INVESTING IN HUMAN CAPITAL:
THE ORIGINS OF FEDERAL JOB TRAINING PROGRAMS,
1900 TO 1945

DISSERTATION

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ABSTRACT

This study explains the origins of federal investment in human capital between 1900 and the end of World War II. It traces the formation of public policies, initiated largely by the private sector—elements of business, organized labor, public intellectuals, and professional educators—that led to federal manpower training and workforce education programs over the remainder of the century. Federal funding for manpower training, however, fluctuated over time. It increased during crises, but receded during times of prosperity, when the private sector and individuals made the largest investments in human capital.

While human capital development encompasses most forms of vocational education, commercial education, technical training, apprentice training, and trade school instruction, I include here on-the-job training, adult education, correspondence instruction, business schools, and training in the workplace. The latter methods of instruction occur outside of formal schools, what the economist of education August Bolino referred to as “nonformal education.” The emphasis here is on non-agricultural, blue-collar and white-collar occupations, skilled and semi-skilled work. Americans increasingly found myriad opportunities for training, ranging from formal schooling in public and private trade and commercial schools, to correspondence instruction, or even from military occupational training. The study is organized chronologically into ten chapters and utilizes archival and textual sources that cut across business, labor, education, and government.

A variety of themes are addressed in this study: It describes efforts to initiate industrial or vocational education and public workforce training at the turn of the twentieth century to make Americans productive workers, thoughtful consumers, and better citizens. Public and private cooperation helped train tens of thousands of Americans for civilian and military duties during both world wars and served as precedents for subsequent training and for the development of professional managers.

The federal government offered little training during the 1920s. Usually only large firms could afford to train employees. However, individuals “self-invested” by using their
own time and resources to attend evening and continuation schools, private commercial
schools, business schools, and junior colleges; they also purchased correspondence courses
from private firms and public and private colleges and universities. A few educators believed
that new technology—the radio—would revolutionize classroom instruction and expand adult
education. The Americanization movement, which declined after immigration restriction
legislation in the early 1920s, provided an infrastructure for adult education during the 1920s
and 1930s. In addition the military promoted training as a recruitment incentive and required
skilled soldiers and sailors to operate the technologies of warfare.

New technologies and new industries, especially electronics, communications,
automotive and aviation, emerged to create new occupations. As a result of the Great
Depression, however, public education and training opportunities for adults dissipated. Small
training programs in New Deal agencies—coupled with the Labor Department’s organization
of joint apprenticeship training that had languished since the turn of the century—formed the
core of the massive training programs established during the Second World War. The
resulting full employment eroded barriers, however temporarily, that segmented workers by
race, sex, age and physical ability. After the attack on Pearl Harbor, labor demand became so
acute that politicians considered drafting men and women into wartime industrial production.
Eventually cooperation between the public and private sectors together produced an
astonishing investment in human capital that helped millions of previously untrained workers
acquire useful skills. After the nation experienced true “full employment” during World War
II, politicians and policy makers discovered the many benefits of investing in human capital
and maintaining a full employment economy in the postwar period.

Public education and workforce training have assumed different functions over time:
they served to improve the quality or character of individuals, educate Americans and
immigrants for citizenship, or prepare workers for the labor market. New interest groups—
labor organizations, women, African Americans, and professional educators, for example—
emerged early in the century. The study also charts the collaboration between state and
federal governments, the emergence of a national labor market, and structural changes in the
national economy. In the final analysis, as technologies and labor market demands continue to
change in the twenty-first century, workforce education and training will remain a central
component of national economic life.
ACKNOWLEDGMENTS

Writing this dissertation has been a long intellectual journey, but I have enjoyed some interesting company along the way. Oftentimes, I have relied upon the kindness of strangers who often went beyond professional courtesy to assist my research. I wish to thank the unnamed librarians and archivists at the Franklin Delano Roosevelt Library in Hyde Park, New York, the National Archives and Records Administration at College Park, Maryland, and especially the staff of the William Oxley Thompson Memorial Library at the Ohio State University. Treks to the libraries and archives, however, also incurred costs.

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I am grateful for a stimulating and interested dissertation committee. David Stebenne, Department of History, and Christopher Zirkle, Department of Workforce Education, lent a sharp eye, sharper talents, and stimulating comments that greatly improved the manuscript. William R. Childs, in the Department of History, also commented on drafts of the early chapters. I owe a special thanks to Kenneth J. Andrien, whose encouragement came at precisely the right moments. I am even more indebted to my adviser, Warren R. Van Tine, for the timely counsel and guidance he offered when I needed it most.

Thanks also to my family and friends for the intangibles: they prodded me to finish the project despite having little understanding of what I’ve been researching and writing about over the past decade—or why. Thanks to you all.

Of course, no acknowledgment is complete until the author accepts full responsibility for all flaws, infelicities, and errors of fact lurking within the text—this I certainly do.
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INTRODUCTION

In his State of the Union message for 1945, President Franklin D. Roosevelt outlined an “American economic bill of rights,” a vision for America that included the right “to a good education” and the “right to a useful and remunerative job in the industries or shops or farms or mines of the Nation.” “The Federal Government,” FDR declared, “must see to it that these rights become realities—with the help of States, municipalities, business, labor and agriculture.” Thus FDR stated his postwar commitment to full employment and modest reform, goals to be achieved through a cooperative arrangement between federal, state, and local governments, and through public and private partnerships.¹

FDR’s vision included a full employment economy, one enhanced by investment in “human capital” through public education and job training. Full employment required a vibrant economy and employees who possessed adequate skills for the workplace. One step on the road to full employment began with the Servicemen’s Readjustment Act of 1944, or GI Bill, funded largely by the federal government following World War Two. The GI Bill provided veterans returning from the war with subsidized housing and monetary support for education or job training. At the time, FDR and some legislators entertained the idea that war workers on the homefront, millions of whom trained for defense jobs, be included in postwar retraining programs as well, but political challenges prevented their inclusion. As a result of the GI Bill and other job training precedents before and during the war, the federal

government, cooperating with public and private institutions, invested in human capital over
the remainder of the century.

Investment in human capital did not begin with FDR’s economic bill of rights during
World War Two, or from the New Deal programs of the 1930s that helped promote adult
education during economic downturns. Rather, businessmen, educators, labor leaders, and
government officials earlier in the twentieth century encouraged public and private institutions
to invest in human capital and thereby enhance the skills of the American workforce.
Investment in human capital is often described as workforce education, human capital
development, human resource development, manpower training, or manpower development;
all of these descriptions, for better or worse, are used interchangeably throughout this study.
Rarely do they appear in the vocabularies of scholars, managers, labor leaders, or politicians
before 1940. While the forms of human capital development encompass most forms of
vocational education, commercial education, technical training, apprentice training, and trade
school instruction, I include here on-the-job training, adult education, correspondence
instruction, business schools, and training in the workplace. The latter methods of instruction
occur outside of formal schools. The economist of education August Bolino referred to these
methods as “nonformal education” and considered all forms of formal and nonformal
education together as “career education.” 2 Bolino examined various ways the public and
private sectors prepared Americans for the workforce in A Century of Human Capital By
Education and Training. 3 While acknowledging Bolino’s contribution to the study of human
capital formation in the United States during the twentieth century, this study takes a different
angle. 3

2 August C. Bolino, Career Education: Contributions to Economic Growth (New York:

3 In A Century of Human Capital By Education and Training (Washington, DC: Kensington
Historical Press, 1989): 14-15, August C. Bolino distinguishes between education and training:
“education includes classroom work and in-plant instruction,” or various methods of formal instruction
to provide the student or worker with tools to analyze and solve problems; training develops particular
skills and techniques through actual practice and repetition on the job. Workforce education, a term
used here to include all kinds of preparation for the labor force, generally follows the definition of
Kenneth C. Gray and Edwin L. Herr, Workforce Education: The Basics (Boston, MA: Allyn and Bacon,
1998): 4; workforce education includes training “at the prebaccalaureate level by educational
institutions, private business and industry, or by government-sponsored, community-based
organizations where the objective is to increase individual opportunity in the labor market or to solve
human performance problems in the workplace.” In the 1960s, economists viewed human resource
development as a “process of increasing the knowledge, the skills, and the capacities of all the people
in a society” through formal education, “on-the-job” training, or individual initiative (taking
Here I attempt to answer a number of questions about how various public and private agents promoted education and training for the American workforce between 1900 and 1945, examine the context for public contributions to that effort, and consider how various workforce education programs served as precedents for federal job training programs for the remainder of the century. For example, when and why did the federal government become involved in workforce education? What effect did government-sponsored training have on the American labor market? Who proposed and who benefited from the federal programs in workforce education before 1945? Again, businessmen, educators, labor leaders, and government officials encouraged investment in human capital through education and workforce training. Moreover, in promoting the “Education Gospel”—the notion that education could solve a plethora of social, political, and economic problems—they supported public attempts to educate and train workers, “Americanize” immigrants, and boost industrial efficiency and productivity in order to enhance the ability of American industries to compete effectively in world markets.4

The commitment to full employment since World War II, however tepid during some presidential administrations since 1945, has led to a variety of federally-sponsored training programs, programs that have met with mixed success. Yet their potential benefits continue to attract the attention of policy makers and political candidates. The major party presidential


candidates in the 2004 election campaign, for example, espoused the utility of job training and retraining programs. If we are able to determine future trends from experience, then future workforce education and training will be borne by a combination of investment in human capital from both the public and the private sectors. Government sponsored surveys demonstrate the efficacy of human capital investment by correlating earnings with education and training.\(^5\)

Recent studies by the U.S. Department of Labor and the Bureau of the Census conclude that investment in human capital—the investment in education or training, whether professional, technical, high school, or “some college”—generally leads to increased productivity and higher lifetime earnings.\(^6\) These findings should not be surprising. Economists and business leaders from the earliest decades of the twentieth century arrived at similar conclusions. Education and training, they observed, produced higher incomes, elevated productivity, and increased “business efficiency.”\(^7\) The stock of human capital


Since the Second World War, the federal government has offered incentives for Americans to pursue advanced education or technical training in the form of college loans and aid to public education. The federal government also sponsored specific training programs, from the Manpower Development and Training Act (1962) to the more recent “America’s Jobs Network,” formerly titled the Job Training Partnership Act (1982), and the Workforce Investment Act (1998). For a brief introduction to and an analysis of job training from a human capital approach, see Bolino, *A Century of Human Capital*; and for a list of federal legislation since the 19th century, see Michelle Sarkees-Wircenski and Jerry L. Wircenski, “Legislative Review of Workforce Education,” in Albert J. Pautler, Jr., *Workforce Education: Issues for the New Century* (Ann Arbor, MI: Prakken Publications, Inc., 1999): 35-47.


\(^7\) See, for example, Otha B. Staples, “Is There a Relation Between the Amount of Schooling and Financial Success in Later Life?,” *Elementary School Teacher*, 10 (February 1910): 261-269; “The
increases with education, schooling, on-the-job training, migration, and improved health, all of which may enhance an individual’s earning potential. In addition to better incomes, job training and education for career advancement—requisites even for today’s “knowledge-based” economy, however much exaggerated—offered Americans opportunities for social mobility, social status, and material security.  

A variety of themes are addressed in this study using the historical analysis of statistics, government reports, and other published data, as well as statements from businessmen, labor leaders, government officials, educators, and official committees, in conjunction with evaluations of economic research. This study will begin to reveal the history behind the training programs initiated in post-World War II America. However, even though

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government investment in human capital may be a good idea, when do public policies promoting education and job training become feasible, affordable, and acceptable in the face of limited public resources? This study investigates the various ways public officials and private citizens—particularly business leaders, educators, government bureaucrats, representatives of organized labor, and individual Americans themselves—became the agents of training and education in response to the changing nature of work in America. At various times between 1900 and 1945 they lobbied, petitioned, and otherwise challenged Congress and various federal officials to invest in human capital by funding vocational education, adult education, and job training programs. Because I emphasize here non-agricultural, blue collar and white collar jobs in the twentieth century that prepared individuals for industrial, commercial, or service industries, I largely ignore training for agricultural occupations. Military training programs are mentioned from time to time, but only to illustrate additional ways Americans prepared for jobs in the civilian workforce. As we shall see, precedents for government-subsidized job training evolved in a complex interaction between the private sector—business, academia, and organized labor—and the public sector—local, state, and federal governments.9

Histories of job training or workforce education as such remain sparse. Few labor or business historians have explored how workers actually trained for the job or who underwrote investments in human capital over time. Histories of vocational education provide useful methods and outlines of how industrial or vocational education developed. August Bolino, mentioned above, offers one of the few sketches available that addresses the extent of public and private investment in human capital over the twentieth century. A fundamental question arises, however, one that asks, How did American workers before 1945 prepare for employment and for career advancement, and how did businesses, governments, and workers themselves invest in human capital? In other words, who paid for training and who benefited? The evidence suggests that the financial onus for the education and training of workers fluctuated over time, just as the demand for different kinds of skills rose and fell in response to the changing structure of local, regional, and national economies. In some instances individuals paid for their own training or education, coined “self-investment” by one

9 Some labor force statistics and demographic data for the entire period covered in this study may be found in John D. Durand, The Labor Force in the United States, 1890-1960 (New York: Social Science Research Council, 1948). (The publication date is correct; the study projects future trends.)
sociologist; they did so at considerable expense, both in monetary terms and in opportunity
costs. In other cases, industries supplemented employee education or trained employees at the
firm’s expense. Moreover, education historians have shown that public education has
assumed different functions over time: it served to improve the quality or character of
individuals, educate Americans and immigrants for citizenship, or prepare workers for the
labor market. In 1940, for example, the American Vocational Association concluded that, “In
the United States of America it is a primary aim of education to promote the development of
each pupil as a prospective worker and as a prospective citizen.” The historian David Labaree
has queried, should education and training serve a public good or a private benefit? Should
public policy promote one or the other? The advocates of federal support for public education
and workforce training adopted various rationales for public education and training over
time.10

In addition to the shifting goals of public education and training, how did state and
federal governments promote workforce education? To gain insight into the role of
federalism, the interaction between existing local, state, and national government contributions
to workforce training will be explored. The federal government before World War II
contributed relatively little funding to workforce education, except in times of crisis. The
analyses here consider how the public and private sectors interacted to increase federal
intervention in workforce training and how the federal government subsequently shaped
public policy regarding workforce education and occupational training programs.11

For an elaboration of “self-investment” and for insights into the relationship between work
and self-esteem, see William A. Faunce, Work, Status, and Self-Esteem: A Theory of Selective Self-
Investment (Lanham, MD: University Press of America, Inc., 2003). For the social implications of
one’s occupation, see Richard H. Hall, Occupations and the Social Structure (Englewood Cliffs, NJ:
Prentice-Hall, Inc., 1969, 1975, 2d ed.). For insights on learning in the workplace, see, for example,
Stephen Billet, Learning in the Workplace: Strategies for Effective Practice (Crows Nest, New South
Wales, Australia: Allen and Unwin, 2001). On the function of education according to the AVA, see
American Vocational Association, Occupational Adjustments of Vocational School Graduates, AVA
Research Bulletin, No. 1, June 1940 (Washington, DC: Committee on Research, American Vocational
Association, Inc., 1940): 132. And for insights into educational issues considered here, see David F.
Labaree, How to Succeed in School Without Really Learning: The Credentials Race in American
Education (New Haven, CN: Yale University Press, 1997); and Grubb and Lazerson, The Education
Gospel.

While few documents describe how workers trained during the early 1900s, recent studies
offer some insight into how workers qualify for jobs and how they improve their skills after
employment, see U.S. Department of Labor, Bureau of Labor Statistics, How Workers Get Their

In addition to the importance of federalism, this study supports the organizational synthesis model which documents the increasing growth and interaction of large organizations, especially those of business, organized labor, academia, and the federal government between 1900 and the end of World War Two. We should be cautious, however, in deducing that public and private cooperation expanded in a progression over time, or that early examples of cooperation created permanent structures of mutual dependence. Rather, as Robert Cuff suggests, using the example of World War One in particular, business-government relations, remained complex, hesitant, and ambiguous. In this study, manpower training serves as one illustration of how the public and private sectors increasingly cooperated and mutually supported one another to train workers for, and to match skills with, the needs of industry, national security, and economic stability. Recognizing the evolution of a national labor market, various interest groups pressured the federal government for the support of training a national workforce. Federal support for training, however, waxed and waned over the century, depending on the changing structure of the national economy and national labor markets. Even so, national exigencies, historians have argued, strengthened the relationship between business, government, and labor since the turn of the twentieth century, exigencies that tended to magnify the powers of the federal government at various times.
During times of crisis, especially during the world wars, the federal government exerted enormous influence on the American labor market by spending huge sums for procuring war matériel and for training millions of workers in skilled and semi-skilled occupations.\textsuperscript{13}

Related to the problems of federalism and the growth of large organizations is another theme which emerges, one that considers the changing role of the federal government and the historical debate that identifies the federal government as a clearinghouse for various interest groups who fostered public policies to achieve certain goals. Responses to interest groups by the state typify what some historians have described as an “associational state,” a “corporatist state,” or a “broker state,” one open and amenable to many competing interests and viewpoints. In this case, educators joined business and organized labor as a potent interest group in the formation of education policy and workforce training. To meet the variety of political demands—demands on behalf of not only business and labor, but also those made by racial and ethnic minorities, agriculture, the aged, women, geographical regions, and others—the federal government increasingly mediated between competing interests during the course of the twentieth century; it provided social services in response to economic challenges and reforms that sought to maintain political, economic, and social stability, especially during and after the Great Depression of the 1930s. In addition, federal bureaucracies became increasingly important to formulating policies by gathering various kinds of social and economic data, by identifying trends and projecting future labor market needs, and by initiating and implementing public policies to address the problems of business, labor, and the public. Federal bureaucracies also shaped labor markets and influenced executive and legislative leaders on public policy issues. The conclusions of this study suggest that federal programs for education and employment training—programs that increasingly shaped the American labor market—arose not only to meet demands from various interest groups, but also to define and solve national social and economic problems.\textsuperscript{14}

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The structure of this study is chronological because it illustrates the earliest demands for federal involvement in public vocational education, job training, and the general development of human capital since the dawn of the twentieth century. It utilizes sources that cut across business, labor, education, and government sources organized into ten chapters. Chapter One examines the efforts made by businessmen, educators, and leaders of organized labor between the 1890s and World War I to meet the labor demands of a new industrial economy. The on-going transformation of the national economy from an agricultural to an industrial and service economy—one that relied upon machinery, efficiency, and mass consumption—led to the “deskilling” of traditional skilled occupations, the creation of new occupations, and the professionalization of personnel training. Thus the industrial or vocational education movement sought to offer training for high school youth to prepare them for the workplace. The influx of “new” immigrants between 1880 and 1914 also played a role in a national effort to “Americanize” immigrants. Americanization efforts laid the foundations for the adult education movement of the following decades.

Chapter Two appraises the mobilization and training for the First World War, aided by the Smith-Hughes Act of 1917, which created a federally funded vocational education program. Individual firms and public vocational schools helped train civilians and soldiers for skilled occupations during the war. Once the emergency subsided, however, the federal government withdrew from the arena of job training and, over the next decade, supported only vocational education and vocational rehabilitation programs.

With fewer federal programs after the war, workers and firms relied upon their own resources to invest in human capital. Chapters Three and Four reveal how workers during the “New Era” found numerous ways to acquire skills during a time of economic expansion.

Training techniques developed during the war led to the professionalization of personnel training during the 1920s. In addition, the adult education movement that began in the mid-1920s fostered adult education and life-long learning programs that continue today.

The opportunities for education and training created by the boom of the New Era, however, dissipated with the onset of the Great Depression as discussed in Chapter Five. The Depression created the highest levels of unemployment in the nation’s history and led to difficulties for state and local governments in financing public education. Likewise, the federal government cut financial support for vocational education during the early 1930s. As the Depression deepened, firms laid-off workers, reduced new hiring, and often eliminated training programs altogether. Many educators and public intellectuals attributed increasing joblessness to “technological unemployment,” and argued that education and retraining would serve as the most effective tools for reducing unemployment created by technology and structural change.

During the 1930s, Congress passed legislation to extend vocational education and to revive apprenticeship training in a cooperative endeavor between business, government, and organized labor. Moreover, the New Deal attempted to ease the problem of unemployment with public works programs, the subject of Chapter Six, but retraining the unemployed in federal work relief programs occurred on a limited scale until the nation prepared for war during the late 1930s and early 1940s.

New industries developed before the Depression restructured the American economy and reshaped the American workforce. They created whole new occupations that required expertise in aviation, electronics, radio broadcasting, transportation, and automotive production and maintenance. Chapter Seven demonstrates how one of these new industries, the aviation industry, stimulated public and private cooperation to develop and regulate the nascent industry, and to train workers for aviation-related occupations during the 1920s and 1930s. While the aviation industry expanded slowly during the Depression years, it emerged from World War II as the nation’s second largest industry.\(^\text{15}\)

While few New Deal programs actually prepared Americans with new skills, they provided the earliest programs for the enormous training effort put into motion as the United States prepared for World War Two. As examined in Chapter Eight, the jump in demand for skilled workers required the cooperation of government, organized labor, various industries, and professional educators, all of whom helped train millions of workers and servicemen for national defense. Labor market demands also began to erode barriers that segmented workers by race and sex, however temporarily. Chapter Nine continues the discussion of wartime mobilization and production after the attack on Pearl Harbor. In 1942 and 1943, politicians considered following the example of the United Kingdom to draft men and women into wartime industrial production. Meanwhile, policymakers looked to the examples of the First World War, when various federal agencies established innovative training programs. Eventually they produced an astonishing investment in human capital that helped millions of previously untrained workers—especially marginal workers such as women, African Americans, the disabled, and older unskilled men and women—to acquire useful skills.

Chapter Ten reveals how during the war, economists, educators, businessmen, labor leaders, and policy makers, fearing the return of high unemployment, planned for full employment in the postwar economy. Training techniques and programs developed over the previous decades served as precedents for manpower programs during the war, just as wartime training would inform the training policies for the remainder of the century. While some variation of a full employment economy materialized in the postwar years, the federal government has assumed responsibility for economic stability since passage of the Employment Act of 1946. The Servicemen’s Readjustment Act of 1944 or GI Bill served as a prototype for investment in human capital after the war, but investigations by the Veterans Administration, the Government Accounting Office, and Congressional committees raised questions about abuses of the GI Bill that may offer suggestions as to why federal programs have enjoyed mixed success thereafter.16

Nevertheless, many programs created under the New Deal and wartime mobilization, particularly the Training-Within-Industry Program and the GI Bill, served as models for future critical view of the Roosevelt administration, see Jim Powell, FDR’s Folly: How Roosevelt and His New Deal Prolonged the Great Depression (New York: Three Rivers Press, 2003).

training programs. After World War Two, national leaders of both major political parties adhered to the “education gospel.” They believed that investment in human capital would encourage economic growth and stability, and that education and training could ameliorate poverty and unemployment. They also knew that scientific and technical training would become imperative in the face of challenges to national security posed by the Cold War. Since the 1960s, critics have identified the many failures of federal job training programs. The rapid economic and technological changes during the course of the twenty-first century will likely require constant retraining for millions of Americans with some federal funding and cooperation between the public and private sectors. In the final analysis, of course, job training requires job creation and an understanding of future workforce needs.17

The reader will notice some familiar topics here—the evolution of vocational education or the training of women for war production during World War II, for example. Yet the examination of how federal job training programs took shape and how well they performed before 1945 may offer insights into the ways workforce education and flexible job training—training through public and private partnerships—will contribute to the investment in human capital for the twenty-first century.


For examples of how demographic changes will likely affect future job trends, see Carnavale and Fry, “The Economic and Demographic Roots of Education and Training.” For insightful commentary about the future labor force, see Peter Drucker, “The Next Society,” in Peter Drucker, Managing the Next Society (New York: Truman Talley Books St. Martin’s Griffin, 2002): 235-299, esp. 252-260. Some European analysts conclude that continued vocational training contributes to the prevention of unemployment; see, for example, Rainer Brödel, Enno Schmitz, and Erwin Fauss, Continuing Training as a Means of Preventing Unemployment: A Comparative Study of Denmark, the Netherlands, Ireland, the United Kingdom and the Federal Republic of Germany (Berlin: European Centre for the Development of Vocational Training (Cedefop), 1982).
CHAPTER 1

SHAPING THE NEW INDUSTRIAL WORKFORCE:  
FROM THE TURN OF THE CENTURY TO THE GREAT WAR

“There are two kinds of capital in the world. The one we call property. . . .  
[consisting] of lands and machinery, stocks and bonds, etc. . . . The other  
kind is human capital—the character, brains and muscle of the people.”  
-- Report of the Committee of Industrial Education,  
National Association of Manufacturers, 1912

Between the end of the Civil War and the outbreak of World War I, the United States  
experienced a dramatic expansion of its industrial and service economy. As a result, new  
occupations emerged that required new skills. Consequently, Americans recognized the  
importance of investing in human capital by promoting public education and training for a  
ew industrial workforce. Businessmen, labor leaders, educators, and politicians advocated  
the investment in human capital through public education and workforce training to achieve  
umerous goals. They proposed to improve productivity and earnings, reduce social unrest,  
and enhance the position of American businesses in world markets. As Progressive Era  
Americans, they sought to humanize the impoverished in American cities, assimilate  
immigrants, educate consumers, and promote “intelligent citizenship.” Along with  
considering whether this investment should be primarily a public or private initiative,  
advocates of vocational education divided over what level of government should be involved.  
Even though federal legislation had contributed indirectly to the expansion of public  
education, Congress had left the administration and funding of education to the states. Not  
until a national crisis ensued, especially when the United States entered the war in Europe in  
1917, did the federal government involve itself in workforce training and education, setting  
precedents for decades to follow.

1 Marvin Lazerson and W. Norton Grubb, American Education and Vocationalism: A  
This chapter sketches the various ways Americans attempted to establish training and education for the workplace prior to the First World War. It briefly examines the existing federal support for education, and various schools and programs that proved inadequate to meet the increasing workforce demands arising from industrial innovation and expansion. It reports on a number of surveys conducted by federal agencies that investigated social problems and determined that education and training could alleviate social conflict. The chapter also reviews some of the intellectual arguments and motives for vocational education and other forms of job training promoted by businessmen, educators, and labor leaders. In some instances, all three groups looked to European models for workforce training and they sometimes cooperated to lobby state and federal legislators to achieve those goals. States themselves provided models of workforce training programs for their citizens. In addition, this chapter also explores how education and training contributed to the “Americanization” of “new” immigrants at the turn of the century, a movement that created a philosophy and infrastructure for the adult education movement which surged in the 1920s and thereafter. The reader will notice that high school vocational education after 1900 merges with other forms of workforce training, a trend that accelerated during the interwar years and persisted until the 1960s. Recent educators have portrayed the use of public schools to provide job training and citizenship courses, to Americanize immigrants, or to ameliorate social and economic problems, the “Education Gospel.” Examples of those promoting the education gospel abound. Finally, this chapter draws together arguments supporting federal aid for vocational education used to promote passage of the Smith-Hughes Act and the development of workforce training during the First World War and considers opposing arguments expressed by the philosopher of education, John Dewey.2

The New Industrial Workforce

Industrialization and the formation of mass production industries restructured the American labor force and altered traditional modes of training by the dawn of the twentieth century. American industries, utilizing innovations and “scientific management” techniques,

no longer required the finely-honed skills of traditional artisans or craftsmen. As a result the traditional apprenticeship system had all but disappeared. While some large firms could afford to train employees for jobs or promotions, small businesses and most state governments avoided large outlays for workforce education and training. Until the eve of the Great War, only a few state and local governments addressed public funding for education and training of the new industrial workforce.3

While many skilled workers had migrated to the United States, especially from Western Europe, the new industrial economy often employed unskilled or semi-skilled labor, largely recruited from the flood of “new immigrants” arriving on American shores from Southern and Eastern Europe as well as Americans migrating from rural farmlands. Machinery displaced or eliminated skilled workers in many trades, a process referred to as “dilution” or “deskilling,” which in turn reduced the need for lengthy training programs and apprenticeships. At the same time, conflicts between management and labor intensified. Real wages remained sluggish between 1890 and 1914, partly due to the in-migration of unskilled and uneducated workers. Organized labor, particularly the American Federation of Labor, which represented skilled workers, vied with a new hierarchical form of business management. The two sides battled for control of the shop floor, and over working conditions, wages, and the right to organize and bargain collectively. Since experienced craftsmen traditionally had trained novices or apprentices in specialized trades, unions also demanded control over the training of new employees. The introduction of labor-saving technologies and disputes between labor and management over shop floor contributed to the near collapse of the traditional apprenticeship system by the turn of the century.4


4 The economist (and future Senator) Paul Douglas argued in 1919 that “new immigrants” included as many if not more skilled workers had been among the “old immigrants” from Northern and Western Europe, contrary to those lobbying for immigration restriction. Over time, he observed, the characteristics of immigrants changed regardless of origin. In addition, he found that the qualitative differences in education and skill were impossible to measure. See Paul H. Douglas, “Is the New Immigration More Unskilled than the Old?,” Publications of the American Statistical Association 16 (June 1919): 393-403. For histories of manual training, apprenticeships, and vocational education by three of the luminaries of the vocational education movement, see Layton S. Hawkins, Charles A. Prosser, and John C. Wright, Development of Vocational Education (Chicago: American Technical
Problems between management and labor also highlighted an evolution in the nature of work. The large mass of workers learned to operate new kinds of machinery or served as manual labor. New management techniques reorganized the labor force and forged a new industrial work ethic.\(^5\) Even though apprenticeships declined and the demand for unskilled and semi-skilled workers increased after the turn of the century, industries still required workers with new kinds of skills or, at the very least, workers capable of performing many skilled jobs. As a result, educators, businessmen, and labor leaders, all having different goals and different means of achieving them, looked to both private and public sources for “industrial” or “vocational” training.\(^6\)

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Federal Interest in Vocational Training

Between 1870 and 1920, the private sector prepared skilled workers in various manual training schools, apprenticeships, and on-the-job, while the federal government contributed little to public education or training. Educators and industrialists resurrected the movement for Manual and Trade Education, whose adherents before the Civil War had sought publicly funded education and apprenticeships to develop “better citizens.” The privately funded Manual Training Movement sometimes clashed with the larger goal of public education that furnished children with basic skills needed to become informed and productive citizens. The Hampton Institute, the New York Trade School, and the Toledo Manual Training School—modeled after the St. Louis Manual Training School begun in 1855—offered a few opportunities for manual training in the late 1800s. D.C. Gilman, president of the Johns Hopkins University, advocated manual training for boys and girls at all levels. “For girls,” he suggested, “the needle is the universal implement, and yet there is no reason why boys should not learn to sew, nor why girls should not learn to use the simple instruments of the carpenter’s bench.” Private training schools, however, remained costly and accommodated relatively few students.7

Public schools did not fall under federal responsibility but, as advocates of industrial education often argued, precedents for federal contributions to public education existed. For example, the federal government had assisted public education through the sale of public lands as early as the Northwest Ordinance of 1787. Later it helped establish agricultural and mechanical schools under the land-grant system—using the sale of public lands to finance colleges that evolved into the current public university system—embodied in the two Morrill Acts of 1862 and 1890, and in the Hatch Act of 1887. By the turn of the century, most advocates of manual training and vocational education saw no conflict between teaching a trade, providing a liberal education, and instilling the fundamentals of “citizenship.” Rather, agricultural and technical training could be integrated into a program of general education, one

that included basic writing, math, history, geography, and other liberal arts, in addition to fostering practical knowledge. Manual or vocational training, adherents insisted, served to supplement general knowledge, not replace it.⁸

Even as public support for industrial education grew and initiatives for federal aid to public education increased after the Civil War, Congress exhibited a marked reluctance to support public education because of a general belief that the burden of doing so rested with the states. However, the combination of expanding public education among the states and the federal funding of land-grant schools failed to meet the growing demand for skilled and semi-skilled labor.⁹


While the federal government avoided direct assistance to public education, a number of investigations by congressional committees and federal agencies between 1880 and 1914 focused on ways education and training contributed to economic and social improvements. These investigations examined the problems of urban America regarding immigration, industrial conflict, unemployment, poverty, and crime. Conducted for the purpose of establishing community needs and to gain an understanding of the underlying reasons for poverty and industrial conflict, the commissions looked into matters of training as a way to avert potential social unrest.\(^{10}\) In 1882 the Senate Committee on Education and Labor charged the Bureau of Education with the task of inquiring into the state of technical and industrial education in the United States “for either men or women.” The Bureau investigated various levels of public education, especially among schools receiving federal funds in the form of land grants under the Morrill Act of 1862. It reported that many skilled workmen learned on the job and, with some exceptions, the number of apprenticeship programs had declined over recent decades. It also found that each state, depending upon its particular agricultural, commercial, or industrial orientation, required different kinds of training and expertise among its particular workforce.\(^{11}\)


\(^{11}\) U.S. Bureau of Education, *Industrial Education in the United States: A Special Report* (Washington: Government Printing Office, 1883): 1. The states of the former Confederacy and African American schools also benefited from the original Morrill Act of 1862. Federal contributions took the form of “gifts” or “donations” of land to be sold from which the proceeds financed the establishment and maintenance of educational institutions within a state. The Hatch Act of 1887 allowed for annual appropriations of $15,000 from the sale of public lands and required that each state furnish experimental agricultural stations. The Adams Act in 1906 doubled the appropriation and removed the requirement that money come from the sale of public land. The Second Morrill Act extended the amount of money provided to land-grant colleges and similar congressional measures followed, and added the number of African American schools. See I.L. Kandell, *Federal Aid for Vocational Education: A Report to the Carnegie Foundation for the Advancement of Teaching*, Bulletin Number Ten (New York: The Carnegie Foundation for the Advancement of Teaching, n.d., c.1923); for the
In 1891, Congress appropriated $5,000 for the Bureau of Labor to investigate the organization and effectiveness of technical, trade, and industrial education in the United States and in foreign countries, paying attention to “facts relative to [the graduates’] economic and moral condition.” The resulting studies found that many trade schools and institutes of technology rivaled the training provided by universities or professional engineering schools. Manual training schools offered lengthy courses of study that prepared highly skilled technicians and supervisory personnel. Investigators also discovered that industrial schools in the United States, while inferior in some ways to those of Europe, remained more flexible and responsive to the labor market than European schools. Nevertheless, the distribution of schools in the United States remained scattered, and funding, both public and private, remained sporadic. Reports on the moral impact of industrial education remained vague. American public education and the training of workers began to undergo slow but significant changes by the turn of the century.12

In 1902 Congress initiated another investigation, this time at the behest of American firms concerned about international competition following the severe depression lasting from 1893 to 1896. The 1902 study focused more narrowly on trade schools, technical schools (most of which were evening schools), and schools of industrial design, included in the category of apprenticeship schools. According to the findings, trade schools had replaced traditional apprenticeships, whose numbers had declined precipitously. The newer trade schools prepared students “in the shortest possible time to become wage earners at the trade,” in order to meet “the demands of both pupil and parent” in contrast to teachers and employers who urged lengthier preparation. The investigators emphasized that European governments subsidized industrial education, prompting educators and business leaders to recommend subsidies to support vocational or industrial education in the United States. The report mentioned additional options for education and job preparation, notably correspondence schools and a variety of adult and continuing education courses. While states and the private sector proffered a number of ways to train, the report concluded that there existed “no uniform

land-grant of 1907, see Gordon, The History and Growth of Vocational Education in America, pp. 39-49.

system of manual training,” trade, or technical schools. Workers who sought training relied solely on “municipal boards or private enterprise.”

Other federal investigations followed in the intervening years. All noted the decline of manual training and apprenticeships. A recent historian of vocational education linked the decline of apprenticeships to the spread of the factory system. Large, highly centralized, mass production organizations preferred training unskilled and semi-skilled workers on-the-job through observation, imitation, or trial-and-error learning—referred to as “pick-up” training—rather than investing in expensive and lengthy apprenticeships or schools for producing skilled workers. Federal investigators blamed mechanization and the “subdivision of labor,” sometimes termed “dilution,” as detrimental to the apprentice system. Dilution occurred when managers divided a skilled task—one normally carried out by a skilled craftsman or mechanic—into simpler, discrete routines that could be performed by unskilled or semi-skilled workers. Dilution enabled firms to rely less on skilled workers and pay lower wages to the semi-skilled ones. Unscrupulous employers hired children as “apprentices” who could be easily trained for unskilled machine tending and be paid lower wages. This practice further aggravated relations between management and labor.

The apprentice system as generally conceived proved incompatible with industrial capitalism, wrote Charles Richards of Columbia University in 1907. Apprentice training remained appropriate only for the building trades. Large firms, he noted, provided workplace instruction, as did many trade unions. The latter, however, often limited new trainees to

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prevent an oversupply and subsequent devaluation of workers in skilled occupations. The latter practice so restricted training in some occupations that a few trades approached extinction. While public schools at the time tended to diminish the value of manual occupations in favor of white collar work, Richards deduced that industries would continue to train employees, but not in the quantity required by industry. Consequently, he encouraged state and local governments to train teenage boys and girls and to furnish additional training for those already in the workforce through evening or continuation schools.¹⁶

If apprenticeships no longer served to train skilled workers, industrial education promised to fill potential gaps. A Bureau of Education report noted in 1907 that educators and business leaders recognized the benefits of industrial education. Such programs helped increase worker productivity and improve product quality; they inspired frugality, reduced poverty and crime, increased consumption, and provided for the moral and intellectual “elevation of the working classes.” In addition, vocational or industrial training supplanted the defunct apprenticeship system.¹⁷ While the federal government contributed little direct aid to education, the Bureau of Education reported on various kinds of educational opportunities in the United States through research bulletins available to the public. Arthur Jones reported in 1907 that continuation schools catered to working teens and adults. After a review of foreign schools, accompanied by comments about school attendance in the United States, his report identified four types of existing continuation schools: 1) the evening school; 2) classes conducted by the Young Men’s and Young Women’s Christian Association, which charged


tuition; 3) classes directed by Roman Catholic, Hebrew, and other religious groups; and 4) correspondence schools. Most of the schools described were located in New York City.\footnote{Department of Interior, Bureau of Education, \textit{The Continuation School in the United States}, by Arthur J. Jones, Columbia Teachers College, 1907, Bulletin No. 1 (Washington, DC: Government Printing Office, 1907): 82-145.}

Among public institutions, evening schools served the largest number of working people. Evening trade schools and high schools emerged by the late nineteenth century, largely in the East and Midwest. The vast majority of students, 85 percent, lacked the rudiments of elementary education or the capacity to advance in school. Low income students often left regular school in order to support their families, and some took advantage of evening school opportunities while they continued working. In addition, the Jones report noted that the foreign-born comprised two classes of continuation school students: one, illiterate and uneducated; the other educated immigrants who had not yet mastered English. The latter required training for a job and the language skills needed to perform "the duties of citizenship."\footnote{Jones, \textit{The Continuation Schools}, pp. 92-99; for additional comment on evening schools, see William Dooley, \textit{Principles and Methods of Industrial Education}, pp. 52-61. Some historians have argued that education and Americanization, or Progressivism in general, served to exert middle class control over a new, fluid industrial social order.} Evening schools could be classified as continuation schools. In large industrial cities, continuation schools offered both practical and liberal knowledge, allowing students to work during the day and attend evening sessions in their leisure time. Nicholas Murray Butler, President of Columbia University, lauded vocational education made available to working people, declaring that "trained industrial skill is a factor in the Nation's prosperity."\footnote{Nicholas Murray Butler, "Training for Vocation and for Avocation," \textit{New York Times} (19 September 1908): 12.}

The continuation school, Jones asserted, remained an important element in public education, especially since "the great majority of young people will enter commercial or industrial life." But apart from the need to prepare for one's working life, educators also included the Progressive Era notion of "training for citizenship" as a central component of education. Jones concluded that continuation schools served three functions. First, they taught foreigners "to read and write English" and understanding the basic customs and ideals of American political life. Second, they addressed the problem of illiterate Americans, who as citizens in a democracy had to be able to read and reason. Schools also offered some basic
skills, even for those who lacked the talent to advance in skilled or professional endeavors. Training would “make them self-supporting citizens.” Finally, continuation schools and evening schools provided opportunities for “all men and women” who sought additional education and training to advance in their occupations or to become future leaders. The majority, however, required “commercial, industrial, and technical courses” to achieve “better salaries and higher positions.” Echoing those who supported industrial training and public education, the report insisted on combining the “practical element” of training with a “liberal education.”

Another federal report by the Commissioner of Labor, undertaken in 1910, grew out of the “widespread and growing demand that the schools shall be more closely related to the future work of the children.” The commission reported on a variety of publicly and privately funded training alternatives available to Americans such as apprenticeship schools, cooperative and evening industrial schools, correspondence schools, YMCA schools, textile schools, and girls’ industrial schools. The latter served girls aged 14 to 16, although the commission reported that women generally left the work force around age 25. While the apprenticeship system had nearly disappeared by the end of the nineteenth century, large corporations, especially railroads, retained apprenticeship schools to fill the need for skilled workers within their own organizations. The “greatest people’s university,” the YMCA, enrolled in 1909-1910 over 53,000 working men and boys—over eighty percent above age 18—in 120 industrial, commercial, trade, and technical subjects around the country. All of these investigations and reports before World War One reveal the federal government’s growing understanding of the importance of public education and training, yet federal involvement remained minimal.

**Federal Assistance to Educate “Dependent” Groups**

The federal government took some responsibility for educating freed blacks and native Indians after the Civil War and the conquest of the American West. Negro industrial

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21 Jones, *The Continuation Schools*, pp. 139-144.

schools, reported the Commissioner of Labor in 1910, “should not be compared with the schools for whites, or judged by the same standards.” Those schools faced a perpetual lack of funds, and most black pupils could ill-afford tuition. While a few industrial schools existed in the North for black Americans, about a dozen schools in the South trained them for trades and agricultural pursuits. Philanthropic organizations, state governments, and federal aid derived from the Second Morrill Act funded these schools. Booker T. Washington, a graduate of the Hampton Institute and founding member of the Tuskegee Institute in Alabama, believed education, especially industrial education, would help solve racial problems by improving the productive capacity for the mass of black Americans. Some Negro schools had gained a “national reputation” and helped blacks to adjust “to the new conditions in which emancipation has placed them.” Southern blacks, in general, lagged in many forms of education because of state education policies.23

Schools for African Americans, over ninety percent of whom lived in the South at the turn of the twentieth century, received a fraction of state budgets for education provided for white schools. Poor funding reflected existing white attitudes about the abilities of African Americans. In addition, the lack of education and training perpetuated “Negro jobs,” usually unskilled, domestic, and common labor that paid low wages and kept blacks from competing for higher paying jobs. Southern politicians compounded the problem. While he did “not mean any unkindness” to African Americans, a prominent senator from Georgia did “not believe instruction from books, except of a simple character, is of any benefit to a considerable portion of them.” The Kentucky legislature, for example, in 1910 prohibited the establishment...

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of industrial schools for black Americans without assent from a majority of the voters. A court of appeals declared the law unconstitutional.\textsuperscript{24}

Powerless in the face of disfranchisement and discrimination in hiring, most blacks worked in agriculture or in poorly-paid occupations. Nevertheless, black leaders saw the importance of education and training as ways to improve working conditions and earning potential. Washington and others before the First World War perceived federal aid as a potential fillip for improving general education and acquiring a skill. Through the efforts of leaders like Washington, black schools attracted support from white politicians. President William Howard Taft, for example, helped raise donations for the Tuskegee and Hampton Institutes in 1909 while promoting technical education. “The help that is needed,” he declared, “is education: not education of the mind alone, but a training of the hands—industrial education.” Later Taft told a Fisk University audience in 1911 that, “I am firmly convinced that the hope of the Negro is in his industrial education throughout the South” along with university education for black leaders. Theodore Roosevelt echoed Taft when addressing black educators: “You do not need to be told how emphatically I favor industrial education for the colored man no less than for the white.”\textsuperscript{25}

A higher percentage of black Americans worked for wages than did whites in the workforce, historians Lorenzo Green and Carter Woodson argued. While the majority remained on farms, their numbers in the trades and in transportation increased between 1890 and 1917, although perennially earning lower incomes. W.E.B. DuBois gathered a number of studies and surveys made by African American scholars and educators during that period demonstrating the growing number of black artisans, mechanics, and tradesmen in the United States. In spite of discrimination by employers and labor unions, many black artisans learned their trade through apprenticeships, trade schools, and on-the-job. While various industrial,


trade, and manual training schools prepared thousands of black Americans, DuBois and his colleagues believed enrollments remained quite low—14,000 males and 21,000 females in 1911—and that few schools prepared students for modern industries. Most industrial schools prepared black students for “handwork” and services rather than for occupations required by modern industries that relied on machinery.26 After 1914, as the demand for workers in wartime industries accelerated, hundreds of thousands of Southern blacks began the “Great Migration” to northern industrial cities to work in mass-production and service industries. While Northern industrial states offered opportunities for jobs and better wages unavailable in the South, they proved to be no haven for black Americans once the Great War ended in 1918. Black workers—use as scabs to break strikes, denied opportunities for training and promotion, and relegated to low-paying jobs—faced new forms of discrimination in the North. The future success of black Americans, DuBois concluded in 1912, depended on common schools, justice, the right to vote, “and the right to work.”27

The federal government also arranged contracts with black schools to train Native Indians. In 1910, for example, some 45,000 Indian boys and girls attended predominantly black industrial schools, ostensibly for cultural assimilation and vocational rehabilitation. The Hampton Institute in Virginia trained 120 American Indians, who remained wards of the state. The Indian children there received education in the trades as well as in traditional academic subjects. Moreover, twenty-one Indian industrial schools operated in 1910, mostly in the West, where youth learned particular trades to supply local labor markets. Thus in special instances, the federal government already funded vocational training before the First World War.28 While Congress remained reluctant to accept the burden of education and workforce

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training, European nations had already established national funding for vocational training and public education that provided models for Americans to emulate.

**European Models of Education and Training**

As with other reform efforts in the Gilded Age and Progressive Era, advocates for vocational education looked to Europe for inspiration. American reformers eagerly promoted German and English models in addition to some aspects of the Swedish, French, and Russian school systems.²⁹ Partisans of the German system believed that industrial education accounted for that nation’s rapid economic development. Such a program in the United States, educators argued, would not only raise the general level of intelligence, but also help develop specialized talents, boost income, increase efficiency, and nurture the expertise required for a “highly developed industrialized state.”³⁰ The National Society for the Promotion of Industrial Education (NSPIE), founded in 1906 to lobby state and federal governments to aid vocational curricula in public schools, issued a number of bulletins for training men and women for industry. One bulletin included a model derived from the public continuation schools of Munich, organized between 1860 and 1875.³¹ Americans also looked subsidizing Indian schools, see Carl E. Grammer, “Shall Public Funds be Expended for the Support of Sectarian Indian Schools?” (Philadelphia, PA: Indian Rights Association, 1915).


to the example of public education in England, which began to levy taxes to support technical
education in 1889, then for handicapped children in 1893, and for special schools for the
disabled in 1899. By 1900 Great Britain mandated compulsory education for public and
parochial students to the age of 14.\textsuperscript{32}

European models of education and the German model of vocational training remained
the talisman of educators and their allies in business, at least until the First World War. Frank
A. Vanderlip, Vice-President of National City Bank in New York, argued that, while
American industry had been successful in recent years, one could not conclude that its
methods were sound, that the market would continue to supply a compliment of skilled
employees, or that advantages in resources and innovation would last indefinitely. Deskilling
had resulted from labor-saving machines—themselves constructed with skilled hands.
Germany, he insisted, had become the new industrial powerhouse in Europe, succeeding
largely because of its educational system and continuation schools. England’s delay in
establishing industrial education, by contrast, had led to its noticeable decline as the world’s
industrial leader. The United States, he averred, should heed the lesson.\textsuperscript{33}

In 1914 brief notices in the \textit{Bulletin} of the National Association of Corporation
Schools reiterated the importance of vocational education to German industrial output, noting
that Germany was second only to England in industrial productivity that year.\textsuperscript{34} Ira S. Wile, a

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\textit{Reports Vol. 33} (Washington, DC: Government Printing Office, 1905); and Department of Interior,
Development} [collated from the reports of the Royal Prussian Industrial Commission of 1904], by
addition, see E.A. Filene, “The Social Improvement of Grammar School Graduates in Business Life,”
\textit{The Social Education Quarterly} \textbf{1} (June 1907): 146-155.

\textsuperscript{32} National Society for the Promotion of Industrial Education, \textit{Bulletin} No. 14, \textit{The Trade
Continuation Schools of Munich} (New York: National Society for the Promotion of Industrial

\textsuperscript{33} Frank A. Vanderlip, “American Industrial Training As Compared With European Industrial
Training,” \textit{The Social Education Quarterly} \textbf{1} (June 1907): 105-109; also see, “Why Germany Is
Reforms,” ibid. (August 1914): 27-31. In addition, see the series of articles by Charles A. Bennett,
and Albert H. Leake, \textit{Industrial Education: Its Problems, Methods, and Dangers} (Boston, MA:

\textsuperscript{34} National Association of Corporation Schools, “Why is Germany Prosperous?” \textit{Bulletin} \textbf{1}
(March 1914): 46, and “Industrial Advance in Germany,” ibid. \textbf{1} (April 1914): 30. Janice Weiss notes a
member of the New York City Board of Education, thought it telling that, “in the single
German city of Munich there are more workers being trained at public expense than there are
in all the larger cities of the United States taken together and showing an aggregate population
of more than 12,000,000.”35 Thus, like educators and government investigators, businessmen
frequently looked to Germany as a model of how national intervention helped educate a
productive workforce.36

**Industrial Training at the State and Local Level**

While European examples buttressed arguments for industrial education, state and
local governments often exhibited successful models. In some instances, state and local
schools encouraged workers and school drop-outs to attend vocational classes. Some firms
and trade unions favored publicly funded vocational education, evening schools, and
apprenticeship schools, although the American Federation of Labor specifically opposed the
use of students as scabs and demanded guarantees for the quality and length of training.37
While Wisconsin and New Jersey had been the first states to legislate public funding for
vocational education, as we shall see below, investigators reported that Massachusetts,

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35 “Technical Training Doubles Wages,” *National Association of Corporation School Bulletin*

36 Hal Hansen, “Caps and Gowns: Historical Reflections on the Institutions That Shaped
Learning for and at Work in Germany and the United States, 1800-1945,” *Business and Economic
History* 28 (Fall 1999): 19-24; and for a fuller explication, see Hal Eugene Hansen, “Caps and Gowns:
Historical Reflections on the Institutions That Shaped Learning For and At Work in Germany and the
reports that Germans, like Americans, made an economic choice about the public funding of vocational
education; however, the differences in culture and social institutions—guilds, strong labor unions, a
smaller population, smaller geographical size, a rigid class structure, and a centralized government, for
example—led German leaders to invoke a state-supported system that mutually benefited the German
economy and the state.

13-33, citing p. 13. For some of the primary literature—bulletins, reports, and legislation—on
vocational education between 1900 and 1945, see L.R. Booker, *Brief Historical Reports on Early
Activities Leading to Development of Vocational Education in the United States* (Clemson, SC: Scholl
of Vocational Education, Clemson Agricultural College, 1947).
Connecticut, New York, and Wisconsin had thus far demonstrated the “most advanced” systems of vocational training.  

At the turn of the century, some Americans equated industrial education with reform schools.  Reform schools at the turn of the century—the Kansas Boys Industrial School, the Wisconsin Industrial School for Girls, or the Ohio Boys Industrial School, for example— instructed delinquents, misfits, the disabled, and minorities in a trade or occupation ostensibly of benefit to both the individual and society.  Progressive businessmen, education “experts,” and labor leaders, however, paid increasing attention to workforce training, training usually supplied by the public sector.  With few exceptions, most states slowly formulated education policies and invested in public education programs by mandating school attendance and restricting child labor.  States paid more attention to the kinds of school curricula that would benefit businesses and the public, yet by 1917 only eight states had established formal vocational instruction.  Worse, in the view of vocational education advocates, estimates suggested that states already providing vocational training programs served less than one percent of their labor force.  

The earliest support by state governments for vocational education emerged among industrial states.  Individual states developed and funded programs which catered to their own needs, sometimes rejecting European models.  More importantly, state supported industrial education indicated a growing recognition that investing in human capital might be good public policy.  


39 David Snedden, who studied industrial schools early in his career, observed that the public sometimes confused industrial education with reform schools; see Administration and Educational Work of American Juvenile Reform Schools (New York: Teachers College, Columbia University, 1907).  For the use of industrial schools as a way to redirect delinquent youth, see Dale F. Poe, “A Study of the Industrial Schools of the United States,” M.A. thesis, The Ohio State University, 1931.  

40 Leavitt, Examples of Industrial Education, pp. 267-298.  

read in part, “It is especially the duty of the State to afford good educational facilities to its youth in those technical studies which are directly associated with the material prosperity of its people.” New Jersey had established three industrial schools by 1898: two coeducational schools in Trenton and Newark, and the Manual Training and Industrial School for Colored Youth in Bordentown.42

Other industrial states followed a similar pattern. The Massachusetts legislature authorized municipalities to establish industrial schools as early as 1872, but made little real headway for twenty more years. Then in 1891-1892, a Massachusetts commission investigated the current conditions and future needs of manual, industrial, and occupational training. The commission concluded that manual training and domestic arts be taught early in “normal schools,” that boys in high schools in cities having a population of 20,000 or more be instructed in the mechanic arts, that girls receive training in sewing and cooking, and that towns be allowed, but not required, to establish manual training and industrial education schools with state support.43 Later, in 1905 the Douglas Commission in Massachusetts found that once children left school at age fourteen, they faced the prospect of seeking a job without adequate training. The lack of training resulted in lower wages and fewer opportunities, sometimes leading to juvenile delinquency. Sixty-eight percent of working children aged fourteen to sixteen worked in unskilled industries and mills; they reached their peak income within a mere two years.44


The Massachusetts State Board of Education provided part-time schooling and vocational education for “working children,” ages fourteen to seventeen. Of these, some 40,000 (or 43 percent of 74,700 children of that age group in 1913) labored in textile manufacturing, boot and shoe production, the metal trades, the confection industry, and in printing and publishing. Only a small number of children had actually completed grammar school, according to a 1906 investigation. Industry, another investigation in 1911 reported, was ill-equipped “to educate its young workers.” In addition, industries increasingly turned to labor-saving devices because of a dearth of educated workers. As a result, fewer workers qualified for advancement and for higher earnings. Worse still, the lack of training resources produced a shortage of supervisory personnel and foremen. Generally, actual work experience convinced youths of the efficacy of vocational training, but most had little time to attend school during working hours. Seventy percent of working youths interviewed at the time favored part-time schools, but most claimed to be too tired to attend evening schools. As new apprenticeships seemed unlikely, vocational education emerged as a viable alternative. Investigators noted the interesting example of English firms that had paired young workers, one of whom would work while the other attended school, in a practical arrangement that allowed for part-time schooling. In that way, employers retained employees on site while young workers attended school.\(^45\)

In another instance, a Rhode Island school commissioner in 1911 inquired about whether or not industrialization itself had created a “new and distinctive form” of schooling, and if the public school system had evolved sufficiently “to meet industrial demands.”\(^46\) Whatever the answer, more states began to offer vocational training at many levels: elementary and high school courses or shop and factory schools in some; continuation schools, industrial high schools, trade schools, evening schools, technical schools, and colleges for others.\(^47\) Rhode Island educators and policy makers emphasized the need for additional

\(^{45}\) *A Special Report on the Needs and Possibilities of Part-Time Education*, pp. 7-18; Appendix A, p. 29, and Appendix B, pp. 41-42.


\(^{47}\) *Special Report of the Commissioner of Public Schools Relating To Industrial Education*, pp. 9-14. Also see Appendix C, pp. 70-71; Appendix E, pp. 90-101; Appendix F, pp. 124-144.
schools, teachers, and resources to meet the labor requirements of local industries. While training workers for better productivity, however, they emphasized the Progressive idea that “the making of good citizens is still the chief business of the school.”48 As of 1910, twenty-nine states had enacted laws to “establish and maintain industrial education.” Both existing public schools and special vocational schools, commission members reported, “may need the cooperation of employers.” Education, they maintained, had to “adapt to local need” and the “state must assume a larger share of support and direction” than it currently does. “Generous state aid,” the report suggested, “is essential to secure immediate and substantial results.” Furthermore, the report insisted that state funds be raised to purchase equipment, to establish additional evening schools in towns and cities that offered industrial courses, and to “encourage the establishment of continuation schools with the cooperation of employers.”

Public policies early in the century, prompted by businesses and public officials, increasingly created public and private partnerships for investing in human capital.49

While industrial education largely catered to young men, some advocates also urged vocational training for women. A physician in 1912 considered the lack of training to be a hardship for women entering the workforce. Work helped define an individual and the lack of training led to indifference, demoralization, carelessness, and “dulling of the mind.” Training for an occupation “supplied by the State as a part of the general scheme of compulsory education,” he told fellow doctors, might lead to permanent employment, better wages, and greater opportunities.50 Indeed, one educator noted the lack of skills among youth leaving schools in the mid-1910s and opined that some would have remained in school longer if useful trade or industrial courses had been available.51 Evening schools particularly appealed to

48 Ibid., pp. 48-49.

49 Ibid., pp. 50-52.


51 Mary Schenk Woolman, Professor of Domestic Art at Teachers’ College, Columbia University, and Director of the Manhattan Trade School for Girls, “Trade Schools—An Educational and Industrial Necessity,” *The Social Education Quarterly* 1 (March 1907): 74-79. For an interesting detailed report on women in industry, see *Employment of Women and Children in Selected Industries,*
workingmen and women. Women benefited from a “practical education” in the domestic industries—sewing, household management, and cooking, for example—and a basic education qualified women for nursing, telegraphy, stenography, and printing. In addition to providing useful skills, one industrialist lectured in 1914, schooling “elevated” American workers intellectually, morally, and financially, and ensured “the protection of American institutions” by encouraging respect for the law and practicing “republican principles.” The needs of older workers, however, remained largely ignored with the exception of a few state programs funding “short-unit” courses and evening schools.

Following the examples of other northeast industrial states, New York established evening vocational schools for workers in 1913. The law required every school district to have an advisory board representing business and labor interests and to provide facilities for continuing education. The state even encouraged advisers from individual crafts to recommend appropriate courses for specialized trades or occupations. Later, when updating

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William E. Warner, Associate Professor of Industrial Arts Education at The Ohio State University in the 1920s, reviewed the trends in industrial arts and education and how the terminology had changed over the course of nearly a half century. He noted that “shop teaching” in the U.S. had evolved from “Manual Training” programs in the 1870s to “Manual Arts” by the 1890s, then becoming the “Industrial Arts” by about 1910. Eventually, industrial education, then vocational education (which included agricultural education and home economics), added the “distributive trades” or “business” courses by the 1930s. Vocational education became the common description of equipping youth with skills and trades necessary for successful employment the workforce. Industrial arts included: mechanical drawing, blueprint reading and drawing, and mechanical and architectural design; numerous special skills working with metals and wood, plumbing and electricity, printing, painting, and binding; ceramic, stone, glass, plaster, and concrete work; textile and leather work, pattern making, jewelry making, and foundry work; and automotive related skills such as upholstery and mechanical repair. See William E. Warner, Policies in Industrial Arts Education (Columbus, OH: The Ohio State University Press, 1928): 9; and Gordon, The History and Growth of Vocational Education in America, pp. 10-12.

state law in 1919 to conform with the federal guidelines, the University of the State of New York suggested adding courses for emerging industries; those included training in automotive, electrical, and welding occupations, or in motion-picture operations, commercial photography, airplane construction, and sheet metal fabrication. States in the manufacturing belt established precedents for investing in human capital with public funds not only to benefit the private sector with increased worker productivity, but also to improve wage-earning opportunities for ordinary working people. Moreover, state governments took the lead in training and assimilating immigrants for the workplace through Americanization programs.54

Americanization

A special instance of federal support for education occurred with demands from the private sector to address the problems created by immigration. The flood of nearly 20 million immigrants between 1880 and 1914 dramatically altered the American workplace and threatened, some believed, American institutions and culture. Americanization—the movement to assimilate the influx of “new immigrants” from southern and eastern Europe, in contrast to the “old immigrants” who arrived from northern and western Europe—induced immigrants to jettison their old world values, learn English, and become Americans. Three differing motives drove the Americanization movement at critical times between the 1890s and the 1920s. A “humanistic” or altruistic form of Americanization emerged during the late 1890s. A “militant” form of Americanization, which encouraged the foreign-born to act and speak like Americans and later coerced loyalty to the United States during the Great War, typified the second phase. A third form, “Industrial” Americanization, fostered the American work ethic and patterns of consumption, stimulated productivity, and integrated immigrants into the industrial workforce during and after the First World War.55


55 The forms of Americanization will become more apparent here and in chapter three. The first phase conformed to Progressive Era idealism, the altruism found among charitable organizations in the private sector. A second phase emerged after 1907 as a frenetic if not militant attempt to acculturate immigrants who seemed to threaten the fabric of American life. This phase intensified, when Americanizers encouraged loyalty as an expression of successful Americanization during the First World War. Finally, a third phase of Americanization, “industrial Americanization,” coalesced during and after the war. Americanizers and industrialists sought to promote or continue labor stability, high industrial output, and the social cohesion generated by the war. For immigrants returning to Europe, see Mark Wyman, Round-Trip to America: The Immigrants Return to Europe, 1880-1930 (Ithica, NY: Cornell University Press, 1993). For a selection of Americanization proponents during the 1910s and
The earliest Americanization efforts among the Settlement Houses and religious groups sought to “humanize” the working and living conditions of newcomers in industrial cities. Reformers spreading the “social gospel” hoped to “Americanize” and “democratize” immigrants, encourage temperance and thrift, and help the newly arrived assimilate American political and cultural values by learning English and the rudiments of American politics, history, and culture. When the First World War began in 1914, however, Americanizers worked to achieve the loyalty of the foreign-born as well as to maintain the uninterrupted production of manufactured goods for sale overseas. While previous attempts to limit immigration failed, the Literacy Act of 1917 restricted immigrants to those who could read and write. Americanization intensified after the United States entered the war in 1917, when Americanizers sought to create loyalty and conformity, and ensure high levels of production in America’s farms, factories, mines, and mills.\(^{56}\)

The Americanization effort reveals a great deal about the prejudices of “mainstream” Americans, the increasing cooperation between public and private institutions, and increasing cooperation between local, state, and federal governments. The Americanization movement in the United States brought together public and private agencies at the local, state, and federal levels between 1900 and 1920. Private charities and organizations, such as the YMCA and settlement houses, instructed immigrants in the necessities of daily urban life and requisites of good citizenship. While Public schools Americanized immigrant youth, local, state, and federal governments provided texts, school facilities, and bulletins to guide teachers and volunteers to help Americanize adult immigrants.\(^{57}\)


57 See for example, Council of Women for Home Missions, *Americanization: a program of action and service for the churches* (New York : Home Missions Council; Council of Women for Home Missions, 1920). For one of the most complete histories of the “Americanization Crusade” during the first three decades of the century, see Hartmann, *The Movement to Americanize the Immigrant*; and for Americanization in the public schools, see David B. Tyack, *Turning Points in American Educational History* (Blaisdell Publishing Company, 1967): 228-263. The Dillingham Commission, chaired by Senator William P. Dillingham of Vermont, investigated the conditions of immigrants and coined the terms “old” and “new” immigrants in his Report of 1911.
Although reformers and settlement house workers had begun nascent assimilation programs in cities where substantial immigrant populations lived by 1900, the historian John J. Miller sees the year 1907 as the “birth of Americanization” for three reasons. First, the New York YMCA in that year initiated evening classes for adult immigrants that served as a prototype for similar classes elsewhere. Second, New Jersey in 1907 became the first state to pass legislation supporting school districts that offered English instruction and evening classes for immigrants. Third, philanthropists, social reformers, and industrialists founded in Boston the North American Civic League for Immigrants in 1907, headed by D. Chauncey Brewer, a prominent lawyer and president of the Boston Chamber of Commerce. The League funded various Americanization programs, enlisted public support for their efforts, and pressured state and federal governments to undertake programs promoting good citizens and good workers. The League also fostered nationwide assimilation and included on its board numerous business leaders and one of the most forceful proponents of Americanization, Frances Kellor. Kellor, a reporter who brandished a law degree from Cornell and had practiced social work at the Hull House in Chicago, served as Secretary of the North American Civic League and led the movement to Americanize immigrants and their children. Armed with scientific management techniques, Kellor sought to create “scientific Americanization” or “citizenship management,” by utilizing social engineering techniques to achieve Americanization goals. The creation of a Federal Immigration Commission in 1907 became the harbinger of future attempts by restrictionists wishing to stem the flow of immigration. Before 1920, however, the North American Civic League for Immigrants emerged as the most potent force for Americanization.

The North American Civic League for Immigrants began its work in New England by first enlisting the aid of wealthy industrialists, then by establishing branches in other cities and


states and becoming especially active in New York City by 1910. The League outlined programs of study and successfully lobbied several states to legislate citizenship education and English instruction, provide funds for teachers and classrooms, and help enact laws proscribing the exploitation of new arrivals by unscrupulous employers. The League also sponsored two additional organizations. The National Americanization Committee, created with federal help, encouraged patriotism and sponsored the first National Americanization Day, July 4, 1915. A second organization, also headed by Kellor and sympathetic to immigrant problems, became the Committee for Immigrants in America. The committee published *Immigrants in America Review* from 1915 to 1916, offering guidance and support to local endeavors around the nation.\(^{60}\)

The North American Civic League for Immigrants also succeeded in its appeal to the federal government to join the Americanization effort. The Committee for Immigrants in America actually funded and provided staff for the Division of Immigrant Education within the Bureau of Education, giving legitimacy to public and private cooperation. The union lasted until March 1919, when Frances Kellor’s interests turned toward industrial Americanization and a new law prohibited private donations and funding to federal agencies.\(^{61}\)

When the movement began, the term “Americanization” had no clear definition. Eventually, it undertook “the complete assimilation of the foreigner through all possible agencies,” especially through various schools and programs designed for adult immigrant education.\(^{62}\) Later proponents considered “socialization” and “democratization,” in addition


to learning the English language, as the most important aspects of Americanization. Some advocates of Americanization included the recruitment of ordinary, native-born Americans, citizens who also had a responsibility to understand their own history and culture. As AFL president Samuel Gompers, himself an immigrant, proclaimed, we “must embrace the inculcation of American ideals and standards into the life of the newcomer, and must imply a willingness on the part of the native to accept the contributions of the foreigner, economic, political, social, cultural, and educational, that may promote the welfare of America.” Eventually Americanization became synonymous with efforts to reduce illiteracy, to inform newcomers about health, sanitation, and disease, to introduce immigrants to the ideals and standards of American civic life, to remove the prejudices of natives, to recognize the contributions of foreigners to American society and economy, and to prepare immigrants for the promise of American life. Others went so far as to recommend trade schools as the best way to Americanize immigrants by preparing them for the workforce.  

Americanization also offered an early example of public and private partnerships developing during the early decades of the twentieth century. Public forms of Americanization followed private efforts. According to one observer, before 1914 only New Jersey had funds for Americanization programs. However, the war in Europe stimulated state and federal Americanization efforts. Massachusetts, for example, created a Bureau of Immigration in 1917 in order to protect newcomers from “exploitation and abuse” and to aid them in the mastery of English, an understanding of American government, and preparation for eventual naturalization. During the war Americanization became a war measure: it


65 The Commonwealth of Massachusetts, *First Annual Report of the Bureau of Immigration*, March 1919 (Boston: Wright and Potter Printing Co., 1919): 7-8; the legislation specified that “one member [of five] shall be a woman”, and two members are to be selected from a representative ethnic group having arrived some time during the past ten years. Americanization efforts begun in earnest after the 1912 Lawrence textile strikes led by immigrant workers. For an example of federal assistance to state and local Americanization efforts, see Department of Interior, Bureau of Education, *Community
encouraged loyalty to an adopted nation and urged increased agricultural and industrial output for the war effort. After the war and up to about the mid-1920s, Americanization of the foreign-born and of Americans themselves included literacy campaigns and citizenship training that eventually led to the establishment of adult education programs.\(^{66}\)

Overall, Americanization proved to be a mixed success: while many immigrants learned the rudiments of English, joined the American Expeditionary Forces (AEF) during the war, labored in wartime factories, and participated in American political life, they rarely satisfied nativists and legislators who passed immigration restriction laws in 1921 and 1924. After 1924 Americanization evolved into the adult education movement in the United States, when immigrants and native-born Americans sought out ways to achieve literacy, increase their earnings, or enhance their leisure time. Americanization also contributed to the interaction between public and private organizations, from the local and state to the national levels, which cooperated to produce public policies and carry out social reforms.\(^{67}\)

**Proponents of Federal Support for Industrial Education**

Like the Americanization movement, the movement for federal aid to vocational education moved through layers of local, state, and federal agencies and private organizations. Educators, labor leaders, and businessmen formed or joined organizations representing a united front. James P. Haney, Director of Manual Training for the New York Public Schools,

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and Charles R. Richards, professor of manual training at the Teachers College, Columbia University, believed that only a national organization could stimulate interest for a national program of vocational education. They initiated a core group of a dozen or so advocates in June 1906, then organized a larger meeting in November of about 250 businessmen and educators from the East Coast to create the National Society for the Promotion of Industrial Education (NSPIE). Progressive luminaries participated as well.68 Even President Theodore Roosevelt declared that, since industry “is vital to our future progress, [we] should furnish the highest average industrial training for the ordinary skilled workman.” He lamented, however, that we “have tended to devote our energies to producing high grade men at the top rather than in the ranks.”69 As a member of NSPIE, TR supported attempts to pass vocational education legislation in Congress as early as 1907. Senator Jonathon Dolliver of Iowa and Congressman Charles R. Davis of Minnesota, with assistance from the American Federation of Labor, introduced legislation in Congress between 1908 and 1910, but the Dolliver-Davis bills never passed.70 As advocates in business, government, education, and labor solicited public support for a national policy of industrial education, membership in NSPIE increased to 900 members by 1908.71

Prominent advocates of industrial education wrestled with the problem of achieving a balance between state and federal responsibilities. David Snedden, who at one time headed NSPIE and served on the Massachusetts Board of Education in 1910, saw education as a “social investment.” The National Government, he wrote, “itself could legitimately be called

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upon to aid this form of education, since the general migratory tendency of laborers carries them constantly beyond State bounds.”72

Educators and government officials alike stressed the theme of industrial success arising from a sufficiently educated workforce. Elmer Ellsworth Brown, the United States Commissioner of Education, addressed the National Education Association in 1909 regarding the importance of industrial education to the nation’s industries. While reaffirming the Progressive belief that freedom and responsible citizenship required intelligent citizens, Brown added that training the populace had also become important for national economic life; it required the cooperation of business, political representatives, and education experts. In commencement addresses delivered at the University of West Virginia and the University of North Carolina in 1908, Brown remarked that, although the responsibility for education “rests primarily with the states, it must be clear that the federal government cannot be indifferent nor inactive.” However, he maintained, federal support should not be undertaken “if the matter can be adequately cared for by the several states” and that federal support should not “disturb” the “state systems of educational administration.” The common notion of separate state and federal responsibilities regarding public schooling remained the principle wedge preventing federal support for education and training.73

Nevertheless, other public officials lent support for federally funded public and workforce education. William C. Redfield—a Democratic congressman from New York who later served the Wilson administration as Secretary of Commerce—headed NSPIE in 1914. At its meeting that year, Redfield praised the work of the organization and believed vocational education programs as outlined by NSPIE would improve the quality of the workforce. In addition, he noted that the shift in manufacturing to large industrial enterprises also altered the


“content” or structure of the workforce, and that no parallel change in the training of workers had yet emerged. He believed, therefore, that NSPIE would help fill that void.74

In a similar vein, James Phinney Monroe, President of NSPIE in 1915, reiterated that education must “produce efficient workers and enlightened citizens.” Public schools should furnish students with basic skills to allow them access to any chosen professional, commercial, or industrial pursuit.75 Monroe lauded “free schools” already operating at the local level and paid for with public taxes. In 1909 alone, the public sector spent nearly $401 million on public education, yet that amount remained insufficient. But like those who pleaded for industrial education at various levels, Brown and Monroe rarely offered practical methods for financing a broad-scale, federal vocational education system. Presumably local governments or the private sector, especially larger industries, would find a way.76

The National Education Association (NEA) joined the coalition advocating industrial training. A committee from the NEA manual-training department in 1907 actually collected data on training instead of espousing lofty opinions. The committee reiterated claims that manual training and industrial education offered a “vital motive for school work.” School curricula needed to meet the needs of “the rank and file,” reduce school “mortality” (drop outs), and promote “national industrial efficiency.”77 While the funding of trade and vocational schools remained the responsibility of state and local governments, the NEA study concluded that, because of the mobility of labor and the tendency of workers to cross state lines, that contributions from the national government may someday become necessary. The committee suggested following the German example. Employers could provide space and equipment for training, although researchers doubted that American firms would become likely partners in educational curricula. Among its conclusions, the NEA committee found


“an urgent need for evening trade and technical classes for bettering the opportunities of men and women already employed in industrial occupations during the day.” Curiously, while educators recognized a need for industrial education, few proposed well-developed plans to institute curricula or to evaluate the costs; nor did they offer supporting data to justify federal spending for education and training.⁷⁸

In spite of the lack of widespread financial support for vocational training, an educated and skilled labor force remained the goal of vocational educators during the early 20th century. Professional educators, supported by industrial and commercial associations, led the intellectual battle for vocational education. The NEA, NSPIE, the Industrial Education Association, and the National Association of Manufacturers (NAM) advocated the use of state resources for education. As demands for skilled and semi-skilled industrial and commercial workers increased just prior to the Great War, private schools, manual training schools, and a few local and state educational boards attempted to keep up with demands for training in the industrial arts. They barely kept pace. In the end, businessmen, educators, and labor leaders called upon state and federal governments to provide workforce training through vocational education.⁷⁹

In addition to promoting social and industrial efficiency, reformers at the turn of the century continued to preach the Education Gospel. Education, both public and private, offered the key to ameliorating social ills and improving individuals. Relatively few school-aged children finished high school during the early 20th century, and the majority of those were females. In The People’s School, published in 1912, Ruth Weeks asserted that “education is

⁷⁸ NEA, Report of the Committee on the Place of Industries in Public Education, pp. 76-78; for the text of the committees’ conclusions, see pp. 81-84, and citing p. 84; for reports and comments from a number of educators around the country, see pp. 84-114. Conclusion number 10, stated, “The main ideas embodied in this report are applicable to girls as well as to boys,” p. 84.

the only sure instrument of progress,” and it was incumbent upon Americans to pay attention to the French and German educational systems. Training was no exception. Weeks believed that most Americans sought knowledge in order to earn a living and support their families, but the schools discouraged attendance, especially that of young boys, because of “impractical” courses promoted by the emphasis on a liberal education and the “excessive feminization” of the teaching profession. Weeks advocated public vocational education. She believed that the lack of training not only caused unemployment, but also reduced the pool of native skilled workers and increased the employment of “half-desirable foreigners.”

Weeks also recommended education for women in the domestic sciences and encouraged readers to “persuade women that housekeeping is interesting.” Even though a woman left the workforce after marriage, she still required good work habits and the skills for motherhood. For women who remained in the workforce, the lack of training, Weeks believed, contributed to lower wages. The permanence of women in industry seemed “an established fact” to Weeks, so furnishing women with skills would avoid the descent of some into prostitution and poverty. Like many of her Progressive colleagues, she insisted that schools train for democracy as well as for jobs.

Weeks believed that the lack of child labor laws created a pool of delinquents unable to work, in addition to shoring up the attitudes of some Americans who found no value in school at all. She echoed the observations of the labor economist Richard T. Ely, that parents needed to recognize that schooling their children could be profitable in the future. Like other educators, Weeks remained enamored of European models. More importantly, “All good education is both practical and liberal,” she asserted, and “Education must develop not

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81 Ibid., pp. 32-33 and chapter 3.

82 Ibid., pp. 10-50.

83 Ibid., pp. 50-72, for a discussion of women, and pp. 28-52 for her discussion of youth.

84 Richard T. Ely, “Probably child idleness is a more serious matter in the United States to-day than child labor.” note 1, p. 179, in Weeks, *The People’s School*, p. 54; for an interesting argument about preparing children for the work force, see McKeever, *The Industrial Training of The Girl* and *The Industrial Training of The Boy*.

85 Weeks, *The People’s School*, pp. 54-94, citing p. 94.
merely efficient producers, but efficient consumers.” Weeks offered numerous challenges and sound advice, adding to the refrains of how both vocational and traditional education could be wedded.86

In addition to Weeks and others who reaffirmed Progressive Era ideas about education and national life, Edwin G. Cooley, the Superintendent of Chicago Public Schools, spoke about the “conservation of human resources,” another Progressive concern. The cultivation of human resources was the equivalent to investing in “human capital,” said Cooley. In an address to the Chicago Commercial Club in 1912, he echoed to the audience a speech made recently by a Harvard professor who declared that, “our most valuable resources are our people.” We should not be “wasting” human resources with unemployment, the lack of opportunity for training, or in unproductive or dead-end jobs. Cooley too believed Americans should follow the German example.87

Before he finished his lecture, Cooley offered a number of justifications for establishing more extensive vocational education programs. The United States, he averred, was presently undergoing a transition from a rural to an urban society and from an agricultural to an industrial economy. Such a transition required new occupations to fill the needs of industry and commerce.88 Following European models of education, he advised extending the age of compulsory education. Moreover, after reinforcing the importance of kindergartens, primary and secondary schools, and higher education for the professions, he called for the increase of vocational continuation schools for older workers, both full- and part-time, and proposed two kinds of “supplemental schools.” The first included part-time schools, essentially vocational continuation schools for those between the ages of 14 and 18, and voluntary continuation schools for those over 18. The second part of his proposal included practical vocational instruction that prepared youths for entry into apprenticeships, trades, commercial schools for boys and girls, home economics courses for girls, agricultural “winter-schools” for rural youth, and evening classes for adults. Schools, he said, should also provide

86 Ibid., pp. 148, 165-166, 174-175.
87 Edwin G. Cooley “The Need of Vocational Schools in the United States: A Statement,” (The Commercial Club of Chicago, 1912): 4; and for an example of the European influence on education and training, see Cooley, Some Continuation Schools of Europe (Chicago: The Commercial Club of Chicago, 1912), and his Vocational Education in Europe (Chicago, IL: A.C. McClurg and Company, 1915, 2 vols.).
for vocational guidance and general education, all funded by a special tax levied by communities and states. Thus many forms of education, financed by the public, stood to improve the standard of living for all who sought additional training for the workforce.89

Before the United States entered the First World War, educators had constructed increasingly sophisticated arguments for the promotion of public education and occupational training. In Learning to Earn John Lapp and Carl Mote summarized in 1915 a number of arguments for vocational education, emphasizing how it developed human resources, maintained social stability, promoted national economic progress, and assured national security. Training and education for work helped men and women earn a living and enhanced their understanding of citizenship. Unlike many observers, Lapp and Mote spent considerable thought and effort on how to fund public vocational education, evening schools, extension schools, correspondence courses, and vocational guidance.90

Looking at times to European models, the two educators called for cooperation between national and state governments. A concerted effort to educate America’s workforce would help trade and commerce, enhance national competition in world markets, and thus ameliorate “social and economic problems at home.” Industrial efficiency required keen management and a skilled work force. Since all levels of society—local, state, and national—benefited, Lapp and Mote reasoned that all should bear the cost of workforce training. In addition, the mobility of the American workforce, the increasing tendency to relocate across state boundaries, and the influx of foreign labor into American industries, all justified a national policy and therefore national funding. Moreover, because the states remained ill-equipped to shoulder the burden of education equally, the entire nation would benefit from supporting education and training in every state. Even though the war in Europe after 1914 increased the demand for trained industrial labor at a moment when opportunities arose to


expand industrial output, most states failed to meet the challenge. Therefore, Lapp and Mote asserted, a federal vocational education bill remained crucial.\(^91\)

Joining Lappe and Mote, Herman Schneider, Dean of the College of Education at the University of Cincinnati, joined the voices advocating schools help train workers already in the workforce. In *Education for Industrial Workers* (1915), Schneider wrote that schools, in conjunction with training and employment, produced the most efficient means to achieving competence in an occupation. He recommended basic or elementary school training for children, then “prevocational” schools for those over fourteen years old to prepare pupils for specific occupations or trades. Later, cooperative schools and continuation schools—in a system where industries and schools pooled their resources—would combine education with actual shop work in order to apply theoretical knowledge. Such schools, however, required public and private cooperation.\(^92\)

While some educators stressed the importance of vocational education for productivity and the conservation of human resources, others focused upon the social implications of education and training. William H. Dooley, principal of the Fall River, Massachusetts, Technical High School and later head of the Continuation School at the New York Navy Yard, reflected the Progressive view of public schools not only as academic institutions, but also as instruments of socialization and workforce preparation. According to a 1905 survey in Massachusetts, the unemployed and those who lacked skills or education usually found work in “blind-alley” or “dead-end” jobs, often in textile mills and other low-skilled jobs. Drop-outs remained idle part of the year and lacked the energy or motivation to continue evening school. Because over seventy-five percent of boys and girls left school by age fourteen, they not only lacked preparation for employment, but they lacked the resources to support a family. They entered a cycle of low-skilled jobs and idleness; lacking skills, they became “ne’er-do-wells.” Schools that adapted to the new industrial order with vocational education programs, Dooley concluded, had a better chance to rescue wayward youth, assimilate immigrants, create good citizens, and train workers for industry.\(^93\)


Business Support for Industrial Education and Training

While educators argued for industrial education, businesses began their own employee training programs. Businessmen and educators cooperated through joint conventions, reports, and addresses, and by supporting bills in state legislatures and in Congress. Just as public education had become a common national concern by the turn of the century, so too had national economic growth and stability. For instance, the president of the National Association of Manufacturers (NAM), representing the largest association of small and medium sized firms at the turn of the century—and also dedicated to limiting the power and influence of trade unions—recommended the public training of American youth in order to sustain “national prosperity.” In an address before the National Society for the Promotion of Industrial Education in 1908, NAM president James Van Cleave noted the rapid increase in the number of wage earners between 1880 and 1905. He lamented the decline of trade apprenticeships and promoted the efforts to train boys and young men for industry in order to meet fierce foreign competition.94 “The aid of the national and state governments,” he asserted, “could also be enlisted in the cause.” Van Cleave mentioned the resources invested in vocational education by the government of Bavaria, and echoed the observations about how

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94 James W. Van Cleave, “Industrial Education as an Essential Factor in Our National Prosperity,” Address before the National Society for the Promotion of Industrial Education, Chicago, January 23, 1908, National Association of Manufacturers, Report No. 9; Frank M. Leavitt also saw industrial education as a way to maintain prosperity, promote national security, and eliminate poverty in Examples of Industrial Education, pp. 20-23. For analysis of whether or not manufacturers colluded in their support of vocational education in order to structure the social order in a way that enhanced productivity and ensured a common commitment to capitalism, see Kenneth C. Gray, “Vocationalism Revisited: The Role of Business and Industry in the Transformation of the Schools,” Journal of Vocational Education Research, 13 (Fall 1988): 1-15.
Bavaria, with a considerably smaller population, managed to construct more industrial schools than the entire complement of similar schools then extant in the United States.\footnote{Van Cleave, “Industrial Education,” p. 8; also see the report by the American Federation of Labor calling for similar action on industrial education, in American Federation of Labor, *Industrial Education* (Washington, DC: copyright, Samuel Gompers, 1910): 59.}

Similarly, the NAM’s Committee on Industrial Education reported at the organization’s 1912 convention that industrial education had become increasingly important for Americans. Reiterating the education gospel, the committee believed that education not only offered personal fulfillment and promoted an informed and intelligent citizenry, but it also helped reduce poverty, ignorance, crime, and the “human waste” of uncertainty and unhappiness. In addition, the education of a skilled labor force would meet the increasing intensity of international competition. The committee recognized the need to develop two kinds of capital: property—land, machinery, stocks and bonds—and “human capital—the character, brains and muscle of the people.” The development of human capital, the committee claimed, had been overlooked and insufficiently developed in the United States. When compared to European nations, Americans demonstrated a higher level of illiteracy, and half of the nation’s children remained uneducated, a condition resulting in human “waste and wreckage.”\footnote{Report of the Committee on Industrial Education, H.E. Miles, Chairman, *Industrial Education* (New York: National Association of Manufacturers, 1912, Publication No. 28): 5-11, citations, p. 5; reprinted in the National Association of Manufacturers, *Proceedings of the Seventeenth Annual Convention* (1912): 151-161.}

The concept of “human capital” (but not the exact term) dates at least to 1691, when Sir William Petty estimated the monetary value of a human being. During the nineteenth century economists described human capital as “social value,” “social capital,” “living capital,” “life value,” “human wealth,” and “human resources.” Utilizing increasingly sophisticated equations and calculations, economists applied estimates of human value for practical use by insurance underwriters and tax collectors, and by the courts for awarding damages for death or injuries. After the Franco-Prussian War and as a result of the First World War, economists began to estimate the human costs of war in monetary terms. The notion of skills, education, and acquired talents (and their rates of return) as part of a nation’s capital stock acquired greater appeal in the twentieth century. In 1935, the economist John R. Walsh, although not without flaws, estimated the costs of education in determining human
value, and by the 1950s and 1960s, economic discourse focused on the inputs of human capital development (in terms of health, mobility, education, and training) and the outputs as demonstrated by increased productivity, income, and increased national wealth. 

In a sense, the NAM proposed the creation of a national purpose and a national identity built around an efficient and productive manufacturing economy that included investment in human capital. The education committee recommended support for continuation schools, trade schools, part-time schools, day schools for those already employed, shop schools within industries, pre-vocational guidance, and apprenticeships overseen by the states. The committee, however, blamed the lack of apprenticeships on union demands for closed shops and on machinery that had eliminated old craft jobs. Nevertheless, the NAM also recommended a program of compulsory continuation schools for 14 to 16 year olds, youths who could work and attend school without a loss of income. Again, looking to Germany, the committee reported that nearly three-quarters of all children in Munich advanced from primary and secondary schools to apprenticeships. Schools in the United States, the committee recommended, must be compulsory until 17 or 18 years old. The NAM, like other business and civic groups, remained unclear about who would pay the additional costs for increased schooling. Since many small- and medium-sized firms declined to divert resources to training, the NAM promoted public education as the way to prepare a trained or trainable workforce. Thus Americans would socialize the costs of training for the benefit of businesses. The committee report also noted the increasing participation of girls and women in the work force. Whether as workers in domestic pursuits or as clerks in

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department stores or offices, training would help girls and women achieve higher paying jobs. In addition, education (presumably in the domestic arts) would also help make women better homemakers and discerning consumers.  

Other business leaders reiterated the importance of an educated workforce. Magnus Alexander, who later helped found the National Industrial Conference Board (NICB), argued that industrial education was good for both employer and employee. The skilled employee could expect higher earnings, while the employer could expect greater efficiency and output, leading to higher profits. Employers, he explained, cared little about whether industrial instruction was public or private, or whether employees acquired their knowledge from industrial training or apprenticeship programs. Mass production industries still required the construction and repair of labor saving machinery performed by skilled workmen. Moreover, even the unskilled looked to leadership from those who possessed “industrial intelligence,” those having knowledge of the production process.  

Like the National Association of Manufacturers and the National Industrial Conference Board, the Chamber of Commerce increasingly promoted business interests in the making of public policy. At its annual meeting in 1913, for example, the Chamber endorsed

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100 Magnus W. Alexander, “The Needs of Industrial Education from the Standpoint of the Manufacturer,” The Social Education Quarterly 1 (June 1907): 196-201. The National Civic Federation, a coalition of corporate leaders, industrialists, and union leaders, also organized an Industrial Training Department. The National Industrial Conference Board, founded in May 1916 as a loose federation of industrial associations, pledged “to promote industrial stability and prosperity” through the impartial “scientific” investigation and analysis of economic problems; it promoted the cooperation of industries for the economic health of the nation. The NICB advised the national government about industrial production and employment during the Great War and participated on the National War Labor Board and the War Labor Policies Board. After the war, the NICB opposed closed-shop unionism and compulsory health insurance, criticized the eight-hour day, and condemned the policies and actions of the U.S. Employment Service during the war. The NICB advocated preferences for returning veterans and rehabilitation for wounded veterans and industrial workers injured in the workplace. The NICB also carried out independent surveys and analyses about industry, industrial relations, and the economies of the United States and other countries over the course of the twentieth century. For a brief introduction, see Clarence E. Bonnett, Professor of Economics at Tulane University, Employers’ Associations in the United States: A Study of Typical Associations (New York: The Macmillan Company, 1922): 475-495. For the official history of the NICB, see National Industrial Conference Board, Let There Be Light . . . The Conference Board’s First Fifty Years of Service (New York: n.p., 1966).
“the principle of liberal appropriations by the Federal government for the promotion of vocational education in the States,” and its Committee on Education reaffirmed its support in 1916. Vocational education, the committee asserted, fostered the “welfare of the nation” and its place in the world. Furthermore, education and training not only provided individuals with the means for “personal advancement” and a better standard of living, but also it enhanced “the industrial and commercial position of the United States.” Without embarking on a useful program of vocational education, the nation would undoubtedly suffer. In addition, the Education Committee recommended the creation of a Federal Board, accompanied by an advisory committee, to administer federal aid for education, and supported the training of vocational educators. Increasingly, the public and private sectors merged their interests: good citizens were also good workers.101

**Corporation Schools**

If declining apprenticeships failed to furnish an adequate amount of “good workers” for the new industrial workforce, large firms before the turn of the century introduced “corporation schools” to meet their own needs. Corporation schools operated exclusively by private firms; they evolved from factory schools to provide apprenticeships and workforce training. They not only trained new hires, but also prepared experienced employees for advancement to supervisory positions as foremen, executives, or technical experts. New firms, especially those in the automotive, rubber tire, machine, and electricity and electronics industries, had to train specialized workers who required instruction unavailable in most trade or public schools. Trainees generally earned wages while learning a job and employers could be highly selective in choosing new hires. The National Association of Corporation Schools (NACS) was organized at New York University in 1913 by the New York Edison Company and the National Cash Register Company of Dayton, Ohio.102

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The corporation school performed an important function for the firm that could afford one. Certainly the public schools could not be expected to perform all of the training required by industrial America. J. Walter Dietz, manager of the educational department at the Westinghouse Electric Company in Chicago, argued in 1916 that the workplace extended, not duplicated, education and training for individuals. Training departments, he asserted, had to focus on training workers for the particular needs of the firm. Just as a sales department had to generate sales, training departments had to achieve observable results in training employees. In addition, a careful selection process for new hires, using profiles of current successful employees, would secure “the right employee to train.” Flexible plans, set standards, close supervision, and intensive instruction, observed Dietz, would lead to the development of optimal training methods. In the end Dietz recommended a four step “scientific shaping” of training as part of a “more comprehensive educational system.” The first step taught the employee a particular task supervised by full-time instructors to ensure proper work habits. The second focused on a trade that would build upon the traditional apprentice system by merging real shop experience with theoretical study. The third step expanded apprentice-type training to include the “business as a whole.” The employee learned the operations of other departments within the firm in order to increase his or her versatility. The expanded training also reoriented older employees to the entire firm by having them work in different departments for a time. The last step offered related subjects that enhanced efficiency and prepared workers for advancement. From his experimental system, Dietz expected that firms would better understand the costs and value of training, arrive at a closer analysis of the work and a better understanding of employees, reduce turnover, and, most importantly, advance “democracy in industry.” While few firms likely adopted his proposals, Dietz indicated before 1920 the importance of investing in human capital—an ongoing training program for employees—not only as an obvious value to the firm, but also toward the professionalization of personnel training departments.103

The NACS advised firms on how to establish corporation schools and how to tailor training programs to match the needs of the firm with the skills and abilities of its employees.

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At its annual meetings, representatives from various industries lectured and held workshops that imparted information on the basis of their own experiences and expertise. Some of the earliest schools prepared college graduates for technical and management positions. However, as businesses became larger and increasingly bureaucratized, firms trained commercial and clerical workers for employment in newly established occupations such as advertising, retailing, and office work. Corporation schools promoted apprenticeship schools, employment plans, health and safety in the workplace, vocational guidance, and training for middle management and supervisory positions, all in a cooperative effort to improve efficiency and productivity. The attitude supporting continued training carried over into NACS’s support for federal aid to vocational education. Furthermore, firms paid attention to the efficiency and welfare of employees in order to decrease turnover, minimize antagonisms between employer and employees, reduce waste and accidents in the work place, and teach English to the foreign-born. Participation in “Americanization” efforts not only meant to reduce workplace accidents involving those unable to read English, but also endeavored to ensure the socialization process, instill middle-class values, and acclimate new hires to the workplace.

By 1918 the Association claimed 315 corporate members from some of the largest firms in the United States. After 1922, however, the name and character of the organization would change when the NACS became the American Management Association, which redirected its efforts toward training and advising professional managers and executives.¹⁰⁴

Committee reports of the NACS reflected the goals and tactics of an early form of welfare capitalism, which sought to limit the power of organized labor by combining benefits and other incentives with anti-union practices. The perquisites of employment included life

insurance policies and improved workplace conditions. Firms promoted home ownership through firm-owned building and loan associations. They also established apprenticeship schools and night schools, social and sports clubs, food cooperatives, Veteran’s Associations, service annuities and pensions, as well as bonuses and profit sharing. The new style of management at the turn of the century, labeled “welfare work” by contemporaries, responded to labor unrest and led to the professionalization of managers and personnel administrators. Personnel managers selected and trained workers, but also looked after their welfare by providing workers with various benefits. Employers eventually extended services—dental, medical, death benefits, banking and loan services, education, recreational facilities—which encouraged loyalty and “esprit de corps”, limited discontent, and fostered loyalty to the firm. While large firms could afford to train employees and offer benefits, most businesses relied upon public education to prepare Americans for the new industrial workforce.

Support for Public Funding from Organized Labor

Along with progressive businessmen and educators, leaders of organized labor stressed the importance of public education for all Americans. Labor organizations initially balked at public schools undertaking industrial training, however, especially when manufacturers became ardent supporters of such efforts. The American Federation of Labor, led by Samuel Gompers, at first showed reluctance to support industrial education. From its inception in 1881, the AFL advocated compulsory education for all children, an end to child labor, and industrial education for those seeking a trade or occupation. The AFL also


supported federal funding for public education at least since the Blair Education bill had been introduced in Congress in 1881. During the late nineteenth century, labor faced the loss of workplace control, abuses by managers, and state intervention that favored industry and limited the power of unions, adding to a distrust of the state. After the turn of the century, the AFL eventually agreed with educators and progressive business owners about the need to train youth who otherwise had little opportunity to learn a trade. In 1898 Gompers himself testified before the Industrial Commission on Capital and Labor regarding the importance of public education and training.\(^{108}\)

Indeed, most labor unions and agricultural organizations supported public education. The Knights of Labor, which had been prominent in the 1870s and 1880s, and the Patrons of Husbandry or Grange, the farmers’ organization begun in 1868, advocated public education in their constitutions. Grangers also supported extension of the Morrill Act in 1890.\(^{109}\) The AFL, however, criticized the U.S. Bureau of Education for relying on private foundations such as the Carnegie Endowment, the Rockefeller Foundation, and the Russell Sage Foundation, whose board members reflected the attitudes of the elites in higher education, management, and politics. Few workingmen populated the governing boards of philanthropic organizations that exerted influence on decisions regarding public education. The AFL endorsed continuation schooling in 1911 and lobbied states for part-time education laws in 1918 to

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\(^{109}\) *Proceedings*, American Federation of Labor, 1911 (New York: American Federation of Labor, 1911): 92-96, 106-107, 136. The AFL did not include the Railway Brotherhoods, representing over 450,000 members in 1920, or the Amalgamated Clothing Workers Union, which claimed 175,000 members.
create “vocational, trade, or industrial schools” for teens, aged 14 to 16 years old. However, “general education [remained] more important than industrial education.”110

In spite of a lack of sympathy from some in the teaching profession, the AFL courted educators by promoting better pay, tenure, and the right of teachers to unionize. AFL support for collective bargaining led to the formation of the American Federation of Teachers in 1916. The federation also supported teachers against inquiries about their religious, political, and personal views.111

After 1903, the AFL committee on education advocated public education in order for workers to “become skilled, efficient, better paid workingmen,” and supported the efforts of NSPIE. Recognizing the significance of international competition, the AFL sought ways to determine the kinds of occupations industry required that would prove “conducive” to workers and communities. Samuel Gompers asserted in 1914 that the AFL had no opposition to industrial education in public schools. In fact, he declared, the need for industrial schools was now “more urgent than ever before.” What Gompers and the AFL opposed were “exploitive” conditions that forced apprentices or students to work for low wages, or to fill occupations that displaced older, experienced workers. Industrial education, Gompers added, whether public or private, should meet the particular needs of the community and refrain from overproducing the number of skilled workmen in certain trades.112


112 For additional explanation on the importance of organized labor for the support of industrial education, see Hawkins, et al., Development of Vocational Education, pp. 414-420. For the view of the NAM see James W. Van Cleave, “Industrial Education as an Essential Factor in Our National Prosperity,” Address before the National Society for the Promotion of Industrial Education, Chicago,
Labor and management conflicts created mutual suspicions and threatened efforts to establish public education and training. The National Association of Manufacturers showed increasing hostility to organized labor during the first decade of the 20th century. NAM tended to blame organized labor for the decline in apprenticeships and the lack of skilled workers. The incredible growth of mass production and non-traditional craft occupations exceeded the ability of organized labor to train adequately a burgeoning workforce. The AFL responded by forming committees to investigate the needs of industry and to promote industrial education. Eventually the NAM and the AFL agreed upon federal support for vocational education.\footnote{Cremin, \textit{American Education}, p. 235. Leavitt noted the hostility of the NAM toward organized labor, see \textit{Examples of Industrial Education}, pp. 24-25. In another example, see “Labor Asks Reforms in Trade Training,” \textit{New York Times} (12 November 1909): 5; American Federation of Labor, \textit{Industrial Education} (Washington, DC American Federation of Labor, 1910); W. Stull Holt, \textit{The Federal Board For Vocational Education} (New York: The Institute for Government Research, 1922): 3.}

While educators debated the best models of vocational education and corporations began to establish their own training schools, the American Federation of Labor resolved in 1909 to revive some form of the apprenticeship system. The AFL proposed a “co-operative industrial education plan” that included management, labor, educators, and the federal government, specifically a federal body overseen by the Secretaries of Interior, Agriculture, Labor, and Commerce. A federal agency would allocate federal funds for various kinds of vocational training. The proposal included many of the terms that would later be included in the future vocational education act. More importantly, a Joint Apprenticeship Committee—a cooperative arrangement between manufacturers and trade unions to fund and provide facilities for training apprentices—eventually established by the New York Building Congress in 1922, presaged the Fitzgerald Act of 1937 that created joint apprenticeship programs with guidance from the Department of Labor. In addition, the AFL supported federal legislation such as a trade training bill in 1917 and programs in 1918 targeted to eliminate adult illiteracy and provide English language instruction. It proposed free tuition for Junior College students and a bill in 1919 to eliminate illiteracy and “Extend Education Among the Adult Population.”
Business and labor did agree on some issues after the turn of the century, especially in the realm of federal support for education and training, a collaboration leading to passage of the Vocational Education Act in 1917.\textsuperscript{114}

The Challenge to Vocationalism

While the impression thus far suggests a broad consensus among various interests groups in promoting a federally funded vocational education policy, not all educators agreed. Foremost among these was the eminent philosopher of education, John Dewey. Dewey, although having no opposition to vocational education as such, opposed “vocationalism,” the notion that education served corporate interests by preparing workers for the labor market. Immediately prior to passage of the Smith-Hughes Act, Dewey questioned “what sort of industrial education there shall be and whose interests shall be primarily considered in its development.” Dewey opposed state and federal legislation that created a dual system of education. The justifications proposed by the advocates of industrial education—better productivity, higher earnings, improved economic conditions, or the enhancement of American products in world markets—did little for the growth of “personal intelligence” or democratic values. Rather than erecting a dual educational system—one that prepared students for the trades and another that provided a liberal education for the elites—Dewey opposed efforts that, he believed, perpetuated class distinctions and class conflict endemic to Europe. Rather than “Learning for Earning,” Dewey believed students should acquire a “respect for useful work” and for the community by utilizing “active and manual pursuits as

the means of developing [the] constructive, inventive and creative power of mind.” Education should combine practical and theoretical knowledge, develop insight and understanding, and encourage creativity, initiative, freedom, and democracy, rather than turn out “more efficient laborers.” He believed that the Smith-Hughes Act would create such a dual system and pit “educational against industrial ideals.”

Dewey shocked proponents of the Vocational Education Act. Charles Prosser, one of the principal authors of the Smith-Hughes Act, admired Dewey but failed to see how his proposal contradicted democracy and individual creativity. Prosser, however, omitted any mention of Dewey in his book with Charles Allen, Vocational Education in a Democracy, published in 1925. In a later revision after World War II, Prosser praised Dewey, yet sidestepped Dewey’s criticisms and concerns about vocationalism. Prosser acknowledged no divergence between Dewey and the Smith-Hughes Act or vocational education in the United States. His mentor, David Snedden, a student of Dewey at Columbia University, agreed intellectually with Dewey, but approved of “social efficiency,” noting the practical importance of vocational education in addressing social, economic, and political issues as advocated by NSPIE and its supporters. Snedden saw no incompatibility between general education and specialization, a feature of modern life. Prosser, Snedden, Cooley, and the vocationalists either ignored Dewey’s concerns or failed to see inconsistencies between his and their own ideas about vocational education. While the American school system never bifurcated into a dual system the way Dewey feared, educators in the Twenty-First Century continue to criticize an educational system that neglects Dewey’s concerns, a system that often prepares students merely to meet minimal standards required by employers rather than to encourage creativity, critical thinking, and democratic values. In the end, the proponents of industry—


businessmen, labor leaders, professional educators—and the requirements of the labor market overwhelmed the kind of education envisioned by John Dewey.117

Conclusion

The criticisms of Dewey and others notwithstanding, advocates had lobbied state and federal governments for over a decade by the time Congress seriously considered a vocational education bill. Federal commissions investigating the problems of labor unrest, poverty, immigration, and urbanization believed education and training would help solve the problems brought about by structural changes in the American economy. Those who advocated investment in human capital—educators, businessmen, labor leaders, politicians, and government functionaries in state and national governments—saw education and training as ways to achieve economic stability and industrial prowess. Education and training—according to the “Education Gospel”—also served as tools of social engineering, tools with which to increase productivity, ameliorate social problems, improve the quality of life, foster democracy, Americanize immigrants, enhance the ability of American industries to compete in world markets, and maintain national security. Yet, despite the calls for education and training, workforce education remained the purview of firms, individuals, and state and local governments. Federal support for investment in human capital stalled for decades until the crisis of the first modern industrial war required skilled and semi-skilled labor, both civilian and military. The nation reached a tipping point in human capital development, one that compelled Congress to legislate and fund a large-scale manpower training program to fit thousands of Americans with skills for war and the workplace during the First World War.118


CHAPTER 2

FROM “DESKILLING” TO “RESKILLING”:
TRAINING WORKERS DURING THE GREAT WAR

“While Europe is killing off its trained workers, we are preparing to train ours.”
-- Alvin E. Dodd, Secretary of the National Society for the Promotion of Industrial Education, 1915

“From now on vocational education is a matter to which the energies of both State and Federal Governments will be directed.”
-- Annual Report of the Federal Board for Vocational Education, 1918

Despite the efforts of educators, businessmen, and labor leaders, national vocational education bills failed to gather adequate support in Congress for before 1914. Once the Great War erupted in Europe, however, production in the United States soared to supply the warring nations. As immigration from abroad plummeted, the demand for skilled and semi-skilled industrial workers at home shot up. Women moved into higher paying industrial jobs. Black Americans flocked from Dixie to northern industrial cities, attracted by jobs and higher wages. Soldiers, sailors and civilian workers required training for the technologies of modern warfare. Just weeks before it declared war in March 1917, Congress passed the Smith-Hughes Act with strong support from nearly every social, religious, civic, educational, labor, business, and agricultural organization in the United States. The Vocational Education Act became the first federal effort to help develop workforce training.2


During the First World War the federal government, the states, and the private sector trained hundreds of thousands of Americans for wartime industry and military duty. The crisis spurred the federal government to consider training for a national labor market and initiate its first manpower programs. This chapter reviews the legislative background for passage of the Smith-Hughes Act of 1917 and describes a few of the military and civilian programs that grew out of the new legislation. It also focuses upon the training of professionals in federal agencies such as the Emergency Fleet Corporation and the U.S. Training and Dilution Service. In addition, the chapter examines the importance of women’s organizations and women’s contribution to the war effort, the opportunities that arose for black Americans, women, and youth. Wartime training accelerated new patterns of workforce education, new training techniques, the professionalization of management, and structural changes in the American economy. The chaos at the outset of American participation in the war eventually led to federal intervention. While leaders gave little effort to planning or preparation for war before 1917, the national government, with state-level and private cooperation, eventually coordinated industrial labor and production. It did so by constructing various boards and agencies to regulate the homefront: the Council of National Defense, the War Labor Policies Board, the United States Employment Service, and the National War Labor Board, for example. Large-scale training programs for civilian workers and the military utilized experts from the newly established Federal Board for Vocational Education, the agency created by the Smith-Hughes Act in 1917, and established precedents for training during the Second World War.3


Once armistice arrived in 1918, however, the federal government abruptly halted job training and demobilization quickly followed. Over the next decade, the federal investment in human capital abated, offering only modest support for vocational education and vocational rehabilitation programs. Nevertheless, the federal government continued to train active duty soldiers, sailors, and marines. While the burden of civilian training once again fell upon the states, the private sector, and individual Americans. The provision of skills and increased productivity exhibited during the New Era may have begun with the federal investment in human capital during the First World War.

**Congress and Industrial Education**

While state governments and private firms performed most training functions before World War One, labor leaders, businessmen, and professional educators continued to lobby Congress for the federal funding of education and training. Even though public opinion and the pronouncements of educators and business leaders began to favor a federal program of industrial education for national prosperity and security, Congress remained reluctant to sponsor any large-scale federal assistance. For example, Senator Jonathon Dolliver of Iowa and Congressman Charles R. Davis of Minnesota introduced legislation in Congress between 1906 and 1908 to establish federal aid for industrial education. When Dolliver died in 1910, his successor, Senator Carroll Page and Representative William Wilson of Pennsylvania, extended the parameters of the Dolliver-Davis bill. Authored by Charles Prosser and David Snedden of the National Society for the Promotion of Industrial Education (NSPIE), the Page-
Wilson bill competed with a bill introduced by Senator Hoke Smith of Georgia. Smith’s agricultural education bill offered little in the way of industrial education in spite of his putative support. As chair of the Committee on Education and Labor in the Senate, Smith exerted power over potential legislation related to education and he obstructed Page’s bill.¹

Page struggled for nearly two years to present a bill in the Senate for federal aid to vocational education. At first, Page sought to extend the Morrill Act and add amendments to provide federal matching funds to support public higher education. He proposed to aid some 400 public vocational schools—seventy-five of those African American schools in the South—offering agricultural, industrial, and domestic courses for boys and girls, ages 12 to 18. Citing the president of the Citizen’s Industrial Association of St. Louis, Missouri, Page reiterated that the United States could no longer rely on extending its territory, exploiting natural resources, and recruiting skilled immigrants in order to sustain economic growth. Rather, he preached the Education Gospel, declaring that, “We must convert the idlers of this nation into producers,” train boys “now almost running wild in our larger cities” and make them “self-respecting, self-supporting, contented producers.” The nation had a duty to produce good citizens, prepare a proper national defense, and “increase efficiency” in order to progress “in its struggle for commercial supremacy.”²

To fulfill those goals, girls too required education in homemaking that could make a difference “between success and failure as a wife and mother,” reduce divorce rates, and prevent “race suicide.” “It is a federal matter,” Page wrote, “There should be a measure of

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federal control, and a center of oversight in a very general way in Washington.”

Both the National Association of Manufacturers (NAM) and its chief rival, the American Federation of Labor (AFL), agreed—to the astonishment of Page who saw the groups as “hostile” and “antagonistic”—on the need for federally funded vocational education. Yet members of the senate stalled Page. Senate leaders such as Reed Smoot of Utah and Henry Cabot Lodge of Massachusetts requested additional research. Hoak Smith of Georgia had submitted his own bill that competed to some degree with Page’s while Congressman Asbury F. Lever of South Carolina shepherded his bill though the House.

Smith stalled discussion of the Page bill in the senate with procedural foot dragging. Smith confused manual training in the public schools—part of general education to familiarize boys with tools—with vocational education, which prepared young people to become future wage earners. For political and perhaps personal reasons, Smith blocked the Page bill and promoted his own legislation between 1912 and 1917. Page also faced senate obstructions in matters ranging from rules of order to abstentions, a lack of support from colleagues, and continued opposition by Smith. Defensive and procedurally inept, Page had difficulty marshalling support and tended to constantly revise his bill.

One of the sticking points for the Smith-Lever bill had been favoritism toward agricultural states, since state legislatures awarded federal funds to designated agricultural schools within each state. The arrangement essentially excluded black schools in the South and some legislators demanded an equitable distribution of federal funds. Talk of racism and charges of sectionalism clouded the issue. According to Smith’s biographer, the senator believed black Americans cared little for agricultural education. In the end, Page’s bill failed.

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8 Congressional Record, v. 48, pt. 8, pp. 7677. Support from the AFL is noted in Curoe, Educational Attitudes and Policies of Organized Labor, p. 127; and the American Federationist (January 1913). For the battles between industry and organized labor, see Lorwin and Flexner, The American Federation of Labor: History, Policies, and Prospects, pp. 57-95, and other labor history sources.

9 Barlow, The Unconquerable Senator Page, pp. 21-50.
but the Smith-Lever bill passed in 1914. Smith-Lever increased funds for agricultural extension while offering only a paltry amount for industrial training, training limited to farming and agricultural work. The latter also appropriated federal money for agricultural education and home economics in proportion to a state’s rural population. The Smith-Lever Act, like the Weeks Act of 1907 and the State Marine School Act of 1911, set precedents for states having to match federal funds with an equal or larger amount of their own money. Matching federal with state dollars began a pattern of joint funding for public projects that lasted the remainder of the century and epitomized the federal system. In all kinds of federal projects, from the construction of interstate highways and federal housing to public works projects and vocational education, state and federal governments shared resources to provide programs and projects for public benefit. Federal support for vocational education and job training, however, remained skimpy until the wartime crisis of 1917. In the face of persistent demands for industrial training, Congress in 1914 formed the Federal Commission on National Aid to Vocational Education, which continued to investigate the utility of federally funded vocational education.

**Federal Vocational Education Act**

Amidst party politics and regional differences, Smith managed a compromise that created a commission to examine the utility of federally funded vocational education in exchange for passage of the Agricultural Extension Act or Smith-Lever Act in 1914. The

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11 See, for example, Hawkins et al., *Development of Vocational Education*, pp. 78-79; and Lloyd E. Blauch, *Federal Cooperation in Agricultural Extension Work, Vocational Education, and Vocational Rehabilitation*.

Federal Commission on National Aid to Vocational Education, the commission proposed by Smith, organized in 1914, reported in June of “a great and crying need” for vocational education. The commission suggested that industrial or vocational education, in addition to commercial and agricultural education, be funded in a way similar to that of the Agricultural Extension Act by having federal funds matched by state and local governments. The commission also reflected the growing recognition of a national labor market. Support for public education and vocational training—the investment in human capital—would therefore benefit the nation. Furthermore, federal aid would assist those states with limited financial resources for education in order to “equalize that task of preparing workers” whose increased mobility might take them to other states and ultimately benefit the nation as a whole. A national effort would utilize the expertise of educators from every state. Echoing the Education Gospel, the commission concluded that, “Vocational Education is therefore needed as a wise business investment for this nation, because our national prosperity and happiness are at stake and our positions in the markets of the world cannot otherwise be maintained.”

Although the commission submitted its report by the middle of 1914, Congress took no action until late 1915 and early 1916, as both chambers of Congress, preoccupied with war in Europe, postponed its passage. 13

The demand for manufactured goods resulting from the war in Europe required additional skilled workers for American industries. Calls for federal aid to education after 1915, especially for industrial education, increased. In an address to Congress that year, President Wilson asserted that, “We should give intelligent Federal Aid and stimulation to Industrial Education as we have long done in the large field of our Agricultural Industry.” 14

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13 Holt, The Federal Board for Vocational Education, pp. 3-4; Hawkins et al., Development of Vocational Education, pp. 80-112; and Barlow, History of Industrial Education in the United States, pp. 58-66. Nine members comprised the commission appointed by the president. The political battle over vocational education serves as a metaphor for the transition of America’s economy from a rural, agricultural economy to an urban industrial one. After 1920, the U.S. Census showed that America had become an urban nation and that those employed in the agricultural sector nearly equaled the number employed in manufacturing. See, for example, the U.S. history textbook by James Henretta et al., America’s History, v. 2: Since 1865 (New York: Worth Publishers, Inc., 3d. ed., 1997): Appendix, p. A-10. Meanwhile, employment in the service sector exceeded both manufacturing and agriculture in 1920.

14 President Wilson’s message to Congress, December 7th, 1915, cited by Alvin E. Dodd, Secretary for the National Society for the Promotion of Industrial Education, in “To Fit Millions For Their Work: The Smith-Hughes Bill, A National Preparedness Plan to Equip This Country for Holding Industrial and Commercial Supremacy in the Future” (Peoria, IL: The Manual Arts Press, 1915),
The National Society for the Promotion of Industrial Education (NSPIE) worked closely with Senator Smith and Congressman Dudley M. Hughes of Georgia to enact a vocational education bill. Stimulated by Wilson’s remarks, Alvin E. Dodd, Secretary of NSPIE, took up the cause of the Smith-Hughes bill before Congress. He assured past opponents that the bill did not attempt to insert the federal government into state affairs. Furthermore, a federal board would not only include government officials, but also represent employers, workers, and educators; the Commissioner of Education would serve merely as an executive officer. State boards would administer funds and develop programs to train students and instructors to meet state and local needs for industrial occupations. By defining human resources in terms of natural resource management, Dodd argued that training would rescue the young and the unskilled; it would prevent the “wastage of our young people—from dead end jobs.” Training, he declared, promised to furnish youth with skills that would translate into higher productivity, higher earnings, and ultimately add “to the wealth and life of the nation.” The war in Europe, Dodd noted, exacerbated the reliance of American industries on apprenticeships and in-house training for workers. “The greatest resource of any nation,” Dodd declared, “is the undeveloped skill and vocational possibilities of its population.” A national problem, precipitated by the Great War in this case, required federal intervention. “National grants,” he intoned, “are justified by the interstate character of the problem of vocational education” and the needs of national industries utilizing a mobile labor force. The decline of skilled immigrants from Europe, especially England and Germany, threatened to choke off the source of skilled craftsmen relied upon in the past. In contrast to Europe, Dodd said, America would “manage” its human resources. “While Europe is killing off its trained workers,” he declared, “we are preparing to train ours.”

The Armed Services also requested assistance with vocational training. Both the Army and Navy began to encourage training for their respective members around the turn of the century. For the Navy in particular, new technologies and shipboard operations required

reprinted from Manual Training and Vocational Education (December 1915): 251-259, with the epigraph by Wilson, p. 251.

skilled mechanics, machinists, and electricians. Representatives from the Army and the Navy had testified at Congressional Hearings as early as 1914. When Congress held hearings on the need for skilled soldiers and sailors, Captain Douglas MacArthur of the Army engineers and Commander C.B. Brittain of the U.S. Navy testified to the importance of funding vocational education in the military. Another young naval officer outlined a plan by which American Industry and the Navy would mutually profit. While the private sector trained sailors on new equipment, the Navy demonstrated American manufactured goods around the world. At another hearing, one participant recommended that soldiers and sailors be given 75 hours of training a month before discharge “to return to civilian life better equipped for industrial, commercial, and general business occupations.” In 1916, the Secretary of War Newton Baker initiated such a program, prompting Alvin Dodd to comment that the Army “is going to add thousands to the ranks of the trained workers of this country.”

Meanwhile, Representative Hughes, who chaired the House Committee on Education, had not acted upon the vocational education bill but reintroduced it at the end of 1915. While the National Association of Manufacturers, the U.S. Chamber of Commerce, the National Society for the Promotion of Industrial Education (NSPIE), the American Federation of Labor and other labor organizations all endorsed the bill, concerns and debates over American preparedness for war in Europe delayed consideration. Senators Hoke Smith and Carroll Page both supported vocational training for the armed forces and promoted the bill in the Senate.

As warfare on the seas intensified, the Council of National Defense—approved by Congress in August 1916 and eventually organized in March 1917—coordinated defense industries and resources for the possibility of war. Meanwhile, pressure mounted on Congress

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18 Barlow, The Unconquerable Senator Page; and Hawkins et al., Development of Vocational Education.
to act on the vocational education bill. A Bureau of Education Bulletin released in February 1917 emphasized that education offered not only “the higher things of the soul,” but also “industrial efficiency” and “material wealth.” “The material and measurable rewards of education,” the Bulletin declared, “should be made plain to those whose votes must determine the support of our educational system.”

After delays in the House and pleas by President Wilson, the Smith-Hughes Act became law in March 1917 with little opposition; it created the Federal Board for Vocational Education, chaired by a long-time proponent of vocational education, one-time president of NSPIE, and chief architect of the bill, Charles Prosser. The act required the formation of boards of vocational education in each state in cooperation with existing public school boards in order to maintain local control and to respond to local labor market needs. The Federal Board issued guidelines over the way states administered vocational education, and enforced those guidelines by investigating, supervising, and reporting on state and national progress as well as by reprimanding those who committed infractions. In addition to educating students in agriculture, home economics, and industrial pursuits, the act also served “young people and adults who had left full-time public schools.”

All forty-eight states accepted the conditions of inclusion and began to initiate boards of vocational education by the end of 1917. By June 30, 1918, over 168,000 pupils across the nation had enrolled in vocational education courses that included industrial, agricultural, and home economics, but not the fastest growing occupations in commercial or clerical work. The Smith-Hughes Act also continued the precedent set by the Smith-Lever Act, the Federal

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Highway Act, the Adams Act, and others that required state and local governments to match or exceed the amount of grants contributed by federal funds. Sharing the burden for national projects typified federalism in the twentieth century. The Smith-Hughes Act, or Federal Vocational Education Act, passed weeks before Congress declared war on Germany.\textsuperscript{21}

\textbf{The United States enters the war}

Training for war production by state and federal agencies in cooperation with private sources prepared skilled personnel for military and civilian jobs after war began. The total armed forces of the United States numbered just over 179,000 in 1916, and expanded to 3.68 million by armistice day in 1918.\textsuperscript{22} In July 1917 the U.S. Public Service Reserve, located within the Department of Labor but privately funded, searched the nation to supply the Army and 160 shipbuilders with engineers and technicians. Although lacking an experienced organizational structure, the agency eventually became the United States Employment Service (USES) in January 1918. Its staff worked closely with state employment agencies to gather statistics on employment and place workers in critical occupations or shift workers to regions with a high demand for labor. The USES established some 850 federal employment offices across the nation by 1919, registering 3.2 million applicants and placing nearly 2.4 million workers in jobs. Congress and the president added supplemental funds, in addition to private donations, in order to help the agency reduce factory turnover, utilize critical talent, and stabilize the labor force. To reduce turnover caused by competition for labor, large firms had


to fill their unskilled workforces through the USES offices. Interestingly, the actual size of the labor force increased only marginally if at all. At war’s end, I.W. Litchfield, an administrator with the agency, recommended the continuation of the USES both to find employment for the postwar unemployed and to act as a placement service for professional managers, executives, engineers, and returning soldiers. The Women’s Division of USES, established in January 1918, placed 534,793 women in jobs from January 1918 to January 1919, and a Junior Division begun in late 1918 offered guidance and placement services for youth over the age of fourteen. Placing women and youth in factory employment, however, threatened progressive state and federal legislation protecting women and children in the workplace, yet the war effort trumped recent reforms.

Like numerous regulatory agencies devised to coordinate resources for the war effort—boards for coal, railroads, industries, and agricultural goods, for example—the federal government, businesses, and the AFL cooperated to control labor turnover, stabilize wages and prices, and prevent labor unrest. Firms standardized the workplace and offered to professionalize personnel management and train men and women for military and civilian occupations. As immigration nearly ceased and conscription removed able workers from the labor force, firms competed for relatively scarce labor. The USES supplanted private employment agencies and regulated hiring to prevent high turnover and to fill crucial jobs

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with skilled workers. Once the shortage of agricultural and industrial workers became apparent in the early months of the war, the national government began to regulate the national labor market by channeling workers into essential occupations and industries, by creating a National War Labor Board, and by training workers to fill critical skilled and semi-skilled occupations.\textsuperscript{25}

**Training during the First World War**

A month before Congress declared war on Germany in April 1917, the Federal Board for Vocational Education (FBVE) reported that the nation was “vocationally unprepared” for war. Free markets proved incapable of producing enough skilled men quickly enough for work in either wartime industries or in the military. The Army alone estimated the need for 250,000 skilled men in fifty different trades. The Federal Board assisted the War Department by screening conscripts who met eligibility requirements for training and recommending that those who qualified—especially those having prior experience in a trade—receive instruction in evening schools before reporting for basic training. Pre-induction assignments served as an efficient way to prepare soldiers for later technical training. The board also surveyed various training centers and developed programs of instruction in various technical fields taught by civilian instructors with practical experience. Student-soldiers attended vocational training classes free of charge four to six nights a week; they spent at least eight hours of total class time per week in either public or private institutions at the secondary or collegiate levels. The Federal Board also authorized local and state schools to enlist the services of private industries for practical instruction by plant foremen on plant equipment. Under the Smith-Hughes Act, however, state governments still had to pay at least one-half of the costs of instruction. Depending on the duration and extent of the emergency, day classes eventually could be established year round to meet the needs of the military. Education officials then examined a soldier’s proficiency and issued certificates attesting to his skill.\textsuperscript{26}

\textsuperscript{25} Eric Karolak, “‘Work or Fight’: Federal Labor Policy and the First World War, 1913-1920,” Ph.D. dissertation, The Ohio State University, 1994, especially pp. 112-168. While “anti-loafing” laws or the “work or fight” order of May 17, 1918, threatened to draft eligible males in non-essential occupations, little evidence supports subsequent large-scale inductions of workingmen. In fact, Tobin and Bidwell asserted that nearly half of those potential draftees found employment in essential industries such as shipbuilding and munitions, and thus became exempt from induction into military service; see Francis G. Wickman, ed., *The American Year Book, 1918* (New York: D. Appleton and Company, 1919): 449-450; and Tobin and Bidwell, *Mobilizing Civilian America*, pp. 124-126.

The government trained workers through various agencies such as the War Department, the Department of Labor, the War Industries Board, and the United States Shipping Board. The Federal Board for Vocational Education received funds specified for war work training. The federal training programs in public schools and private firms thus provided free tuition and certificates of competency in various occupations such as machine shop operators, electricians, sheet-metal workers, pipe fitters, truck-drivers, motor-car and motorcycle repairmen, radio technicians, and especially workmen in shipbuilding, an industry that required some seventy kinds of trades.27

In addition to a lack of vocational preparedness, the war also demonstrated that prewar methods of training were “inadequate to meet the present emergency.” Wartime demands presaged a new shift in the structure of the economy resulting from technological innovations, innovations that required greater attention to specialized training, even the possibility of continuous training and retraining. In the face of the wartime emergency, civilian schools and industries had neither the time nor the facilities to train adequate numbers of workers. Instead, the federal government, for the first time, helped fund the large-scale training of adults for skilled jobs necessary to support a modern war. After nearly thirty years of investigations and arguments by the advocates of vocational education, the board noted that, “From now on vocational education is a matter to which the energies of both State and Federal Governments will be directed.”28

Vocational Education, Mechanical and Technical Training for Conscripted Men (Air Division and U.S. Signal Corps), Bulletin No. 4, (Washington, DC: Government Printing Office, 1918): 4-14. Pre-induction training for conscripted men excluded women and girls, boys under military age, those who failed physical and mental examinations, and persons seeking free training for their own benefit; see p. 5. Examples of examinations given for selected occupations are included in the appendixes of Bulletin No. 4. This bulletin also includes brief descriptions for instructors of particular skills such as engine repairmen, structural mechanics, and truck drivers.


While schools prepared new workers for badly needed skills, the technologies of modern warfare required “fighting mechanics” who had yet to be trained. To supply 200,000 mechanics and technicians in support of a two million man force, the Army sought the aid of the Federal Board for Vocational Education. The Army Signal Corps, for example, wanted 1,000 men with photographic training. Other branches required thousands of men trained as machinists, auto mechanics, gunsmiths, chauffeurs, electricians, tentmakers, welders, and various kinds of instrument, clock, camera, and typewriter repairmen. The increased demand for trainable recruits led to immediate shortages of vocational education teachers. As a result, industrial, trade, and agricultural instructors received military deferments, and military officials screened candidates for specialized training. Yet, the need for additional instructors remained.29

The Research Division of the FBVE studied the Army’s needs and organized vocational training regimens. One-third of the funds for state vocational education teachers paid the salaries of instructors for part-time classes, continuation schools, or extension schools. The dearth of trained personnel underscored the fears and desires that educators, businessmen, and labor leaders had expressed in the years before the war. “The vast expenditures of money for the prosecution of the war,” the FBVE discovered, “have led many people to see that the country can afford education and cannot afford to be without a rapid extension of vocational work.”30

Meanwhile, the National Subcommittee on Welfare Work, a component of the Council of the National Defense Welfare Division, established branches for Industrial Training early in the war, mostly in major industrial states. The governing councils of the local branches generally comprised “one-third labor, one-third employers, and one-third practical educators.” The welfare work committee created 65 vestibule schools—schools that screened and prepared entry level workers—in aircraft, ordnance, small arms, and “essential war trades.” About 300 plants offered some form of training and managed to increase national


production from an estimated ten to forty percent in addition to reducing turnover and hiring the unemployed. Employers continued to favor male over female workers, however. Unskilled men, the Defense Council advised, should be educated wherever possible “before resorting to the employment of women,” even though women had shown a willingness and ability to be trained. In fact, a high demand for machinists and toolmakers existed in Massachusetts, where “Women are coming into the factories in daily increasing numbers and are proving themselves successful machinists.” The Annual Report of the Council of National Defense suggested that cooperation for training between employers, labor leaders, and educators, augured well for the postwar reconstruction, and that a trend “may find all three moved to develop together vocational education.” Graduates of lengthy apprenticeship programs advanced more quickly, according to the Council report. In addition, the report also cited the example of New Jersey, where industries and labor unions cooperated to retain skilled workers instead of “diluting” jobs. Only as a last resort would employers train the less-skilled in essential occupations or employ women. When industries resorted to employing women, however, they were advised to offer equal pay for equal work and maintain good workplace conditions. One firm preferred to hire women “with relatives at the front.” The persistence of federalism, however, usually created a decentralized system of control: responsibility for most training largely remained a “community matter.” Most communities, however, required federal dollars, especially for the mass production of new equipment stemming from technological innovation that required new kinds of skills.31

Training for the Aviation Industry

The nascent aviation industry poignantly demonstrates how new industries altered the occupational structure of the new industrial workforce and the economy of the future. The training of airplane riggers and fitters (mechanics and structural technicians) for the Army Air Service offers interesting insights into ways that government and industry adapted to the shortage of skilled workers. Shortly after the United States entered the war in April 1917, the lack of airplane technicians and mechanics prompted the government to arrange for the training of Americans with the Allies in Europe. Even though the first successful airplanes had been designed and built in the United States, France and Britain had surpassed the United States in the mass production of military aircraft by 1917. As a result, the French and British

trained hundreds of American aircraft mechanics and maintenance personnel in European aircraft factories during the spring and summer of 1917. Because few new military recruits possessed the requisite occupational skills, the Federal Board for Vocational Education began to screen thousands of recruits for training in aircraft maintenance.\footnote{Michael E. Peterson, “Riggers and Fitters: The Creation of the Aircraft Mechanic and the U.S. Air Service Maintenance Corps During World War I,” M.A. thesis, The Ohio State University, 1995, pp. 18-20, 24-28, and 34-36.}

In addition to parceling out the training of aviation workers to allies overseas, manpower requirements for the war demonstrated the concept of “portability” or the “conversion” of skills, skills that not only could be transferred from one employer to another, but also from one occupation to a similar occupation. For example, coppersmiths, tinsmiths, and sheet metal workers were retrained to fabricate or repair airplane engine fittings and control cables. The conversion of engine mechanics offers another example. Since both automobile and aircraft manufacturers utilized internal combustion engines, those who mastered the fundamentals of gasoline engines could be easily trained to work on either automobile or airplane engines. The War Department began an aggressive recruitment campaign in late 1917 to attract large numbers of auto mechanics to repair aircraft engines, a decision that led to a shortage of domestic auto repairmen for the duration of the war. Eventually the Air Service, in cooperation with private industries, created thirty-four schools to train over two thousand men. During the first five months of 1918, vocational education programs related to aviation alone produced 12,000 graduates.\footnote{Peterson, “Riggers and Fitters” pp. 18-20, 24-28, and 34-36; Mechanical and Technical Training for Conscripted Men, pp. 19-29.} Women also received instruction in aviation-related trades, so that by the close of the First World War, “23 percent of the employees in 40 airplane factories were women.”\footnote{U.S. Department of Labor, Women’s Bureau, Women’s Factory Employment in an Expanding Aircraft Production Program, Bulletin of the Women’s Bureau, No. 189-1 (Washington, DC: U.S. Government Printing Office, 1942): 1.}

While records of actual training programs are rare, studies at the time convey some insights into the successes of training women for the war effort. A 1918 study of the Navy’s newest aircraft factory at the Philadelphia Navy Yard, for example, revealed the effectiveness of training women after the first year of the war. Since few engineers, supervisors, or production workers had experience in the nascent industry of aircraft manufacturing, nearly
every level of management and production required experimentation and the search for optimal modes of training. In fact, no more than twenty-five persons hired at the factory had any previous experience with airplane manufacturing. Directed by Frederic Coburn, a Naval Academy graduate and an officer in the Navy’s Construction Corps, the plant built seaplanes and employed almost 2,400 workers in June, but increased that number to over 3,600 workers by the end of the year. In February, the Young Men’s Christian Association (YMCA), endorsed by the Naval Aircraft Factory and “leading aeronautic experts,” established a school to train both men and women in airplane construction and repair in a four week course for a $30 tuition fee ($433 in 2005 dollars). The plant began in May to train women in wood- and metal working in a makeshift shop school. Together the plant and the YMCA trained 200 to 300 women for jobs in airplane construction within the first few months of 1918. In spite of the tardy response by the local government to meet vocational training needs, the Naval Aircraft Factory increased its workforce. The number of female employees from June to August 1918 increased from 218 to 710, comprising nearly twenty percent of the plant’s workforce. An aggregate profile of the women revealed that most had finished grammar school; one-fourth attended high-school; twelve had attended college; and twenty-three had some kind of vocational training. One-half of the women were under 25 years old, two-thirds remained unmarried, and about half reported having dependents. Nearly one-third of the women served in clerical occupations, while another third worked in technical production jobs. Employment of women in the plant approached twenty-five percent of all employees by the end of the year.35

After screening for manual dexterity and mental ability—while following civil service guidelines—the plant vestibule school prepared both male and female workers for production jobs. The managers decided to teach women wing panel assembly, the most technical

assignment for which most women trained. After learning to read blueprints and how to use shop tools, the women constructed wooden airframes. As pupils, they received the lowest wage, about $15.84 a week, but eventually boosted their earnings to over $20 a week ($288 in 2005 dollars). Initially a female instructor took charge of the women trainees until they became comfortable with the shop training process. New hires had a week to learn one of the various levels of construction. If they failed to grasp the concepts or techniques, managers gave trainees two additional weeks to learn one of two other processes. For women trainees having difficulty learning proper procedures, managers offered the opportunity to perform remedial work. Those simply unable to perform satisfactorily usually resigned. In addition to carpentry work, the pupils learned wire splicing and binding, soldering, riveting, and drill press operations, although metal work remained closed to most women by the fall of 1918.36

The shop school, according to the report, had three advantages: First, it weeded out those lacking in skill or work ethic. Second, it allowed job candidates time to adjust to factory routines while classes in the school prepared them for suitable jobs. Third, the school became the plant’s “placement bureau” when trainers recommended trainees for specific jobs. The factory had a 58 hour work week with ten hour days, five days a week, and eight hours on Saturday. Most women trainees proved to be successful and productive. By the end of July 1918, 311 of the plant’s 468 women (about two-thirds of all women employees) worked in production jobs. At the time of the armistice in November, the Aircraft Factory employed about 3,700 workers, but began dropping a thousand within two weeks. The personnel service that hired workers also assisted those laid off to relocate or find other work.37 By war’s end, the entire aircraft industry had produced in 1917 and 1918 over 16,000 airplanes for military use; military and civilian aviation workers numbered over 174,000. Not until 1941 would employment by aircraft manufacturers exceed that number. During the next war, aircraft

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manufacturing became a leading industry in the United States, contributing to the changing structure of the economy in the mid-twentieth century.38

Training for Radio Communications

In addition to aviation, another wartime innovation contributed to a booming industry after the war: radio communications. Many radio and telephone mechanics learned a marketable trade in the Army Signal Corps. Before the war, very few school-trained radio operators existed within the military or the civilian workforce, although some universities and high schools offered courses in radio theory and practical applications. After the Federal Board for Vocational Education organized training programs, soldiers took instruction in evening schools before their report dates and entered service already prepared to operate wireless broadcasting equipment. The FBVE located and prepared experts to instruct soldiers in two areas related to radio communications, mechanics and operators. Radio mechanics learned basic theories of electricity and magnetism and their practical applications. A bulletin published by the FBVE recommended teaching materials and texts; it outlined courses of instruction and illustrated simple circuits. Radio operators learned Morse Code and basic wireless communications to become radio telegraphers, or “buzzer operators.” The Federal Board recommended giving preference to men already having experience as electricians, telephone equipment repairmen, and amateur wireless operators. Administrators also considered others for training if they demonstrated a remote skill such as familiarity with automobile ignitions or if they had worked with their hands as watchmakers and jewelers. Pre-induction training in vocational education remained open to students aged 18 to 31 year olds, although younger students enrolled in some cases. Administrators discouraged candidates unable or unwilling to join the Army or Navy, however. Access to vocational courses remained open to men and women, depending on local needs. Instructors preferred small classes of fewer than fifteen, but allowed a maximum of thirty students. Most trainees learned on simple radio equipment available at technical or vocational high schools, with over half the class time devoted to lab or shop practice. By the end of the course, students had to construct a wireless receiver. One of the earliest schools to operate a broadcasting station

before the war—Seneca Vocational High School in Buffalo, New York—trained nearly 800 men for military service.\textsuperscript{39}

While mechanics and technicans filled the ranks of the Air Service and Signal Corps, the Army required men trained in various other trades and technical fields. After the Second Selective Service Draft in the Spring of 1918, the Army decided on three ways to train skilled technicians and mechanics. First, soldiers already possessing skills would be pulled from combat units and given assignments where their skills could be put to better use. Second, men eligible for conscription would be transferred from war industries into special staffs and departments. Finally, men of draft age who possessed the talent or education were inducted into military service, and then sent to colleges, universities, or technical schools. Nearly 100,000 eighteen year-olds entered some 400 colleges for collegiate education or vocational training. The government called for volunteers in technical fields, but often filled the schools with qualified conscripts to meet quotas.\textsuperscript{40}

\textbf{The U.S. Training Service Detachments}

The Federal Board for Vocational Education assisted the War Department’s Committee on Education and Special Training to form Army Training Detachments in April 1918 under the direction of Channing Rice Dooley. Dooley, granted leave from the Westinghouse Electric and Manufacturing Company where he had been educational manager, had been a founding member of the National Association of Corporation Schools. The War Department’s own panel on training included Colonel Hugh S. Johnson, who later headed the National Recovery Administration in the Roosevelt Administration. A civilian advisory board included educators and administrators. The program screened recruits for literacy and ability,


\textsuperscript{40} National Society for Vocational Education, \textit{Newsletter} No. 2 (April 1918): 4-5; and \textit{Newsletter} No. 5 (October 1918): 1.
and enlisted the aid of civilian public schools, technical schools, colleges, and universities—over one hundred fifty institutions in all—which were then organized into ten districts across the nation. District directors appraised resources and facilities, contracted with schools and instructors, assigned trainees to technical occupations, met training quotas in a timely fashion, evaluated programs of instruction, and submitted progress reports on training and living conditions to the director. Instructors with little trade experience often failed as teachers, whereas skilled craftsmen from local industries, or even experienced soldiers, proved to be successful instructors. Industries supplied training equipment, tools, instructional staff, and expertise.41

Between April and November 1918, Dooley and his Westinghouse colleague J. Walter Dietz guided the Detachments’ training of over 100,000 men in 67 trades, many in new fields such as radio communications and repair, automobile repair, and airplane mechanics. The Training Detachment also prepared soldiers for traditional occupations such as carpenters, machinists, cooks, telegraphers, and band musicians. In addition a dozen African American schools such as the Tuskegee Normal and Industrial Institute, the Hampton Institute, and Alcorn Agriculture and Mechanical College trained over 7,000 black Americans in twenty-four occupations. Some 4,000 black draftees attended specialist schools in radio engineering, electricity, and auto mechanics at eleven institutions. Out of the entire complement of Training Detachments, nearly 70,000 graduates served with the American Expeditionary Force in Europe, and forty thousand more were ready for deployment when the war ended in November 1918. The Training Detachment anticipated preparing another 222,000 soldiers when it demobilized in July 1919.42


Emergency Fleet Corporation

While the Training Detachments created large-scale training for the military, other agencies overseen by the Council of National Defense trained workers for defense industries. Even though the Council of National Defense had been formed in 1916, the lack of preparedness for fighting in Europe permeated American industries and government alike. The military forces remained small in 1916 and, like the aircraft industry, skilled workers in the shipbuilding industry were rare. Only 43 shipyards operated then and employed about 45,000 workers. After the war began, manpower shortages quickly came to light. The Shipping Act of 1916 established the United States Shipping Board and its construction division, the Emergency Fleet Corporation (EFC). In September 1917, over sixty shipyards operated in the United States, accounting for about 80,000 employees. Constructing additional ships for the Navy and Merchant Marine, however, required a much larger labor force trained quickly. Charles Allen—who served on the staff of the Massachusetts State Board of Education under David Snedden and Charles Prosser—joined the training staff of the EFC and eventually became its director. The EFC taught instructors how to develop a detailed analysis of work routines and how to construct an effective plan for training workers. The FBVE also recommended that firms establish training departments, organize a competent advisory staff, create inspection services, and offer employees supplemental part-time and evening classes. The FBVE published a bulletin to assist training departments and state boards of vocational education. Over the next year, the Emergency Fleet Corporation, in

Dooley—the first director of education for the Westinghouse Corporation in 1911, and then president of the Westinghouse Technical Night School—later headed the department of personnel and training for the Standard Oil Company of New Jersey and then for the Standard Oil Company of New York. He also served on the executive board of the American Association for Adult Education during the late 1920s. In 1932 he became manager of industrial relations for the Socony Vacuum Oil Company of Cleveland, Ohio, the corporation that evolved from the merger of Standard Oil of New York with the Cleveland Oil Company of Ohio. He served as an adviser to the Industrial Advisory Board of the National Recovery Administration and later helped form and direct the innovative Training-Within-Industry program under the Office of Production Management and the War Manpower Commission. After the war, Dooley continued to promote his instructional techniques overseas between 1948 and 1950 at the request of the State Department. For a brief but enlightening biographical sketch of Dooley, see Ronald L. Jacobs, “Honoring Channing Rice Dooley: Examining the Man and His Contributions,” Human Resource Development International 5 (March 2002): 131-137. Also see Richard A. Swanson, ed., Origins of Contemporary Human Resource Development, from Advances in Developing Human Resources 3 (May 2001). For additional information on trade schools for African Americans, see U.S. Commissioner of Labor, Seventeenth Annual Report of the Commissioner of Labor, 1902: Trade and Technical Education (Washington, DC: Government Printing Office, 1902): 281-354.
cooperation with Federal Board for Vocational Education and private shipbuilders, trained over 350,000 workers to fill occupations in shipyards which now numbered 195.\textsuperscript{43}

Like the aviation industry, shipbuilders had to locate workers with related or “portable” skills. Public and private schools near shipbuilding sites provided space and equipment to train workers in evening schools, but first the industry needed to train instructors. The EFC helped subsidize training and offered guidance to state directors of vocational education, but ruled out apprentice training because it would be “a future and not an immediate asset.” The EFC encouraged accessible evening classes near workers’ homes and arranged part-time schools at shipyards. Schools offered classes in blue-print reading and oriented new workers to the shipbuilding industry by illustrating yard organization, explaining the parts of a ship and shipboard terminology, and assigning workers to specific ship trades such as shipfitters, shipwrights, joiners, electricians, plumbers, and pipefitters. Instruction catered to three classes of men: those who possessed a shipyard trade; those having knowledge of an allied trade able to crossover with additional training; and those having no experience with shipyard work, but who could be used for low-skilled and manual jobs.\textsuperscript{44}

Shipbuilding firms, while training their respective workforces, sent experienced personnel and foremen to the Emergency Fleet Corporation training consultants located in 36 yards, mostly on the East Coast. The EFC hired seventy field instructors who produced 1,098 new instructors; they in turn trained 80,000 personnel in 71 yards from mid-November 1917 to mid-November 1918. The EFC found that experienced instructors could train workers on-the-job quickly and efficiently.\textsuperscript{45} The firms utilizing EFC instructors succeeded in training


\textsuperscript{45} \textit{The Training of Shipyard Workers}, pp. 11-23, for a summary of the program, and pp. 49-73 for comparisons of training and outcomes. Only a handful of the thirty-six EFC programs existed on the Gulf, the West Coast, or the Great Lakes.
Ship Construction During World War I

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<td>1925</td>
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Table 2.1: Ship Construction. Source: Frederick G. Fassett, Jr., *The Shipbuilding Business in the United States of America*, Vol. 1 (New York: Society of Naval Architects and Marine Engineers, 1948): Chapter 3: Table 6, p. 74; Table 9, p. 78, for vessels; Table 45, p. 122, for naval combat vessels; and Table 46, p. 123, for auxiliary ships.

new employees and “converting” trainees from related manufacturing and mechanical industries. EFC trainers found that learning on actual jobs (rather than creating practice jobs) produced less waste of both time and material. The findings confirmed that training under regular working conditions, and in small groups, reduced turnover in yards run by trained instructors. Some paid out $5 a day to skilled workers taking instructor courses. According to available studies, over 24,600 black Americans found work in the nation’s shipyards overseen by the Emergency Fleet Corporation during the war. Twenty percent, or nearly 5,000, worked in skilled occupations, mostly in the South. While the total number of black workers trained by the EFC is unknown, 3,800 kept their jobs after the war. The success of the various programs can be measured by the output of shipbuilding firms during and shortly after the war. (See Table 2.1 above for ship construction during and after the war; find numbers in bold for production during and shortly after the war.)

46 Ibid., pp. 49-73, for training methods, examples, and outcomes.

Women’s Organizations and Training Opportunities for Women

While federal agencies oversaw training programs for critical occupations, manpower shortages in some industries remained. To meet the crucial demand for skilled industrial workers, private patriotic groups entertained extreme measures. The Los Angeles Chamber of Commerce and the state of South Dakota, citing the Canadian example, recommended the conscription of critical workers.49 In order to avoid conscripting skilled workers and even women, the National League for Woman’s Service (NLWS), established in January 1917, followed the example of women in England. The NWLS raised private money and recruited thousands of volunteers. It proposed a National Census of “women power” and a national Women’s Committee located within the Council of National Defense. Like other Progressive-era organizations, the League established state and local committees to recruit women for various duties that assisted the national war effort. The League then wrote the Secretary of Labor in March 1917 offering to help the federal government recruit women for war industries. By the time Congress declared war in April, nearly 50,000 women had enrolled in 31 states to lend aid to their nation.50

A number of divisions within the League carried out specialized services that required some training. The League organized Americanization classes for the foreign-born, physical training for youth, day nurseries for the children of war workers, and investigators to report on social conditions and plant safety. The Home Economics and Agricultural Divisions assisted with agricultural work, food conservation, and planting community gardens. The Social


49 NARA, RG-174, General Records of the Department of Labor, Box 5, file 19/16, and files 20/16 and 20/31 for conscription recommendations. The Department of Labor in June 1918 sought a national labor recruitment policy.

Welfare and Canteen Divisions cooperated with private social agencies to provide recreation and sustenance for soldiers, sailors, and marines. The NWLS initiated para-military contingents to learn communications and map reading, and launched a Motor Driving Division that trained women drivers to chauffeur dignitaries and the sick in military vehicles and ambulances. The League also cooperated with the Red Cross to supply medical and nursing services. The General Service Division guided volunteers in raising donations and selling war bonds. The Home and Overseas Relief Division acquired food and provided medical treatment for the needy. “Reconstruction work”—later defined as occupational therapy—trained women to massage wounded bodies and assist in various ways wounded and blinded soldiers. The League also scrutinized government contracts to eliminate waste and improve efficiency, and conducted labor surveys to alleviate shortages by enlisting the services of women. Women contributed an incalculable amount of free labor, and fostered cooperation between private and public organizations. For example, the NWLS encouraged the YMCA and similar groups to send trainees, volunteers, and job seekers to the United States Employment Service, Training Services, or the War and Navy Departments. The organizational skills learned during the war unified and organized women for political efforts, especially for passage of the Nineteenth Amendment, during and after the war.51

The Colored Work Committee, a branch of the War Work Council of the Young Women’s Christian Association (YWCA), organized African American women for duties similar to those of the National Women’s Service League.52 African American organizations discovered “a vast reservoir of labor” and sent agents to recruit in the South where, according

51 National League for Women’s Service, Annual Report For the Year 1918, pp. 6-13, pp. 14-50, for a summary of various services, pp. 53-185, for detailed descriptions of the league’s efforts at the state and local level, and p. 187, for finances. In the Spring of 1918, for example, the Florists Association of America approached the National Women’s Service League for assistance. The Florists requested that League drivers deliver flowers to sick and wounded men in hospitals. The League agreed, and sparked the slogan, “Say it with Flowers,” ibid., pp. 44-45; for useful introductions to women in the early twentieth century workforce, see Christine E. Bose, Women in 1900: Gateway to the Political Economy of the 20th Century (Philadelphia, PA: Temple University Press, 2001).

52 Jane Olcott, The Work of Colored Women (New York: Young Women’s Christian Organization, 1919). The War Work Council formed in June 1914 (p. 7). Estimates are taken from the inserted table, “Information from War Work Centers Indicating Industries in which Colored Women are Employed and those in which Y.W.C.A. Club Membership is Represented.” Also, see Brown, Rosie’s Mom pp. 69-94, for a discussion of the Great Migration and black women in wartime industries. Rosie’s Mom is highly informative regarding women’s issues before and during the war, and it contains a wonderful collection of photographs.
to the 1910 census, some 10 million black Americans resided. Stereotypes remained common among white employers, however. Many still assumed that blacks differed “physically, temperamentally, and psychologically” from whites. Others promoted stereotypes by recommending that blacks needed firm supervision, that Irish made good bosses for African Americans, and that blacks tended to have high rates of absenteeism and turnover. Experts recommended close supervision and patience. African Americans alone, however, could not ease the manpower shortages despite the migration of hundreds of thousands during the war.53

Nevertheless, the Committee on Colored Workers recommended trade and general training for women, and sought ways to educate employers and the public about accepting black women into industry. In addition to New York City, African American women migrated to Philadelphia, Pittsburgh, Detroit, Baltimore, and many cities in Ohio such as Columbus, Dayton, Youngstown, Cincinnati, and Springfield. Black women took jobs in laundries, tobacco factories, department stores, garment factories, automobile plants, and steel mills. The Industrial Women’s Service Center reported that black women toiled in the packing houses of East St. Louis and that over 7,000 women worked the stockyards and railroad yards of Chicago.54 During the war, black women found unskilled and semi-skilled work in low paying jobs such as meat packing, or in glass factories, textile mills, furniture factories, and munitions factories, or by cleaning railroad cars or clearing tracks. Some made inroads into clerical work and occasionally they found work driving trucks. The lack of education and training, however, hampered the opportunities for black women for additional training or advancement into skilled jobs. Observers noted that training from public and


54 Olcott, The Work of Colored Women, pp. 81-81, and 111-116. The Bureau of Negro Economics in the Department of Labor tracked instances of discrimination. For example, black women freight handlers for the Wabash Railroad in Chicago earned over a dollar a day less than male counterparts; see Mary Van Kleeck, Director of the Women in Industry Service, Report No. 6 (week ending August 24, 1918), p. 10. Mary Anderson replaced Van Kleeck as director of the Women in Industry Service in 1919. The WIS became the Women’s Bureau of the Department of Labor in 1920.
private schools, in addition to women’s clubs and community organizations, had the means to prepare black women for the industrial workforce.  

Black women working in the North had arrived there as part of the early “Great Migration,” the exodus of black Americans from the South seeking unskilled and semi-skilled jobs and opportunities in northern industrial cities. As a result, whites in the South feared the loss of agricultural and domestic labor, prompting the Wilson administration increasingly to exert controls over migration and the labor market through the Department of Labor and the U.S. Employment Service. After race riots in some cities and the potential for race conflict as blacks competed for jobs and housing in northern destinations, the administration created the Division of Negro Economics within the Labor Department in May 1918. Headed by George E. Haynes, the division attempted to defuse racial tensions—with the cooperation of African American organizations—and assist black Americans. While blacks found opportunity for improving their wages and living standards during the war, women discovered opportunities for industrial occupations during the war.  

The Women in Industry Committee of the Council of National Defense, chaired by the former glove maker and trade union activist Agnes Nestor, coordinated similar state committees. Samuel Gompers of the AFL also joined the Women in Industry section not only to monitor and maintain standards of employment and working conditions for women, but also to exert control over the kinds of occupations women would undertake. The National League for Women’s Service (NLWS), which cooperated with the Labor Department and worked closely with the USES, apparently had little knowledge of women’s wages or employment. Some agencies avoided training women for positions that competed with men; they emphasized that women remained merely “substitute workers” for the temporary shortage of males. Diluting skilled jobs with women workers sped up training time and acclimated women to the industrial workplace. Dilution also maintained workplace standards, freed up men for military service, and allowed male workers to upgrade their skills or obtain better paying jobs. Historian Eric Karolak asserted that employing women allowed managers to

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56 Karolak, “‘Work or Fight’,,” pp. 193-226. James H. Dillard led an investigation into the reasons for migration from the South that included poor housing, low wages, and racial discrimination.
dilute skilled jobs, reduce wages, and diminish workers’ control over the job. A similar effect held true for African Americans and poorly trained males entering mass production industries, however. In addition, training and dilution protected women from some of the hazardous occupations. Karolak concluded that business, labor, and government manipulated the supply of women workers in order to achieve high productivity and maintain “male labor standards,” although the government manipulated the labor market for all wartime industries.

As the likelihood of U.S. intervention in the world’s first modern, industrial war became apparent, the National League for Woman’s Service began to assist the USES in mobilizing women for the war effort. The private organization, directed by future Labor Department officials Mary Van Kleeck and Mary Anderson, recruited women workers to join the nearly one-and-a-half million women already in the labor force. The tremendous increase in production foreseen by wartime planners would require many more industrial workers. The League placed itself under the direction of the Secretary of Labor, while the Secretary of War and the Secretary of the Navy furnished information on over 2,000 contracts with various firms that would help plan the kinds of occupations required for war production. Many jobs such as spinning, weaving, sewing, and canning, the Secretary of Labor noted, merely became the industrial equivalent of “women’s work.” However, women eventually entered traditionally male occupations in transportation, shipbuilding, aircraft assembly, and munitions manufacturing. While “Rosie the Riveter” became one of the icons of World War Two, “Rosie’s Mom” set the precedent for the large-scale training and employment of women in industry during the First World War.

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57 Ibid., pp. 252-255, 265-278, 281-282, 296; and citing the New York Times Book Review, “Mobilizing Women Power in the War” (7 July 1918), p. 309. Agnes Nestor, former president of the International Glove Workers’ Union, and Mary Anderson, employed in the boot and shoe industry, actually performed factory work and became trade union leaders. Anderson eventually headed the Women’s Bureau in the Department of Labor; see Carrie Brown, Rosie’s Mom; and Woman at Work: The Autobiography of Mary Anderson as told to Mary N. Winslow (Minneapolis, MN: The University of Minnesota Press, 1951).


59 About a million-and-a-half women had been employed in non-agricultural industries at the beginning of the war; see U.S. Department of Labor, Reports of the Department of Labor: 1917 [Fifth
After the declaration of war with Germany in April 1917, the Council of National Defense appointed a Committee on Women’s Defense Work, or the Women’s Committee, to organize and coordinate women’s work on the homefront and provide a centralized agency for women’s committees in each state. The physician, suffragist, and ordained minister Dr. Anna Howard Shaw headed the committee. Upper middle-class women “of national prominence”—professionals, writers, educators, trade union leaders, reformers and suffragists, including Carrie Chapman Catt and Ida Tarbell—occupied staff positions. The Committee advised the Council on women’s issues and coordinated defense and propaganda efforts made by women between various federal agencies and state committees. The Women’s Committee, wrote its secretary, Mrs. Ira Couch Wood, served as “the channel by which information reached the women of the country.” Enjoying the cooperation of numerous women’s organizations, the decentralized networks by mid-1918 encompassed women in 2,538 counties, over 8,500 cities, towns, and townships, and over 3,000 other units comprising wards, precincts, and school districts. The Committee also appointed a “Colored Section,” which reported on the activities of African American women in thirteen states who engaged in recruiting black Americans for national defense. The Council then disseminated information and requests for workers and volunteers, and the committees registered women possessing skills useful for public service. For example, women answered the call for stenographers, clerical workers, social workers, and nurses.60


The Secretary of Labor, state labor commissions, and private industries preferred to hire men over women for wartime industrial labor, partly because of laws that restricted hours and conditions for women and partly because the labor market had yet to catch up with demand. Nevertheless, circumstances necessitated the employment of womanpower, and the result offered insights into training new workers for industrial employment after the war.61

The year before the United States entered the war, the Secretary of Labor had approved a plan to establish a Women’s Division and to find a way to employ females over the age of sixteen. The secretary proposed a cooperative effort between state and local offices of the United States Employment Service (USES) with firms in the private sector. Women and girls received elementary and vocational training or worked in farming and rural areas. Reflecting the legal, social, and cultural norms of the day, the federal government sought to protect women workers by avoiding “occupations and places where evil conditions exist.” Agents of the Employment Service were cautioned to use “extreme care. . . . to prevent the sending of female wage earners to localities where labor troubles exist or are threatened, or to places where labor conditions would be disturbed thereby.” “No woman or girl,” the agency continued, “should be directed to an opportunity unless the character of the place to which

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61 Wartime Employment of Women in the Metal Trades, p. 69, for comment about deflecting women from new occupations. For the attitudes of male co-workers in the metal trades toward women, see pp. 73-74, which found only seven of 94 firms reporting hostility toward women entering their shops. The lack of competition for jobs, because of increased production, contributed to the generally favorable attitudes toward women. Men already employed tended to receive promotions and many women had been referred by families and friends of employees. However, for resistance to women workers, see L.H. Colburn, General Manager, Colburn Machine Tool Company, “Difficulties in Employing Women,” Industrial Management 55 (March 1918): 218. Also see Erik Obert, Modern Apprenticeships and Shop Training Methods (New York: The Industrial Press, 1921): Chapter 10: “Training Women for Machine Shop Work,” pp. 103-114. State laws limiting working hours and excluding women from certain jobs had support from health specialists. See, for example, U.S. Department of Labor, Women’s Bureau, A Physiological Basis for the Shorter Working Day for Women, by George W. Webster, Bulletin No. 14 (Washington, DC: Government Printing Office, 1921); U.S. Department of Labor, Women’s Bureau, Some Effects of Legislation Limiting Hours of Work for Women, Bulletin of the Women’s Bureau, No. 15 (Washington, DC: Government Printing Office, 1921); and State Laws Affecting Working Women, Bulletin of the Women’s Bureau, No. 16 (Washington, DC: Government Printing Office, 1921).
addressed and of the employer has been established to the satisfaction of the superintendent or
other officer in charge of the division.”62

Women in small numbers had worked in manufacturing since the early nineteenth
century, but the trend of female wage earners entering the workforce had been rising between
1870 and 1910. By 1910 over 8 million women comprised nearly twenty percent of the paid
workforce, entering jobs in service and light manufacturing industries. By 1914, over 1.5
million women worked in manufacturing industries alone.63 When the Department of Labor
considered including a Women’s Department, some objected to special treatment or separate
departments for women. Ethelbert Stewart, Commissioner of Labor Statistics, originally
opposed a Women’s Department because Labor Department studies already included all
workers, even women workers. Stewart found “no such sharp lines of demarcation” existing
between the two sexes, although he voiced a minority opinion. Most feminists and women
trade union leaders generally agreed that all workers, male and female, should enjoy a safe and
sanitary workplace.64

The Woman in Industry Service (WIS) became a division within the Department of
Labor and precursor to the Women’s Bureau. It began its work in July 1918 by monitoring
the employment and working conditions of women. Directed by Mary Van Kleeck and her
assistant Mary Anderson, the WIS wanted to create the kind of workplace outlined in General

62 U.S. Department of Labor, Fourth Annual Report of the Secretary of Labor, 1916
during the First World War, see Maurine Weiner Greenwald, Women, War, and Work: The Impact of
World War I on Women Workers in the United States (Westport, CT: Greenwood Press, 1980); Carrie
Brown, Rosie’s Mom; the early chapters of Julia Kirk Blackwelder, Now Hiring: The Feminization of
Work in the United States, 1900-1995 (College Station, TX: Texas A&M University, 1997); and the
articles in Joyce L. Kornbluh and Mary Frederickson, eds., Sisterhood and Solidarity: Workers’
researcher for the Russell Sage Foundation, and Mary Anderson helped formulate labor policies for the
Ordnance Department in the War Department. They later moved to the Women in Industry Service and
the Department of Labor.

63 National Industrial Conference Board, Wartime Employment of Women in the Metal Trades,
Research Report Number 8 (Boston, MA: National Industrial Conference Board, 1918): 1 For an
economic analysis of women in the workforce during this period and spanning most of the twentieth
century, see Claudia Goldin, Understanding the Gender Gap: An Economic History of American

64 Memorandum, untitled, in William B. Wilson to [Representative David J.] Lewis, 28 July
1916, File 120/1A (“Women’s Bureau, 1913-18”) cited in Karolak, “‘Work or Fight,’” p. 250; Alice
Kessler-Harris, Out to Work: A History of Wage-Earning Women in the United States (New York:
Order 13 of the Army Ordnance Department, which Van Kleeck had previously headed. Labor Department officials did not wish to regulate women’s employment, Anderson later recalled, but sought “to regulate instead the conditions of employment for all workers.” They continued to insist on the eight-hour day, the forty-hour week, time for meals and rest, equal pay for equal work, the minimum wage, safe and sanitary working conditions, no homework, women supervisors, and professional personnel departments.65

In 1918, with an unprecedented numbers of women entering wartime industries—most of whom began to shift from low paying domestic and service jobs into higher paying and more skilled industrial occupations—the Women in Industry Service and the Policies Board of the Department of Labor devised various “safeguards” to ensure the “health and welfare” of women in the workplace in addition to maintaining high levels of productivity. Employers in various states had to contend with progressive era state and federal legislation regulating the working conditions of women. As a result, the WIS policy board recommended standards for wages and hours, overtime pay, and ways to enhance the comfort, health, and sanitary conditions for all workers. Most importantly, the WIS upheld the principle of equal pay for equal work, which the federal government adopted for industries awarded with federal contracts. The equal pay doctrine, however, did not arise solely from notions of fairness; rather it precluded women from undercutting the wages paid to men that would intensify competition for jobs and increase turnover. Business, government, and organized labor—including women trade union members—cooperated to develop training programs and to introduce useful employment policies and services. Women had little influence on community labor boards created by the USES, however, and the Labor Department and employers restricted the recruitment of women in order to preserve customary notions of gender. As a result, various agencies, concerned over the safety of women and protective of male occupations, directed women into “acceptable” occupations.66


66 *Reports of the Department of Labor: 1918*, pp. 118-119. On women moving into better paying jobs, see Mary Anderson, “Will Women Retire from Industry with the Return of Peace?”
Women worked in expanded male occupations in the munitions industry, aircraft factories, automobile factories, national railroads, and on street railways. The Packard Motor Car Company, for instance, instituted training to reduce turnover and supplement its workforce by hiring women for technical, skilled, and semi-skilled occupations. The firm trained over three hundred people a month at a cost of about $17,000 a month, averaging $52 per student [roughly $770 in 2005 dollars]. The company also trained women managers. Like their counterparts in Europe and Canada, most women in manufacturing shifted from low paying jobs such as domestic service or “women’s industries” into higher paying industrial jobs. Women filled jobs vacated by men who enlisted or faced conscription. During 1918 alone, the U.S. Employment Service placed about 368,000 women in jobs.67

In addition to manufacturing employment, American women trained for “traditional” women’s work as well, although, given the choice, they tended to prefer higher paying jobs in industry. A shortage of nurses prompted the Council of National Defense to undertake a broad national recruitment effort. While seeking 25,000 graduate nurses through an aggressive advertising campaign, only 13,000 “patriotic women” answered the call. The Council devised the Student Nurse Reserve for women aged 19 to 35. The program, in which women trained two to three years to become nurses, offered incentives such as board and lodging, money for books and uniforms, and a minimal stipend. Upon graduation, nurses would be posted in a civilian or military hospital. By contrast, the Army School of Nursing, which managed to recruit over 4,500 of the 13,000 “patriotic” nurses, paid all expenses. The Division of Home Nursing under the Committee on Welfare Work sought nurses for rural areas and in industrial plants, where “extra hazards” lurked under wartime conditions. Meanwhile, the Women’s Committee successfully registered nearly half of the 5,788 women physicians in the country for possible service at home in the event of future shortages. The campaign to recruit nurses appealed to traditional notions of gender, the “age-old instinct of women to care for the sick and suffering.” Higher pay and shorter training time for industrial

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67 Wolfe and Olson, “War-Time Industrial Employment of Women in the United States,” p. 640. For examples of women trained for occupations in the auto industry, see D.G. Stanbrough, “Packard Training Schools for Employees,” Industrial Management 56 (November 1918): 378-382; and J.M. Eaton, “Vestibule School of Lincoln Motor Co.: A Gateway for Women to Enter Effective Production in Industry,” ibid. 56 (December 1918): 452-455, which trained 700 women by late 1918; and Breen, Labor Market Politics, p. 98, for the placement of women by the USES.
jobs, however, attracted larger numbers of women than did the nursing profession. The abrupt end to the war in 1918, moreover, led to the cancellation of the Student Nurse Reserve, prompting one contemporary observer to note that officials chose to remain ignorant about the efficacy of appeals to gender and patriotism as a way to induce women into traditional, low paying occupations. Meanwhile, hundreds of thousands of women supplanted males in agriculture, transportation, and manufacturing.\(^{68}\)

While some women opted for long-term security or careers, many took the opportunity to learn a skill quickly. The scarcity of large numbers of men in some cities produced a critical need for women in production, leading some firms to experiment during the war. At the Recording and Computing Machine Company of Dayton, Ohio, a professional “Employee Department” screened applicants and trained them for one job in ten days or less. By using “scientific management” techniques, the firm trained 5,000 women in a work force of 8,600 employees. The firm paid women trainees as they learned to operate lathes and precision machine tools, assemble electric fuses, and operate lens-making and grinding equipment. Women received good wages and benefits and the opportunity for additional training. Supervisors earned pay on the basis of their workers’ efficiency. While some women originally appeared fearful, slow, and wasteful, the training department guided them to become efficient and productive. The firm reported that men got along well with female employees and that some women became instructors. Such progressive business management presaged the “welfare capitalism” of the 1920s by offering opportunities for advancement.

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Studies performed during the early decades of the 20th century explained the discrepancies between the wages of men and women. Men received higher wages than women for a number of reasons: First, a sexual division of labor existed, one that awarded men better paying jobs. Second, men usually exhibited greater physical strength, speed, and skill in performing the same work as women, or in achieving supervisory work. Finally, women took lower paying jobs just to earn an income. The lack of training given women, their deference to men, and their lack of experience organizing for collective action led to lower wages; see U.S. Department of Labor, Bureau of Labor Statistics, Bulletin No. 175, *Summary of the Report on Condition of Women and Child Wage Earners in the United States* (Washington, DC: Government Printing Office, 1916): 21-24; and Goldin, *Understanding the Gender Gap*. 
fair wages and bonuses, additional training, good working conditions, a health plan, and a cafeteria. While women entered the industrial workforce largely as substitutes for men who left for war or for higher pay and better jobs elsewhere, training opportunities arose in the metal trades. While the metal trades employed over 98,000 workers in 1914, including clerical workers, their number increased for the duration of the war. A survey by the National Association of Corporation Schools of seventy large employers in 1917 found that the percentage of women in their respective industries rose by about one to five percent. The National Industrial Conference Board (NICB) inquired into the practices of 600 metal-producing manufacturers, whose workforce contained nearly fifteen percent women in the spring of 1918. Of the 330 firms that replied to queries about the role of women in their industries, the combined workforce of 131 firms employed nearly 50,000 female workers, or 12.9 percent of employees in actual production work. Women tended to receive less pay than men, although about a half dozen firms emphatically stated that women received equal pay for equal work. Just over twenty percent insisted that women received the same pay for piece work, but their output did not equal that of men. In the automobile industry, for example, over 3,500 women operated various kinds of machinery—drills, lathes, and milling machines—or performed bench work—soldering, wiring, and upholstery fabrication and assembly. With few exceptions, employers reported that women performed their tasks as well, and sometimes more efficiently, than men.

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70 National Industrial Conference Board, *Wartime Employment of Women in the Metal Trades*, pp. 1-2, 4-6, and Table 3, pp. 8-29, for the responses of firms regarding the number of women employed, their occupations and pay. In addition, see pp. 44-48 for training methods as well as pp. 52-54 and 57-78.
Women proved their value in many male-dominated occupations. Railroad employment for women increased from 61,000 on January 1, 1918 to 101,700 by October, nine months later. While the majority worked in clerical, cleaning, telegraphy, and telephone services, over 5,000 women worked in shops as electricians, machinist helpers, metal workers, and laborers.71 A Women’s Service Section in the Railroad Administration reported that the Bureau of Labor Statistics determined that streetcars hired women last, allowed them to work long hours and at night, and offered poor accommodations.72

Once war ended, layoffs for men and women began immediately. Thousands of women lost jobs in arsenals and munitions factories. Others held on to jobs a bit longer in meatpacking plants, railroads, shipyards, and airplane factories until demobilization ended and reconstruction began in early 1919. The Women in Industry Service became the Women’s Bureau of the Department of Labor in July 1919, after years of lobbying for such an office by women’s organizations. Passage of the 19th amendment seemed imminent. Two decades later, as the national government promoted “Rosie the Riveter” and “Wendy the Welder,” Rosie’s mom had been forgotten. “No one seemed to know,” Mary Anderson complained, “anything about what women had done in World War I.”73

Less Training and More Work for Women and Youth

Womanpower became critical for American agriculture as well as American industries. The increased demand for agricultural goods, aggravated by the rush of farmers and rural laborers to urban regions for better paying industrial jobs, led to a temporary crisis in food production. The Army gave deferments for farmers as long as they continued to farm.

71 For the number of women employed by major carriers and their occupations, see Division of Labor, Women’s Service Section, Number of Women Employed and Character of Their Employment, for January 1, April 1, July 1, and October 1, 1918 (Class I Roads) (Washington, DC: Government Printing Office, 1919): 36, Table, “Summary By Classes of Employees and By Subdivisions For Eastern, Southern, and Western Territories.”


73 Brown, Rosie’s Mom, pp. 359-161, 176, 182, 188-189; Mary Anderson, Women at Work, pp. 246-247.
At one point, the Army granted furloughs to men from farming communities to return home and help with the harvest. Because many workers had migrated from or grown up on farms, the state of Connecticut, in cooperation with the Chamber of Commerce, the Connecticut Association of Manufacturers, the United States Employment Service, and large industries, planned to allow industrial workers time off to work as part-time emergency farm workers for the harvest in 1918.74

The Women’s Committee together with the Department of Agriculture enlisted the aid of women for food conservation and food production in the Women’s Land Army. In addition to the six or seven million farm wives and daughters, the Women’s Land Army assisted farmers in 18 states, where the shortage of men—coupled with the national call for increased agricultural production—required women and youths to plant and harvest crops. Herbert Hoover, who headed the Food Administration, asked women to conserve food and collect surpluses, plant community gardens, staff community kitchens and canneries, and educate the public about food conservation.75

As in many aspects of mobilization, Americans followed the example of Great Britain in recruiting wartime workers, including women and youth. While agricultural work held little promise for the acquisition of skills, good wages, or long-term security, patriotic appeals helped fill the demand for farm labor. Just as the Women’s Land Army aided agricultural production, the Department of Labor devised a way to channel the energy of boys into the war effort. The U.S. Employment Service in the Department of Labor formed in 1917 the U.S. Boy’s Working Reserve. The Reserve enrolled boys and young men 16- to 21-years old in forty states to work in agriculture (and later in industry), no doubt to the elation of school-age boys. Now that many state laws mandated education to the age of fourteen or sixteen, critics maintained that the program disrupted education, vocational guidance, and child labor regulations. Nonetheless, William E. Hall, President of the Boy’s Club, directed gratis the


Working Reserve in 1917, placing over 200,000 boys from cities and towns into farm communities. He eventually enlisted nearly a half million volunteers during the course of the war. For relatively short durations, boys earned wages and accolades for their services on farms. The Department of Labor reported that by the end of the war the Working Reserve contributed over $100 million in food stuffs to the war effort in addition to aiding famine relief in Europe after the war. At a conference in Washington, D.C., held in September 1918, one educator suggested a permanent form of the Working Reserve after the war. The following December, the USES organized a Junior Division to place youth in various industrial jobs, but found little success as demobilization ensued. The Working Reserve itself disbanded in October 1919, ending the wartime expedient of using boys and youth for agricultural labor.76

In addition to farm labor, a small number of boys received some practical training with the cooperation of state and local high schools and colleges, and the YMCA. Faculty from agricultural colleges trained boys in farming techniques and how to use various kinds of farm equipment. One thousand boys in Chicago, in cooperation with local high schools, learned to work on farm machinery. Thirty boys from Washington, D.C., filled jobs making glass jars in the New Jersey Glass Works. A small contingent filled jobs for the industrial unit of the Working Reserve, yet the vast majority trained on farm camps and helped farmers with planting and harvesting.77

While adolescent boys and girls engaged in food production, the Bureau of Education enlisted younger children from nine to fourteen years old to help with the war effort. As early
as 1914 school children tended garden plots in backyards and on vacant lots in urban areas after school and on weekends. Once the United States entered the war, the National War Garden Commission, aided by the Department of Agriculture, authorized garden plots to help supplement food consumption on the home front and divert farm products to soldiers and allies overseas. President Wilson approved $50,000 for the project, supported by thousands of civic and patriotic organizations. Structured in military fashion, students held various military ranks and wore insignias with “U.S.S.G.” on arm patches. The National Council of Defense created a number of regional directorates and raised money for the project in states and in local communities. Over 1.5 million children, guided by 50,000 teachers, tended some 20,000 plots around the country, and produced nearly $250 million in food. The project had been budgeted with $200,000 for July 1919, but the war ended six months earlier. While little “training” occurred for children in food production, the project stimulated a work ethic, provided knowledge of food production, and encouraged patriotic sentiments toward a common effort. Once demobilization began, the youth continued to assist efforts at famine relief, after which various federal agencies promoted a “back-to-school” campaign to make room in the workforce for returning veterans and workers no longer required for war production.78


In addition to federal programs, some state and local officials organized boys into “farm cadets.” The Assistant Superintendent of Boston public schools, for example, created a paramilitary unit of 16 to 18 year-old boys who received bronze badges inscribed with “Boys’ Working Reserve, U.S.A.” Additional attachments to the decorations included “Honorable Service, 1917,” “The Nation’s Service,” and “Food Production.” With parental consent, physically qualified boys worked in supervised, hygienic camps from May to October 1917, and received minimum wages, room and board in some cases, and a year of high school credit. Nearly a thousand boys received an “honorable discharge” after their service. A number of Massachusetts universities agreed, on condition of satisfactory school performance, to admit the bearers of such discharges without having to present the usual entrance requirements. The New York State Military Training Commission organized “cadet camps,” which foreshadowed the Civilian Conservation Corps of the 1930s, to assist farmers in rural New York. The boys earned two dollars a day, room and board, and other amenities. The use of boys for war production demonstrated only one of a number of eager proposals to enlist both skilled and unskilled workers for the wartime labor force. While women and teenagers aided the war effort in agricultural pursuits, women continued to fill occupations required for wartime. See Dean, Our Schools in War Time—And After, pp. 234-254 and 275-285.
The U.S. Training and Dilution Service

Another innovative project that began late in the war trained unskilled workers quickly for skilled and semi-skilled occupations. At the behest of the Advisory Council on National Defense, the War Labor Administration created the Training and Dilution Service in July 1918 in order to prepare workers for industries essential to the war effort. Overseen by Charles T. Clayton, formerly assistant director general of the U.S. Employment Service and the Department of Labor, the Training and Dilution Service prepared nearly “a half million industrial workers during the war.”79 The Service contained four divisions: Planning, Administrative, Training, and Dilution. The Planning Division, through its Training Methods Section, gathered information on extant training techniques and the needs of various industries around the country; it designed appropriate training courses and coordinated training with federal, state, and private instructional agencies. The division’s Research Section collected and analyzed data related to training, which it then reported to the Information Section. The Information Section prepared bulletins, news releases, and articles for publication to be utilized by employers and employees in the private sector. Similar materials supplemented textbooks on training for industries and schools.80

The Administrative Division kept personnel records, maintained correspondence and files, accounted for “expenditures and allotments,” gathered statistics and reports on field operations, and analyzed industrial conditions. The Training Division supervised twelve districts around the nation where training programs operated. The districts themselves followed the territorial arrangements already designated by the Ordnance Division of the War Department. Together, the two agencies cooperated effectively and established programs in cooperation with industries, colleges, and public schools to provide apprenticeship training for vital war industries.81

Finally, the Dilution Division determined which occupations desperately lacked skilled workers. The “dilution” of a skilled job, remember, occurred when tasks usually performed by a skilled craftsman were reorganized into smaller, discrete tasks easily

79 Reports of the Department of Labor: 1918, pp. 125-129. For the number of workers trained, see Reports of the Department of Labor: 1919, pp. 164-169, esp. p. 165; and National Society for Vocational Education, Newsletter, No. 5 (October 1918): 4-5, announcing the program.

80 Reports of the Department of Labor: 1919, pp. 164-165.

81 Ibid., pp. 164-169.
performed by less-skilled workers; the dilution of jobs varied by trade and the complexity of
the task. The Dilution Division, however, dissolved just as it prepared to begin operation in
November 1918.82

Only six months after the Training and Dilution Service began operating, the armistice
in November 1918 ended the need for emergency workforce training. Anecdotal evidence
suggested that both employers and employees benefited from the service. When the war
ended and the agency became the United States Training Service, training programs had been
established in 359 firms, with 147 becoming fully functioning training departments in major
war industries. After December 1, six large corporations, employing over 100,000 people in
over 30 plants, established industrial training programs. As the federal government cancelled
war contracts, the demand for labor declined as well; but, to the surprise of officials in the
Labor Department, many firms retained in-plant schools and utilized the methods devised by
the Training Service. With exception of the Dilution Division, the Training Service continued
operations until the end of the fiscal year. The Training Service continued to collect data and
prepare pamphlets on employment training methods requested by various firms in the private
sector. The new training “experts” consulted with private sector employers who planned to
train new employees, enhance the skills of existing workers “for higher efficiency and wider
knowledge,” and prepare “experienced workers to be foremen.” The Training Service of 1918
foreshadowed the Foremen Training, In-Plant Training, and the Training-Within-Industry
programs that federal agencies continued to develop through the Second World War. When
the Training Service dissolved on June 30, 1920, some 247 firms had already requested
advice; 125 additional firms considered implementing their own departments of training.
Interestingly, in some cases prospective employees who had knowledge of the Service sought
out firms that had sponsored training programs in order to enhance their own opportunities for
promotion and higher wages.83

The techniques established by wartime training agencies reflected the
professionalization of personnel management and corporate training departments. Their

82 Ibid., pp. 163-167.
83 Ibid., pp. 166-169; “Six Large Corporations Institute Industrial Training for 100,000
Employees of Their Plants,” U.S. Employment Service Bulletin 2 (7 February 1919): 6. Also see U.S.
Federal Board for Vocational Education, Foreman Training Courses, Part I (Washington, DC:
efforts, underway since the turn of the century, would continue into the 1920s. Charles Clayton, director of the Training and Dilution Service, asserted that three-fourths of industrial workers produced only 35 percent of industrial output. In the future, he predicted, industrial training would increase the value of wage earners by “20 to 25 percent.” Training helped diminish costly turnover, decreased damage to machinery, and reduced the “spoilage” of materials left over or unusable after practice. Training also reduced accidents, increased individual efficiency, and improved employer and employee relations. The cost of training amounted to about $8 to $100 per capita ($115 to $1470 in 2005 dollars), depending on the materials and length of training courses. As the first government agency to promote training, the Training and Dilution Service provided gains so obvious that employers adopted many training techniques and hired a corps of experts to assist firms with workforce education.84

The U.S. Training Service had proven its value as a “clearing house of methods and experience,” in the estimation of the Secretary of Labor, William B. Wilson. In addition to publishing a series of bulletins on general and specialized training topics, the Training Service assembled a “corps of adequately trained experts.” Those experts, steeped in scientific management techniques, studied industrial needs, applied up-to-date training methods, and informed employers and labor leaders about ways to enhance industrial education “in the interest of the employee, employer, and the public.” Those training innovations presaged the shift from foremen as trainers at the turn of the century to professional Personnel Managers during the 1920s. But the rapid demobilization and a lack of interest by the Wilson administration and Congress precluded the continuation of federally sponsored experiments in job training and personnel management. Only two wartime agencies devised by the Department of Labor managed to survive the war: the Women in Industry Service program continued as the Women’s Bureau, and the department funded the Department of Negro Economics until 1921. Both women and black Americans lost jobs quickly once wartime production ceased. Other wartime measures, such as publicly funded housing for war workers, dissolved almost immediately. Secretary of Labor William Wilson noted the

Congressional rejection of the Training Service in his report for 1920. “For lack of appropriations,” he lamented, “this valuable industrial service was abandoned with the close of the fiscal year 1919.”

The U.S. Training Service so impressed Secretary Wilson that he recommended the president and Congress provide the “Authority and appropriations necessary to promote the training of wage earners within their industries for the purpose of making their employment more profitable to themselves and their work more useful to their employers and the public.” In its final report to Secretary Wilson, the Training Service declared that, “labor wants an open way to self-development, a real opportunity for self-advancement, and that through a system of practical industrial training, intensive but thorough, lies more of such opportunity than in any of the present accepted types of education.”

Director Clayton believed that continuation of the Training Service or a similar public agency would bridge the gap between workers—unprepared for the workforce with “cultural” education—and industrial employers, who required workers with “practical” skills. A Training Service, he believed, would benefit both employers, employees, and the Nation in the coming days of postwar reconstruction. The return to “normalcy” and solving the problems of peace required the same kind of expertise and cooperation Americans marshaled for the war effort.

Conclusion

The close cooperation between government, business, labor, educators, and private organizations demonstrated the power of a national training policy. The federal government during World War I exerted tremendous influence over the national economy and especially over labor markets. The views of Secretary Wilson and others reflected the culmination of a growing sense over three decades among businessmen, educators, labor leaders, and others, that the public sector, through federal and state governments, offered a potential source of

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investment in human capital for the public good. The First World War also demonstrated the culmination of a growing interdependence between the public and private sectors between 1900 and 1920, and the emergence of a corporatist political configuration in which many interest groups—government, business, banking, labor, and agriculture with the support of women and minority groups—collaborated under the banner of the federal government to unite the nation in a common goal: production for victory in war. The federal government stabilized labor markets with the U.S. Employment Service and the National War Labor Board. It also assisted mobile workers with subsistence housing and began to invest in human capital that sometimes included women, black Americans, and minorities. Manpower programs trained millions for working and fighting, coordinated industry and agriculture, and created conformity and consensus.

Once the emergency of war dissolved, however, the mutual dependence dissipated; public and private sector interaction took new forms during a period of “associationalism” in the following decade. The investment in human capital during the war, both in the vocational education programs of the military and job training for civilians, likely contributed in part to increased productivity during the 1920s. The war prepared workers for new kinds of occupations brought about by technological innovations, especially in the electronics, aviation, and automotive industries. While some fortunate adults found training and job advancement with the aid of public education and private sector training, most workers in the New Era would prepare for the workforce through personal initiative, on-the-job training, or public and private adult education programs.88

After the war, Dooley’s friend and colleague from Westinghouse, J. Walter Dietz, along with Charles Allen from the Emergency Fleet Corporation, promoted the professionalization of personnel managers or what eventually became Human Resource Management. Educators and personnel professionals systematized the preparation of instructors for training in the workplace. While Dooley, Dietz, and other professionals and industrialists returned to the private sector after the war like “industrial Cincinnati,” they would reprise their roles in government service when war erupted two decades later. During the next war, government

officials would remedy, at least to some degree, the lack of preparation experienced during the Great War. Until that time, however, federal motivation and the money for workforce training largely disappeared. The investment in human capital reverted to pre-war sources: firms, individuals, and state and local governments.
CHAPTER 3

TRAINING THE NEW ERA WORKFORCE—PART I: PUBLIC AND PRIVATE SECTOR TRAINING DURING THE 1920s

“Now is the time to take stock of all the possible forms of vocational education that will fit, not a few thousand only, but millions of the workers of the future for the better performance of their economic duties.”

-- David Snedden, president of the National Society for Vocational Education, 1918

“Our problem is to increase and to conserve the efficiency of the entire labor force; not simply a fraction of it.”

-- Don D. Lescohier, The Labor Market, 1919

“Vocational training for the commoner wage-earning pursuits and skilled trades is equally as essential as training for the professions.”

-- Herbert Hoover, 1923

During the First World War American businessmen, labor leaders, government functionaries, farmers, educators, and women’s groups helped transform the United States into a modern military and industrial power. After some initial hesitation, cooperation between the public and private sectors expanded production quickly while training hundreds of thousands of Americans. While the United States, according to the Federal Board for Vocational Education in 1917, had been “vocationally unprepared” for the war, large-scale training programs furnished hundreds of thousands of Americans with new skills. Manpower training

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during World War I demonstrated that, in a relatively short time, men and women could be trained for the national labor market.

The private sector benefited from wartime manpower training by absorbing a number of important precedents learned during the war. First, the federal government established training departments, developed methods of instruction, and published the lessons of those training programs in bulletins for public use that carried over into the postwar period. The U.S. Training Service and the Emergency Fleet Service contributed to the professionalization of personnel managers and helped refine techniques for “organized training.” Second, wartime training increased cooperation between the public and private sectors. Public agencies such as the Department of Labor and the United States Employment Service, especially at the local level, aided private industries in numerous ways by locating, screening, and training workers. Those services disappeared in 1919, however. While the United States had been vocationally unprepared for the war, the National Industrial Conference Board asserted in 1919 that the nation remained “unprepared for the important problems of peace.”

This chapter reveals examples of cooperation for workforce training between the public and private sectors, and how employers and employees invested in human capital during the 1920s during a time of economic expansion. Expansion required an intelligent workforce during a time of relative labor shortages. Youth attended school for longer periods because of the legislation by many states that reduced or ended child labor and initiated compulsory education. In addition, immigration restriction led to a precipitous decline of migrants seeking work in American industries. To increase the number of skilled employees, firms adopted training techniques established by various federal agencies during the war. Workers themselves paid for additional education and training in order to increase their earnings, improve their social status, enhance their career goals, or to fill their leisure time. “Self-investment,” as one sociologist has coined individual enrichment, took many forms during the New Era. While the federal government continued to fund vocational education,

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2 National Industrial Conference Board, Problems of Industrial Readjustment in the United States, Research Report Number 15 (Boston, MA: copyright, February, 1919): 1. For similar pronouncements about the national lack of preparedness for peace, see Will N. Hays, Chair of the Republican National Committee, and Frank Vanderlip, President of the National City Bank, in Emanuel Jay Howenstine, Jr., “The Economics of Demobilization After World War I,” Ph.D. Dissertation, The Ohio State University, 1942, pp. 48 and 57, respectively, and for the discussion by politicians and economists, see pp. 48-60.
vocational rehabilitation, and military training, federal support for workforce education and training waned during the 1920s.³

The Postwar “Reconstruction,” 1918-1920

The problems of the peace surfaced within months of the armistice as the federal government cancelled contracts and millions of American workers lost jobs. The president and the Congress paid insufficient attention to demobilization and post-war reconstruction. The United States Employment Service (USES) temporarily continued its placement function, but with much less success or support than it had during wartime. The USES had placed over 4.5 million workers during the war. Hampered by budget constrictions thereafter, it placed fewer than 475,000 of the 758,000 veterans registered with the agency in the year following the war. The period of “Reconstruction” following the First World War failed to smooth the transition from a wartime to a peacetime economy as unemployment, inflation, labor unrest, and racial divisions plagued the nation over the next two years. While the Smith-Hughes Act of 1917 and federal training programs helped train hundreds of thousands of Americans for the war effort, manpower training for the remainder of the decade largely remained in the hands of state and local public schools, private firms, and individual workers.⁴


Training in the immediate postwar period posed problems for the economy and the workforce. The National Industrial Conference Board (NICB), composed of numerous metal, machine, electric, fabric, and other types of manufacturing associations, investigated in 1919 the problems of industrial adjustment after the Great War. Most other belligerent nations, including Germany, had prepared for postwar reconversion, but the United States lagged in that regard. Of course, conditions in the United States differed markedly from those of Europe: the U.S. had entered the war late; there had been no fighting within its borders; the loss of men and matériel remained modest compared to those of the major belligerents; and exports from the U.S. actually increased over the duration of hostilities. While European nations faced reconstruction, the United States faced “readjustment.” The demobilization of over 4 million men in uniform created potential unemployment problems. Their return, however, would take several months because of shipping constraints and administrative processing. Three-fourths of the 1.7 million men who remained on the continental U.S. had been discharged by December 1918; many returned to their former jobs, displacing civilian war workers, especially women and black Americans. The Conference Board estimated that civilian manpower in the First World War required five workers to support one soldier in the field, so the reduction of soldiers from active duty likely tripled or quadrupled the reduction of civilian wartime workers. Together with the cancellation of wartime contracts, millions of additional workers faced unemployment after demobilization, which contributed to the postwar recession and the waves of labor and racial unrest.5

If the employment outlook seemed bleak, the NICB projected a cautious optimism that the economy would reabsorb unemployed workers. Moreover, during the war American firms trading in foreign markets had displaced Germany and Great Britain and the “momentum of expansion” would likely continue. In addition women who entered wartime industries numbered a million or so and, according to the Department of Labor, ninety-five percent of those had shifted from other manufacturing occupations. On the basis of women’s

reliability and capacity for training, however, many industries entertained the hiring of additional women. While the prospect of unemployment appeared ominous in 1919, the NICB asserted that the massive European immigration seen before the war seemed unlikely to return anytime soon: the loss of life and the need to rebuild created labor shortages in Europe, and transatlantic steamship service would take time to recover. However, millions of unemployed Europeans in the early 1920s stood poised to flood American labor markets once again. In 1921, over 800,000 immigrants entered the United States, a figure approaching pre-war levels; over eighty percent arrived from Europe, and over 220,000 from Italy alone. Between the end of the war and 1924, when the Immigration Act of 1924 restricted the inbound flow of immigrants, over 2.9 million immigrants had arrived in the United States. Unlike the pre-war reliance on skilled newcomers, the success of industrial efficiency and wartime training programs obviated the need for skilled immigrants. Nevertheless, the NICB committee failed to consider the need for skilled and semi-skilled workers in manufacturing, finance, and trade. It ignored the potential demand for skilled workers in industries created by new technologies developed during the war—especially those in the automotive, electronics, and later aviation fields, for example—and it neglected to estimate how many workers might require retraining for new occupations.6

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Federal Vocational Training

David Snedden, who became president of the National Society for Vocational Education in 1919, believed that vocational educators should make a “new start.” The training needs “for the economic occupations of our people have become more evident and more urgent,” he advised. With the knowledge of training gained during the war, Snedden proposed to extend vocational education to all working adults:

“We are obviously going to hear less in the future about vocational education for youths from fourteen to sixteen, or even sixteen to eighteen years of age, and much more about genuine vocational training, close to farm, or home or shop or office itself for those of any age. . . . Now is the time to take stock of all the possible forms of vocational education that will fit, not a few thousand only, but millions of the workers of the future for the better performance of their economic duties.”7

Before reaching adults, however, educators remained focused on high school youth and young adult workers. Layton Hawkins, chief of the Vocational Education Division of the FBVE, believed many problems for vocational educators remained. Students had to be identified; vocational education teachers had to be trained; career guidance for the nation’s workers had to be implemented. The immediate targets of vocational education were teens and young adults already in the workforce. The purposes of education, Hawkins noted, remained social training for citizenship, general education for individual enrichment, and vocational training for work. The solution to expanding and elevating vocational education courses relied upon three components: First, the educational system had to accommodate those already employed by establishing more evening and part-time schools. Second, because local and regional labor markets differed from one place to another, policy makers should determine vocational course content on the basis of community needs. Finally, the system had to attract skilled teachers who should be adequately compensated. Hawkins optimistically believed all of the goals for vocational education could be achieved with cooperation between private firms, the states, and the federal government.8

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8 The parallel teaching of vocational education and general education came to be referred to as possessing a “duel purpose” [sic] content; Layton S. Hawkins, “Future Problems of State and National Administration of Vocational Education,” The Vocational Summary 3 (May 1920): 6-8.
In the meantime, federal funds for vocational education under Smith-Hughes also included high-school instruction in home economics. The numbers of women and girls enrolled in those classes increased annually over the first five years of the Smith-Hughes Act. Even though educators encouraged girls into traditional roles, industrial and trade schools remained open to women who had proven their capacity for learning various trades during the World War. In 1918 women represented over thirty-eight percent of trainees in part-time trade extension programs, even though their numbers diminished precipitously after the war. By 1923, the number of females enrolled in part-time trade and extension courses briefly exceeded twenty percent of all students enrolled. Moreover, girls slightly outnumbered boys in all part-time continuation classes. Industrial classes prepared women for work in textile mills, dressmaking, millinery, and the cutlery trades. Preemployment training prepared young women for low-wage jobs in “laundries, garment factories, hotels, and restaurants,” although a few still found employment in industrial plants.9

In federally funded vocational education programs, expenditures quadrupled between 1917 and 1921, from $2.68 million to $10.65 million; the federal contribution comprised about 22 percent of the total in the 1920-21 fiscal year, $2.38 million. The number of federally aided schools increased from 1,741 to 3,896 during the same period, the majority of these in agriculture, home economics, and continuation schools rather than in industrial schools. Enrollment in vocational schools doubled, again for agriculture and home economics, areas that mostly served farmers and young women. In 1930, 981,000 students enrolled in federally funded vocational education schools (618,000 in trade or industrial classes). Federal and state contributions totaled $29.9 million.10

The number of adults enrolled in corporation schools, education programs, extension and correspondence courses, and evening and commercial schools rose perceptibly, demonstrating evidence of a New Era in education. At the first meeting of the American

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Vocational Education Association in December 1926, which united the National Society for Vocational Education and the Vocational Society of the Middle West, Charles Prosser induced educators and industrialists to appoint a committee to promote adult education. Prosser stated that the country would advance if the nation invested just one-one hundredth of its money and effort developing human resources as it did natural resources. Educators pressed for additional federal aid to vocational education. Commenting on recent trends of mobile adults seeking continuing education, vocational training, and rehabilitation, J.C. Wright and Charles Allen, both affiliated with the FBVE, emphasized vocational education as a “national responsibility,” one that included local, state, and national government financing in addition to training provided by the private sector. While that consensus emerged among educators, Congress lacked the will to fund workforce education or training, which remained the purview of the states.11

If Congress refused to support general workforce training for adults, it remained committed to vocational education. By the end of the decade, the numbers of students enrolled in vocational education courses continued to increase, reaching 24 percent of 14 to 17 year olds in 1930 shortly after passage of the George-Reed Act of 1929, which extended Smith-Hughes. Almost a quarter of high schools students aged 14 to 17 enrolled in vocational education classes. New Hampshire, Vermont, and Louisiana held the lowest percentage of vocational students, while Wisconsin, South Carolina, New York, and Arizona ranked among the highest.12

Vocational Rehabilitation and the Federal Government

While educators resumed their quest to train the workforce, Congress and the public saw a moral obligation to train Americans injured in war overseas or in the workplace at home. Influenced by British, Canadian, French, and even German vocational rehabilitation programs for war casualties, Senator Hoke Smith, chair of the Senate Committee on Education


and Labor, and Congressman William J. Sears of Florida, presided over hearings during the war to consider the problems of disabled veterans who had risked life and limb for their country.  

The Federal Board for Vocational Education reported to Congress that vocational training for soldiers and sailors would help ensure their economic independence, prevent their exploitation, and conserve their individual experiences and skills. In addition, rehabilitation produced more skilled workers, helped to heal the nation in the postwar period, and reduced the number of unemployables who otherwise “burdened” society. Some proponents wished to include disabled civilian industrial workers in the rehabilitation legislation as well, but members of the committee, including vocational educators such as Charles Prosser, wanted no reason for Congress to reject a bill that funded rehabilitation for wounded veterans. Therefore, Congressional proponents deferred civilian rehabilitation until later. Uel W. Lumpkin, director of the FBVE in the early 1920s, later justified expenditures for rehabilitation by remarking that, “A trained man is worth more to the community than his training costs.” After hearings demonstrating support from many organizations in the private sector, including the Veterans of Foreign Wars, the National Association of Manufacturers, the National Industrial Conference Board, the American Federation of Labor, and the recently formed American Legion, Congress passed the Federal Vocational Rehabilitation Act of 1918 (the Smith-Sears Act) to train disabled veterans under supervision of the Federal Board for Vocational Education. Between June 27, 1918, and June 30, 1932, nearly 180,000 veterans entered rehabilitation training. Although over 48,000 discontinued their rehabilitation, 128,700 completed training at a cost of $644 million.  


The growing interaction between private organizations and public institutions after the Great War became apparent in other ways. For example, the American Legion aided veterans seeking employment, helped establish preferences for disabled veterans in civil service posts, and fostered rehabilitation curricula, both educational and vocational. The Legion also promoted “100 percent Americanism” by supporting anti-immigrant legislation. Like the Legion, the Veterans of Foreign Wars (VFW) referred wounded veterans to vocational rehabilitation centers. Other agencies such as the Benevolent and Protective Order of Elks, the National Tuberculosis Society, the National Catholic War Council, the National Association of Manufacturers, the United States Chamber of Commerce, the American


15 American Legion, Committee Reports and Resolutions Adopted at the National Convention (1919): 29-34, including support for vocational education for the disabled (HR 8778), the Sweet bill, and for anti-immigration sentiment, pp. 39-49; American Legion, Reports of the Seventh Annual Convention, Omaha, Nebraska (October 5-9, 1925). Also see the Fourth Annual Report of the Federal Board for Vocational Education, pp. 288-289, and “State Conferences of American Legion Vocational Training Officers,” The Vocational Summary 3 (May 1920):1-2. The Legion’s success in politics after the First World War shaped their importance as advocates for veterans and their impact on the outcome of the Servicemen’s Readjustment Act of 1944; see Davis R.B. Ross, Preparing for Ulysses: Politics and Veterans During World War II (New York: Columbia University Press, 1969): Chapter 1, pp. 6-33.

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Federation of Labor, the YMCA, and rotary clubs helped supplement rehabilitation and training. In fact Section 5 of the Vocational Rehabilitation Act gave the FBVE discretionary powers to “cooperate with such public or private agencies as are deemed advisable in performing duties imposed by this act.”

While the Vocational Rehabilitation Act aided disabled soldiers, sailors, and marines, the Civilian Vocational Rehabilitation Act (the Smith-Fess Act), aiding those injured in the workplace, passed in 1920. The Smith-Fess Act funded the retraining of men and women injured on the job who could no longer function in their original occupations. Estimates suggested that every year nearly 14,000 workers, the majority between thirty and thirty-five years old, suffered severe injuries on the job. Through retraining and rehabilitation, injured workers would have the ability to support themselves and their families, thus conserving resources, and avoiding idleness, dependency, and the erosion of families.

To aid passage of the Smith-Fess Act, numerous organizations and advocates for the disabled gave support. Opponents in the House and Senate argued against the use of federal

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16 Fourth Annual Report of the Federal Board for Vocational Education, pp. 262 and 288-292; “Veterans of Foreign Wars Cooperate With the Federal Board,” The Vocational Summary 3 (June 1920): 1. The veterans’ organizations apparently exerted considerable influence; see “Progress Under the Cooperative Plan With the American Legion and the Veterans of the Foreign Wars,” ibid. 3 (August 1920): 55-56. The FBVE came under attack for mishandling the rehabilitation program, but the Legion, the VFW, and the American Federation of Labor, among others, supported the board’s defense; see “American Federation of Labor Approves Work of Federal Board,” ibid. 3 (August 1920): 59. Hawkins vaguely explained that mistakes occurred that led to a Congressional investigation of the FBVE, Development of Vocational Education, pp. 451-452. The Disabled American Veterans of the World War were organized in May 1919, “Disabled Veterans Organize,” The Vocational Summary 3 (November 1920): 102-104.


funds to solve state or local problems. Federal intervention, they argued, threatened the
nation’s “moral fiber.” Critics charged that rich states would subsidize the poorer states, or
that federal funds for education would be construed as “bribes” to the states. The federal
government, they declared, had no right to assist someone injured in the private sector because
that was the responsibility of the state; it was both unconstitutional and “paternalistic.”

Nevertheless, the Smith-Fess bill included language that specified not only those injured in
industry or any “legitimate occupation,” but also those without employment experience or
having any “physical defect or infirmity” that necessitated special training. The bill limited
vocational training to four years and provided education and placement, but not any sort of
treatment, prosthetic devices, or physical and occupational therapy. The Vocational
Rehabilitation Act, administered by the FBVE, distributed nearly a million dollars annually to
the forty-eight states (and in 1924 a number of territories), apportioned according to a state’s
population. The act also stimulated growth in the National Society for the Promotion of
Occupational Therapy and eventually fostered growth in the profession of Occupational
Therapy. Congress amended and extended the act when it expanded rehabilitation under the
Social Security Act of 1935.19 States had to follow a number of guidelines and, to “induce

19 Grantham, *Hoke Smith and the Politics of the New South*, pp. 333-334. Smith’s wife fell ill,
so he did not participate in the debates. Smith supported federal aid to education to promote literacy;
Congressional Record, 65th Congress, 2nd Session, pp. 4429-30, 4476-82, 4501-4503, 5237, 6196, 6409,
and 6433-34; Blauch, *Federal Cooperation in Agricultural Extension Work*, pp. 167-172; and Hawkins
et al., *Development of Vocational Education*, pp. 455-468. Arguments against the Sheppard-Towner
Act before the Supreme Court threatened federally funded vocational education and rehabilitation. For
an articulate defense of federal aid to those arguments, see Charles Prosser, “The Massachusetts Attack
on Federal Aid,” *Vocational Education Magazine* 1 (February 1923): 403-409. For expansion of
rehabilitation under the Social Security Act, see U.S. Department of Interior, Office of Education,
*Vocational Rehabilitation of the Physically Handicapped*, Vocational Education Bulletin No. 190,
The Civilian Vocational Rehabilitation Act was approved on June 2, 1920, and amended a
number of times, ibid., pp. 1-2, 8, and the Appendix, pp. 53-58. The FBVE was transferred to the
Department of Interior by executive order on June 10, 1933. The list of specific duties of the Office of
Education are listed on pp. 2-3. For a brief history of the vocational rehabilitation act, see U.S. Federal
Board for Vocational Education, *Fourth Annual Report to Congress of the Federal Board for
the text of the Industrial Rehabilitation Act, Public Law 236, 66th Congress (H.R. 4438), see pp. 540-
544; and *Administration of Vocational Rehabilitation*, Bulletin 113, pp. 53-58. For the European
influences on the rehabilitation program, originally prepared for the Red Cross Institute for Crippled
and Disabled, see U.S. Federal Board for Vocational Education, *The Evolution of National Systems of
Vocational Reeducation for Disabled Soldiers and Sailors*, by Douglas C. McMurtrie, Bulletin No. 15,
(Washington, DC: Government Printing Office, 1919). For the specialty of Occupational Therapy, see
Glenn Gritzer and Arnold Arluke, *The Making of Rehabilitation: A Political Economy of Medical

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states to spend their own money in like or greater amounts,” had to match federal funds. The law also mandated that states provide annual reports on their progress in rehabilitation and an accounting of expenditures used for rehabilitation programs.20

The rehabilitation of disabled Americans proved that men and women with physical handicaps could find useful employment in the labor market. Robert Tarbell reported in 1927 that many innovative techniques of rehabilitation grew out of those used to rehabilitate veterans. Using programs already in place, he outlined general ways other states could organize a staff, recruit the handicapped, attempt to match the person with a trade, plan a course of training, then evaluate, place, and follow-up the candidate. Some state and local governments went further. The Chicago Public Schools, for example, initiated special training for handicapped children. Tarbell also stated the case for qualified counselors and noted the potential difficulties of rehabilitation, both physical and psychological. In the end, he suggested, training the disabled created wage earners, offered the individual a way to “self-support” and self-respect, “which lightens the burden on the rest of the community.” The disabled returned to society “useful and happy people,” people who acquired skills with public assistance.21

This section also recounts the dispute between the FBVE and the Surgeon General over the control of vocational rehabilitation and job placement.

20 Administration of Vocational Rehabilitation, Bulletin 113, pp. 3-18. For tables of occupations constructed from the 1920 Census, including some categorized by urban and regional locations, see May Rogers Lane, Manual to Accompany Vocations in Industry: Content and Materials of an Occupations Course, Lesson Plans for the General Survey of Occupations, Census Studies for States and Cities (Scranton, PA: International Textbook Company, 1929). For reports on the rehabilitation of soldiers and sailors, see The Vocational Summary 2 (May 1919).

21 Robert W. Tarbell, “The Training of Crippled and Handicapped People,” Industrial-Arts Magazine 16 (June 1927): 206-208. John A. Lapp called for an “aggressive program” in vocational rehabilitation at the meeting of the National Rehabilitation Association in 1932. Lapp—a political scientist, economist, and one-time associate editor of the National Municipal Review who consulted with legislators on vocational education issues—had been appointed by President Wilson in 1914 to the Federal Commission for Vocational Education. He helped draft the Smith-Hughes Act in 1917. Lapp also participated in the American Association for Adult Education, the National Conference on Social Work, and other progressive publications and organizations. Oscar M. Sullivan, director of the Reeducation of Disabled Persons in the Minnesota Department of Education and a founding member of the National Rehabilitation Association in 1925, was elected its president for 1932-33.

For criticisms of the rehabilitation programs, see “Vocational Training A Failure,” by the director of the War Veterans’ Bureau, in National Association of Corporation Training Bulletin 8 (November 1921): 504, reprinted in part from the Philadelphia Enquirer [no date, c. October 1921].
Reconstruction Training

While Congress legislated training programs for purpose of rehabilitation, proposals to continue civilian training after the war surfaced temporarily. William B. Wilson, in his last report as Secretary of Labor, recommended a number of items that included “appropriations necessary to promote the training of wage earners within their industries.” C.T. Clayton, former Director of the Training and Dilution Service, argued shortly after the armistice for the continued training of workers during the reconstruction period, but to no avail. A few states took the initiative, however. Oregon in 1919 and later Colorado, New York, Minnesota, North Dakota, California, and Wisconsin, provided financial aid for honorably discharged veterans to study at any public or private school or college in the state. The Oregon law foreshadowed the G.I. Bill available to veterans after the Second World War. Oregon veterans received $25 a month ($300 in 2005 dollars) or $250 a year for a maximum of four years schooling. Few other states, however, provided generous veterans benefits specifically earmarked for training or education. The federal government offered a bonus to veterans that would remain unavailable for nearly two decades and therefore had no effect on aiding veterans with education or training.

Congress, meanwhile, failed to continue supporting federal employment services so useful during the war. The United States Employment Service attempted during the war to match workers with employers through 1,386 local boards. In 1918 alone, the USES received over eight million orders for workers, registered over three million applicants, and placed over two million in jobs, while amassing information on labor markets around the nation. The USES and the Council of National Defense arranged conferences regarding the problems of unemployment after the war. Together they formed over 2500 Bureaus for Returning Soldiers, Sailors, Marines, and War Workers around the country. Congress, however, remained hostile to the Department of Labor, perceiving the department’s USES as pro-union and as a centralized rather than federalized structure. Opposed by the National Association of Manufacturers and the National Industrial Conference Board (but supported by the U.S.

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Chamber of Commerce), the USES garnered little support in Congress. To reduce federal spending and ostensibly maintain a balanced budget, Congress cut funding for the USES after the war and the agency ceased as a national employment service until 1933.  

**An Advocate for Training in the New Era**

In 1919, advocates for federal job training and employment services continued to argue in its favor. Don Lescohier, professor of economics at the University of Wisconsin, a former superintendent in the Minnesota Public Employment Office, and chief statistician for the Minnesota Department of Labor, published a study of labor markets. He argued “for national machinery” to “control the problem of employment” in national labor markets. First, he focused on five reasons to account for unemployment, especially in those occupations that required technical skills. One, Americans lacked skills, he explained, because no adequate system of apprenticeships existed. Two, industrial education remained inadequate. Three, the “specialization of tasks” made learning a trade in shop classes “impossible.” Four, rapid labor turnover limited opportunities to become skilled, and routine jobs became boring or they lacked opportunities for advancement, all of which led to high turnover and “industrial inefficiency.” Finally, too long American firms had relied upon a small amount of skilled immigrant labor and large numbers of unskilled immigrants. He also observed that rapidly changing industrial practices often led workers into “blind alley” occupations. Blind alley jobs may have offered some minimal training for routine tasks, but the lack of investment in training made layoffs easy and frequent.

Lescohier reported that “progressive firms” successfully retained employees in four ways. First, they offered “steady work and promotion” if workers took advantage of training opportunities. Second, successful firms promoted workers who qualified for or could benefit from additional training. Third, he recommended “careful training and instruction” of employees for their assigned tasks. Fourth, he urged that workers receive adequate compensation for improving their skills.

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26 Ibid., pp. 78-81. Between 1920 and 1931, Congress expanded the scope of the Federal Board for Vocational Education with amendments that included vocational rehabilitation for civilians, and extended the board’s services to the District of Columbia and the territories of Hawaii and Puerto
In addition to recommending training as a means of retaining valued workers, limiting turnover, and reducing lost productivity, Lescohier also praised the “marvelous results” of “intensive training” during the war. However, he warned, overloading workers with daytime work and then sending them off to night schools might backfire: night schools attracted only the most ambitious and disciplined workers, and employers would have to train workers on the job or “during periods of idleness.” He recommended, therefore, on-the-job training centered around the “vestibule school,” a short, intensive course for new employees or those transferring from other departments within a firm to perform semi-skilled or “diluted” skilled jobs. Lescohier echoed the opinions of those educators who warned that the vestibule school remained merely an introduction to a job and should be reinforced later with additional training. Another problem, he pointed out, concerned the responsibility for training. America should not depend solely on employers to provide all of industrial training. He believed public education shared that duty. As a “fundamental principle,” Lescohier stated, public policies should include the education of the labor force: “Our problem is to increase and to conserve the efficiency of the entire labor force; not simply a fraction of it.” The “advocates of industrial education,” he warned, have paid attention to only a few trades, largely because they misunderstood that older forms of apprenticeships were dead; they must now adapt to a twentieth century economy by developing cooperation “between industry and our school system,” a system whereby a student learns “to do” in shop and “learns to see” in the school. Lescohier articulated the important connection between public and private institutions for workforce education and training.27

States such as Wisconsin had begun vocational education programs before passage of the Smith-Hughes Act and implemented the kind of education Lescohier advocated. Progressive laws, especially workmen’s compensation acts, health and safety rules, and minimum wage laws, were important steps for improving working conditions. But, Lescohier added, employers refused to hire older workers or the disabled, which created a class of undesirable or unemployable workers. Therefore, he proposed two supplementary alternatives: first, provide industrial training to reduce the number of those unfit for work and, Rico; see U.S. Federal Board for Vocational Education, *Sixteenth Annual Report to Congress of the Federal Board for Vocational Education: 1932* (Washington, DC: U.S. Government Printing Office, 1932): 1.

27 Lescohier, *The Labor Market*, pp. 82-86, citations from pp. 85 and 86 [italics original].
secondly, to provide for unemployables who are unable to support themselves with gainful employment.\textsuperscript{28}

While Lescohier examined the ways workers could better prepare for jobs, he pointed to the problem of worker dissatisfaction resulting from low wages, poor working conditions, long hours, ill-tempered managers, and other complaints real or imaginary. Only employers, he stressed, could address the problems of the workplace. Firms could choose to reduce discontent create loyalty among their employees, and thereby improve productivity through good treatment and healthy and habitable surroundings. Of course, he noted, some workers by temperament would never be satisfied.\textsuperscript{29}

Lescohier alluded to the choices managers of large corporations made in controlling their workforce. To reduce labor militancy and the potential for radical action exhibited by the Bolshevik Revolution, employers found two strategies to meet the challenges of disgruntled employees, high turnover rates, and low morale among employees. Some chose the “American Plan,” the “hard side” of anti-union measures that included union busting, maintaining open shops, forming company unions, seeking anti-union injunctions from sympathetic jurists, employing strikebreakers, and issuing “yellow-dog” contracts that forbade employees from engaging in union activity or face dismissal. The “soft side” of anti-union measures entailed “welfare capitalism,” a system that offered myriad benefits and perquisites to maintain or improve the health, morale, and productivity of employees in exchange for implied loyalty to the firm. Committee reports of the National Association of Corporations Schools before the Great War, for example, foreshadowed the strategies of “welfare capitalism.” Firms combined benefits and other incentives that included various forms of continuing education that might lead to better pay or promotions. They offered tips for the productive use of leisure time, and amenities that included life insurance policies, improved workplace conditions, dental, medical, and death benefits, and cafeterias. Enlightened firms also provided plant dispensaries, company building and loan associations, apprenticeship schools and night schools, social clubs, recreation facilities, kindergartens, cooperatives, Veteran’s Associations, service annuities and pensions, as well as vacations, bonuses, and profit sharing. Some firms even operated funeral parlors and cemeteries for their employees!

\textsuperscript{28} Ibid., pp. 88-89.

\textsuperscript{29} Ibid., pp. 89-94.
The new style of management after the turn of the century, described as “welfare work”, led to the professionalization of managers and personnel administrators. Personnel managers screened, selected, and trained workers, but also looked after their welfare. Although paternalistic, welfare capitalism worked to the mutual benefit of all and encouraged an “esprit de corps,” thus reducing discontent and fostering loyalty to the firm. The downward trend in turnover, work stoppages, and the number of workers involved in strikes during the 1920s tend to indicate the effectiveness of such business strategies in a time of prosperity. When prosperous times waned, however, benefits receded along with production, employment, and profits.30

Beyond the confines of the individual firm, Lescohier, admittedly influenced by British ideas and experiences, recommended a national clearinghouse—such as the USES—to match employer needs with employee skills.31 The ideal system, he believed, included federal control and funding, but with local financial contributions, local management, input on the basis of local industrial requirements, a consideration of local unemployment rates, the existence of educational or training facilities, among other factors. Yet shortsighted


For the view that “welfare capitalism” and education sponsored by the firm enhanced the manufacturers’ control over the workforce, see Robert W. Dunn, *The Americanization of Labor: The Employers’ Offensive Against the Trade Unions*, with an introduction by Scott Nearing (New York: International Publishers, 1927); for a proponent of welfare capitalism, although he did not use those terms, see E.K. Hall, Vice-President, American Telephone and Telegraph Company, who gave the Convention Address, “Management’s Responsibility For And Opportunities In the Personnel Job,” at the American Management Association Pittsburgh Convention, November 9, 1922 (New York: American Management Association, 1922).

politicians, educators, administrators and others had neglected the importance of community needs and planning when constructing a national bureau that placed workers in useful employment. During the 1920s, however, Congress rejected funding most public education and job training programs.\textsuperscript{32}

\textbf{Foreman Training}

The knowledge and experience gained from federal programs for foremen training during the war encouraged the refinement of professional management and human resource development during the 1920s. Shortly after the war, the Federal Bureau for Vocational Education published a bulletin to guide the training of foremen. The authors, especially Charles Allen who directed training for the Emergency Fleet Corporation, believed foremanship represented the third stage of a lengthy effort to establish vocational education. The first stage, the training of executives and technical experts, began before the turn of the century. Presumably, the authors referred to manual training and engineering schools. The second phase marked the vocational training of workers themselves in public and private industrial education schools. The third phase, the most recent, concerned the link between the previous two: the foreman. The foreman had become the agent for communicating ideas from the expert to the worker in addition to managing the production process. Until the Great War, the foreman had been the weakest link in production, when efficient supervision helped train and guide hundreds of thousands of workers and thereby increased productivity and industrial output. Anticipating more intense competition for international markets in the future, the training of foremen could help boost productivity, reduce costs, and create an advantage for American firms. Europeans realized that education at public expense helped stabilize society; it reduced idleness and social problems, and provided essential skills. It behooved Americans to follow suit. \textsuperscript{33}

\textsuperscript{32} Lescohier, \textit{The Labor Market}, pp. 211-216, citing p. 215 [italics original].

\textsuperscript{33} U.S. Federal Board for Vocational Education, \textit{Foreman Training Courses}, Bulletin No. 36 (Washington, DC: Government Printing Office, 1920). The bulletin was a collective effort headed by Charles R. Allen and Michael J. Kane. This publication offered course outlines, explained why foremen needed to be trained, and suggested how to conduct classes and how to analyze and classify foreman’s jobs. Here section III is cited, which discusses the need for training; see pp. 52-60. For another method of training foremen, see T.E. Jones, Supervisor Foreman Training, Cleveland, Ohio, “The Training of Foremen in Industry,” \textit{Vocational Education Magazine} 1 (April 1923): 632-635; and H.L. Neilson, Delco-Light Company of Dayton, Ohio, “What Foremaship Training Can Do to Pull Down Unit Costs,” \textit{Factory and Industrial Management} 75 (January 1928): 82-83. For comments on national supremacy, see G.F. Arps, Ohio State University, “Industrial Education and Cooperation
The FBVE recommended that foremen receive training under the Smith-Hughes Act.\footnote{H.H. Coxen, Professor of Industrial Education, University of Tennessee, “Foreman Teacher Training under the Smith-Hughes Act,”\textit{Proceedings of the National University Extension Association [Seventh Annual Convention] at Lexington, Kentucky, April 20-22, 1922} (Boston, MA: Wright and Potter Printing Company, 1924): 67-77.} The Federal Board suggested methods of training foremen, teachers, and vocational school administrators, yet a distinction had to be set in order to separate the costs of training vocational education teachers from those for training foremen. The board classified the latter specialty as trade preparation—industrial training, not teacher training. It recommended a number of specific ways to train foremen that included a twelve week course in Modern Production Methods, a three year, part-time course in all aspects of production, or a one year full-time course; all emphasized the foreman as a professional, the crucial link between management and production workers. Good foremen had to be good teachers, both in the classroom and on the job.\footnote{Arthur L. Mann, Supervisor of Training, Eastman Kodak Company, “Training Foremen on the Job,”\textit{Vocational Education Magazine} 2 (October 1923): 158-164; and Frank Cushman, “The Necessary for National Supremacy,”\textit{The Vocational Summary} 2 (November 1919): 122, portions reprinted from\textit{School and Society}.}

Allen, a graduate of the Massachusetts Institute of Technology, taught science in the public schools for thirteen years and served with David Snedden and Charles Prosser on the staff of the Massachusetts State Board of Education. In 1917, Allen headed the Emergency Fleet Corporation of the U.S. Shipping Board, which utilized scientific management techniques to train thousands of foremen and workers in the shipbuilding trades. After the war he joined the Federal Board for Vocational Education and published in 1919 a seminal work in the field of management and workforce education, \textit{The Instructor, The Man and the Job}. In 1922 he released a companion volume, \textit{The Foreman and His Job}. Meanwhile, Allen helped edit \textit{Vocational Education Magazine} and published a number of studies for the Federal Board for Vocational Education. See Charles R. Allen, \textit{The Instructor, The Man and the Job: A Hand Book For Instructors of Industrial and Vocational Subjects} (Philadelphia, PA: J.B. Lippincott Company, 1919) and \textit{The Foreman and His Job: A Handbook for Foremen and for Leaders of Foremen’s Conferences} (Philadelphia, PA: J.B. Lippincott Company, 1922). Also see his pamphlets, \textit{Foremanship Courses vs. Instructor-Training Courses}, Bulletin No. 60 (1921); \textit{Improved Foremanship}, Bulletin No. 61; and \textit{Instructor Training}, Bulletin No. 62; all written for the Federal Board for Vocational Education. While associated with the Dunwoody Industrial Institute in Minneapolis, Allen edited the “Department of Training in Industry,” a section of the monthly periodical, \textit{Vocational Education Magazine}.

For additional comments on how professional management changed the workplace from one guided by the whims of foremen toward employees to a rational approach, see Arthur H. Young, Industrial Relations Counsel, Curtis, Fosdick and Belknap, “Evaluating Personnel Work in Industry,” address presented before the Swampscott Convergence of the American Management Association, September 19, 1924, (New York: American Management Association, 1924). For a number of essays and articles on the professionalization of management by a Boston management consultant, see Daniel Bloomfield, ed., \textit{Selected Articles on Employment Management} (New York City: The H.W. Wilson Company, 1919).
Training advocates popularized the ideas of foremanship training during the mid-1920s, while expanding the definition of foreman as a manager and a teacher. Educators in the public and private sectors also promoted foremanship training. On the basis of research and his own experience, Allen recommended foremen’s conferences to consider essential topics related to the duties of foremen. J. Walter Dietz, educational director of the Western Electric Company in New York, asserted that education was a continuous process, not just for skilled workers, but also for supervisors who also benefited from guidance and instruction. The foreman acted as a supervisor and a coach; he or she listened to suggestions, analyzed the needs of workers, taught them to solve problems, and assigned jobs to meet the needs of workers. Foreman training worked best in small group conferences, but foreman education continued through conferences, continuation schools, library work, correspondence instruction (with due caution and as a last resort), and hands on instruction. “Any company’s greatest asset is a loyal and trained body of men and women,” Dietz declared, “our entire business must function as a training system.”

Trainers in the private sector also contributed their knowledge to the development of foremanship classes. Harry H. Tukey, who trained foremen for the Submarine Boat Corporation during the war, observed in 1923 that the modern foreman emerged from the First World War, when wartime mobilization of industry required intensive training programs. Learning from mistakes is costly, he said, so a firm must choose foremen carefully: He or she must be competent, possess the ability to schedule, and demonstrate leadership and good relationships.

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relations with employees; the foreman must be able to lecture, train large numbers, and have the capacity to continue upgrading his or her skills through correspondence courses and conferences.  

The demand for education and training of various sorts after the Great War and throughout the 1920s increased tremendously for at least two reasons: first, industry and commerce required new kinds of skills, especially in the new technical areas of communications, electronics, aviation, automobile production and supply, and in other industries restructuring the economy. Wartime shortages of skilled workers, especially those among the newer industries, awakened policy makers and educators to the need for continued training. The federal government had expended the unprecedented amount of $200 million on education in a single year for the war effort, and some educators took that figure as a sign the public was “ready to spend unlimited funds on education,” provided those funds benefited the “community, state and nation.” The funding by Congress for education, however, remained small; the burden of educating the public continued to fall on state and local governments, and the responsibility for training upon the private sector, employers and employees.40


**Educators and Training**

Even though Congressional reluctance hindered federal support for broad-based training and education, professional educators continued to advocate federally funded public and vocational education. Hugh S. Magill, Field Secretary for the National Education Association (NEA), warned in 1919 that the mass testing of recruits during the war exposed “a national problem.” Army Intelligence testing revealed that 700,000 men between the ages of 21 and 31 were illiterate, that 30 percent were “physically defective,” and that some 13 million immigrants who had arrived in the United States over the previous decades required “Americanization.” The public schools, Magill insisted, needed support; education was now “of vital importance to our federal Government.” Adhering to the gospel of education, Magill wrote, “If America is to compete with and co-operate successfully with the other free nations of the world, she must look well to her system of public education.” The nation needed better teachers and better paid teachers. All levels of government had to accept responsibility for improving education and recognize that public schools required “substantial support” in order to carry on their mission.

While intelligence testing may have revealed a shocking rate of illiteracy, testing opened an avenue for the newly established profession of educational or employment psychology. Henry C. Link, in his 1919 book *Employment Psychology*, for example, offered employers screening techniques. By applying scientific management principles, experts could evaluate candidates for employment with standardized tests, and then fit them for occupations in which they could excel. Various tools detected one’s ability to sort, visually discriminate, and focus on problems (“steadiness”). Tests determined one’s level of manual dexterity and general intelligence all in an effort to determine the ideal worker for a particular job. In the end, Link believed that employment psychology would reduce labor turnover, the bane of industrial stability, and return American industry to a state of steady employment, a condition beneficial to both industry and its workers. The most important factor, he emphasized, remained education. “Education is the most stabilizing influence known to man.”

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Educators also promoted vocational education as a means to improve productivity for the employer and to achieve “higher wages, a better standard of living, and fuller participation in civic affairs” for American workers.\(^{43}\) The lack of advancement and opportunities for women workers, according to the FBVE, resulted largely from their lack of vocational training. Opportunities during the war arose from necessity, but vocational training could help communities and women themselves. Even President Harding’s Council on Employment recommended in March 1920 that women “not be discriminated against in respect to opportunities for training or advancement or the representation of their interests.”\(^{44}\) Despite the concern for training women, the FBVE asserted that the apathy of educators and the public obstructed training for women and girls, and that it would take state and federal cooperation to expand training for women.\(^{45}\)

Educators in the 1920s emerged as the key link between public and private sector training. They made and retained contacts between businesses, educational institutions, government, private foundations, and organized labor. J.C. Wright, director of the FBVE in 1923, believed education a public responsibility.\(^{46}\) Yet, it remained the duty of the state to

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\(^{45}\) Ibid., p. 44.

\(^{46}\) J.C. Wright, Director of the Federal Board for Vocational Education, “All Education For All the People Is a Public Responsibility,” Vocational Education Magazine 1 (March 1923): 488-491.
provide public education in order to ensure democracy. Even trade unions, while opposed to vocational education in its early stages, supported public education and training.47

During the 1920s, public policies directly and indirectly changed the character of the workforce. In addition to immigration restrictions, child labor laws and mandatory public education in many states reduced the number of children competing for employment. The percentage of children aged 10 to 15 years who were gainfully employed declined from 18.4 percent in 1910 to 4.7 percent in 1930. As economic historians have made clear, secondary education incurred enormous social costs for buildings, teachers, and administrators. Total expenditures for all schools increased from $215 million in 1900 to $605 million in 1915. That amount tripled by 1924, and hovered around $2 billion annually well into the 1940s.48

David Snedden, editor of *Vocational Education Magazine* approved of mandatory education and predicted in 1924 that it would bring higher employment, improvement in the standard of living, and increased productivity, all resulting in part from “superior labor power.” While firms and private agencies had attempted to meet the needs of training, he wrote, “publicly supported and controlled agencies” will likely become responsible for “every desirable kind of education.”49

**Public Schools and Private Sector Cooperative Training**

While the federal government had become a small partner to public education, public schools cooperated with local firms to bridge the public and private sectors. In Pittsburgh, Pennsylvania, for example, the Westinghouse Electric and Manufacturing Company, the Pittsburgh chapter of the National Association of Corporation Training, and the Pittsburgh Public Schools arranged a cooperative venture to train the local workforce. Four committees gathered and analyzed information about local labor market needs. Then representatives

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49 Editorial, [David Snedden], “Immigration Restriction and Vocational Education,” *Vocational Education Magazine* 2 (June 1924): 799-800.
reviewed committee reports and met with local employers and school guidance counselors to estimate the number of workers and the kinds of skills the local workforce required. Once accomplishing that task, the schools worked out appropriate vocational education classes. Employers trained new hires in specialized skills when they joined their firms. Workforce educators made an important discovery: training could not be performed by public schools or by firms alone.50

Other state and local governments experimented with public and private partnerships for training. The New York State Department of Education offered to assist any firm initiating a training program at no cost to the firm.51 The Chamber of Commerce in Indianapolis, Indiana, saw vocational guidance as a “civic responsibility” and attempted to coordinate vocational guidance with community needs. In Fresno, California, city schools initiated vocational surveys among industries to determine local needs.52 In Philadelphia, Pennsylvania, employers hired boys already enrolled in vocational education courses. Sixty percent of those students remained with their employers after graduation. The Building


51 For later cooperative efforts between schools and industries, see First Report of the Committee on Education of Associated Industries of New York State, Educational Series No. 1, noted in “Plant Training,” American Management Review 13 (December 1924): 20. Numerous examples of cooperation between schools and firms can be gleaned from Vocational Education Magazine and American Management Review (and its previous incarnation as the National Association of Corporation Schools Bulletin).

Trades and other industries in the City of Brotherly Love worked with local schools after 1923 to teach bricklaying, metal trades, tailoring, textile production, automobile repair, and painting and paint sales. Labor Unions also promoted cooperation between schools and trade unions through advisory committees and by union members taking seats on school boards and the boards of directors of state universities. Labor also recommended that industrial education include courses in the sciences, politics, and economics, and that school systems provide opportunities for continuation and evening schools. The investment in part-time education by both the public and private sectors paid off for businesses and the nation. By the late 1920s vocational education schools in Philadelphia enrolled 13,000 men and boys in the evening and part time schools; of those, 5,000 desired instruction in a specific trade. Other examples of cooperative ventures between public schools and local businesses existed in New Jersey, California, and Ohio.

While public schools increasingly cooperated with local firms, finding teachers with proven skills, as the Emergency Fleet Corporation discovered during the war, posed a

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55 “Cooperation Between Industry and Schools” *Industrial-Arts Magazine* 17 (April 1928): 129. According to the article, the New Jersey building trades increased the enrollment of evening classes from 100 to over 3000 over 6 years. Cooperation meant “better schools, happier and more efficient workers, and a clearer understanding of the problems in industry”; Floyd R. Love, Director of Vocational Education, Stockton, CA, “Cooperative Foundry Training” *Industrial-Arts Magazine* 17 (April 1928): 121-124; editorial, “Cooperative Part-Time Education,” *Industrial Education Magazine* 30 (March 1929): 317; and Morris E. Hurley, Principal, Merritt High School, and Director of Part-Time Education, Oakland CA, “Essential Steps in a Cooperative Education Program,” ibid., pp. 329-331; editorial, “How Local Schools Can Help in Training,” *Dry Goods Economist* (2 September 1922), noted in *Personnel Administration* 10 (October 1922): 21; and William T. Bawden, *Helping the Shop Teacher Through Supervision*, Industrial Education Circular, No. 10, Bureau of Education (February 1922), noted in ibid., p. 22; Bawden recommended that teachers take summer jobs in industry to gain expertise; “Industrial Co-operation with the Public Schools in Niagara Falls,” ibid. 11 (January 1923): 11-12; “The Cooperative Industrial High School and Part Time Trade Extension (Continuation) School of Dayton, Ohio, for Apprentices,” a plan by the Dayton Public Schools to cooperate with local manufacturers, M. 3194, Steele High School, Dayton, Ohio; and J. Ray Stine, *Training Workers Through Part-Time and Cooperative Education* (Columbus, OH: Ohio State University, 1926), which proposed cooperation between schools and employers for training programs tailored to specific occupations.
dilemma. Oftentimes schools had to choose between good teachers with little real experience or hiring skilled, knowledgeable workers, but ones lacking teaching ability. Teachers possessing both traits remained in high demand in both the public and private sectors. Trade Unionists stressed that boys and girls could not master industrial skills within the school alone, and teachers should emphasize that fact. Some mechanics hesitated to become instructors because school might flood the market with workers in particular trades. Cooperation sometimes degenerated into competition for scarce teachers.56

Public Schools and Junior Colleges

While vocational schools and private industries increasingly cooperated to produce competent, skilled workers, foremen, and teachers, public and private junior colleges emerged to provide technical skills beyond the high school level, but without the lengthy terms of colleges and professional schools. Only a handful of junior colleges existed in the United States before the First World War. Enrollment in the juniors actually declined during the war and the recession that followed. The boom years of the New Era, however, stimulated mandatory school attendance, encouraged technical and white collar jobs, and promised higher incomes for those pursuing post-secondary education. Eventually thirty-two new junior colleges appeared in 1927 alone. Many offered adult and continuing education curricula and, by the end of the decade, junior colleges offered vocational education courses. However, nearly half of all junior colleges granted no degree.57

Marvin Lazerson and W. Norton Grubb identified a two-fold conception of junior colleges: one, juniors filtered students desiring education at four year research universities and helped save on the costs of teaching preparatory classes; second, the juniors extended high school education by two years and prepared students for the workforce. As states mandated and funded high school education for teens, the number of college graduates between 1920


and 1940 increased from about 2.5 percent to nearly 8 percent of 23 year olds. The percentage of high school graduates attending college, however, declined by half, from 49 percent in 1910 to 25 percent in 1933. The decline in college attendance is deceiving, however, because it reflects the enormous increase in high-school students preparing “for life” and for the workforce rather than for college or the professions. Undergraduate and graduate education from 1914 to 1928 increased by 280 percent, while the number of public and private junior colleges increased from 52 in 1920 to 277 by 1930. By 1940, 456 junior colleges operated in the United States, many within nine states of the West and Midwest. While the increased attendance in high schools reflected mandatory secondary education and the effectiveness of child labor laws, the proliferation of commercial schools, adult education programs, extension classes, correspondence schools, and instruction by radio, all indicated a national thirst for education and training that may account in part for the increased rates of productivity experienced by American industry throughout the 1920s. Cooperation between state and local governments, and between the public and private sectors, grew markedly during the 1920s. In some cases, cooperative arrangements included the growth of junior college education.

Businesses and industries in California established cooperative arrangements with Riverside Junior College of California, following the examples of the University of Cincinnati, Antioch College, and the Massachusetts Institute of Technology. Students,

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For the growth of junior colleges or two-year community colleges, see Allen et al., America’s Community Colleges, especially pp. 1-113; and John H. Frye, The Vision of the Public Junior College, 1900-1940: Professional Goals and Popular Aspirations (Westport, CN: Greenwood Press, 1992): 74-78. The number of junior colleges in the latter text conflicts with number used here as reported in the Historical Statistics of the United States, Part 1, pp. 382-383.
selected or screened by the college, interned for six weeks with firms that assigned a “coordinator” to follow the students’ progress. Most students paid their own tuition, sometimes with wages earned from cooperative employers. By the end of the decade nearly 70,000 students enrolled in 450 junior colleges, mostly private institutions with some sharing facilities with high schools.\footnote{H.H. Bliss, Director of Vocational Education, Riverside Junior College, California, “A Junior College Cooperates With Industry,” \textit{Vocational Education Magazine} 2 (April 1924): 692-694.}

Public high schools also received a boost in support for training in continuing education, evening schools, and extension classes that catered to vocational education. Immediately after the armistice in November 1918, growth in the number of trade school and industrial education classes lagged for a perceived lack of demand. After three years or so of recession and readjustment, demand returned and a vast majority of states reestablished day, evening, and part-time vocational education schools. Compulsory education in some states also stimulated interest in vocational training, especially in skills meeting local needs. Evening school enrollment increased rapidly in 44 of 48 states, although largely in urban areas. According to a report by the Federal Board for Vocational Education in 1920, continuing education schools offered apprenticeship training for young adults, aged 16 to 18 or 20, and for adults seeking skills for job advancement or career changes. According to the Office of Education, over 842,000 adults enrolled in evening schools in the 1921-1922 school year. Adults who enrolled in evening vocational education classes, however, increased from 46,000 in 1918 to only 97,500 by 1927, a relatively small number. An insufficient number of teachers limited the growth of evening schools. Even so, experienced foremen and workers teaching in evening sessions had the potential to become the “most efficient teachers,” according to Charles Prosser, especially those who had received short-term, intensive training as wartime instructors.\footnote{Fourth Annual Report to Congress of the Federal Board for Vocational Education, 1920, pp. 17-22. In its report for 1923, the Federal Board for Vocational Education noted that evening classes “for adult farmers is given for the purpose of increasing the yields of farm products, improving their quality, increasing the efficiency of farm operation, marketing and distribution, and making farming a more profitable business.” Southern states initiated evening classes for black farmers, but few instructors were available. The report mentioned no figures about adult participation or enrollment by age group in the programs, U.S. Federal Board for Vocational Education, \textit{Seventh Annual Report of the Federal Board for Vocational Education, 1923} (Washington, DC: U.S. Government Printing Office, 1923): 47 and 54, respectively; but see C.A. Prosser, who called attention to the potential utility of evening schools, in “What’s Wrong With the Evening School?,” \textit{Vocational Education Magazine}, 1 (March 1923): 525-527. Later, he gathered data that included the number of adults enrolled in evening classes.} As one educational official in New Jersey put it in 1922, the
complexity of modern society forced schools to provide instruction beyond the “Three Rs.” While offering varieties of education—an “appallingly” expensive system, according to one official—the value would become apparent in the long run. Evening industrial schools for working adults required special attention and assistance from the public—organized labor, chambers of commerce, employer associations (and presumably boards of education and school administrators)—in order to service the needs of working Americans as well as the needs of industries. Assistance from the public, however, relied upon sympathetic state and local governments; state officials decided whether or not to allocate Smith-Hughes funds for adult evening classes in shop subjects.62

By 1930 Charles Allen saw the evening school as the principle method for adult training. The “evening school always has been and always will be a school for the worker,” he declared. Allen also began to see that “education is a business,” one now made more efficient by utilizing the principles of business management. The evening school rendered a service to adults motivated to attend, rather than having to be forced. The mature worker, according to Allen, generally wanted “an opportunity to better himself in employment.” In addition some workers attended classes in order to begin a new career or occupation, transition to a white collar job, or learn a technical skill for modern industry.63

Modern industries spawned new occupations and a renewed demand for workers with skills. After the First World, immigration restriction in 1921 and 1924 slowed the influx of skilled and unskilled foreign labor. Furthermore, because of efficient farming techniques, new industries attracted surplus agricultural labor moving from rural areas to urban industrial centers. States began to restrict child labor and mandate school attendance, forcing children to attend school through the middle-teen years. Increased school attendance drove up state

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education budgets in order to finance new facilities and the training of teachers. Even greater numbers of school-aged children remained in school during the 1930s when high unemployment and unstable labor markets forced many teens to stay in school. Thus between 1920 and 1940 a dramatic increase in high school graduations occurred, leaping sharply from about 16% of 17 year olds who graduated in 1920 to 49% of that group graduating in 1940 [see Figure 3.1 above].

**Training Women for the New Era Workforce**

One of the unanticipated consequences of the war had been the successful training of women for industrial work formerly reserved for men. The war “accelerated” the employment of women in industries and demonstrated their capacity for training; the number of women in the paid workforce continued to increase thereafter. The official government appeal to women for industrial work went out late in the war, in September 1918. A month later, the USES replaced men with women where feasible. Anticipating a lengthy conflict, the Department of Labor called for additional women workers in November, just prior to the armistice. While over 8 million women participated in the labor force in 1910, nearly 10 million did so by 1917. Although few official statistics exist, many women already in the workforce during the war shifted from low paying domestic and agricultural jobs into higher paying manufacturing jobs. By 1919 the Committee on Women in Industry estimated 11 million women over age ten earned wages (although that number receded to 8.5 million by 1920) and would benefit from training as they had during the war.64

The War Department in particular—rarely identified as a proponent of feminist causes, according to Mary Van Kleeck, director of the Women’s Bureau in the Department of Labor—appreciated the importance of women’s contribution to the war effort. Women assisting or employed by various state and federal agencies participated in government activities for the first time. Reconstruction, however, also spawned fears of unemployment and wage competition between the sexes. After the war, public appeals, business and trade union policies, or government fiat insisted that women had a “duty” to withdraw from the industrial labor force. In contrast to cutting women from the labor force, Van Kleeck asserted

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after the war that, “Reconstruction is not restoration.” To stem a flow of women exiting their jobs, Van Kleeck recommended continued economic growth and a system of national labor exchanges that would utilize the existing workforce, continue wartime labor standards—the eight-hour day, equal pay for equal work, safe working conditions, the right to collective bargaining, and minimum wages—cooperate with state and federal agencies, and professionalize management, which now included women. Market forces, however, probably did more to attract women into schools that prepared them for the workforce.\(^{65}\) In fact, a study by the Women’s Bureau in 1921 predicted a need to train women because the decline of male immigration suggested an impending labor shortage. The success of training women during the war proved they could be trained for production work, woodworking industries, and machine shops.\(^{66}\)

The National Association of Manufacturers welcomed women into the New Era workforce as a matter of official policy. Howell Cheney, of Cheney Brothers Manufacturing in Connecticut, believed women were “well fitted” for training, which he saw as a requirement to remain efficient. He and others failed, however, to elaborate on the particular skills women brought to the workplace.\(^{67}\) Nevertheless, women continued to join the labor force in many capacities. In a speech before the NAM, Mary Anderson, who followed Van Kleeck as director of the Women’s Bureau, noted that, in the mid-1920s, women held jobs in all but 35


of the 572 occupations listed in the national census of occupations. Women’s wages, however, remained much lower than those of men. Many working women, according to the Department of Labor, earned less money—some even less than the level considered to be a living wage—yet were responsible for the care of children or family members. Nearly seven of ten single working women helped support their parents.68

Educators also recommended trade education for women and girls. The number of women engaged in the female trades such dressmaking, millenary work, and domestic service had receded between 1910 and 1920. Apprenticeships for dressmaking and millinery—occupations replaced by machinery—declined precipitously. The Department of Labor reported that the overwhelming majority of most manufacturers expressed satisfaction with female employees. The garment industry continued to draw women as did light manufacturing—printing and bookbinding, the electrical trades, jewelry and watchmaking, bench work in metal shops, as well as semi-skilled jobs such as welding, riveting, soldering, and assembly. In the entire United States, just over 15,400 women and girls attended vocational, part-time, or evening trade courses supported by the federal Vocational Education Act. Because women remained integral to the economy, many believed that any trade should be open to women. Hiring a woman should depend on her fitness for the job. Trade schools for girls should expand their content to include additional occupations for women.69

A study by the Women’s Bureau in the mid-1920s reported on the effect “applied research” had for the employment opportunities of women: “the forces of invention and economic necessity” had contributed to the “woman invasion of industry,” especially as the number of working married women increased. A new occupational structure, reflecting the introduction of new technologies during the war, evolved in a way that made more jobs in light industries available. Scientific discoveries also led to new technical innovations in communications, transportation, and new product lines such as office machines and dictaphones that made clerical work more productive. In addition, technical innovation rejuvenated older products such as paper, rubber goods, and tobacco products, which created


jobs that pulled women into the labor force. For example, in 1919 women filled nearly 60 percent of the cigar making jobs and 55 percent of cigarette manufacturing jobs. Women also qualified for watchmaking and the assembly of small machines such as typewriters, telephones, radios, calculating machines, sewing machines, glass finishing and optical instruments, the production of china, ceramics, and tableware (the latter had been cut off from importation during the war). Mechanization also made jobs easier, driving up demand for occupations related to the manufacture of electrical motors and devices. Service occupations such as telephone operators suited women because those jobs required less physical strength and did not compete with men. While new contingencies arose and local labor markets attracted women workers, resistance to women in certain industries remained. Some industries, for example, claimed they lacked “facilities for training women” in new occupations.  

While more women entered the workforce, accommodations for training women by 1920 remained slim, according to Mary Anderson. Women required training to break out of traditional female labor: “they must be permitted and urged to take the training which will prepare them for the work they are best fitted to do, and which is ready for them in the community in which they live.” Cleo Murtland, Associate Professor of Industrial Education at the University of Michigan, noted in the early 1930s that women during the war had demonstrated their abilities in many skills. Vocational education, she urged, should prepare women both for wage-earning and for homemaking. The presence of women in many kinds of industries required larger investments in the quality and kinds of training, especially for those in the age group most likely to work, the 14 to 24 year olds. Because of the successes women experienced working industrial jobs during the war, vocational educators within the National Society for Vocational Education urged state and federal officials to expand training for girls and women. The number of women and girls enrolled in vocational education courses, however, remained small, only about 10,000 by June 30, 1919. Murtland urged

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cooperation between federal and state agencies to include a staff to administer programs for
women and train women as teachers in various trades and occupations in order to stimulate the
acceptance of women. 72 In an attempt to gauge the vocational and professional interests of
women, scholars and professional managers developed methods to draw out the interests,
attitudes, personalities, talents, and goals of women in the labor force. During the 1920s the
trend of women preparing for white collar jobs, industry, and the professions, continued
pace. 73

**Growth of Business and Commercial Schools**

Many jobs open to women and men since the turn of the century required a good,
basic education with additional training offered by commercial or business schools. The
authors of the Smith-Hughes Act, which in 1917 limited training to support industry,
agriculture, and the home, neglected vocational training for the fastest growing occupational
fields in business and commerce. Private and public schools attempted to meet the demand
for business and clerical pursuits by creating or adding new courses in bookkeeping,
stenography, typing, and related courses; but the demand outgrew both public and private

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72 Cleo Murtland, “Vocational Training For Women In Industry,” Report of the Committee on
Women in Industry by the Chairman, reprint of Bulletin No. 32, *Proceedings of the Chicago
Convention*, February, 1932, National Society for Vocational Education; and see the report of
resolutions passed at the Second Annual Conference of State and Federal Agents for Vocational
For the Resolution passed at the annual convention of the Society in 1920, see *Newsletter*, No. 8 (April
1920; misprinted as No. 7): 3.

73 Grace E. Manson, “Occupational Interests and Personality Requirements of Women in
Business and the Professions,” *Michigan Business Studies* 3 (April 1931). Interestingly, over 13,700
women in Manson’s survey not only liked their chosen occupation (mostly business and professional
women), but also welcomed marriage and home-making. The investigators noted the group’s median
age as 37.7 years, and median work experience as 13.7 years, with average annual earnings of $1,526
($16,500 in year 2005 dollars). Clerical workers made up over a third of the total. The survey gives
little indication as to how the women trained for their occupation or who financed their education,
except to note high school and college-level work. Also see Margaret Elliott and Grace E. Manson,
The Department of Labor also showed an interest in women workers; see Alice Rogers Hager,
“Occupations and Earnings of Women in Industry,” *Annals of the American Academy of Political and
Social Science*, 143 (May 1929): 65-73; and E.W. Barchart, Chief, Commercial Education Service,
Federal Board for Vocational Education, “Cooperation Between Schools and Business Offices in
Training Commercial Workers,” *Vocational Education Magazine* 2 (December 1924): 1108-1109, part
of an address before the National Office Managers’ Association held at Niagara Falls, Canada, June
1924. The Bureau of Vocational Information published a useful guide for women interested in the
professions or in business and technical occupations; see *Training for the Professions and Allied
Occupations: Facilities Available to Women in the United States* (New York: Bureau of Vocational
Information, 1924).
resources for commercial subjects. If Smith-Hughes excluded commercial and clerical vocational training, occupations that had ushered women into the workplace, the Federal Board still vowed “to meet the needs of girls and women.” While the common perception held that women stayed only briefly in the work force, the FBVE endeavored to train women not only for the home, but also for occupations that offered women advancement. While the Vocational Educational Act excluded commercial education, part of the FBVE mandate allowed the board to investigate vocational issues. The board assessed the educational needs of business and developed training programs and commercial education curricula for public high schools. Moreover, it did so with the cooperation of state and local boards of education, and in consultation with private firms. Even without federal support, commercial programs, public schools, and company training programs benefited from the FBVE research efforts.

The number of commercial schools increased dramatically at the turn of the century to provide training for those aspiring to white collar work. Eventually, commercial education divided into two distinct camps: commercial schools continued to train clerks and office workers; universities established professional business schools to train managers. Although many successful corporate owners and managers before 1920 may have had little or no formal education, ascending the corporate ladder during the New Era required managers to be familiar with the principles of professional and scientific management. In 1918, over 278,000 pupils enrolled in public school commercial courses. By 1924 the number of commercial students in public high school increased to nearly 432,000. Over 18,000 commercial students enrolled in private high schools and 188,000 in attended private business schools. For women, increasing specialization and the “gendering” of clerical work diverted women from


high paying supervisory jobs into low paying “women’s work.” Even though clerical work early in the century conferred some status and clerical workers received higher compensation than unskilled manual laborers, the wage differences between them narrowed and disappeared by the 1930s. Nevertheless, commercial and “business” schools, some franchised by “chain schools,” continued to attract women. In 1900, women comprised 36 percent of enrollees, but by 1925 women overwhelmed commercial schools, representing 64 percent of commercial students. Similarly, in 1900 women made up 27 percent of all clerical workers (76 percent of stenographers and typists), but that percentage rose to 52 percent by 1920 (almost 92 percent of stenographers and typists).76

The demand for commercial education—business, clerical, banking, bookkeeping and the like—became increasingly important after the war in the burgeoning consumer economy. Part-time and evening schools, correspondence schools, and corporation schools were the only available means of upgrading those seeking skills for commerce or preparing for advancement in business occupations.77 The Census of 1920 revealed a 7.4 percent increase in commercial trade occupations (merchants and sales) over the previous decade, yet a remarkable increase of 63 percent in clerical occupations. The number of women in those occupations increased by

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128 percent. Some educators reinforced the “gendering” of the workforce when they cautioned that, “Obviously boys should not be preparing for clerical positions in competition with the lower-paid women workers.” Commercial schools, they suggested, should develop programs suitable for boys, but “for businessmen rather than for clerks.”

Some commercial workers, male and female, required the basics that anyone attending high school should master: English grammar, business mathematics, business etiquette, elementary economics, and “thrift.” Advanced students needed to understand how departments within firms functioned. Training was expensive, and firms faced a dilemma: should the firm undertake training on its own, or should businesses learn to cooperate with educational institutions? Even businessmen expressed doubts that industries knew what kind of training programs, courses, and standards public schools should employ to assist the private sector. Some merchants, however, in cooperation with public schools helped establish courses in salesmanship and retailing. A women’s organization in 1906 convinced Boston merchants to help women gain practical experience in sales and general merchandising while attending school. Harvard University Graduate School of Education eventually joined with the program to prepare teachers in the field of retail training.

78 E.W. Barnhart, chief, Commercial Education Service, Federal Board for Vocational Education, “Commercial Occupations in the Census Reports,” Vocational Education Magazine 2 (October 1923): 115-117; and see his essay, “Trends in Commercial Education,” ibid., pp. 100-102; Weiss, “Educating for Clerical Work,” pp. 37-42, 53-59, and especially Table 1, p. 38. Weiss, who has studied the history of clerical work between the Civil War and the 1970s, asserted that the typewriter “feminized the work force” and that women comprised “the majority among typists” from its earliest adoption. Typing was “suited” to women, and of course they worked for lower wages during that period; and Harvey A. Kantor, Learning to Earn: School, Work, and Vocational Reform in California, 1880-1930 (Madison, WI: University of Wisconsin Press, 1988): 63.

The National Association of Corporation Schools held discussions about opportunities and wages for women in industry; see Laura Drake Gill, president of the College for Women, Sewanee, Tennessee, who wrote that “the need for industrial education in this country is expressed by the social unrest of workers, especially women. . . . [Investigation showed they] were working for salaries yielding small return on the money expended in educating them,” cited from “Cause of Social Unrest,” National Association of Corporation Schools, Annual Report, Second Annual Convention 1 (July 1914): 17. In addition, one way to create higher wages for women was to entice girls to stay in high school, a plan suggested by a vocational educator in Philadelphia; see John Frezee, in “Plan Trade Schools to Solve Girls’ Problem,” ibid. 1 (October 1914): 27.

David Snedden, who promoted vocational education and served on the Federal Board, noted that commercial education seemed “profitable and respectable” and appealed to urban dwellers seeking distance “from the grimy surroundings of the factory occupations.” Also, he noted that white collar work appealed to young women and that clerical work seemed “clearly suited to girls.”

But Snedden remained critical of private commercial schools because they lacked standards and because most skills required for work in business—reading, writing, and arithmetic—were taught in general education curricula. While the Smith-Hughes Act had excluded commercial education, that deficiency would be remedied in part by the George-Deen Act of 1937, which provided funding for “distributive education” required for the wholesale and retail trades. The increasing demand for business courses in all schools during the early 1920s, however, led to a shortage of instructors with actual business experience. Because of demands for additional commercial and business courses coupled with the limitations of public schools, educators considered alternative modes of teaching the subject.

A sensible proposal by an experienced commercial education teacher sought to fill a “weak spot” in commercial education. Since evening schools catered to the schedules of working people, public school officials should know something about local business conditions and the vocational needs of employed students. When local surveys helped understand workers’ needs, schools could offer alternatives for the ambitious student. For example, “extension” training helped improve one’s skills for promotion in a current occupation; “preparatory” training prepared workers for new vocations. Curricula should

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consider long- and short-term goals. Educators discovered that, while a “short course” was an
efficient and usually successful way to provide skills quickly, a “long course” cut attendance
problems and offered a wider range of specialized skills. Ideally, schools should limit class
size, advertise to students and employers, and cooperate with employers who reimbursed or
paid student fees. Of course, some kind of guidance helped determine the needs and abilities
of the students. In addition, evening schools should keep records, award certificates, and
select experienced teachers from businesses, not from day-schools. While private schools
provided the bulk of business and clerical training before 1920, public schools increasingly
took up the burden of commercial education thereafter.83

Private Sector Training

In addition to commercial schools, the most obvious form of private sector training
took the form of corporations schools. Charles Prosser wrote in 1923 that corporation schools
“have come and come to stay.” Vocational schools in public and private domains supplied
general training, while corporation schools specialized for particular industries. While
vocational schools “select” or self-select graduates for training elsewhere, helping the young
to decide on an occupation, the two kinds of schools should cooperate with one another,
Prosser advised. Schools tended to become “too general and theoretical,” while corporation
schools tended “to become too practical.” Public vocational schools needed to gauge the
business and manufacturing requirements of their communities. Schools and businesses
working together, Prosser concluded, would complement the training of workers for local
industries. Of course, some industries continued to operate their own apprentice schools to fill
niches in training neglected by public schools and to offer promotions or incentives to
employees who upgraded their skills.84

83 Josephine Wronker, Part-Time School, Utica, New York, “A Weak Spot in Commercial
C. Link, United States Rubber Company, also recommended various ways to train foremen and
workers, “Education and Training,” ibid. 2 (December 1923): 337-341. Francis J. Keller, Principal of
the East Side Continuation School in New York City, called for standards for part-time schools; see
“Standards of Achievement and Evidence of Progress in Part-Time Schools,” Vocational Education

84 Editorial, C.A. Prosser, “Corporation Schools and Public Vocational Education,” Vocational
Education Magazine 1 (February 1923): 445-447; Mildred J. Weise and Ruth Reticker, The Modern
Three-Position Plan of Promotion,” Annals of the American Academy of Political and Social Sciences,
No. 65 (May 1916).
One educator told the Ohio Society for Vocational Education to “sell vocational education” to employers. Employers, he suggested, should consider using government funds to improve the skills and efficiency of workers in part-time vocational schools, thereby using government funds to reduce their own training costs. No training at all, Charles Allen admonished, remained “inefficient and costly to both industry and to the public.” Firms incurred an “unnecessary overhead” by neglecting to take advantage of vocational education in the local public schools.85

Some American business leaders and politicians remained unconvinced that the federal government had a role in education and training. The private sector, they believed, remained the primary source of training. Early in the decade the educational scholar Erik Oberg, noting the decline of apprenticeships, reviewed current methods of training personnel in industrial plants. He recommended “the systematic and careful training of the men who are to become the skilled machinists, foremen, and superintendents of machine shops ten, twenty, and thirty years hence.”86

Business leaders and professionals in vocational education, however, decried the lack of enforcement of standards or the poor quality of some vocational teachers and public schools. By the middle of the decade, David Snedden lamented that, despite “excellent beginnings,” the lack of large-scale vocational training and the lack of cooperation between schools and industry to provide practical experience. The failure wasted human resources. The public, he argued, should support training for the public good. Near the end of the decade, some firms endeavored to cooperate with state boards of education to furnish skills through newly organized apprenticeship programs. The Caterpillar Tractor Company and the State of California, for example, together screened applicants, provided instruction, and awarded diplomas to graduates. The company extended its program to other factories thereafter. While public schools, private schools, and large firms continued to train workers, many employees turned to “self-investment” in human capital; individuals not only paid the


86 Oberg, Modern Apprenticeships and Shop Training Methods, p. v. Oberg also included descriptions of apprenticeships in various industries and training programs in particular manufacturers such as the Willys-Overland automobile manufacturer and the Eastman-Kodak Company.
costs of supplemental courses, but also they incurred the opportunity costs that kept many
people from engaging in the “self-investment” alternative.  

While large firms trained employees, their role remained inconsistent. Magnus Alexander,
President of the National Industrial Conference Board, recognized by 1928 that mass production
eliminated some jobs yet created new ones. Mass production had fashioned a better standard of living
and employment in “non-industrial occupations,” but the “growing size and complexity of the modern
business structure” created demand for workers with new kinds of skills that placed incredible demands
for continuing education at all levels. Alexander apparently remained satisfied that acquiring these new
skills rested solely with individuals and public schools, or with the few large corporations able afford
training. In the inevitable “displacement of individual labor,” workers unable or unwilling to retrain
would become the “martyrs of progress.” Self-investment and non-traditional modes of training for
most adult Americans remained the chief avenue for training and occupational mobility during the New
Era, the subject of the next chapter.

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87 James P. Munroe, president of Munroe Felt and Paper Company as well as an early member
of NSPIE and the first Federal Board for Vocational Education, “The Employer’s Attitude Toward
Vocational Education,” in Lee, Objectives and Problems of Vocational Education, pp. 339-352, esp.
342-343, for criticisms of the system; and see Wright and Allen, “Vocational Education as a National
Responsibility,” ibid., pp. 30-31, for similar complaints; David Snedden, Teachers College, Columbia
University, “Some Vital Problems of Industrial Education,” Vocational Education Magazine 2
(December 1924): 1097-1098; Oscar L. Starr, Vice-President, Caterpillar Tractor Company, San
Leandro, California, “Making Skilled Mechanics,” Factory and Industrial Management 75( March
1928): 526-529; and Herman Feldman, Advisory Committee on Industrial Relations, A Survey of
Research in the Field of Industrial Relations (New York: Social Science Research Council, 1928): 144-
145. For a recent study that demonstrates that large firms are more likely to train workers, see Ann P.
Bartel, “Formal Employee Training Programs and Their Impact on Productivity: Evidence from a
National Bureau of Economic Research, July 1989). Also see John Van Liew Morris, Employee
Training: A Study of Education and Training Departments in Various Corporations (New York:

88 Magnus Alexander, Mechanization of Industry and Economic and Social Progress, Twelfth
especially pp. 15-17. Also, see Brandes, American Welfare Capitalism, pp. 52-65.
CHAPTER 4

TRAINING THE NEW ERA WORKFORCE—Part II: “SELF-INVESTMENT” AND NON-TRADITIONAL MODES OF TRAINING DURING THE 1920s

“[The] interest in training aroused at the time of the war has not materially abated.”
-- Henry S. Dennison, Recent Economic Changes in the United States, 1929

While public schools, corporation schools, commercials schools, and businesses trained workers for specific jobs, Americans increasingly sought out relatively inexpensive ways to train or acquire education during the 1920s. Instead of relying on public schools or employer vestibule schools, many Americans “self-invested” in their own human capital. Americans found ways to upgrade their skills for better pay and promotion, to change careers, or merely to find alternative ways to spend their leisure time. While often paying their own way, they incurred additional expenses in the form of opportunity costs. This chapter continues the examination of various ways Americans engaged in workforce education and training during the “New Era” of the 1920s by attending workers’ education schools, Americanization classes, and adult education classes, or by engaging in “distance education,” instruction offered through correspondence and extension courses or through radio programs. A few Americans even learned a trade or vocation in the military.

Workers’ Education Bureau of America

Workers’ Education combined formal and informal schooling to orient adult learners to working-class issues. Shaped by the British trade union movement during the nineteenth century, the Workers’ Educational Association, commonly referred to as the “Ruskin System of education,” began in 1903. An American equivalent developed within the Knights of Labor before the turn of the century and later matured under the patronage of organized labor by the 1920s. Workers in the needle trades offered education for their own around 1915, and the

National Women’s Trade Union League, the International Ladies’ Garment Workers Union, and the American Federation of Labor (AFL) began to support workers’ education in many locations around the United States. The AFL and dozens of other labor organizations helped finance the Workers’ Education Bureau of America that grew out of a conference of union officials and teachers in 1921 at the New School for Social Research in New York City. Workers’ Education functioned in 30 states by 1923 and eventually adherents published *Workers’ Education*, the *Workers’ Education News Service*, and a number of pamphlets and books, which became the core of the Workers’ Bookshelf series. In addition the Bureau offered library services and correspondence courses.²

Unions also supported various workers’ schools, including the college for “breadwinners” in New York City. The school fostered democracy, freedom, culture and science, and called for a National University, a “People’s University,” to reduce alienation and class warfare. Similar enterprises included the Brookwood Workers’ College and the Bryn Mawr Summer School for Women in Industry, headed by Hilda Smith, who later guided the Workers’ Education Bureau in the Works Progress Administration during the New Deal.³ The Workers’ Education Bureau became a clearinghouse for information. Its membership exceeded 20,000 in the 1920s in a loose confederation of unions, cooperatives, and various political and labor organizers, but it remained available to all workers.⁴

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³ Thomas Davidson, “Education for All: Problem of the 20th Century,” from Thomas Davidson, *The Education of Wage Earners*, edited by C. M. Bakewell (Ginn and Company), reprinted in C. Hartley Grattan, ed., *American Ideas about Adult Education* (New York: Bureau of Publications, Teachers College, Columbia University, 1959): 84-101. Other schools included the Trade Union College of Boston, the Workers’ University of Cleveland, Ohio, the Rochester Labor College, the Workers’ College of Seattle, the Rand School, owned by the American Socialist Society, all of whom supported the Workers’ Education Bureau.

⁴ Harold W. Stubblefield, *Towards a History of Adult Education in America: The Search for a Unifying Principle* (New York: Croom Helm, 1988): 61-63. Also see Louis E. Reber, Dean of
According to Arthur Gleason, Workers’ Education was identical to adult education, but in a form distinct from university extension programs, evening schools, Americanization schools, night schools, employer schools, or the YMCA. Workers’ Education often served union members who aspired to leadership posts within unions. It aimed to give the worker “power” knowledge and problem solving skills free from government or institutional authority. Thus the movement exhibited a decidedly working-class orientation. “Workers’ control” meant to liberate the worker, to foster worker ownership of public resources, and to control and finance education by workers themselves. The Bryn Mawr Summer School for Women Workers in Industry typified the consummate Workers’ Education model. The Summer School for working women, usually union women in the 21 to 35 year-old age bracket, offered scholarships from alumnae donations. Subjects ranged from elementary courses to university level history and economics or the techniques of collective bargaining. The school prepared future working-class leaders to educate the rank-and-file and bring culture to the masses. The Schools experimented with new modes of teaching and eschewed traditional textbooks. Workers’ Education emerged as one of many forms of adult education during the 1920s.5

Americanization and Adult Education


queen mother of Americanization, in 1919 rejuvenated the campaign for “industrial Americanization” in order to stabilize the immigrant workforce, reduce the threat of Bolshevism and radicalism, promote American business, and foster American culture. According to the Census of 1920, 13.7 million foreigners had settled in the United States with their 22 million children. Numerous businesses, in cooperation with local and state governments, re-energized Americanization programs after the Great War. Businesses established a variety of schools to teach English and other subjects to foreign-born workers, not only to integrate and assimilate, but also to create better producers and consumers. Local patriotic organizations, school boards, libraries, and teachers enlisted to help Americanize immigrants also provided the core infrastructure for adult education in the 1920s.6

Adult education no doubt existed in some form before the twentieth century. San Francisco public schools organized evening classes as early as 1856 as an alternative to day school for working youth. Later the movement emphasized reducing illiteracy and teaching English and citizenship courses to Americanize foreigners under the banner of “Americanization.” College level courses for adults grew out of the National University Extension Service in 1916 and the founding of the New School for Social Research in 1919 by reform-minded Progressive educators. While the universities would eventually attract greater numbers of adults over the course of the century, most adults interested in expanding their potential sought out primary and secondary education courses. By the late 1920s, for example, adult education in San Francisco included high school and college preparatory courses, in addition to domestic arts and vocational, technical, commercial, and trade courses.7

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7 For example, see Mary M. Fitzgerald, Deputy Superintendent of Public Schools, San Francisco, “Many Aspects of Adult Education With Special Reference to the San Francisco Public
The adult education movement grew increasingly popular during the 1920s and expanded under federal work relief agencies during the 1930s. After the earliest “Americanization” efforts guided in large part by Kellor, a number of public schools and private organizations in various states and localities created programs in 1915 to teach English to the millions of “new” immigrants. During the First World War, Army examiners found that about one-fourth of foreign-born draftees were functionally illiterate. Americanization after the war, therefore, had a twofold purpose: first, to promote literacy and, second, to instill some sense of American social and political values in order to create “good citizens.” The State Department provided pamphlets for teachers and community leaders on ways to publicize the need for educating foreign-born adults. The department also produced a film, “The Making of an American,” which stimulated public interest in the effort. The State Department conducted training courses for teachers around the country, especially in areas with large immigrant populations. In Massachusetts, for example, immigrant participation in Americanization classes increased from 3,000 in 1918 to over 22,000 in 1922. In addition, the Federal Bureau of Education assisted with the education of immigrants between 1915 and 1919, but discontinued the program due to budgetary retrenchment and the withdrawal of private funds.

after the war. Thereafter, the National Education Association (NEA) in 1921 established a Department of Immigrant Education to continue training the foreign-born.⁹

The partial return to “normalcy” and passage of restrictive immigration laws in 1921 and 1924 reduced the influx of immigrants by the mid-1920s. The restriction of skilled immigrants from Europe—an important source of skilled labor for some American businesses—increased the need for training Americans in skilled and semi-skilled occupations. Charitable organizations, industries, and state and local governments had prepared the infrastructure for adult education by establishing evening schools and literacy programs for adult immigrants. In 1924 the NEA renamed its Department of Immigrant Education, changing its title to the Department of Adult Education. State and local school boards expanded Americanization efforts into the broader education of adults. The Minnesota Council of Americanization, for example, reorganized its administrative center into the Minnesota Council on Adult Education at its annual conference in 1929. Americanization, as a topic and a movement, disappeared from NEA educational programs by the late 1920s. Similar changes occurred in New York, Connecticut, and Delaware. The NEA national meeting in 1929 included discussions of library extension services, evening schools, literacy programs, and other forms of education that would target adults and immigrants. As Robert T. Hill observed that year, “Americanization has changed in spirit, content and procedure so that it now conforms in practice as well as in principle with other current movements for the education of adults.”¹⁰


According to the historian of adult education Malcolm Knowles, the adult education movement in the United States remained rather “formless” and “haphazard,” which actually proved advantageous. Individuals followed their own interests, formulated their own goals, and chose from a variety of sources and modes of learning. The American style of adult education actually held an advantage over the European models because the American schools remained flexible and catered to local needs. The term “adult education” became vogue around 1924, when the Carnegie Corporation sponsored the first conference on Adult Education. Morse Cartwright, an administrative assistant at the Carnegie Corporation, eventually led the American Association for Adult Education after its founding in 1926. Cartwright, formerly an administrator at the University of California, struggled to define adult education. He considered newspapers and radio programs to be educational in addition to university extension services, forums, lyceums, and religious instruction; he even mentioned “psycho-analytic clinics” and life experiences as ways Americans continued learning into adulthood. The Carnegie Corporation invited educators of diverse backgrounds to a conference on adult education in 1924. Panels included the historian Charles A. Beard; the writer Dorothy Canfield Fisher; Dr. Alfred E. Cohn, medical researcher for the Rockefeller Foundation; C.R. Dooley, educational director for Standard Oil of New Jersey who trained soldiers for the U.S. Army during the war; and the journalist William Allen White. The Corporation sponsored studies covering diverse forms of adult education, beginning with university extension program, then leisure-time activities from lyceums and public lectures, commercial correspondence schools, public evening schools, corporation schools, and the activities of religious, charitable, labor, and fraternal organizations. To gather current information on adult learning capacity, the corporation funded studies of adult psychology. The Corporation also worked with federal agencies such as the Bureau of Education to exchange research data and publish reports on a variety of topics related to adult education.11

another view, see Gerd Korman, Industrialization, Immigrants, and Americanizers: The View from Milwaukee, 1866-1921 (Madison, WI: The State Historical Society of Wisconsin, 1967).


The adult education movement grew from a series of meetings and conventions that began in Cleveland, Ohio, in October 1925. From there a national organization promoted and disseminated information about adult education and distinguished educators met in a number of regional sessions. Finally members met in March 1926 at Chicago, Illinois, to found the American Association for Adult Education. With sponsorship from the Carnegie Corporation, the AAAE published in 1926 a quarterly periodical, the *Journal of Adult Education*, later printed the *Handbook of Adult Education in the United States*, and over the next decade conducted surveys, organized symposia, published research, and provided information about adult literacy, education, and career training. While downplaying vocational education until about 1930, the AAAE remained eclectic: it embraced workers’ education, evening schools for adults, correspondence and extension schools, and ways one could fill her leisure time or achieve personal fulfillment through lifelong learning. Over the first decade of the AAAE’s existence, the Carnegie Corporation contributed almost $3 million for experiments and programs in adult education, including support for libraries, radio programming, occupational training, general education, and Negro education.12

Printing company, 1925):76-83. Cartwright had previously held administrative positions at the University of California, Berkeley. R.A. Beals, of the American Association for Adult Education, categorized five areas of adult education on the basis of their popularity: 1) vocational instruction, 2) “ego-centric” or individual interests such as hobbies and leisure activities, 3) home and family life, 4) social interests and political and economic life, and 5) the individual’s relation to the world through broad study in science, philosophy, and religion; see Beals, “Associated Leadership for Developing a Program of Adult Education,” *Proceedings of the Twentieth Annual Convention of the National University Extension Association* at the University of Nebraska, Lincoln, Nebraska, May 15-17, 1935, 18 (Spencer, IN: Samuel R. Guard and Company, Inc., 1935): 65. For an interesting exploration of the significance of adult education, see Herbert W. Hess, Wharton School of Finance and Commerce, University of Pennsylvania, “Adult Education in a Changing Age,” *Proceedings of the National University Extension Association* at Bloomington, Indiana, May 24-26, 1933 (Bloomington, IN: Indiana University Press, 1933): 113-123. Businesses also recognized the importance of training for recreation and leisure time; see Martin L. Pierce, Hoover Suction Sweeper Company, “Training for Leisure Time Activities,” *Personnel Administration*, 11 (January 1923): 3-5.

By the late 1920s and early 1930s, adult education focused on ending illiteracy and filling leisure time. In the 1930s, contributors to the *Handbook of Adult Education in the United States* described the many opportunities for training and education available to adults. The schools mentioned in the *Handbook* catered to those seeking career changes, job enhancement, social reform, or personal fulfillment. The Association rated schools according to quality and type, as well as to their accessibility for women, black Americans, working people, and those who were unemployed. The reports noted vocational schools, part-time “continuation schools,” evening schools, unemployment relief classes, foremen training programs, preemployment day schools, the Workers’ Education Bureau, as well as colleges and schools operated by trade unions. One contributor mentioned a Federal Board for Vocational Education report that noted higher attendance in vocational schools during the “greatest periods of business and industrial activity.” An abundance of educational opportunities, however uneven by region and class, emerged during the 1920s.  

While most advocates of adult education appeared eclectic in their goals, some insisted upon providing a liberal, “humanist” education, one that focused on an individual’s intellectual development rather than as preparation for the workforce.

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In addition to the two major organizations fostering adult education, the work of the eminent psychologist Edward L. Thorndike in the 1920s and 1930s, funded in part by the Carnegie Corporation, furnished evidence that, even though the teens and twenties appeared to be the peak years for learning, adults continued to learn throughout the life cycle. In addition, rapidly changing technologies begat economic and social changes that made traditional industries and occupations obsolete. As a result workers required upgrading or re-training. Informed citizens turned to education to better understand political, social, and economic issues of the day. Consequently, adult education offered older Americans opportunities for self-improvement as well as employment opportunity. New exigencies, a Western Reserve University professor declared, necessitated “universal education” for the young and lifelong study for all. Lifelong learning became increasingly acceptable and affordable to a broader population of Americans, and a market developed for commercial and trade schools, correspondence courses, and learning by radio.15

Distance Learning: Correspondence and the National University Extension Association

Interest in adult and continuing education spilled into the universities during the New Era. In the United States, large-scale extension and correspondence education began in the private sector but eventually became part of the university extension curriculum before the turn of the century. Reputable colleges and public universities provided extension services for college credit or for the personal edification of those living beyond the college campus. William Rainey Harper, president of the University of Chicago, established a correspondence division in 1882 to offer courses for students who, for social or economic reasons, could not attend regular university classes. Correspondence study soon achieved academic recognition when other colleges and universities followed a similar pattern. The University of Wisconsin Extension Division offered the earliest public university-level correspondence instruction, mostly for engineers, beginning in the 1890s. This seminal form of “distance learning” led

some students to obtain a university education otherwise beyond their means. At the
University of Chicago, for example, the secretary of the correspondence-study department
noted that nearly one in five such students eventually enrolled in residence programs between
1905 and 1916.16

Correspondence instruction, however, required special qualities of a student. President Harper at the University of Chicago noted the importance of a personal relationship
between teacher and student, that both must be motivated, ambitious, and engaged in learning.
On one hand, potential problems arose from the lack of direct contact between teacher and
pupil: students missed the reinforcement or “class-spirit” among peers and the asides or casual
but interesting references made by teachers in the classroom. They had to endure the
drugery of lengthy written exposition otherwise made easier in conversations between
student and instructor. Furthermore, they had to avoid interruptions and irregularities working
outside of the classroom, as well as the temptation to be dishonest, which could easily be
detected in correspondence. On the other hand, he noted, about “two-thirds of oral instruction
given is valueless.” Moreover, some students found inspiration in personal correspondence,
since preparation was more demanding than classroom work. They had to be well-disciplined
and mature to overcome interruptions. The correspondence system also possessed advantages
by stimulating brevity, thoughtfulness, accuracy, thoroughness, and exactitude in writing. The
correspondence method reached thousands of students who otherwise had no opportunity for
schooling. Harper predicted the day would come “when the work done by correspondence
will be greater in amount than that done in the classrooms of our academies and colleges.” To
improve the quality and service of extension courses, educators at a number of universities
pooled their knowledge and resources by creating a national organization.17

16 Hervey F. Mallory, Secretary of the Correspondence-Study Department, University of
Chicago, “Teaching by Correspondence in the University of Chicago,” Proceedings of the National
University Extension Association at Chicago, Illinois, April 12-14, 1916 [Second Annual Conference]
mentions the pioneer of university extension courses, Professor Richard Moulton. The most
comprehensive studies of correspondence schools up to the mid-1930s are by John S. Noffsinger,
Correspondence Schools, Lyceums, and Chautauquas (New York: The Macmillan Company, 1926),
and Walton S. Bittner and Hervey F. Mallory, University Teaching By Mail (New York: The Macmillan
Company, 1933), both of which include brief histories of correspondence schooling. The Carnegie
Corporation funded both works as part of the Studies in Adult Education series.

American Ideas about Adult Education (New York: Bureau of Publications, Teachers College,
Columbia University, 1959): 75-83; and see the compendium of documents with commentary on
Educators from a number of large private colleges and state universities formed the National University Extension Association (NUEA) in 1915 as a way for university extension programs to share knowledge and to establish national standards for continuing education. University Extension, or non-resident university courses, began in England after the Oxford Commission conceived the plan in 1850. Students in the U.S. registered for extension courses as early as 1885. Extension courses catered to Americans already in the workforce but unable to attend regular classes or to afford resident academic programs. At the first meeting of the NUEA, Charles Van Hise, President of the University of Wisconsin, succinctly defined the university’s role in continuing education. The university ideal, he said, included “carrying knowledge to the people. . . . to carry light and opportunity to every human being in all parts of the nation.” Extension programs contributed to adult education in three ways. First, they provided vocational or professional skills for “economic improvement.” The University of Wisconsin correspondence courses in the mid-1910s, for example, remained largely vocational. Second, extension courses served to satisfy an individual’s natural curiosity about the world. Third, a loftier goal, extension or adult education offered ways to find personal enhancement and an appreciation of culture. University extension programs, educators believed, offered a unique way for adults to achieve those goals.18

Correspondence courses became an integral part of university extension services, which reached out to non-traditional students by offering subjects applicable “to concrete


problems of everyday affairs," according to the University of North Carolina at Chapel Hill, which began its extension programs in 1912. Extension courses also allowed a number of students to commute to classes in large cities and most courses conferred credits applicable toward a degree. The university also published an extension bulletin, consisting of handbooks, reports, articles, and outlines for courses and programs. Eventually, extension and correspondence students might become full-time students in residence. In many correspondence programs, examinations were usually required for credit courses and could be completed at the home university or at an approved location. In 1921 over 15,000 students enrolled in university extension courses at institutions in 39 states. The University of Wisconsin reported over 29,000 enrollees between 1920 and 1922, and over 6,000 correspondence students enrolled in courses from the University of Chicago in 1922 alone. Industrial-related courses had been made available for over 30 years by some schools. At the NUEA conference in 1928, the Extension Association’s president cited a Carnegie Corporation report that Americans spent $70 million a year on private correspondence instruction, mostly paid for by the students themselves.

In 1920, L. L. Bernard, a professor of English at the University of Minnesota, suggested two motives for the expansion of university-sponsored correspondence courses. First, by reaching more residents, state universities encouraged taxpayer support for university growth. Second, correspondence courses “offer as much first aid to a somewhat ailing democracy as is possible” by educating Americans to become informed citizens, an allusion to the citizenship component of the “Americanization” movement. In addition, correspondence schools offered a number of advantages and provided substitutes for university attendance. The working student could make “haste slowly” without physical exhaustion. Students could

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20 Moyer, “President’s Address,” Proceedings of the NUEA, 1928, p. 19. Interestingly, a survey reported in 2007 found that most students “in adult, continuing-education, and professional programs at American colleges and universities” relied upon their own resources or those of employers to pay for their education; see “Assessing Consumer Preferences for Adult, Continuing, and Professional Education: Financing and Tuition Assistance in Adult Learning,” reported by Elyse Ashburn, “Many Adults Use Cash to Pay for College,” The Chronicle of Higher Education, 9 March 2007, p. A 42.

broaden their skills at a comfortable pace. However, the correspondence method also imperiled individual study. Correspondence learning required a greater degree of self-discipline for some, and the degree of difficulty could rise for subjects that required additional learning aids such as musical instruments, exposure to languages, and laboratory paraphernalia. Quality textbooks might not be available and students could eventually lose interest or become distracted by leisure-time amusements, Bernard noted. As a result, “scholastic mortality” was high. In fact, “handicaps” abounded. Some faculty members often delayed grading papers or responding to students, and many saw correspondence study as less important than regular classroom teaching and lecturing. Some remained indifferent or expressed dissatisfaction with their compensation. Administrators often assumed that correspondence students were of poor quality, or they resented those correspondence instructors who made too much money!

While most university extension programs emanated from state-supported public universities, state governments usually required those departments to be self-supporting. With economic fluctuations, state financial support sometimes failed to cover large-scale extension budgets. A poll by the members of the National University Extension Association in 1919 favored federal aid to extension work. Despite a number of proposals from the NUEA during the 1920s and 1930s requesting federal aid to adult education and extension education, the federal government offered little assistance.

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22 Bernard, “Education By Correspondence,” pp. 31-38. Over a ten year period, Hermann Schlesinger, professor of chemistry at the University of Chicago, reported having few students enroll in chemistry by correspondence and few complete the course once begun. The university shipped laboratory supplies to those enrolled in science classes, even to those in foreign countries. He recalled no students replying to his inquiries regarding their failure to complete the course; see Hermann Schlesinger, “The Teaching of Science Courses by Correspondence,” *Proceedings of the National University Extension Association* at Madison, Wisconsin, May 8-10, 1924, pp. 179-195; N.C. Miller of Rutgers reported in 1927 that 25 percent of students enrolled in correspondence courses through the Rutgers Extension program failed to begin their studies; see N.C. Miller, Director of Industrial Extension, Rutgers University, “Adult Education in Industry,” *Proceedings of the National University Extension Association*, (1927): 100-101. For insights and an interesting summary of correspondence schools, see S.C. Mitchell, Benton Harbor (Michigan) High School, “The Small High School and Correspondence Instruction,” *Vocational Education Magazine* 1 (April 1923): 612-613.

23 Helen Williams, University of Iowa, “Correspondence Study Handicaps,” *Proceedings of the National University Extension Association* at Lawrence, Kansas, April 25-27, 1928 (Indianapolis, IN: Wm. B. Burford Printing Company, 1928): 140-146.

When the NUEA failed to attract attention from the federal government, some extension educators looked to the private sector. A number of firms increasingly valued the training of employees in plant or company schools by cooperating with local vocational and high schools, or by offering their own extension courses. In 1927, N.C. Miller of Rutgers University interjected the concept of “Industrial Extension,” or adult education in industry as opposed to Workers’ Education, which defined a specific kind of student preparing for leadership positions within organized labor. Employees attended industrial extension classes at their plant or work site and received credit from a cooperating university. Instructors from the university commuted to the plant site and the firm made payments in full to the school. The university thereby made a profit and had little or no overhead, while the firm benefited by adding to its stock of human capital. In New Jersey large firms such as General Electric, Westinghouse, the Lehigh Valley Railroad Company, the Mack Truck Company, the Vacuum Oil Company, Singer Sewing Machine, the American Can Company, Dupont, and smaller firms established on-site extension classes. Throughout the 1920s firms increasingly turned over extension training to professional managers in personnel or human resource departments. Miller noted that the most popular courses in factories related to foremanship. During the first year of the Rutgers industrial extension school, he reported that over 1,200 foremen and skilled mechanics enrolled in courses that generated nearly $18,000 for the university. While students explored diverse subjects, the most popular courses included economics, applied psychology, industrial relations and management, and marketing (“Psychology and Salesmanship”). Miller suggested using the terms “business” or “applied” when naming courses, since most students sought out topics useful to work or career development. Large numbers of students worked in retail, banking, and public utility companies, but few factory workers cared about achieving college credit. In Miller’s experience, older students proved demanding. Instructors had to display a command of their subjects, demonstrate motivation

and the ability to keep the students’ attention and respect, and exhibit practical experience in the field.  

Like the outreach to businesses by Rutgers, other university extension programs cooperated both with business and labor organizations. The University of Chicago, for example, offered courses for the Meat Packers Institute. The American Medical Association requested that the Johns Hopkins University and other institutions offer courses in a variety of health-related specialties. The costs of training and upgrading skills—the costs to firms in terms of employee wages, tuition, extension programs, correspondence courses, payments to instructors, and the use of facilities and equipment for seminars, workshops, and conferences—no doubt improved the performance and productivity of management and employees. The costs to American firms throughout the 1920s and thereafter must have been enormous, yet those costs were never carefully tallied by most firms or by state and national governments. Looking back from decades later, one observer discovered a number of reasons firms made (and continue to make) little effort to calculate their investment in human capital. Some managers excluded training as a primary function of the firm, or saw it as peripheral to “production, sales, and profit goals.” Although important, education took low priority to other goals and managers assumed the costs of training to be minimal. Most importantly, education and training programs tended to be decentralized, their costs spread over many departments, and oftentimes no mechanism existed for tracking the various kinds of training and educational programs. In the late 1920s, a survey of “industrial group instruction” by the Pennsylvania State University revealed the ages of those most likely to engage in home study: 17.6 percent of students fell into the 15 to 20 year old group; 46.3 percent made up the 21 to

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26 Hervey F. Mallory, Secretary of the Home Study Department and Dean in the Extension College at the University of Chicago, in Bittner and Mallory, *University Teaching by Mail*, pp. 26-27.

30 year old category, the largest; 31 to 40 year-old students comprised 23.3 percent; and those over 41 year old comprised 8.5 percent.\textsuperscript{28}

While correspondence courses in general remained popular, their completion rate remained low, especially for courses deemed “unsatisfactory and unprofitable.” The Commissioner of Education reported that, of the 4,112 students who enrolled in correspondence classes through the University of Chicago between 1892 and 1905, only 1,415, about 35 percent, actually completed the courses. Private correspondence schools, although reluctant to reveal privileged data, fared little better.\textsuperscript{29}

**Distance Learning: Private Correspondence Schools**

In addition to university extension programs, private correspondence schools appealed to millions of adults and garnered huge profits for the “home study” industry. Correspondence study ballooned after the Great War, demonstrating that Americans devoted increasing amounts of money and leisure time for self-improvement or the development of marketable skills. The Society to Encourage Studies at Home began in 1873 to promote study groups, prepare guides, and correspond with members. Late in the nineteenth century, two basic types of correspondence instruction emerged: private, for profit schools, and public or endowed universities affiliated with the NUEA; the latter offered extension courses either for credit or for general interest. Among the largest privates, the International Correspondence Schools (ICS) began its unique brand of instruction in 1891 from Scranton, Pennsylvania, originally to prepare coal miners to become licensed mine inspectors. The school provided useful information for those unable to attend formal classes, especially mechanics and apprentices who required some theoretical work. ICS printed its own textbooks and references, and reflected in its selection of subjects the growth of commercial occupations such as marketing and retail sales. While no data exist for evaluating the motivation or efficacy of correspondence courses purchased and completed, one school estimated that nearly ninety percent of students enrolled in courses sought new careers or advancement in their current


\textsuperscript{29} Jones, “The Continuation Schools,” pp. 107-112.
occupations. The Commissioner of Labor reported in 1902 that the average age of the more than 300,000 ICS students was about twenty-six years old. Most students, however, rarely completed their course of study, and those that did often took more than five years to do so. The ICS, which advertised heavily (and still does), catered mostly to apprentices and mechanics at the turn of the century. With no time limit, the completion rate remained low compared to that of the University of Chicago. The price of an ICS course, including text, cost $50 or more ($1,045 in 2005 dollars) and could be purchased on the installment plan. Demand remained high: over 850,000 students enrolled in 1905, and receipts for 1905-06 reached $425,000. Some correspondence schools achieved high quality and attracted large numbers of students, while others defrauded students by taking their money without providing a useful product. In some cases students enrolled just to acquire the textbooks.

To dissuade skeptics that correspondence courses were a frivolous endeavor, the Reverend Joseph H. Odell, admitting an early skepticism toward correspondence instruction, spoke favorably of the method in 1910 at Scranton, Pennsylvania, home of ICS. On that occasion he noted that the ICS had enrolled over 1.3 million students by 1910, including some


members of the U.S. Navy who went on to win commissions.\textsuperscript{32} ICS alone had served over 1,750,000 students, enrolling about 125,000 a year, by June 1915. The successful schools employed aggressive marketing and sales techniques, together spending millions of dollars on advertising alone. Lee Galloway, Professor of Commerce and Industry at New York University, classified correspondence schools into three groups: those that offered “general training” in basic subjects; those that offered “specialized technical training” as in law or bookkeeping; and those that offered “general commercial training.” In addition, he classified schools into “public” correspondence schools affiliated with universities, private schools such as the LaSalle Extension Institute and ICS, and “quasi-public” schools sponsored by commercial institutes and business associations. Apparently, those poorly managed or of low quality disappeared as quickly as they surfaced, but most served a useful function.\textsuperscript{33}

Another barometer of popularity stemmed from credit receivables for correspondence school courses—courses paid for on installment alone—which hovered between $15 and $19 million annually, peaking for the decade in 1926. The three largest schools accounted for forty percent of net receivables.\textsuperscript{34} In his later report on correspondence schools to the American Association for Adult Education in 1936, Noffsinger demonstrated a quantitative leap in correspondence enrollment by the mid-1930s. He noted that, apart from the university and secondary school correspondence courses, about 275 private correspondence schools existed in the United States. The latter offered good quality texts and courses in technical and trade occupations, marketing, and administration. Nearly 600,000 students, generally aged twenty-two to twenty-nine years old and most likely employed, sought instruction for job


The Bureau of Labor report of 1910 also mentioned correspondence schools as a form of instruction, but one that posed problems because of the isolation of students, delayed responses from instructors, or the reliance on postal communication, all of which proved frustrating for some students; see \textit{Twenty-Fifth Annual Report of the Commissioner of Labor, 1910: Industrial Education}, pp. 13-33, and citing p. 13.

improvement or promotion. In fact, some 5,000 firms contracted with various correspondence schools for training and for “up-grading” their employees. Unfortunately, some “irresponsible institutions” still offered courses of “questionable merit,” courses that were obsolete or merely reading courses that inhibited personal communication with knowledgeable mentors.\(^{35}\)

To protect correspondence school consumers, the National Home Study Council headed by John Noffsinger monitored private correspondence schools and rendered advice through its publication, the *Home Study Blue Book*. The *Blue Book*, available to the public at no cost, listed approved correspondence courses. Some of the approved schools in 1928 included the American Correspondence School of Law, American School of Photography, the Chicago School of Nursing, the LaSalle Extension University, the Moody Bible Institute, and the National Radio Institute. Of course, evaluating the efficacy of correspondence schools, whether private or public, prestigious or pedestrian, must have been difficult. Despite available figures for both private and public schools, enrollment did not reflect the successful completion of coursework. In fact, anecdotal evidence demonstrated that, even though employees benefited from employer-paid correspondence schools and received promotions, many students simply failed to complete the coursework. Despite the problems and drawbacks experienced by students over the decades, however, correspondence schools flourished in the 1920s and made education a consumer product.\(^{36}\)

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\(^{36}\) Noffsinger, “Private Correspondence Schools,” and J.S. Noffsinger, *Home Study Blue Book* (Washington, DC: The National Home Study Council, 1928): 15-17. The institute’s slogan: “We bring the campus to you.” Noffsinger emerged as the single most informed observer of correspondence schools; he is cited in nearly every publication referring to correspondence schools from the mid-1920s through the 1940s.

Charlatans continued to perpetrate fraudulent correspondence courses decades later. A conference of European educators, for example, convened in the 1960s to supervise and regulate correspondence schools that offered poorly constructed courses or employed deceptive advertising; see Isaäc J. Sloos, *Public Supervision of Correspondence Courses: The Harmonization of Legislation* (Strasbourg, France: Council for Cultural Cooperation, 1969). Also see “Report on University Extension Credit Courses,” *Proceedings of the National University Extension Association* held at Madison, Wisconsin, May 8-10, 1924, pp. 60-130. For a discussion about cooperation with the radio industry three years later, “Report of Committee on Radio Broadcasting,” *Proceedings of the National University Extension Association* at Chapel Hill, North Carolina, April 25-27, 1927 (Boston, MA: Wright and Potter Printing Company, 1927): 182-188.

Correspondence courses have been extended by way of the internet, and many are added nearly on a daily basis. For a review of the literature on distance learning through 2003, see Christopher J. Zirkle, “Distance Education: The State of the Art in Career and Technical Education,”
Although one of the most popular methods of adult and continuing education, correspondence schools in the 1920s embraced no national standards and remained largely ill-defined. Some schools catered to one specific interest while others offered many types of courses. The National Home Study Council reported that about 40 percent of correspondence students studied business and commercial courses, another 40 percent registered for vocational courses, and the remainder enrolled in liberal arts or personal development courses. In his report to the Carnegie Corporation, Noffsinger estimated that about 350 correspondence schools existed in the United States by the middle of the decade. The schools attracted over a million-and-a-half students who paid for courses that ranged in price from $40 to $280. Many courses were never completed. Furthermore, some schools engaged in false advertising, promising to provide instruction for “any course demanded,” including medicine, engineering, and the law. The latter sparked a rebuttal from one lawyer, who objected to granting law degrees by correspondence.37

To monitor and regulate unscrupulous schools, symposia held by the NUEA during the 1920s and 1930s included reports on the successes and failures of correspondence study at various institutions, and attempted to establish national standards. Contributors often complained about the unsavory practices of commercial schools. In 1922, for example, Earl Kilpatrick of the University of Oregon reported on a five year study of eighty-three commercial correspondence schools. He noted that, while university extension courses focused on the diffusion of “knowledge,” commercial schools existed for profit, leading some to abuse the public trust with false advertising. Some schools merely sold books and guides; others assured purchasers of jobs, promised easy courses, or acquired endorsements from successful public figures. Students often paid on installment plans or received special promotions and discounts. One school guaranteed a certificate to every student. Kilpatrick commented that, after five years, unscrupulous practices placed “some schools still definitely in the patent medicine class.” He recommended that the U.S. Bureau of Education oversee


interstate commercial correspondence schools, require conformity to standard teaching methods, and prohibit schools from making false claims.38

A number of reputable private schools joined with the NUEA and the National Better Business Bureau to police the industry and adopt advertising and industry standards. A number of private schools organized and funded the National Home Study Council in 1926. The council promoted ethical and educational standards for correspondence study approved by the Federal Trade Commission in 1927, and listed reputable schools. The accumulation of criticisms eventually attracted the attention of Edward L. Greene, General Manager of the National Better Business Bureau. Greene noted in 1930 the “tremendous increase in the desire for education that marked the years immediately following the war” and its subsequent impact on commercial correspondence study. While established schools met the sizeable demand for instruction, Greene observed “less stable” correspondence enterprises emerging, ones that used “high pressure tactics” and sensational advertising, promising that students having little or no education could increase their incomes by studying in their spare time. Charlatans guaranteed reduced prices, easy credit, and “money back” if the student remained unsatisfied. The Better Business Bureau and the FTC monitored advertising copy and infractions, which “toned down” but did not eliminate the problems. The Bureau conducted an investigation of the industry to “restore public confidence,” but offered little data demonstrating improvement. Worse, contractual obligations landed many students who failed to pay for whatever reason in the throws of bill collectors or the courts.39

While policing the correspondence study industry during the mid-1920s, Noffsinger also attempted a broad description of students enrolled in correspondence schools. On the basis of available data, he found that nearly 80 percent of all private correspondence students purchased vocational courses. In a survey of over 168,800 students enrolled in 25 private


correspondence schools, student’s ages ranged from 14 to 65, with the middle half of that number aged 21 to 34 years old. Three-fourths of correspondence students were above college age. Noffsinger concluded that the majority of correspondence students who worked had families. Other surveys indicated that most students had some high school. The majority worked at semi-skilled jobs in business and industry, and most resided in mid-sized cities of less than 100,000 rather than in rural areas or the largest cities where older students likely attended public or private vocational and commercial schools. At the University of Chicago, the occupations of correspondence students varied: teachers, students, and those employed by schools or school boards enrolled in large numbers, while business personnel (clerks, accountants, stenographers, bookkeepers, office assistants, secretaries, and salesmen) represented the second leading cluster of occupations. The most frequently requested subjects in 1930-31 included history, languages, literature, education, and the social sciences.40

While private correspondence schools revealed little information about enrollment or the background of their students, an examination of 168,000 student records from public university programs in 1925 showed that thirty-five percent of students worked in business, twenty-three percent in industry, nine percent as professionals, five percent in agriculture, and the remaining twenty-eight percent in various kinds of jobs. The great majority worked in unskilled or semi-skilled occupations. From the study, two trends emerged: first, most students came from small communities having inadequate training programs; second, there existed a high demand for courses in business and technical training. By the end of the decade, correspondence study and extension courses for colleges, universities, and business schools experienced a tremendous expansion of enrollment. Hundreds of thousands enrolled in college level courses, and millions in commercial correspondence schools. Correspondence education, as Harper predicted decades earlier, exceeded the number of courses offered by all of the colleges, universities, and professional schools combined.41

40 Noffsinger, Correspondence Schools, Lyceums, Chautauquas, pp. 35, 50-60; Bittner and Mallory, University Teaching by Mail, pp. 40-41, 60. Noffsinger does not cite the origins of his data. Also see the summary of a report from Iowa State University by C.L. Robbins and Wendell Johnson, “A Study of Correspondence Students,” in Mary L. Ely, ed., Adult Education in Action (New York: American Association for Adult Education, 1936): 338-340.

Working students continued to face problems with commercial correspondence schools after spending millions of dollars on instruction. One educator stressed vigilance, like the awareness required for operating machinery: students should pay close attention to the work required and the conditions of enrolling in a correspondence course. He recommended that employers, educational directors, managers, or supervisors advise their workers about enrolling in reputable correspondence schools. Schools as well should supply firms with adequate information about their course content, conditions for completion, and prices. Businessmen, educators, and journalists also endorsed correspondence education for employees. As an alternative, employees could enroll in group instruction or short courses that generally furnished lesson pamphlets. The latter, along with schools that awarded certificates, exhibited higher completion rates. While universities and private correspondence schools dominated the market, a few firms offered guidance from educational directors, or created their own courses, thus lowering costs for students, allowing for quicker feedback, and providing closer supervision and guidance. The Southern Bell Telephone and Telegraph Company, for example, offered “Home Study Sheets” that covered various topics for employees. The Carnegie Steel Company’s Duquesne Works offered a two-year course for employees interested in learning more about the steel industry. Students received time off from work to attend classes. The firm also offered home study courses in cooperation with Pennsylvania State College and the University of Wisconsin. Upon completion of the courses, the company refunded the students’ tuition. In addition, Carnegie Steel offered literacy courses for immigrants, illiterates, and African American employees, as well as elementary subjects in English, math, and citizenship.42


Despite the large numbers of students and the attempts by schools to police the industry, correspondence schools lacked uniformity of instruction and content. Noffsinger expressed concern at the “appalling” rate of drop-outs, even though most schools tended to be “over-generous” in grading, lest students become discouraged. Nevertheless, private correspondence education remained a vibrant industry after the First World War. Expenses included advertising, commissions for salespeople, the cost of materials, and postage. The schools made large profits because they spent very little on actual instruction. The promotional staffs in a survey of 100 schools exceeded the instructional staffs by four to six times or even larger in some cases. Correspondence courses also remained a good source of revenue for universities.43

While the demand for education and training so prevalent in the 1920s could be achieved in a number of ways, correspondence education remained the most popular because working students found it so accessible despite the high attrition rates. More students enrolled in correspondence schools than in universities. Unscrupulous schools remained the target of consumer advocates such as Noffsinger. He decried abuses by “diploma mills” and criticized the lack of oversight by some state governments while praising the few states that policed the industry. He also recommended that states design standards and regulate correspondence and resident schools, using as a model the bill proposed in Illinois that gave the state authority to license, inspect, and regulate correspondence schools. In addition to state oversight, Noffsinger called upon the legitimate schools to police the industry, to set the standards, and restore public confidence. Correspondence coursework clearly dominated continuing education by adults during the 1920s. Its potential rival, education by radio, emerged as a weak alternative for workforce training and education.44


43 Noffsinger, Correspondence Schools, Lyceums, Chautauquas, pp. 61-80; Bittner and Mallory, University Teaching by Mail, pp 157-166. For additional criticisms of correspondence instruction, see Bittner and Mallory, University Teaching by Mail, pp. 5-8, citing Scott Buchanan’s critical review of Abraham Flexner, in “Universities,” Journal of Adult Education (April 1913), and Ella Woodyard, Culture at a Price: A Study of Private Correspondence School Offerings (New York: American Association for Adult Education, 1940). Also see Rolf Nugent’s study for the Russell Sage Foundation, in a section on correspondence schools, in Consumer Credit and Economic Stability.

44 John S. Noffsinger, Orders and Stipulations Issued to Home Study Schools by the Federal Trade Commission, 1925-1938 (Washington, DC: National Home Study Council, 1938): 72-90; and A Directory of Approved Correspondence Courses, which included two of the largest commercial
Distance Learning: Education by Radio

In addition to correspondence instruction, another form of distance learning emerged during the 1920s as a result of technological innovation. Although many new technologies promised innovative methods of instruction, radio had the power to extend easily and cheaply the benefits of education to millions of Americans unable to attend formal schools.45 About the same time radio became available to more Americans in the mid-1920s, Americanization classes mutated into adult education. Radio was the first modern technological innovation to be used for “distance learning” as commercial radio flooded the airwaves in the decade following the First World War. After station KDKA began broadcasting from Pittsburgh in 1920, commercial radio blossomed and broadcasters anticipated the medium’s money-making potential. In 1924, the Department of Commerce under Herbert Hoover issued 533 broadcasting licenses; educational institutions received 85 of these. The majority of educational licenses, however, went to electrical engineering departments for experimental

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purposes. Some had broadcast in code since the turn of the century. Nevertheless, some educators embraced the new technology that promised to extend the blessings of education to large numbers of Americans, much as their progeny would do with television and the Internet later in the century.46

Educators envisioned the potential for “distance learning” and, by extension, vocational training available with radio. A report by the National University Extension Association radio committee in 1924, noting the monopolistic power of newspaper chains, feared a similar trend in radio broadcasting as demonstrated by the “chain of powerful stations” popping up across the country. One optimistic educator opined that radio revived the Roman forum and would supplement the school curriculum. In addition, the radio might “once again buttress home and family influences.” On the other hand, T. J. Grayson from the University of Pennsylvania pointed out that commercial stations were “apt to pander to the lowest average taste.”47


While academics and intellectuals at the time discussed books, literature, music and innovations in the sciences and social sciences on radio for a “high-brow” culture, the historian Joan Shelly Rubin asserted that radio in the 1920s and 1930s pandered to a “middle-brow” culture. The middle brow rejected (or perhaps contaminated) high-brow culture and appealed to a growing, upwardly mobile middle-class sensibility. While some listeners may have dialed up quiz shows and soap operas, educators saw the potential of radio for music appreciation courses with broadcasts of opera and classical music by the New York Philharmonic. According to Rubin, by January 1923 over seventy “universities, colleges, and schools had obtained broadcasting licenses.” Listeners could pay for on-air courses and receive certificates and degree credit. Chicago’s “Little Red Schoolhouse of Radio” broadcast to primary and secondary schools reaching 27,000 children in 1924-25, although the program fell silent shortly thereafter. Some schools published their programs in local newspapers. The radio rescued others from isolation. According to one survey of public schools, by the late 1920s New Jersey boasted the largest percentage of radio receivers in its public schools (nearly fifty percent), followed by Nebraska (with nearly twenty-five percent). Especially useful to rural areas were agricultural reports. With the aid of local, state, and private sources, universities became the first to utilize radio for “distance learning,” and by 1925 forty-one institutions formed the Association of College and University Broadcasting Stations (ACUBS). However, membership fell off within a few years and few states installed radios in schoolrooms for instructional use.

Radio helped publicize educational programs and offered information to people wanting to develop certain skills. The University of Michigan, for example, created a package of radio extension courses by 1923, and sixty institutions, forty-seven universities among them, broadcast educational and musical programs to a small portion of the 1 to 1.5 million receivers in the United States. The “Ohio School of the Air,” serving primary and secondary schools as well as adults and university students in 1923, began as a cooperative effort between Ohio State University (WEAO) in Columbus and the privately owned WLW station

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in Cincinnati. During the Spring Quarter of 1929, Ohio State gave listeners a taste of the college lecture when it broadcast entire courses from the classroom. A number of universities offered radio courses, but few listeners paid fees for college credit. In radio courses offered by Nebraska Wesleyan University, for example, over fifty percent of the 130 students enrolled completed the first courses offered; they took exams “on the honor system.” J.J. Tigert, president of the University of Florida and former U.S. Commissioner of Education, noted a consensus among most colleges and universities, a consensus that colleges offer informal, non-credit lecture courses by radio. While some commercial stations offered air time for educational institutions during the evenings, educational courses on commercial stations during the peak daytime hours compromised advertising revenue. Furthermore, the Federal Radio Commission eventually restricted educational broadcasting to limited frequencies at inopportune times.49

Universities conducted various surveys to gauge listener support for educational programming. In 1928, a University of Virginia educator concluded from a small study of about thirty commercial radio stations from New York to Richmond, Virginia, that music, especially popular and classical, comprised at least half of all programming. Air time devoted to educational talks exceeded those of religion, sports, and advertising. Encouraged by the time given to educational programs, Zehmer urged the NUEA to continue cooperating with other universities, government bodies, and commercial stations to study the efficacy of educational programming and demand its inclusion in commercial venues.50


Educational broadcasting remained marginal during the 1930s because of uninspired programming and perhaps from a misunderstanding of the market. For example, the disappointing results of a survey by Frederick Lumley of Ohio State University in November 1931 revealed a lack of interest by listeners. WEAO, the 750 watt station operated by OSU in Columbus, reached Franklin County residents and those residing in two layers of surrounding counties. In the survey, only 10 percent of the more than 1800 subscribers to the monthly program guide bothered to respond. Although women listeners slightly outnumbered men, respondents ranked football as the most popular program, followed by music, plays, discussions (regarding domestic and agricultural topics such as livestock and market reports), and Ohio history. Language lessons attracted few listeners. Another survey by Tracey Tyler in 1933 reported that, of 71 land-grant colleges and state universities, only 24 actually owned and operated their own stations. Of those, nearly 45 percent of broadcast time was spent on entertainment, 20 percent on farm and home information, and only 7.5 percent of the broadcasts catered to educational instruction. Apparently educational programs by radio found only a tiny audience. Training for technical fields by radio remained unworkable, and many educators believed good training required close supervision. Few if any Americans used radio education for job training during the 1920s and 1930s, although expectations for such a market may have been elevated by the fact that the number of households owning radios increased from 2.75 million in 1925 to over 12 million by 1930.51

The National Committee on Education by Radio, formed in 1930 to foster research and experiment, also informed educators, the public, and various levels of government through its publication, *Education by Radio*. It sought legislation that guaranteed “a minimum of fifteen percent of all radio broadcasting channels” in the U.S. be made available for educational institutions and government agencies.52 Despite cooperation from some

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The distinguished social scientist Paul Lazerfeld of Columbia University and Frank N. Stanton of the Columbia Broadcasting System (CBS) attempted to evaluate the effectiveness of radio programming in a report issued in 1941, concluding that radio programming and advertising created mixed effects, often related to a listener’s age, in Paul F. Lazerfeld and Frank N. Stanton, *Radio Research, 1941* (New York: Duell, Sloan and Pearce, 1941).

52 National Committee on Education by Radio, *Education By Radio* v. 11, n. 4 (Fourth Quarter 1941): 35-40. The journal eventually ceased publication in 1941. For the early regulation of
commercial broadcasters, educators as early as 1926 complained that universities lacked up-to-date equipment, could broadcast only in the evenings, or that the Department of Commerce had granted so many licenses that frequencies interfered with university programs.\textsuperscript{53}

The National Radio Chamber of Commerce developed plans to establish extension courses for American colleges and universities, and by 1929 forty-five institutions did so. Over the next decade, however, the number of educational institutions owning their own stations declined. The survey by Tyler in 1933 found that capital remained scarce for equipment, maintenance, and operating expenses; many colleges and universities simply could not afford to support a radio station. Furthermore, commercial radio competed for broadcast frequencies and air time. Commercial broadcasters, such as David Sarnoff, president of the Radio Corporation of America (RCA), believed that using airwaves for education only narrowed the appeal of radio. The Federal Radio Commission (FRC), created in 1927, favored the commercial development of radio over instructional programming. The FRC, according to one historian of educational radio, restricted the licensing of educational stations and assigned poor frequencies and the least desirable operating time to educational institutions. Meanwhile, commercial stations, taking advantage of the weak financial conditions of some college and university radio stations, purchased licenses or offered other incentives in order to increase their own broadcasting operations and obtain additional broadcasting channels. A committee of the FRC reported to the senate in 1932 that educational stations were unnecessary, and Congress rejected a bill introduced in 1932 by Senator Simeon Fess of Ohio that allocated 15 percent of the frequency spectrum for educational purposes. After battling commercial broadcasters for most of the 1930s, advocates of educational radio finally managed to achieve some success in the 1940s, when the Federal Communications Commission set aside FM radio and television frequencies for educational purposes.\textsuperscript{54}


\textsuperscript{53} “Discussion on Broadcasting,” \textit{Proceedings of the National University Extension Association} at Salt Lake City, Utah, June 7-10, 1926 (Boston, MA: 1926): 119-122.

\textsuperscript{54} Hill, \textit{NAEB History}, Vol. 1, pp. 15-17, and 42-60; \textit{Education by Radio}, vol. 11, no. 4 (1941): 35-40; Tracy F. Tyler, \textit{An Appraisal of Radio Broadcasting in the Land-Grant Colleges and State Universities}. 185
Educators blamed commercial enterprises for the lack of interest in educational programming. In the face of commercial competition for frequencies and air time the number of educational radio stations declined to 38, and the FCC seemed willing to maintain the status quo. However, members of the NUEA carried on-air courses and federal agencies such as the U.S. Office of Education and the Department of Agriculture expressed interest in developing programs. Moreover, the committee welcomed the efforts of the National Association of Broadcasters in its work on a code of standards, its attempt to facilitate the freer use of copyrighted material, and the renewed cooperation from the broadcasting industry, notably the National Broadcasting Company (NBC) and the Columbia Broadcasting Company (CBS). The report made special mention of CBS because it continued daily broadcasts of the American School of the Air and made available handbooks for teachers with supplementary materials and schedules of broadcasts in each time zone. While commercial broadcasting of educational programs seemed promising, Oscar Sams, head of radio education at the University of Tennessee, believed that many teachers failed to utilize radio in the classrooms or lacked training in the optimal use of radio technologies. Furthermore, the lack of coordination between national programs and classroom schedules persisted, although local broadcasters often chose to assist classroom programming. Despite his criticisms, however,
Sams had no complaints of the quality of educational programs, and believed that as the use of radio in the classroom continued to grow, so would the demand for educational programs.57

In addition to education by radio, a few vocational schools initiated the first courses in the “science and art of broadcasting.” Radio broadcasting contributed to the changing structure of the national economy and created new occupations. One station operated by the Buffalo, New York, school system trained operators and studio technicians. Amateur radio stations operated in 1923 by public schools in Toledo, Ohio, served newly established vocational courses in radio theory, followed later by courses in the production and techniques of broadcasting. Dunbar High School, an African American school in Okmulgee, Oklahoma, joined another local high school and a junior college in adding broadcast studios to its building. Schools and junior colleges around the nation installed radio receivers as aids to classroom study and gave students hands-on experience with radio broadcasting.58

Education by radio largely faded by World War Two, partly because of the loss of public school revenues during the Depression. The National Committee on Education by Radio ceased publishing its quarterly, Education by Radio, and ended its operations in late 1941. The attempt by educators to substitute classroom learning by radio began a new approach to education, one driven by existing technologies. Education by radio presaged later technology-driven methods of distance learning: television and the internet.59

Military Training as Adult Education

Despite the inherent problems of correspondence courses and education by radio, millions of distance learners certainly benefited. Correspondence schooling especially suited soldiers and sailors deployed on ships or to distant posts having no formal schools or resources. Like the civilian workforce, the military required skilled personnel and constant upgrading and continuing education. The technological innovations in the United States


military paralleled those of industry. Soldiers and sailors lacked technical instruction and basic education in many locales, or their assignments stationed them away from regular classroom facilities. Modern warfare utilized new technologies such as aircraft, larger and faster diesel-powered ships, and motorized vehicles to support combat arms, communications, and transportation. As a result, national defense included investment in new technology and investment in human capital. Addressing the National Association of Corporation Schools in the summer of 1914, a young naval officer reminded Americans that their tax investment in the Army and Navy produced returns in many ways: continued security, peace, and prosperity. Vocational training for young men made them more efficient, well-disciplined workers and citizens after their military service. When voyaging to foreign lands, soldiers and sailors demonstrated to the world some of the best machinery made in the United States. The Navy in particular placed a new emphasis on training during the administration of Woodrow Wilson, when the Secretary of the Navy Josephus Daniels issued in 1913 General Order 63. The secretary’s initiative established instruction in fundamental subjects and promoted various kinds of training for the Navy and Marine Corps. A year later Daniels declared that, “The Navy is the greatest university in America, embracing every character of instruction, from the teaching of spelling to the newly enlisted men, to the study of strategy by the most experienced officers, and having in its classes, including university extension work, more than 60,000 men.”

The Navy utilized the expertise of private sector and public educational institutions. By 1915 over 1,500 bluejackets had enrolled in correspondence courses. Among those, 85 studied to become eligible for entrance to the Naval Academy, and 356 prepared themselves for warrant officer billets. About sixty percent of the courses taken by enlisted men were meant to enhance professionalism or technical knowledge. L.R. Alderman, who later served in the Bureau of Education during the Roosevelt administration, became senior educational advisor to the Navy. He established an adult education program in 1919 to provide correspondence courses in conjunction with guidance from officers and University Extension

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programs. While no supporting evidence exists, commanding officers reported that additional training and education improved efficiency, promoted attention to the care of equipment and the conservation of resources, and boosted morale.61

At the behest of Secretary Daniels and other progressive military leaders, the sea services established trade schools and encouraged self-improvement through education. In fact, “Uncle Josephus” established numerous reforms meant to increase civilian respect for servicemen and improve the quality of life for ordinary sailors. Daniels encouraged recruitment with slogans such as, “Join the Navy and Learn a Trade” or “Every Battleship a School.” Incentives for promotion, and thus higher pay, induced sailors to become “rated” in a particular skill or trade, especially as the Navy became increasingly technical during the 1920s and 1930s. Extension Departments and correspondence schools served the needs of sailors aboard ship or those without access to formal service schools. In 1919 the Naval War College began offering correspondence courses for professional development, and by the early 1920s the Navy utilized correspondence instruction in a variety of technical fields, ranging from navigation and communications to electrical engineering and pharmacy. The rating system for sailors provided incentives—promotions and higher pay—to gain experience and proficiency in one’s field. Enrollment for sailors in 1922 exceeded 6,000 men (about 6.5 percent of the entire enlisted force) on 241 ships and six shore installations. In the following year, the Training Division that oversaw correspondence and technical training became responsible for all Navy educational activities except those at the Naval Academy. By the mid-1930s, however, the availability of naval schools and reimbursement for correspondence courses declined precipitously.62


Like the Navy, the Marine Corps and the Coast Guard had also established training
divisions and correspondence schools for their members. For the Marine Corps,
Commandant Major General John A. Lejeune, a progressive like Daniels, launched the Marine
Corps Institute (MCI) in 1919. Lejeune instructed the Institute “to provide enlisted men with
educational facilities for the joint purpose of increasing their efficiency while in the service
and of better fitting them for the duties of citizenship when they leave the service.” The
Marine education and vocational courses helped retain veterans and attract good recruits. The
extra schooling, Secretary Daniels remarked, would make a Marine “better equipped
physically, mentally, and morally, than he was when he entered the military service.”

The majority of MCI courses followed the correspondence method developed by the
International Correspondence Schools (ICS), which also helped organize the Institute and
provided free textbooks. The Marine Corps paid the tuition, struggling to do so at times, and
appointed instructors to grade assignments and offer expertise in certain fields. In some
instances, the Corps actually conducted classes at Quantico, Virginia, as well as at other
installations, where individuals voluntarily enrolled in courses. During a time of growing
professionalization and bureaucratic oversight, administrative courses such as typing,
stenography, shorthand, English, filing, bookkeeping, and mathematics—subjects covered in
civilian business or commercial schools—enjoyed broad popularity. The Institute offered 215
courses to nearly 4,500 Marines during the first year alone, courses that prepared men for
promotion or attracted recruits. However, the completion rate for Marines mirrored those of

what follows is informed by Leo J. Daugherty, III, “‘To Fight Our Country’s Battles’: An Institutional

63 The total number of active duty military and naval personnel between 1922 and 1936
(excluding the Coast Guard, which serves under the Department of Treasury) never exceeded 300,000
and, until 1940, the number remained less than 400,000, see U.S. Department of Commerce, Bureau of
members between 1920 and 1940.

1930; Quantico, VA: The Marine Corps Association, 1979): 464, cited in Daugherty, “‘To Fight Our

65 Daugherty, “‘To Fight Our Country’s Battles’,“ vol. 2, pp. 458-459, citing Josephus
Daniels, Annual Report of the Secretary of the Navy (Washington, DC: Government Printing Office,
1919): 150.
most civilian correspondence courses, a rate that varied from five to ten percent at various times between 1921 and 1925. Although some 7,000 Marines (over 35 percent of all enlisted personnel) enrolled in courses in 1924 and 1925, roughly ten percent completed their studies. The Marine Corps established extension and correspondence schools for officers in 1926. In addition to MCI courses, the Corps offered other useful occupational training during the 1920s that included cooking and baking, motor transport, and aviation mechanics. Auto mechanics proved to be the most popular course among vocational classes offered in 1920.66

While the Navy and Marine Corps found ways to offer continuing education for their members, the Army faced funding shortages by a parsimonious Congress. The Army issued a general order in 1919 to establish a training policy. The Army sought to, first, train technicians and mechanics, and provide general education to enhance military efficiency. Second, it offered educational programs to prepare soldiers for an occupation in civilian life. By March 1920, 100,000 soldiers had enrolled in classes, but reorganization of the Army after 1920 reduced funding for peacetime purposes. The Army also established correspondence courses after its reorganization in order to increase efficiency and to utilize civilian technical training for regular and reserve personnel. Also that year the National Society for Vocational Education endorsed efforts to introduce vocational training to soldiers. However, in 1922, following paltry appropriations for military training, only correspondence courses seemed to offer at least some minimal training, and that funding went to reservists. While deficient in providing actual “hands-on” experience, regular Army officers trained reserve officers by correspondence. The military correspondence and vocational training courses mirrored those of the civilian world during the New Era, but opportunities for training and education suffered as a result of budget cuts during the 1930s.67

66 Capt. J.D. Chase, “Professional Education by Mail,” Marine Corps Gazette 57 (October 1973): 38-43; Daugherty, “‘To Fight Our Country’s Battles’,” vol. 2, pp. 459-526, Table 11.2, p. 464, for MCI completion rates, and p. 460, note 17, on the popularity of auto mechanics. The interest in automotive courses may have been for personal reasons or a response to the demand for trained mechanics in the 1920s. F.C. Smith called upon the industry to provide services to customers by properly training and upgrading auto mechanics, or by cooperating with existing schools, most of which lagged in offering timely technical information for their students. He proposed an outline for formal auto mechanic schooling in “Training Auto Mechanics in Cooperation With Industry,” Vocational Education Magazine 2 (November 1924): 1057-1060.

67 “Education in the Army,” The Vocational Summary 3 (July 1920): 39; Major William C. Rose, “Problems of Army Correspondence Courses,” and Arthur J. Klein, “Education Aspects of Army Correspondence Courses,” Proceedings of the National University Extension Association, held at Lexington, Kentucky, April 20-22, 1922, pp. 123-125 and 125-127, respectively. For the Resolution
Conclusion

While the New Era demonstrated a period of enormous productivity and economic growth, hastened in part by new innovations and a surge of investment in human capital, Americans utilized any number of resources—public and private—to enhance their chances for increased material and social rewards. Training and education begun during the war continued to increase during the 1920s. As one economist noted in his report to the President in *Recent Economic Changes in the United States*, “the interest in training aroused at the time of the war has not materially abated.”

By the end of the decade, however, the National Industrial Conference Board sensed a “maladjustment” between industry and the public school system, and set about to appraise the state of public education and the economic and social conditions that influenced it. Because of the concern for the common welfare of many diverse segments of society, the function of education had broadened, and “the state,” the Board report noted in 1929, “is assuming more and more responsibility for the solution” to problems created by a modern economy. Education, the NICB reported, “has become increasingly important.” But were the American people willing to bear the costs of education for youth and adults? As schools accepted more responsibility for physical development and “character building,” and “moral training,” many employers complained of the inability of young people to “write legibly, figure accurately . . . spell correctly,” or exhibit the power to think and apply common-sense. Taxpayers complained of the rising costs of education. Educators decried routinization, the lack of professional commitment by colleagues, and having to accommodate “unassimilated” students forced into school by legal mandates. Moreover, various interest groups pressured educators

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69 National Industrial Conference Board, *Public Education As Affecting the Adjustment of Youth to Life* (New York: National Industrial Conference Board, Inc., 1929): v-vi. The Conference Board’s Education Advisory Committee included representatives from both industry and education, including David Snedden, then a public school superintendent and state commissioner, and two university officers: the president of Antioch College and the chancellor of New York University, ibid., p. viii.
to follow one course of study or another. Thus training the American workforce placed increasing demands upon public education.  

Changes brought about by modern industrial society caught the attention of Charles Prosser in 1924. He observed how new developments in industry required corresponding adjustments in technical knowledge. New discoveries, new machinery, and new forms of knowledge, all required adaptation or “constant readaptation”—including the continuous upgrading of skills. New forms of communication disseminated knowledge quickly. Therefore, there existed no “complete adequate and final preparation for any job.” The most likely places for upgrading skills, Prosser observed, were part-time or evening schools financed by the public. Schools must be relied upon for additional training, whether public or private, and it was imperative that schools keep abreast of local occupations and local needs. In addition, instructors had to remain competent in their skills and maintain an awareness of “changing conditions and requirements.” Yet by the end of the decade, David Snedden wondered if supporters of vocational education had done enough. The lack of standards for training and competency in particular skills allowed thousands of young workers to seek additional training in haphazard fashion through day schools, part-time schools, correspondence courses, and evening classes. Americans seeking training and education, he quipped, resembled sick people seeking well-advertised remedies. Americans have spent “millions of dollars” for correspondence training, Snedden charged; “money wasted” except for those who through chance or natural ability succeeded through “efficient self-education.” Snedden realized that the need for full-time vocational training for adults aged twenty to thirty years old exceeded that for younger ages.

World War One may have changed the nature of warfare and America’s role in world affairs, but it also stimulated manpower training for adults. While the public and private

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70 Ibid., Chapter 2, pp. 4-20, and citing pp. 12-13. Still some educators even believed vocational education inappropriate for high school students; see T.H. Eaton, Cornell University, “Casting Vocational Education Out of the High School,” and David Snedden’s response, Vocational Education Magazine 1 (June 1923): 723-724 and 724-726, respectively.


sectors worked together to train hundreds of thousands during the war, the federal government displayed no long-term interest in training. During the interwar years, American workers relied upon employers, commercial schools, correspondence courses, state and local universities, public vocational and secondary schools, and, of course, their own resources. While the federal government trained its own employees such as Internal Revenue Service agents and military personnel, that training served to fill specific federal occupations rather than aid American workers in the private sector. The burden of workforce education in the New Era fell upon state and local school boards, large firms, and individuals. The federal government, however, would take on a greater role in education and workforce training over the following decades.

CHAPTER 5

REHABILITATING THE “DISABLED SOLDIER OF INDUSTRY”: TECHNOLOGICAL UNEMPLOYMENT AND STRUCTURAL CHANGE IN THE 1930s

“There is a manifest necessity of anticipating industrial changes far enough in advance so that employees destined to be displaced by them may be retrained for other types of work.”
-- J.C. Wright, Director, Federal Board for Vocational Education, 1931

Paul Douglas, the eminent economist at the University of Chicago and future Senator from Illinois, remarked in the early 1920s that the huge numbers of Americans seeking technical education in the private sector rendered “adequate proof that the present educational system of the country has failed to meet the needs of the times.” Educators concurred that technological changes had transformed the nation swiftly and profoundly since the turn of the century. In fact, observers by the end of the 1920s noted the growing problem of “technological unemployment,” unemployment created by labor-saving machinery that


“displaced” workers from obsolete occupations. Did the education system fail or was it slow to respond to rapid technological changes, changes that required public school curricula, firms, and individuals to adapt to new occupations?

This chapter examines how policy makers responded to the problem of “technological unemployment” and structural change, and attempts to describe various ways educators, private trainers, business leaders, labor unions, and individuals struggled to achieve or maintain training in the face of mass unemployment. It also explores the patterns of workforce education and training established during the 1920s that continued into the 1930s. Correspondence schools, commercial schools, public evening schools, and large firms reduced their operations and services during the nadir of the Great Depression. During those years vocational school enrollment declined and opportunities for education and training became increasingly scarce. The chapter closes with the observations made by government officials about future labor force trends. Meanwhile, many Americans remained ill-prepared for the labor market and the number of skilled workers declined precipitously during the decade. Only on the advent of World War Two did training revive on a massive scale, largely through the efforts of the federal government.

Technological Unemployment

During the late 1920s, a number of authors writing in the *Journal of Adult Education* began to refer to “a new kind of unemployment.” Using the term “technological unemployment,” they indicated that a form of structural unemployment occurred because of new technologies. For example, Spencer Miller, Jr., Secretary of the Workers’ Education Bureau, wrote: “In 1928 for the first time we were confronted as a nation with a serious problem of technological unemployment” attributable to the “mechanization of industry.” Similarly, a notice for the Workers’ Education Bureau offered practical subjects to meet the “problems arising out of technological unemployment.” A symposium conducted by the Carnegie Corporation late in 1930 discussed “Unemployment and Adult Education: Displacement by Machines Creates Re-education Problems.”

Participants in the conference included educators, public intellectuals, and training experts. Subsequent articles emerged from the symposium by the historian Charles Beard, the economist Paul Douglas, and the future director of the Bureau of Labor Statistics, Isador Lubin, then a researcher at the Brookings Institution. The participants recommended that unemployment resulting from structural changes required public funding for re-education and public assistance with job placement, interventions that required assistance from the federal government. The popular author Stuart Chase observed that technological innovations had displaced millions of workers and the trend would likely continue. Beard noted that, under the auspices of the Federal Board for Vocational Education (FBVE), machinery already existed for rehabilitating the “disabled soldier of industry.” Little national data existed for unemployment and labor market demands, however. To monitor national labor markets, Paul Douglas headed a long list of proponents for gathering data on employment and other social phenomena. He suggested that public agencies begin to forecast employment needs, provide unemployment insurance, offer training, and create agencies to help place workers into suitable employment. While suggesting that federal funds help furnish “alternative training,” which he considered an unlikely course of action, Douglas believed that state and local governments would have to take up the burden.4

Labor leaders and public intellectuals, like those gathered at the Carnegie symposium, expressed a persistent concern over technological unemployment, especially as the Depression wore on. Industrial leaders, economists, and politicians during the 1920s accepted occupational displacement as a byproduct of technological progress. After all, new

technologies also created new jobs. Herbert Hoover appointed a commission in 1930 to investigate the problems of unemployment and offer remedies even more extensive than earlier studies on the economy and unemployment he had initiated during the 1920s.³ The report to the president, entitled Recent Social Trends in the United States, reiterated the concern over technological unemployment.⁶ The elimination of occupations indicated structural change in the economy and foreshadowed the possibility that Americans might require training for more than one job in their working lifetimes. The Federal Board for Vocational Education reported in 1930 that,

> Employment conditions have changed, operations have changed, processes have changed, new occupations have come in, old occupations have gone out, and it has been difficult if not impossible to adapt the program to the changing conditions, because the school has been already provided with equipment which authorities felt must be utilized. In more than one school in the country to-day boys and girls are being trained for occupations which have practically ceased to exist because equipment is outdated.

The federal board may have added that many occupations had become outdated as well. One reason for the inability to adapt stemmed from “cultural lag”, according to W.F Ogburn in Recent Social Trends. “Cultural lag” implied that a gap existed between the introduction of innovations and the way industry, workers, or society in general adjusted to the effects of technological changes. Measurements of unemployment remained sketchy because no uniform data collection existed, and measurements of technological unemployment were impossible. The Sixth Annual Report of the American Association for Adult Education illustrated the recent transformation of work in the United States: “twenty-five percent of our present working population are [sic] working at jobs which did not exist 10 years ago.” For workers displaced by technology, a cultural lag also afforded time to retrain, but retrain for which jobs or what kind of occupations? Even schools and firms seemed hesitant to commit resources for training with little knowledge about future labor market demand. If the FBVE

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³ For a fuller discussion of technological unemployment and the responses to it during this period, see Amy Sue Bix, Inventing Ourselves Out of Jobs?: America’s Debate Over Technological Unemployment (Baltimore: Johns Hopkins University Press, 2000): 24-54. Hoover asked economists to study the problems following the First World War, reported finally as the President’s Conference on Unemployment, Recent Economic Changes in the United States, 2 vols. (New York: McGraw-Hill Book Company, Inc., 1929).

had to retrain displaced workers, it also had to avoid training a surplus of workers for particular occupations “already oversupplied.”

The federal concern with unemployment in general and the effects of technological unemployment in particular emerged from a congressional inquiry into vocational education in 1931. The investigating committee recommended that, “Vocational training at public cost, to the extent that it can be utilized as a means of minimizing the evils of unemployment, should be liberally provided for.” It recognized that adult workers “who, if displaced by machine or by the introduction of new processes, may need training to enable them to secure a new job.” Furthermore, “Training for a new job is clearly the logical remedy for that portion of unemployment which results from lack of training on the part of the unemployed worker.”

While Secretary of Commerce in 1923, Herbert Hoover noted that, “We in this country believe that education pays for itself and is worth while and if this is true of any sort of education it is certainly true of vocational education—that it pays for itself.” The cost of training should be borne by the public to ensure equality of opportunity. The committee also cited the vocational educator and administrator J.C. Wright who intoned that, “There is a

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manifest necessity of anticipating industrial changes far enough in advance so that employees destined to be displaced by them may be retrained for other types of work.” He added that vocational education should serve to retrain the unemployed. For its part, the committee also recommended commercial education as well as the rehabilitation for some 250,000 physically handicapped children. Yet congress or the administration in the early 1930s avoided creating budget deficits to fund massive retraining programs for the unemployed.8

Elsewhere in the federal government, the Department of Labor also recognized that “great technical changes” had created technological unemployment and undertook a number of studies in the early 1930s to gauge its impact.9 Although researchers subsequently recommended the kind of training prevalent in the 1920s, public funding for instruction and new facilities remained elusive.10 Workers continued to rely upon public vocational schools, correspondence schools, YMCA schools, evening schools, and others forms of instruction. As the Depression worsened, calls for federal intervention increased as enrollments in vocational schooling dipped and private sector training dropped off.11

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11 Most issues of the Journal of Adult Education advertised a variety of schools, many of which had operated for most of the 1920s. The association also published brief articles on various ways to discover educational opportunities in the Handbook of Adult Education in the United States (Copyright, American Association for Adult Education, 1934). For an example of requests for federal assistance, see A. Caswell Ellis, “Can We Afford Not to Afford It?: The Problem of Financing Adult Education,” Journal of Adult Education 5 (April 1933): 143-147; Arthur E. Bestor, “The ABC of Federal Emergency Education,” ibid. 6 (January 1934): 15-154; and “Vocational Training and Unemployment,” Monthly Labor Review 34 (February 1932): 275-279. For additional sources on adult
While the Great Depression stemmed from cyclical and structural unemployment, a “mismatch” of jobs and trained workers occurred in some cases. A “lag time” existed between initiating new forms of production and preparing a proper workforce, especially for technical occupations generated by nascent industries such as electronics, radio broadcasting, aviation, automotive manufacturing and maintenance, communications, and health care. Public vocational schools—already impeded by constricted budgets and limitations on the kinds of training allowed—had difficulty maintaining current facilities and keeping instructors up-to-date. Many unemployed workers simply lacked the training required by modern manufacturing enterprises. There also existed a mismatch between jobs and skills that became apparent to some in the 1930s. Social Worker Ida Hoos, for example, observed that, even though jobs were available in some industries during the Depression, the lack of skills held many back from employment. In addition, despite the high unemployment rates during the 1930s, what remained puzzling to many economists and policy makers was the fact that productivity increased in the face of rising unemployment.

With rising unemployment and declining incomes, firms cut production, personnel, and therefore training opportunities at the same time state and local governments cut funding for public education and vocational schools. The state supervisor of trade and industrial education in Illinois noted the importance of training skilled workmen who actually made the machinery used in mass production industries. He reiterated the comments of the Secretary of Labor Frances Perkins, who commented in 1934 that employers should either offer more training or else support vocational guidance and training in the public schools. Perkins had come to accept the idea that the burden of training fell upon both the public and private sectors. As a result of similar findings, a number of educators and social workers called upon state and federal governments to offer job training and retraining to prepare unemployed education during the early 1930s, see Jacques Ozanne, Regional Surveys of Adult Education (New York: American Association for Adult Education, 1934).


workers for existing jobs. The director of the division of Industrial Education at Santa Barbara College wrote in 1936 that, “big industry, various trade journals, and employers generally in all fields, are joining in a cry for competent workers in jobs demanding high levels of skill, or of managerial ability coupled with such skill.” New junior colleges in the California system initiated new courses to fulfill some of those needs, but in other parts of the United States the poor economy strained public school systems and adult education programs.¹⁴

The Federal Board for Vocational Education also recognized a “mismatch” of workers and jobs. For example, a mismatch occurred if a surplus of skilled workers arose in one location while a demand for the same skills occurred in another. The FBVE recommended that, rather than retrain workers, individual migration or a federal and state funded transfer of workers could alleviate the mismatch. While the Smith-Hughes Act restricted vocational training to high school boys and girls and those in the workforce, the FBVE recommended a number of ways to assist unemployed adults. Trade schools could admit the unemployed for training and part-time vocational schools could help to upgrade skills through extension courses. Thus training not only benefited the employee and employer, but also the community by maintaining a productive, stable workforce. Vocational education schools in every locality already possessed a professional training staff, but they needed additional funding from state and federal governments. The Smith-Hughes Act prohibited the use of funds for training in a new career or trade, however, although if important to the community, state and local governments could set aside their own funds for vocational training not covered by the Smith-Hughes Act. Public schools also assisted with in-plant training, provided instructor training for foremen and supervisors, and promoted cooperation between employers and employees.


Unfortunately, vocational education was no “cure-all” for unemployment. The nation needed jobs and economic recovery to stimulate demand for manufactured goods.\textsuperscript{15}

The business sector also considered the lack of skilled workers as a national problem. The National Industrial Conference Board (NICB) noted the absence of certain skilled workers in its publication, \textit{Wanted: Skilled Labor}. The NICB raised concerns over the paradox of high unemployment yet demands by some industries for skilled and semi-skilled workers, especially those in the metal trades, which included machinists, tool and die makers, sheet metal workers, screw machine operators, pattern makers, molders, grinders, and electric welders. The greatest demand for special skills, of course, fell within the Northeast industrial core, where the highest levels of industrial unemployment occurred. The Conference Board queried some 287 manufacturers of various sizes in twenty-one states, ranging from shops employing fewer than 100 employees (87) to those employing over a thousand (24). Together these manufacturers employed 115,260 employees. The report, prepared by Harold F. Browne of the research staff, found no shortage among 113 firms; 100 firms reported an immediate need for certain classes of skilled workers. The reasons for extant shortages—especially in the nation’s industrial core—the report showed, stemmed from changes in machinery, the promotion of skilled machinists to production supervisors, or the exit of skilled machinists from large firms to small, independent niche shops.\textsuperscript{16} In addition others left factories to seek job “permanence” and nearly a quarter of skilled mechanics by the early 1930s had retired from jobs in manufacturing. Because of immigration restriction, the number of skilled European immigrants, once relied upon for mechanical skills and expertise, had seriously declined and the number of new trainees through apprenticeships remained low. Positions for electric arc welders—one example of a recently created occupation—had not been filled. Unemployed skilled workers eventually lost precision skills from disuse or, worse, their particular crafts became obsolete. Few apprenticeships existed and youth seduced by wage incentives for production work grew impatient with lengthy apprentice training. In fact, many high school youth preferred white collar jobs. The building trades attracted potential workers

\textsuperscript{15} Federal Board for Vocational Education, \textit{Vocational Training and Unemployment}, pp. 2-17.

\textsuperscript{16} National Industrial Conference Board, \textit{Wanted: Skilled Labor} (National Industrial Conference Board, Inc., 1935): 14, and p. 30, Table 1; for shortages of workers within various metal fabrication trades see p. 32, Table 2.
who earned higher wages. According to a report by the United States Employment Service in early 1936, many businesses curtailed training and apprenticeship programs altogether.17

The NICB also blamed federal policies for the shortage of skilled and semi-skilled workers. Complications arising from the National Industrial Recovery Act, according to the NICB report, bore some responsibility. The NICB charged that reduced hours mandated by NRA labor codes led to bottlenecks and further layoffs. Also minimum wage requirements and employment quotas, the board continued, handicapped firms and led to less training and fewer apprentices, who usually received a minimum wage during training. The NICB, reflecting a conservative business view, also blamed a shortage of skilled workers on government work programs that created competition for skills, especially on those projects that paid prevailing wages such as the Public Works Administration and the Navy Yards. Highly skilled workers remained in demand because they were crucial for certain steps in production. The 287 companies surveyed required nearly 1,200 skilled craftsmen immediately and could absorb over 7,700, but had difficulty finding candidates who met industry standards.18

The Conference Board proposed eliminating the NRA, first, to end limitations on hours of skilled labor and minimum wages for apprenticeships, and, second, to remove public works jobs that competed with the private sector. The NICB argued that government should create a better system of relief and abort policies that encouraged Americans to avoid work. Instead, they called for “better cooperation between government and industry” by making public works jobs less attractive and by ceasing to drain the best labor from private industry. Trade unions, the NICB report asserted, supported government (New Deal) efforts. The NICB also recommended relaxing immigration restrictions, but any trickle of skilled labor from abroad would likely have little impact. It suggested a plan for government and industry to cooperate in apprentice training, a view shared in part by organized labor, to secure a supply of skilled workers. In addition industry should retrain older men who, despite skill and experience, had been rejected by companies because of age. The NICB also recommended

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17 Wanted: Skilled Labor, pp. 4-9, and pp. 31-34, Tables 3 and 4; U.S. Senate, Vocational Education in the United States, p. 2, for the report of a presidential commission in 1913 about the dependence upon skilled immigrants, especially from Germany. For potential shortages of skilled labor foreseen by the USES, see Who Are the Job Seekers?, p. 49; and for occupational mobility, whereby those with skills moved into other occupations, see pp. 51-52.

18 Wanted: Skilled Labor, pp. 9-14, and 29.
creating jobs through dilution to help alleviate the shortage of skilled labor and advocated cooperation between industry and federal and state employment services. Some firms expressed dissatisfaction with the quality of referrals by public employment services, although the board conceded that the USES improved screening procedures after its reorganization in 1933 under the Wagner-Peyser Act. Furthermore, the NICB wished to make apprentice training “more attractive” by proper supervision and quality training, the assurance of steady employment, better compensation, and rapid advancement for skilled workers. The NICB called for uniform standards, careful planning, and cooperation between industry and vocational schools perhaps with state and federal assistance. 19 While acknowledging a demand for highly skilled workers, Secretary of Labor Perkins believed that responsibility for training those workers fell upon the employer and the public schools. 20

Understandably, the American Federation of Labor criticized Wanted: Skilled Workers because thousands of their members remained unemployed. But government studies suggested that retirements and attrition would soon decrease the number of skilled workers. In another survey the following year, the NICB defended industries against exaggerations of “callous disregard” and purported inaccuracies about employer-employee relations. Firms continued strategies begun under “welfare capitalism” of the previous decade by offering benefits, investment opportunities, savings plans, and financial incentives. Some firms offered employees education and self-improvement courses. Interestingly, of more than 2,450 firms surveyed, about one-third offered some form of training for employees, but those were large firms that generally employed over a thousand employees. Twenty-six percent of all the firms surveyed offered apprenticeships, five percent trained unskilled or semi-skilled workers and foremen, and fewer than eight percent of firms trained executives. Of these, slightly over one percent cooperated with federal agencies and less than six percent utilized public school programs and facilities for training purposes. Similarly, educational activities seemed paltry. Again, mostly large firms offered educational benefits, with just over 3 percent of firms reporting employees attending continuation schools and 10.6 percent reported employees attending cooperative courses. Other forms of “education” included employee magazines,

19 Ibid., pp. 16-28.

20 Thompson, “Highly Skilled Workers Needed Now More Than Ever,” pp. 90-91; and Ericson “Need for Technicians and Skilled Workmen,” p. 38.
libraries, reading rooms, and foremen’s committees—not a particularly impressive training effort overall.21

The Unskilled

Those who lacked skills altogether faced a working lifetime of uncertainty and low wages. As the structure of the economy changed to one demanding more skills and oriented to technological and service industries, demand slowly weakened for unskilled workers—domestics, common laborers, and seasonal workers in agriculture and canning—and increased for those with some training and education. The number of workers in plastic molding, for example, increased 200 per cent from 1931 to 1937. So, who comprised the unskilled? The most likely unskilled workers included young people, aged 16 to 24, farm workers, rural blacks, the foreign born, and women. The author of The Unskilled Worker pointed out that unskilled work required little responsibility and no special education or training, although it sometimes served as an entry to a better position for a fortunate few. A WPA study found that those with varied experiences increased their chances of employment. Those who sought training, however, demonstrated enviable work habits and ambition. While emphasizing the importance and utility of unskilled work, the author demonstrated that competition among the unskilled would likely increase because of mechanization, seasonal unemployment, and the tendency of employers to furlough unskilled workers first. Unskilled workers earned lower wages, lacked prestige, and found little opportunity. In addition, unskilled labor could be physically difficult, unpleasant, and sometimes hazardous—casualties remained high among miners, fishermen, longshoremen, and lumbermen, for example. By contrast, workers with skills and education garnered greater monetary returns.22

Vocational Education and Training during the Depression

Workers with low paying jobs or who faced unemployment lines during the Depression sometimes turned to vocational education schools to acquire new skills for the workforce. The abundance of training during the 1920s matched a period of unprecedented economic growth that easily absorbed a slowly growing national workforce. The


transportation and communications industries, for example, increased their collective workforces by 900,000 in seven years. Semi-skilled work in domestic and personal service industries added 761,000 jobs. A Brookings Institution survey in 1929, however, discovered before the stock market crash in October that new industries failed to reabsorb laid-off workers very quickly. In a survey of 754 laid-off workers, half found work similar to their previous employment, but half worked in unrelated jobs. While the unemployed relied upon their savings or found temporary or supplemental employment. Their earnings declined. Workers over age 45 experienced the most difficulty finding new employment.23

The onset of the Great Depression in the early 1930s exacerbated technological unemployment and created mass unemployment on an unprecedented scale. The Depression reduced consumption, investment, and production, all of which contributed to the highest levels of unemployment seen in the United States for the twentieth century. As more Americans remained idle, aggregate demand plummeted, leading to a downward economic spiral. Despite pleas from President Herbert Hoover, firms laid-off workers and cut hiring and training. By most estimates, unemployment peaked at about twenty-five percent in 1932. While the reasons for the Depression varied, the fears of technological unemployment surfaced repeatedly during the late 1920s and early 1930s. A combination of uncertainty among workers, the loss of tax dollars that shrank state and local school budgets, and spending cuts among businesses reduced enrollments for apprenticeship training and vocational schools, even as newly developed industries demanded skilled and semi-skilled employees for electronics, aviation, and automotive production and maintenance.24


A number of demographic changes influenced unusually high levels of unemployment and affected employment and training during the Great Depression. The declining birth rate and aging population contributed to women and youth leaving the home for employment and thus increasing the size of the labor force. With fewer births, the number of elementary school children declined and more women entered the labor force. They did so to supplement family incomes, especially by the middle of the decade, and to support elderly parents. A number of state employment agencies noted that women without previous work experience applied for unemployment. Women who lost jobs during the early years of the Depression often used their own means to finance training. In a Department of Labor study released in 1933, 23 out of 100 unemployed women from seasonal trades such as clothing and millinery production used their own resources to attend commercial or continuation schools. High-school enrollments increased due in part to child labor laws and mandatory education until age 16. Fewer jobs also caused teens to remain in school longer, although official unemployment statistics generally included only those actively seeking work. Colleges and universities increased enrollments by about six percent from 1930 to 1932, but then dropped for a time because of reduced budgets, salary reductions, layoffs, and increased teaching loads for those still employed as teachers. Young workers of high-school and college age sought work because they either could not afford school or worked part-time to pay for college tuition.

As the Depression reached its nadir between 1930 and 1933, the burden on state and local school boards mounted. According to a 1933 report by the Office of Education, while ten percent of the population attended high school in 1900, now fifty percent did so in 1930. Tax revenues dropped off when businesses failed, jobs disappeared, or property owners could


no longer pay their taxes. Voters during the 1930s rejected levies or tax increases to fund schools or other community services. In a number of school districts around the country, teachers, especially married women, faced layoffs, cuts in pay, and increased teaching loads resulting from state and local retrenchment. Teachers remained vulnerable to political and religious prejudices, and faced dismissal when breeching decorum such as smoking, drinking, or dancing in public. In some cases, public officials pressured teachers to work without pay, imploring them to remain at their teaching posts out of moral obligation or social responsibility. According to a study by the Social Science Research Council, teacher salaries fell even though the secondary school population had increased because of mandatory schooling, child labor restrictions, and the lack of employment opportunities for high-school aged youth. As a result, even as fewer teachers entered the classrooms in the early 1930s, secondary school attendance increased dramatically. Drop-outs from full-time schools often did so to help support their families, but they later returned to part-time or evening schools. Rather than prepare for college or a profession, most American youths in the 1930s prepared for the workforce.

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Americans continued trends in workforce preparation established during the previous decade. Every state had constructed a plan for sharing the costs of vocational education with the federal government, but part-time schooling proved unsuitable for unemployed adults with dependents. While various private and public vocational education schools attempted to upgrade skills, the existing school system offered no “panacea for unemployment.” Indeed, training and education prepared one for the contingency of work, but they offered no guarantee a market or job existed. Nevertheless, public continuation schools and social agencies in New York City, for example, carried out retraining and placement programs beginning in late 1930. Over 5,750 adults enrolled in 146 classes around the city in April 1932. The demand for ordinary public education exceeded the ability of public schools to function normally let alone embark on programs for retraining large numbers of adults. Few at the time had any idea the extent and duration of the Depression, so continuing education and training, even with no immediate prospect, seemed a reasonable course to follow. The editor of Industrial Arts and Vocational Education commented on this problem in 1932. Acknowledging that the extension of educational services to the unemployed in the face of severe public school retrenchment would be difficult, he believed that skills would again come into demand. Therefore, training must continue.

Like the public schools, private schools remained vulnerable to the loss of funding and declining enrollments. The meteoric rise in public and private commercial education during the 1920s slowed considerably during the early years of the Great Depression. Enrollment in commercial schools by 1933 fell to 1905 levels, and daytime enrollments dropped by 52 percent in only four years, subsequently ruining many private commercial schools. Of the 1,826 commercial schools examined in 1933, at least 275 (or 15 percent) closed between 1929 and 1933. Interestingly, women continued to comprise the majority

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(over 60 percent) of the 651 commercial schools reporting enrollments in 1933, and the student-teacher ratio improved at the cost of fewer students.³³

While students and unemployed Americans sought jobs and training through available public and vocational schools, community or junior colleges maintained a pattern of steady growth during the Depression. Although a college education seemed beyond the reach of most Americans, junior colleges had become affordable and thus enrollment escalated. The number of public junior colleges increased from ten during the 1919-1920 school year to 235 by 1945, while the number of private juniors increased from 42 in 1919-20 to 225 in 1945-46. Together the number of junior colleges expanded from a total of 52 in 1919-20 to 460 in 1945-46. Total enrollment increased from 74,000 students in 1931 to 122,000 in 1936, and finally peaked at 156,000 students in 1945. While only two of five schools received public support, two-thirds of all junior college students enrolled in public junior colleges.³⁴

If junior colleges offered an alternative to a baccalaureate degree, some vocational schools assisted graduates by offering guidance, interview preparation, and placement services, and by seeking out knowledgeable managers or employees with connections to a particular industry (a practice that predated the moniker, “networking”). Vocational educators recommended that new graduates avoid temporary jobs or “so-called emergency programs,” unless well-administered. Recent graduates should continue to prepare for skilled jobs and inform themselves about prospective employers or work in related fields. Still, the Depression limited the employment options for most new graduates.³⁵

While funding for vocational education dropped for a time during the early 1930s, Congress voted three supplemental bills to extend the life of the Federal Board for Vocational Education over the course of the decade. The Smith-Hughes Act provided about $7 million a year for vocational education programs, matched by state and local governments. Congress


passed the George-Reed Act in 1929, the first supplement to the Smith-Hughes Act that extended vocational education for five years in agriculture and home economics and increased annual funding by $2.5 million; it did not include industrial training, however, which suffered declines in enrollment up to about 1935. Despite an attempt by President Hoover to abolish the FBVE in 1932 and transfer its duties to the Department of Interior, Congress overrode the president’s executive order. President Roosevelt in 1933, however, altered the board’s function from one of administering funds to that of an advisory board without compensation. The George-Ellzey Act of 1934 replaced the George Reed Act and added $3 million a year up to 1937. Even though white-collar business, clerical, and commercial occupations had grown dramatically during the 1910s and 1920s, federal funding for commercial education had been absent from the original Smith-Hughes legislation. The George-Deen Act of 1936 became the third supplemental act that remedied that lapse to some degree. FDR originally opposed the George-Deen Act, hoping to reduce the federal budget, but relented and signed the legislation. The George-Deen Act, which began in 1937, increased the budget for vocational education to nearly $14.5 million annually and had no time limitation. The legislation also made available federal funds for education in commercial skills and public employment. As a result, enrollment increased for all fields of vocational education. FDR eventually transferred the FBVE to the Department of Interior in 1933, then to the Federal Security Agency in 1939, when enrollment for vocational education classes peaked at over two million students nationally. Even though the FBVE later helped train millions of workers during World War II, the Truman administration finally abolished the Board in 1946 and reorganized vocational education under the George-Barden Act of 1946.36

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By the end of the decade, one observer concluded that the Smith Hughes Act, while effective, “leaves much to be desired.” A survey of youth trained in vocational schools in 1938 showed that, while enrollment had increased, vocational education largely served as a substitute for the lack of genuine work experience among youth. (The National Youth Administration—taken up in the next chapter—actually integrated work and school.) Organized labor complained that partially trained graduates competed with skilled workers while employers objected to hiring workers who lacked adequate training, especially for occupations in high demand. Furthermore, the AFL desired vocational training be made available to full-time employees as well. Because industrial work constantly adapted to new technologies or methods of production, older, experienced workers required “practical vocational education in times of great industrial change.” Closer ties between vocational educators and organized labor through advisory councils or the participation of labor representatives on boards of education could be mutually beneficial. Despite the shortcomings of vocational schools, cooperation between labor and management, and between the public and private sectors, would benefit everyone. Yet public schools still faced the problems of teacher shortages for lack of funds by the late 1930s. As a result, large firms that could afford training programs remained one of the few sources to outfit workers with specialized skills.  

**Training in Large Firms**

Although training remained rather flat for the first half of the decade, some formal training continued in large firms. Nathaniel Peffer reported that large firms such as Standard Oil of New York and New Jersey, R.H. Macy and Company, Singer Sewing Machine, Westinghouse, and General Motors had reduced the quantity of training but continued formal training schools. Other firms reduced training costs by combining training resources and staffs. Industries with similar interests or operations that had formed trade associations—the American Institute of Banking, the National Metal Trades Association, and the Insurance Institute of America, for example—pooled resources in joint training programs. Still others teamed with public schools, especially vocational schools, technical schools, university extension classes, opportunity schools, and junior colleges—a trend under development since the Great War. Peffer, acknowledging the importance of education and training for successful industries, recommended training programs become creative, even “experimental.”  

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methods of training would likely develop in response to rapidly changing technologies. Firms able to adapt by experimenting with various methods of training would discover the optimal way to train for their particular workforce and within limited budgets. By mid-1938, the Office of Education reported on 40 training programs by large firms willing to experiment with training techniques. Although supervisors and foremen generally trained new employees, they had support from a professional training staff. A study by the NICB in 1937 found a considerable amount of on-the-job training among 473 large companies, especially automobile, electrical, iron, steel, machine, tool, and paper manufacturers. Although over 57 percent reported active apprentice training for over 7,300 trainees, that number represented only one percent of all employees within those firms. Training helped employers screen and orient new hires, decrease fatigue and accidents, and reduce turnover; it also improved productivity and the quality of the product. Older workers displaced by new technologies, the study suggested, remained productive when retrained.

Among the firms that continued training, the Carnegie-Illinois Steel Corporation recognized by 1938 that new technologies generated more sophisticated methods of production in steel fabrication. The firm required workers able to adapt to new processing methods. In selecting employees from its existing workforce, Carnegie-Illinois utilized various forms of training. For instance, foremen and supervisors consulted outside specialists to build upon a foreman’s actual experience in a “conferences method” to hone supervisory and organizational skills. The firm introduced college student-engineers to the industry through a kind of internship program, while others took extension courses or studied professional journals. The company also encouraged workers to upgrade their skills in classes and shops offered by local public schools. A vertically integrated company, Carnegie-Illinois also had in place a sales program largely for college graduates. Americanization courses at the firm catered to the foreign-born who enrolled in literacy and citizenship courses, carried out with the assistance of the WPA in some locations. The firm offered training for

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machinists, electricians, and roll turners in cooperation with local schools funded by the Smith-Hughes Act. The company also established an apprenticeship program for thirteen trades among fifteen Carnegie-Illinois plants, recognizing that the skilled workers had begun to disappear because of immigration restriction, old-age and death, and the transfer of skilled workers to other jobs as a result of the Depression. In one plant over six hundred people applied for twenty-six seats in one apprenticeship program. The firm also utilized local public trade schools and correspondence courses. Thus, at least a few large firms in the private sector not only continued to train employees, but they also utilized public and private resources available within their respective communities.  

**Distance Learning during the Depression: Correspondence and Extension Schools**

While fewer firms trained workers during the 1930s, individuals found ways to fill leisure time and prepare for career advancement. The easiest and most popular form of “self-investment,” while not entirely successful, had been correspondence instruction. While most correspondence courses developed during the 1910s and 1920s in a trial and error method, catering to a mass market, university correspondence courses grew to be more selective and rigorous during the 1930s. Successful students were likely to be older and better educated, and the unemployed among them filled their time with useful work. Some correspondence schools recruited reputable faculty with a strong interest in correspondence and extension teaching. The National University Extension Association (NUEA) maintained a Committee on Standards, which reviewed, updated, and promoted standards for correspondence study. The committee recommended in 1936 that university courses demonstrating little value be eliminated; some of those, the committee reported, may actually have contributed to the lack of interest and the high attrition rates for certain correspondence courses. Member schools of the NUEA agreed upon certain principles and standards of quality. They established an accreditation procedure, agreed to supply more information about the nature and content of courses to students and high school administrators, and established an agency to conduct and coordinate research on home study. Improved standards also appealed to high school counselors and administrators who wanted to assist high school students taking college-level courses or preparing for college-level work. At its annual meeting in 1936, the NUEA

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appointed a standing committee to evaluate and approve supervised correspondence courses
on a continuous basis and make their findings available to schools and the public.41 A.A.
Reed, president of the NUEA in 1936, decried the “vultures preying on unfortunate
unemployed” by selling “spurious courses in so-called ‘adult education.”” While the Federal
Trade Commission investigated complaints, charlatans offering “cheap credentials and
valueless degrees” threatened to discredit legitimate correspondence instruction.42

The NUEA conference in 1939 organized a panel to combat unscrupulous schools.
Participants recommended notifying the Better Business Bureau and proposed that the NUEA

41 See, for example, see the presentations by Herbert Sorenson, University of Minnesota,
“College Aptitude and Classroom Achievement of University Extension Students”; E. A. Richards,
Department of University Extension, Columbia University, “Quality in Correspondence Study,” under
“Third Session”; W. H. Lighty, Director of Extension Teaching, University of Wisconsin,
“Correspondence Study in Wisconsin”; Mrs. Della G. Turman, University of Colorado, “The
Committee Method of Supervision of Courses and Methods of Instruction”; J.S. Noffsinger, Director of
the National Home Study Council, “Quality in Correspondence Study from the Standpoint of the
Commercial School”; W.S. Bittner, Indiana University, “A General View on Maintaining Standards in
University Correspondence Teaching”; and A.A. Reed, Director, University Extension Division,
University of Nebraska, “Quality in High School Correspondence”; all in Proceedings of the National
University Extension Association at the University of Minnesota, Minneapolis, Minnesota, May 11-13,
1932, 15 (Bloomington, IN: Indiana University Press, 1932): 27-73. For a statement of standards by the
NUEA for 1936, see “Report on the Committee on Standards for Supervised Correspondence Courses,”
Proceedings of the Twenty-First Annual Convention of the National University Extension Association
at the Louisiana State University, Baton Rouge, Louisiana, May 7-9, 1936, 19 (Indianapolis, IN: Wm. B.

42 I.O. Horsfall, University of Utah, presiding, “Panel on Federal Aid to Adult Education,”
Proceedings of the Twenty-Fourth Annual Convention of the National University Extension Association
at Berkeley, California, June 22-24, 1939, 22 (Bloomington, IN: Feltus Printing Company, Inc., 1939):
59-65. Also see, Robert Gordon Sproul, President of the University of California, “Adult Education
and the State,” [also broadcast over the Red Network of the National Broadcasting Company] ibid., pp.
106-110. For the comments of Read, see Proceedings of the Twenty-First Annual Convention of the
National University Extension Association at Louisiana State University, Baton Rouge, Louisiana, May
7-9, 1936, 19 (Indianapolis, IN: Wm. B. Burford Printing Company, 1936): 23. For later discussions of
adult education, see Bruce E. Mahan, President of the NUEA and State University of Iowa, “Adult
Education—Old Trails, New Vistas,” Proceedings of the Twenty-Fourth Annual Convention of the
National University Extension Association at Berkeley, California, June 22-24, 1939, 22 (Bloomington,
and the National Education Association expose fraudulent schools and make that information
available to the public. A few states such as Wisconsin regulated correspondence schools and
monitored textbooks.\footnote{“Group Discussion of Correspondence Rackets,” \textit{Proceedings of the Twenty-Fourth Annual
Convention of the National University Extension Association} at Berkeley, California, June 22-24, 1939): 71 -73.}
By 1940 the NUEA required member programs to follow two general
principles for university extension programs. First, courses and their content had to meet the
approval of their respective academic departments. Second, adult education staff had to
review the “organization and presentation” of course materials. Educators had to demonstrate
a willingness to adapt to new demands for correspondence teaching such as additional requests
for non-credit courses.\footnote{C.O. Thompson, University of Chicago, “University Correspondence Instruction:
Adaptations to Meet the Changed Interests and Needs of Adults,” \textit{Proceedings of the National
University Extension Association} at Ann Arbor, Michigan, May 15-18, 1940, 23 (Bloomington, IN: Feltus Printing
Company, Inc., 1940): 48-59.} With a teacher shortage created by the war after 1941, a resurgence
of correspondence study helped students speed up completion of school curricula during
summer sessions. Correspondence courses accelerated their pace of training and allowed
some to acquire needed courses or skills where a lack of students could not justify scheduling
a full class or where the student had no access to in-class instruction.\footnote{K.O. Broady, University of Nebraska, “The Contribution of Supervised Correspondence Study to the War Effort,” \textit{Proceedings of the National University Extension Association} held at the Pennsylvania State College, State College, Pennsylvania, May 18-20, 1942, 25 (Bloomington, IN: n.p., 1942): 33-37.}

The increasing attention to quality and the demand for correspondence instruction
helped the correspondence method reach new heights of enrollment by the late 1930s.
Although the number of correspondence students dipped between 1930 and 1934, John
Noffsinger, the one-man consumer advocate of correspondence learning, observed a rebound
of correspondence instruction after 1935. The National Home Study Council reported that,
among its forty-five member institutions, non-credit courses had increased by 100,000 from
1934 to 1939, attracting some 750,000 students. A Carnegie Corporation Study found that
enrollment in correspondence schools exceeded the enrollment in all professional, college, and
university enrollments combined. Noffsinger stressed that home study merely supplemented
education and training in high schools, professional schools, and higher education. Because
private correspondence schools did not reveal enrollments and completion rates, the Russell
Sage Foundation estimated the amount of correspondence education by calculating the net receivables accrued by private schools. They found that after profits of more than $16 million dollars during the 1920s, the receivables of correspondence schools plummeted during the Depression, especially between 1932 and 1935, when receivables dipped to $8 or $9 million. The NUEA found that in 44 of 50 university or college correspondence departments, more women enrolled than men, and their number increased from 62,700 in 1933-34 to nearly 72,000 by 1937-38. By 1941 the NUEA recognized that correspondence study had to meet the needs of changing social and economic conditions. Non-credit courses increased among NUEA member schools during the 1930s. In the 1940s, the NUEA enrollment alone averaged 37,000 to 42,000 new students a year. The NUEA did not report completion rates, however. Still, promoters called for more non-credit courses for increasing numbers of high school and college graduates interested in personal enrichment.

To understand the reasons behind the failure of so many to complete correspondence classes, the Metropolitan Life Insurance Company in 1935 examined the “mortality” of home studies courses. While private schools were reluctant to provide data, their own estimates on completion rates varied from 2 to 100 percent! In a Minnesota survey of unemployed who signed up for correspondence courses, forty percent dropped after the first year and that fraction climbed to two-thirds after 15 months. Only six percent of those surveyed successfully completed courses. Met Life compiled a number of factors that contributed to low completion rates. It discovered a lack of uniformity of collecting data and defining criteria (for courses, assignments, and lessons), and found large “variations” in the volume of work assigned. In some cases, students misinterpreted qualifications to enroll in a course or failed to meet objectives because they only sought specific information or merely wanted the textbooks. Others dropped out because they discovered a course did not meet their objectives.

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Still other factors included the quality of supervision, the type of institution (oriented toward academic study or for the work place), the expertise of the instructor, the extent of instruction given, the turn around time for completing an assignment and grading it, and the opportunity for supplemental instruction. One University of Chicago professor offered additional reasons for heavy mortality: some courses remained too advanced for under-prepared students and some students simply lacked motivation. Personal demands on a student caused him to fall behind. A commercial correspondence instructor also cited numerous reasons, but in general found that either a student’s particular experiences and personal environment hindered completion, or the course of instruction remained incompatible with a student’s goals or her abilities. Most students stressed the need for proper supervision, especially for matching education with the needs of an employer.48

While a number of factors contributed to the success or failure of completing correspondence courses, motivation remained key. In education courses for teachers, for example, a large percentage merely sought credit to fulfill continuing education requirements and remained indifferent to the utility or content of a course. Others took learning content seriously and enrolled in continuing education courses to improve their understanding. Most supervisors and principals showed high motivation, and deemed individual attention by correspondence mentors superior if the instructor communicated constructive criticism in a timely manner. Still, attrition rates for correspondence courses remained high.49

Undaunted by high dropout rates, Walton Bittner of Indiana University proposed correspondence courses for the military during World War Two.50 The Armed Forces

48 “A Study of Administrative Practices in Correspondence-Study Departments of Teachers Colleges and Normal Schools,” Studies in Education 1 (January 1930). The Kansas State Teachers College of Emporia showed that correspondence study varied in quality, costs, and completion rates, yet large numbers of students enrolled. For the Met Life study, see Policyholders Service Bureau, Group Insurance Division, Extent of Completion of Home Study Courses (New York: Metropolitan Life Insurance Company, 1935): 2-10, 22, and 25.


Institute (USAFI), begun in 1942, offered 5,000 courses at the high-school and college levels through the University of Wisconsin with credit awarded by the extension divisions of 83 colleges and universities. The government paid half of the tuition, up to $20 (about $315 in 2005 dollars). USAFI enrolled over a million and-a-half soldiers and sailors in college-level courses during the war. Bittner cautioned, however, that correspondence courses remained supplementary; they were no “substitute for classroom teaching.” Still correspondence instruction worked well for motivated students who received higher grades than those in equivalent classroom instruction. Despite the high percentages of students who never finished correspondence courses, the method remained quite popular and correspondence instruction continued throughout the war. By 1945-46, nearly 536,000 correspondence and extension students enrolled in higher education correspondence courses and the method persisted into the twenty-first century.51

**Distance Learning during the Depression: Education by Radio**

The other form of distance learning during the Depression could be dialed up on radio, although, judging from the evidence, few Americans relied on the radio for learning technical or conceptual subjects. Proponents of education by radio struggled throughout the 1930s for a couple of reasons. First, they lacked funds from state supported universities or private donors at endowed universities. Second, educational stations fiercely competed with commercial broadcasts. Broadcast corporations sometimes derided educational broadcasts and both fought litigation battles over the sharing of frequencies, wattage, and air time. Federal regulatory bodies, according to the educators, favored commercial airways. Only 42 educational stations

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remained on line in May 1931, half the number operating in 1924.\textsuperscript{52} Despite Senate investigations and charges of favoritism toward commercial radio, little changed.\textsuperscript{53}

Interest in Education by Radio waxed and waned during the Depression. The National Committee on Education by Radio (NCER) held fewer meetings by the mid-1930s, despite the generosity of the Payne Fund. The NCER broadened its scope to include promoting educational programs to the general public in 1936, following the “New Mexico Plan,” which called for programming that included topics related to “state, business, education and culture, state history programs, and public information.” A state radio board of five members, elected by a state advisory board, oversaw policy and the operation of non-commercial public stations financed by the state legislature. The stations, located in Albuquerque and Santa Fe, had been endorsed by the state government, but awaited approval by the FCC.\textsuperscript{54} Although proponents of educational radio won a victory of sorts with the appointment of the Commissioner of Education John Studebaker to advise the Federal Radio Education Committee, educational radio made little headway against the profitable commercial networks.\textsuperscript{55}


Despite complaints by educators, commercial networks allotted time for educational programs. The Workers’ Education Bureau and the American Federation of Labor created the “America at Work” series on CBS radio catering to various trades, including carpenters, electricians, radio technicians, plumbers, and auto workers. The Workers’ Education Bureau conducted interviews with educators and practitioners of workers’ education.56 The Works Projects Administration (WPA) and the U.S. Office of Education sponsored programs on a limited basis as well. After the U.S. entered the Second World War, officials used radio for information and propaganda. Educational radio programs assisted the “war effort and civilian morale,” expanded the number of course offerings by radio, and created state networks. The NCER closed shop in 1941, however, and discontinued its quarterly bulletin, Education by Radio. The Federal Radio Education Committee published the monthly FREC Bulletin through the U.S. Office of Education. Educational institutions owned only 36 radio stations in 1941. With the exceptions of the University of Georgia, which boasted a 50,000 watt, clear-channel station, and Washington State College, which owned and operated a 5,000 watt station, most states offered modest radio programming through their extension services either on low-power stations or on commercial stations that donated off-peak air time. The importance of radio during the war to inform and propagandize remained useful, but did little for training the wartime workforce.57 Despite the efforts of vocational educators, practical and technical education was not conducive to radio. Later public radio and television offered Americans educational broadcasting but did so with mixed success.58


58 See, for example, Edwin A. Lee, Director, Division of Vocational Education, University of California, “Vocational Guidance By Radio,” Education By Radio 3 (5 January 1933); and Paul F.
Adult Education

Educators and policy makers gave increasing attention to adult education and its role in American life. Various modes of instruction served the curious and those open to new ideas or willing to learn new skills. Public evening schools attracted adults who wished to “self-invest” in their own “human capital.” “The evening school,” wrote Charles Allen—an authority on training and vocational education—“always has been and always will be a school for the worker.”59 Enrollment for all types of vocational education exceeded one million in 1932 and adult enrollment in evening courses comprised nearly a third of these.60 In 1933, one educator opined that, “adult education at public expense” aided occupational readjustment.61 The unemployed demanded time of public schools during the early years of the Depression and local communities sometimes adjusted curricula to meet the demand for evening instruction, continuation schools, vocational classes, postgraduate courses, shop practices, and recreational pastime. The FERA helped state educational agencies fund work relief for teachers and offered vocational education and rehabilitation, general education classes, nursery schools, and adult literacy classes. Hundreds of thousands of Americans


burdened public libraries during the Depression seeking knowledge, diversion, or shelter, and nearly as many seemed willing to return to school.\textsuperscript{62}

Adult Vocational education in part-time continuation schools, evening schools, and government opportunity schools attempted to accommodate the demand. Cleveland, Ohio, public schools, for example, offered vocational courses for adults in 1931. In a survey that queried students about their reasons for attending evening school, nearly half of the 4,000 students enrolled responded that they sought additional skills useful for work, either to prepare for a job or to advance in one’s occupation. Women comprised 35 percent of those who responded. Most respondents were single. Evening students sought to “improve their economic status,” acquire cultural knowledge, or compensate for deficiencies in their education. Others gave in to social pressures or wanted to keep up with modern progress and the “demands made by employers” for continuous training.\textsuperscript{63} The Federal Board for Vocational Education reported that by the end of June 1932, 400,000 adults enrolled in evening vocational classes, including 159,000 industrial workers. Enrollment in continuation schools dropped during the Depression, however, as youth tended to remain in full-time schools and out of the labor force. In addition, school districts laid off teachers and closed buildings. As an alternative to public schools, the YMCA reported in 1934 that about 90,000 persons enrolled in its engineering, commerce, law, business, and technical schools.\textsuperscript{64}

Adult vocational education rebounded by the middle of the 1930s. Maris Proffitt, in his monograph for the Office of Education, found that adults enrolled in vocational education courses either for self-improvement or to improve their prospects in the job market. Part-time vocational education classes for the unemployed began to increase in 1936. Evening vocational education schools attracted adults: home economics classes enrolled over 152,000


\textsuperscript{63} Cleveland Board of Education, Division of Adult Education, \textit{The Educational and Occupational Status and Interests of Evening School Pupils with Inferences Pertinent to Adult Education}, Adult Education Bulletin, 1931 (Cleveland, OH: Cleveland Board of Education, 1931): 1-6, and p. 21, Table 4. The respondents included 2,385 men and 1,543 women; about 2000 men reported they were currently employed.

in 1932, and industrial classes enrolled 118,000; the latter increased to 146,000 students in 1935. Part-time trade extension courses enrolled 97,800 in 1936. The unemployed began to recognize that their future prosperity required retraining or learning new skills adapted to changing technologies.65

Continuous training and demands from employers accompanied technological change. Technological changes, nearly everyone agreed, would likely increase, placing new demands on vocational education. A national committee on technological unemployment cooperating with the Department of Labor to collect employment data. Vocational school administrators urged instructors to keep abreast of industrial changes, plan training on the basis of local needs, and “keep in close touch with organized labor” in order to keep abreast of new technologies, training techniques, and labor trends.66 Verne Fryklund, a vocational educator from Minnesota and future training officer for the Army, observed that readjustment required retraining. Since most reports on unemployment and changes in industry had been made by “casual observation,” educators needed real data to determine the impact of new technologies and gauge the needs of industry and of workers seeking training. While industries often remained reluctant to give information, Fryklund believed that cooperation between employment agencies, government agencies, and personnel departments could anticipate new occupational trends that would benefit management and employees. In the future, Fryklund predicted, workers should “not expect to become trained permanently in any occupation,” but anticipate the need to readjust and remain “versatile.”67

J.J. Metz, editor of *Industrial Arts and Vocational Education*, also noted the impact of technology on the workforce. Technological innovation created new jobs in the electrical, aviation, rubber, glass, motion picture, and radio and broadcasting industries. Technology would likely spawn new occupations in the future. Vocational teachers, he advised, must continue to prepare men and women for the unforeseen changes in work and life.68 The

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President’s Advisory Committee on Education recommended in 1938 additional grants to the states for the physical construction of schools and assistance to primary, secondary, and vocational schools. In addition, the committee proposed the inclusion of teacher training, rural library services, and adult education.\textsuperscript{69}

Some states took particular interest in how to serve the adult population. The Regents of the State of New York consulted Floyd Reeves, who led a number of committees regarding education and public policy for the Roosevelt administration, to research the efficacy of adult education in 1935. Reeves and his associates published their findings in 1938. They recognized a number of social and demographic trends that indicated an aging population, a declining birth rate, and a longer life span. In addition, urbanization, the increase in leisure time, immigration restriction, and the impact of migrants from rural areas having little education all combined to suggest the importance of continuing education and retraining. The team loosely defined adult education as “self-development” for individuals in work, personal life, and their role as citizens. Reeves and associates recommended that adult education move beyond “literacy” and citizenship for the foreign born (Americanization) to the acquisition of other kinds of knowledge, especially knowledge of economics, culture, social problems, consumer education, and “vocational literacy.”\textsuperscript{70} Federal Emergency adult programs extant in New York State, the researchers noted, serviced an average of over 41,700 students in daily attendance, although relatively few enrolled solely in vocational education classes. However, 56 percent took courses to keep up their skills; 61 percent enrolled to acquire a new skill; and 64 percent expressed interest in improving their earnings. Over 42 percent attended in order to meet new people, while 37.4 percent did so to fill their time. Reeves and his associates concluded that adult education had become an “integral part of public education.” Adult education promoted equal opportunity and should be considered equal to other forms of education, the committee affirmed. It also recommended state responsibility for adult education which required financial aid, a commitment to a variety of adult education agencies


and programs, the importance of decentralizing adult education to accommodate local needs, and coordination between private and public agencies.71

**African Americans**

Adult education also offered opportunities for African Americans. In the South, funds for school buildings, teacher training, and general education remained sparse, especially for the vast majority of African Americans who lived there. The lack of skills and education prevailed for black Americans during the first half of the twentieth century. State legislators and administrators maintained segregated schools of poor quality with inadequate funding that contributed to low wages, lack of opportunity, and impoverishment for many black Americans. Black men, generally relegated to agricultural work, earned less than half of whites between 1900 and 1940. During the Depression years, black heads of households flooded relief offices and oftentimes received little public support. Still, black educators called for education and training to ease the burden of segregation and lack of high-wage jobs that plagued black America.72

Fred McCuistion of the Southern Association of Secondary Schools and Colleges wrote in 1939 that public support for Negro education in the South remained minimal. Although three million black children lived in the South, their schools received fewer funds than those of all southern school children. Black school teachers received about half the pay of white teachers, and their schools contained less equipment and poorer facilities. Black students attended shorter school terms and had few resources for transportation. While the national average of expenditures per pupil reached $99 in 1930, the average expenditure for a white southern student totaled $45, and for a black southern student $12.50.73 While Southern

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71 Ibid., pp. 30-36, 109-111, and 141-145; Reeves also cites, on p. 31, Olive O. Van Horn, *Individual Satisfaction in Adult Education* (New York: New York Adult Education Council, 1936): 107, Table XXI.


black youth faced a number of roadblocks to employment in the 1930s, high rates of illiteracy beleaguered Southern blacks in 1935: over 187,000 aged 16 to 20, and 1,848,000 over age 21 remained illiterate. The federal WPA Emergency Schools helped eliminate illiteracy for many.⁷⁴

Receiving little educational assistance from their home states, black Americans relied upon white philanthropy and community resources; they forged their own course to achieve some degree of education and training. Speakers told a conference of Negro Land Grant Colleges in 1935 that black schools, especially land grant colleges, must take responsibility for preparing men and women for training and education. With the scarcity of skilled labor and impending shortages due to a “moratorium on training during the depression; the restriction of immigration; shorter hours of labor; and new industries,” educators counseled black school administrators to prepare black youth to fill the potential void.⁷⁵ In 1937, the president of the Hampton Institute pointed out that skilled workers earned higher wages and enjoyed a higher standard of living. Noting that black vocational schools offered courses in many fields such as auto mechanics, electricity, welding, and sheet metal fabrication, he urged


his fellow educators to promote continuing vocational education. For women in the workforce, he recommended night school instruction to strengthen credentials or to upgrade one’s knowledge of business subjects such as banking, insurance, sales, clerical skills, and health education.76

Charles Thompson, editor of The Journal of Negro Education, cautioned against narrow vocational training, however. With rapid changes in technology and production, educators should avoid a too narrow focus on technical subjects; rather, echoing John Dewey, workers needed to learn how to adjust to changing labor market demands. He cited the Industrial Secretary of the National Urban League, who wrote that, “The type of vocational instruction most necessary for the vast majority of high school education is not technical education but social.” While vocational schools offered particular skills, industrial workers needed to see the larger picture, to understand the production process, and learn to adapt to changing labor markets. Yet schools neglected to focus on the functioning of modern industrial society and convey how and where the individual fit. Good teachers, Thompson believed, imparted that knowledge.77

While little data exist on Negro schools and students before 1930, a national survey of secondary schools during the early 1930s offered insights into the ways black high schools prepared black Americans for the workforce. According to one report, about half of the 1,316 black high schools responded to the survey, and perhaps a third provided answers to a detailed questionnaire. Nevertheless, the survey found that between 1920 and 1930 enrollment increased by over 500 percent for black high school students in contrast to 175 percent for whites. “Poverty” and “work” accounted for poor attendance. About 67 percent of reporting schools were rural. In 16 states, 15 percent of black high school age-students remained illiterate, while only 2.6 percent of white students remained so. Only 9.5 percent of high

76 Arthur Howe, President of the Hampton Institute, “New Fields of Opportunity and How the Land Grant Colleges Can Meet Them,” Proceedings of the Fifteenth Annual Conference of the Presidents of Negro Land Grant Colleges, November 15-17, 1937, Howard University, Washington, D.C. (n.p., n.d.): 11-16. Also see the note later in the proceedings, “National Coordinating Committee for Equitable Distribution of Federal Aid to Education,” which reproduced a speech delivered to the Advisory Committee on Education. The speech called for a law to ensure “equitable education opportunities” and decried the disparity in the distribution of federal funds between black and white schools, pp. 88-91.

school-age blacks enrolled in school as opposed to 33.5 percent for whites. The teacher to student ratio of high school-age blacks held at 1:211; whites experienced a ratio of 1:60. Like their white counterparts, more girls than boys enrolled in school. Some black teachers in the South had not completed college; only two-thirds held a bachelor’s or master’s degree while rural teachers possessed fewer credentials. Nearly all black teachers remained overburdened and underpaid. While the report made little mention of vocational education, Charles Florence addressed the problem of training vocational teachers in the South. Vocational teacher training had been provided for by the Smith-Hughes Act. Although enrollment in Negro land-grant colleges increased substantially during the 1930s, vocational teacher training declined in comparison because of low pay, job insecurity, and the lack of interest and funding from vocational programs operated by Southern states. In fact, black land-grant colleges that trained African American vocational teachers in many Southern states rarely received their allotted share of federal funds. Thanks to Dixiecrats most black schools received few of the federal funds distributed to their respective states. Despite the roadblocks to adequate education and training, the economic historian Robert Margo found that over the course of the twentieth century, blacks in the South managed to increase their years of education and began to close the education gap between whites and blacks by 1940.78

Black educators looked to the federal government for the equitable distribution of educational funds. The report released by the President’s Advisory Committee on Education in 1938 was “significant,” The Journal of Negro Education editorialized, especially to the education of African Americans. The Advisory Committee proposed the extension of federal aid to support primary and secondary education, the expansion of vocational education and teacher training, the construction of buildings, the addition of libraries and support services, and the elimination of federal interference with curriculum content. Most importantly, to the editor, the committee advised the federal government “to require a just and equitable treatment

of Negroes in separate schools wherever the statutes do not now specify it.” Education and training would greatly improve economic opportunities for black Americans.79

By the end of the decade, black educators emphasized the importance of adult education and training. At a conference of Negro Land Grant Colleges in 1939, John W. Davis presented “The Need for Adult Education” and training programs for adults. The sociologist E. Franklin Frazier pointed out that black Americans required some form of industrial training because, having come mostly from agricultural regions, the Negro was a “newcomer to industry.” Industrial work differed significantly from agricultural labor and required literate workers. A.F. Hinrichs, chief economist for the U.S. Bureau of Labor Statistics, spoke to black educators on the “Economic Trends of Significance for Adult Education,” as a way to respond to technological displacement. “We must be prepared to train and retrain those whom the machine displaces,” he declared. Even though adult education might offer a short-term training, it had to encompass lifelong learning.80

Black Americans took advantage of WPA adult education classes in the South and in Northern cities. Their presence on WPA work relief projects increased after 1939. In February 1939, over 387,000 black Americans comprised 14 percent of WPA workers. In ten Southern states, nearly 180,000 blacks enrolled in WPA Emergency Education programs in


June 1935, comprising nearly 42 percent of all enrollees. With private employment difficult to obtain, African Americans in some states having large black populations such as Georgia, South Carolina, and Louisiana made up 37 percent or more of WPA workers in occupations that included musicians, artists, laborers, and skilled tradesmen. Many adults turned to WPA schools for literacy training and elementary education taught by thousands of unemployed African American teachers. The WPA boasted that over 350,000 black adults had learned to read and write between 1933 and June 1937. In addition, others learned trades, hobbies, and skills for the workplace.

By 1940, the war presented new opportunities for job training, education and the rights of citizenship for African Americans. The Journal of Negro Education gave reasons in 1940 for black Americans to be hopeful for greater participation in the war effort than they had experienced during the First World War. First, the National Defense Advisory Committee announced “an explicit policy of non-racial discrimination in the selection and training of workers.” Second, the Deficiency Appropriations bill pending in Congress stated that no trainee face discrimination “because of sex, race, or color,” and that training facilities receive equitable funding. Enforcing the policies would test the resolve of the federal government. In addition, once trained, black Americans had to hurdle the problem of placement with employers. The editor emphasized that it was better to get training first and worry about employment later. In the armed forces, the Selective Service Act prohibited “discrimination against any person on account of race or color.” Segregated units remained likely, however. The editor concluded that the government must realize “that real democracy means the complete integration of the Negroes as well as other minorities into the total life of America.”

War production eventually helped break down discrimination in training and employment for women, blacks, and older workers.


82 “Many Negro Students Complete WPA Adult Education Courses,” WPA Press Release No. 4-1550 (16 June 1937); and see “Improved Teaching Methods to Reach 181,000 WPA Students in Fall and Winter Classes,” WPA Press Release No. 4-1801 (10 October 1938); both in RG-69, Press Clippings Concerning Negro Affairs, 1936-1940, A-M, Box 1, 1936-1938.

Older Workers

During the New Era, American industry benefited from trained personnel, immigration restriction, new technologies that included innovative methods, materials, and processes. The Federal Board for Vocational Education in 1931 reiterated the observation that mass production and technology eliminated numerous jobs. Workers over 40 years old remained especially vulnerable and society carried the burden of responsibility for directing older workers to other employment. Old workers faced increasing discrimination in the labor market prior to and during the Great Depression. At a conference of the National Association of Manufacturers 1929, a session examined the problems of older workers. Addressing the charges brought by various magazine articles that firms imposed maximum age limits, a NAM investigation found that over seventy percent of firms had no policy restricting workers by age. Twenty-eight percent of manufacturers restricted employment to workers aged 25 to 70 years old in unskilled and semi-skilled jobs; they restricted skilled work to those aged 35 to 70 years. About seven percent of all companies limited unskilled and semi-skilled work to those 45 years old and younger. Indeed some NAM members admitted to such policies, citing training costs and the flexibility of younger people as well as the cost of insurance premiums as workers aged. Most firms considered the fitness and ability of an employee that might affect workplace safety and company liability. They also considered that employees generally had to work fifteen or twenty years with an employer in order to receive pension benefits.

A representative from the Metropolitan Life Insurance Company, however, reported a lack of data regarding older workers in the United States. According to the 1920 census, over three million males 45 and over worked in industry along with 300,000 females over 45. Some 400,000 of those gainfully employed were over age 65. The censuses since the turn of

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the century had demonstrated an aging population in the United States. Some firms saw older workers as mature, reliable, loyal, and often skilled; they proved to be valuable employees. Presumably, accidents increased with age, but no hard data supported that assertion. Absences also decreased with age. As the population aged, he advised, firms should expect increasing numbers of older workers and begin to investigate and plan future labor needs and work routines accordingly.86

In 1929 Channing Dooley—the former head of the Army Training Detachments in World War I, a member of the Advisory Committee of the Carnegie Corporation for adult education, and now training director for Standard Oil of New York—argued in favor of employing middle-aged, 40-55 years old employees. Older employees with broad experience in a firm proved valuable. He also observed, however, that when firms eliminated the positions of older workers, they saved money on pension plans and paid lower wages and salaries because older workers presumably needed less money for their families. One company representative admitted that a reduction in salary for older workers remained a “very common practice.” An associate of a professional personnel foundation, referring to the work of E.L. Thorndike on the abilities of older workers, stated: “you can teach an old dog new tricks almost as easily as you can teach a young one.” More training led to more opportunities.87 That same year, the Secretary of Labor James J. Davis recognized the problem as one of the “grave economic problems that deserve our particular consideration.” Men over 40, he said, had proven their capability, had more experience and better work habits, and provided a “valuable service.”88

As unemployment rose during the Depression and the job market tightened, older men and women faced increasing discrimination in the workplace. The NAM in 1938 categorically opposed the hiring of children under sixteen and the setting of “arbitrary upper age limits.” The NAM in cooperation with veterans groups conducted a survey during the mid-1930s

86 Roderic Olzendam, “What Industry is Doing With the Older Worker,” ibid., pp. 3-11.


regarding workers over 40 years old. According to self-reports by NAM members, no companies discharged workers when they reached forty. During periods of worker furlough or layoffs, as in the recession of 1937-1938, some firms preferred to keep older employees. Over 38 percent of companies preferred to hire younger workers because of training costs and physical demands of the job, but 89 percent reported no maximum age limit. Among over 2,000 firms responding, 63 percent offered group insurance, but only ten percent had retirement plans. The survey offered no data about the number of skilled workers, the age of skilled workers, or the type of training offered to employees, however. The American Federationist, shortly after the “Roosevelt Recession” began in 1937, pointed to WPA studies and those enrolled with public employment offices as evidence of “prejudice against age.” Many WPA workers had years of experience and the age of WPA workers increased throughout the decade.89

A year after the NAM’s survey, the journalist Beulah Amidon gathered evidence from the Committee on Employment Problems of Older Workers within the Department of Labor to demonstrate “age as a handicap.” The Unemployment Census of 1937 revealed unemployment most severe among the 20 to 24 year old age group, however. Those between 25 and 39 fared better, but unemployment crept up again for every age group over forty. Women over 30 faced similar trends and married women faced hiring discrimination during the early years of the Depression. The WPA rolls confirmed higher average ages among men and women by the late 1930s and early 1940s. Employee retention often favored those with useful skills, good health, better education, and those having dependents. Amidon counted five main reasons why employers preferred youth: First, they claimed older workers produced less, but offered little evidence. Second, older workers remained prone to accidents, although accident rates remained higher for those under 30. Even so, accidents did increase for those over 55. Third, older workers added to the cost of group insurance, although employers presented no evidence. Fourth, older workers weakened pension plans, but that no longer remained a problem with social security and pensions that allowed for flexible worker

89 National Association of Manufacturers, Workers Over 40, A Survey by the National Association of Manufacturers of its Member Companies to Determine the Status of “Workers 40 and Over” (New York: National Association of Manufacturers, 1938): 1, citing from a resolution made by the Board of Directors, February 1938. The NAM queried 2,485 member companies employing over 2.3 million employees; some firms did not reply to all of the questions, see pp. 7-9; Editorials, American Federationist, 44 (December 1937): 1290-1291.
contributions. Finally, older workers seemed less adaptable to new jobs, a finding that remained inconclusive, although Amidon conceded that older workers experienced some loss of ability. She recommended a more thorough study and a concerted effort by labor, management, and government agencies to correct misconceptions about older workers who were amenable to training and retraining. The Secretary of Labor concurred with observations about the “difficulties of persons over the ages of 40 or 45 in finding jobs.” As we shall see in chapters 8 and 9, when demand for labor intensified during the Second World War, the problems of age, sex, and race diminished with full employment.90

**Occupational Trends and Projections**

For unemployed youth and job seekers, what kinds of jobs were available and what qualifications did one need to acquire a good job? *American Job Trends*, a pamphlet written for high school students in 1941, explained labor market trends up through the 1930s and projected those trends into the 1940s. It sketched an evolving portrait of the American workforce during the first decades of the twentieth century. After the Great War and by the end of the 1920s, a number of demographic and occupational trends became apparent. On one hand, the authors demonstrated that the fastest growing occupations from 1910 to 1930 included clerical workers and professionals, as well as skilled and semi-skilled workers. On the other hand, agricultural and unskilled labor declined as a proportion of the labor force. And while the number of workers in manufacturing industries increased during the 1920s, their percentage of the workforce actually declined because of increasing real numbers of workers entering service industries, the professions, and white collar jobs. Most women who worked in manufacturing did so in textiles and clothing, food processing, printing, and in the cigar and tobacco industries.91

Overall, the authors of *American Job Trends* predicted that manufacturing jobs would likely drop off. The building trades—the second largest manufacturing sector which largely employed men—remained difficult to enter because of trade union restrictions. Moreover, the


industry remained the most vulnerable to fluctuations in business cycles. While new technologies increased productivity, they reduced the number of jobs in many manufacturing and mass production industries. The most promising manufacturing jobs, for example, appeared in the chemical, electrical, and food industries. However, jobs in the lumber and furniture industries, some in the metal trades, and others in the clay, glass, and stone work industries would likely decline. The most promising occupations included those in the distribution and service industries that absorbed nearly one-fourth of the labor force, or 12 million people, in 1940. Service industries encompassed commerce (retail sales, merchants, banking and insurance industries, brokers, real estate agents), transportation (air, rail, and trucking), and communications. While clerical work increased rapidly during the 1920s and even during the Depression, many of these occupations employed more women than men. Educated women with training in business and the professions stood the best chance of retaining employment, at least during the early years of the Depression, but their earnings tended to decline. Office skills—skills required of bookkeepers, cashiers, accountants, and office workers who could operate typewriters, dictaphones, mimeographs, adding machines, and others devices—all required some kind of training. The number of government service jobs had doubled since 1910, surpassed only by that of clerical workers. After excluding professionals and white collar workers—teachers, engineers, and clerical workers—the authors of *American Job Trends* found that most government service occupations included maintenance workers, law enforcement and military personnel, postal workers, public officials, and other public jobs such as notaries, county agents, and garbage collectors. The trend would likely continue. Despite the growing emphasis on defense in 1940, occupational trends reflected a move away from production work and toward distribution and service work.\(^\text{92}\)

\(^{92}\) Anderson and Davidson, *American Job Trends*, pp. 22-26, 32-34, and 44-47. For a study of skilled and professional women and their job opportunities, undertaken by the American Woman’s Association and the President’s Emergency Committee for Employment, see Harriet Houghton and Louisa Blaine, *The Trained Woman and the Economic Crisis: Employment and Unemployment Among a Selected Group of Business and Professional Women in New York City* (New York: The American Woman’s Association, 1931). A few years later, about thirty percent of the women in this organization experienced unemployment. The most disconcerting aspect of the Depression, Lorine Pruette and Iva Lowther Peters found, proved to be the “psychological costs,” the insecurity bred by having no income (most states had yet to establish unemployment insurance) and eventually becoming “unemployable”; see *Women Workers Through the Depression: A Study of White Collar Employment Made by the American Women’s Association* (New York: The Macmillan Company, 1934). One conclusion from
While schools added business and commercial subjects to the high school curriculum during the 1920s, commercial education remained absent from vocational education programs until after 1937. The George-Deen Act, passed in 1936, added “distributive” occupations to vocational education funding that included subjects such as retailing, sales, merchandising, and clerical work—stenography, bookkeeping, shorthand, and typing. Adult education during the Depression remained available through extension and correspondence schools, continuation and evening schools, and eventually WPA Opportunity Schools. Adult education combined the efforts of local, state, and federal institutions, and the cooperation of public and private agencies. The George-Deen Act, passed in 1936, added “distributive” occupations to vocational education funding that included subjects such as retailing, sales, merchandising, and clerical work—stenography, bookkeeping, shorthand, and typing. Adult education during the Depression remained available through extension and correspondence schools, continuation and evening schools, and eventually WPA Opportunity Schools. Adult education combined the efforts of local, state, and federal institutions, and the cooperation of public and private agencies.93 The trend showed, the editor of *Industrial Arts and Vocational Education* magazine reiterated in 1938, that while innovations may threaten older industries, “preparedness and adaptability” should help vocational education teachers encourage their students to prepare themselves for new opportunities “at various stages of their lives.”94

**Conclusion**

The ability to adapt to changing labor markets by learning new skills eventually dominated workforce training after the late 1930s. Nearly a quarter of the workforce had no work in the early 1930s. Technological unemployment displaced workers and the unskilled faced the most difficulty regaining jobs or entering the workforce from high school. Marginalized workers—African Americans, the disabled, some women, and older adults without substantial skills—struggled to find employment during the Depression. Funding for public education, including vocational education, declined for most of the decade. The American workforce had lost skilled workers through attrition, uncertainty, the lack of apprenticeship training, and immigration restriction that reduced the earlier flow of skilled workers to American industries. Only large firms could afford to train workers, but they required fewer workers to produce goods for a depressed economy. To rehabilitate the

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“disabled soldier of industry,” the New Deal in 1933 created work relief programs, but officials did not design those programs to train workers; rather, work relief projects substituted “made work” for simple relief checks.

In fact, Americans considered that high rates of unemployment might become a permanent feature of American life. The administration of Franklin Roosevelt and an army of economists and policy makers studied the problems of unemployment but failed to implement a solution by the late 1930s. Work relief, therefore, attempted to preserve and utilize existing skills, maintain work discipline, and create projects useful to the public. Meanwhile, government agencies gathered data on employment, production, and training needs, and recommended the reinstitution of apprenticeship training. Trends indicated the importance of training for future labor force needs. When the United States finally entered World War Two, the enormous demand for skilled and semi-skilled workers for war production restructured the American workforce and highlighted the importance of workforce education and training.
CHAPTER 6

THE NEW DEAL AND HUMAN CAPITAL:
FEDERAL TRAINING PROGRAMS IN THE 1930s

“Particularly for the young workers and those who have little hope of returning to their old occupations, the need for educational and vocational training and retraining programs is clearly indicated.”

-- The Advisory Committee on Economic Security, 1935

“Public works programs in the past have been chiefly devoted to construction projects—to building physical resources. The recent depression taught us that the conservation and development of our human resources is even more important.”

-- Harry Hopkins, Director of the Works Progress Administration, 1938

“The only real capital of a nation is its natural resources and its human beings.”

-- Franklin D. Roosevelt, 1938

“[Our educational system] must adjust itself to the new needs of our economic and social order. It must constantly prepare and re-prepare our citizens, so that their skills will fit the demands of a changing civilization. It must so educate our people that no one need fear the future, that is, fear that the things that he has been trained to do will no longer be needed or wanted by our society.”

-- Isador Lubin, Director, Bureau of Labor Statistics, 1938

By the early 1930s, the Great Depression had reduced or eliminated employment opportunities for many Americans, so much so that job training declined during the early years

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of the decade. Only a few large corporations possessed the resources to train new workers and, because of job uncertainty and the sluggish recovery, large-scale training and apprentices training in many occupations languished. Paradoxically, the expansion of new industries during the 1920s and 1930s—electronics, broadcasting, automotive, aviation, and trucking, for example—required workers with new kinds of skills. Even though FDR commented in his first inaugural address that the nation should provide “an adequate education for everybody,” the first New Deal remained ambivalent toward that end. According to one observer, FDR had no particular philosophy or plan of education except the progressive goals of preserving democracy, instilling citizenship, and preparing young people with practical skills for the workplace.

To understand how New Dealers succeeded in establishing at least miniscule occupational training, vocational education, and eventually large-scale defense training programs in concert with organized labor and large corporations, this chapter briefly sketches various training programs begun by New Deal agencies up to the beginning of the Second World War. While federal work relief programs offered a temporary expedient for the unemployed, small training programs eventually emerged under the Tennessee Valley Authority (TVA), the Civilian Conservation Corps (CCC), the National Youth Administration (NYA), and the Works Progress Administration (WPA). Some of these programs served as models for the massive expansion of training during World War Two. In addition, the Department of Labor revived apprenticeship training in a cooperative arrangement between organized labor, industry, and state and federal governments. Increasingly, the federal and state governments fostered closer ties between businesses, labor, and educators to establish workforce education and job training for large numbers of Americans.²

The New Deal and Work Relief

Despite the uncertainty of FDR’s beliefs about federal funding for education, the New Deal invested in human capital through work relief programs that initially attempted to preserve skills and provide minimal training and continuing education programs. To address the problems of funding and to assess the efficacy of federal assistance to education, the president established various committees during the 1930s. FDR often bypassed the Bureau of Education and professional organizations, however, and left the daily task of public

education to state and local governments. In fact, some educators believed FDR had done little to shore up a crumbling educational system wounded by the Depression. Willard Givens, who served as executive secretary of the National Education Association in 1935, publicly criticized the Roosevelt administration in 1938 in an article titled, “New Deal a Raw Deal for Public Schools.”

Advocates of education, training, and retraining not only included educators, and business and labor leaders, but also officials within the Roosevelt administration. The Advisory Committee on Economic Security—led by Frances Perkins, Henry Morgenthau, Jr., Homer Cummings (the Attorney General), Henry A. Wallace (Secretary of Agriculture), and Harry L. Hopkins (FERA administrator)—proposed in 1934 a number of reforms to assist those suffering from the effects of the Great Depression. In fact, many of their recommendations became part of the Second New Deal in 1935 and federal policies after World War Two. The committee recommended the federal government assure security for Americans by providing unemployment compensation, old-age benefits, and security for children—particularly child care, maternal and child health services, and aid to fatherless children—in addition to a national public health service and national health insurance. The committee proposed that government support employment either through public works projects and employment services such as the United States Employment Service (USES), or in collaboration with private employers. The committee also considered “educational and rehabilitation services” that included education, training, and vocational guidance and more. Education, the committee emphasized, “to fulfill its purposes, must be related much more than it has been to the economic needs of individuals. . . . [It] cannot be regarded as completed upon leaving school.” Recognizing recent structural changes, the committee wrote, “In a day and age of rapidly changing techniques and market demands, many people will find it necessary to make readjustments long after they have first entered industry.” Echoing the Education Gospel and prevailing notions of vocationalism, the committee warned that the educational system must adjust “educational content and technique to this situation” for long-term security.

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4 *Report to the President of the Committee on Economic Security*, p. 47. [Submitted January 15, 1935.] The committee’s recommendations, long before the presidential campaign of 1936, supports
The advisory committee believed the nation must commit to education and training in response to changes in the labor market: “Particularly for the young workers and those who have little hope of returning to their old occupations, the need for educational and vocational training and retraining programs is clearly indicated.” While state and local governments retained control of public education, the committee recommended that federal participation “is most desirable” to obviate threats to economic security. The great majority of Americans needed “a chance to work at some job, a chance to develop skills and techniques.” The administration included in its assessment “special programs for the physically handicapped.” While forty-five states had adopted the Vocational Rehabilitation Act, only 68,000 disabled Americans, a relatively small number of disabled, trained for new occupations. Officials at the highest levels within the administration agreed on the importance of expanding education and training.5

In 1934 Charles Sylvester, Director of Vocational Education in Maryland, summarized the impact of the New Deal on training and vocational education up to that time. New Deal programs sought to provide “equal opportunity for all” in addition to a general education. He noted the “new conditions” created by the National Recovery Administration (NRA) in codes that restricted child labor for children less than age 16. President Roosevelt also issued an executive order in June 1934, which created a national apprenticeship training agency under the NRA. Sylvester also underscored the importance of cooperation from employers, organized labor, educators, and the community. Community representatives served on “advisory committees” that had an important function. The advisory committees determined local needs for training, formulated regulations governing training programs, monitored and enforced school attendance, reviewed student applications, and coordinated various cooperating organizations. In addition, schools needed to expand vocational education programs for adults in order to enhance their chances of employment with training or retraining, especially in newer industries such as radio, refrigeration and air-conditioning. Sylvester also subscribed to the “Education Gospel,” adhering to the notion that teaching

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David M. Kennedy’s appraisal that FDR had considered various reforms, including social security, before Huey Long, Charles Coughlin, and Francis Townsend “pressured” the administration; see Freedom From Fear: The American People in Depression and War, 1929-1945 (New York: Oxford University Press, 1999): 241-243.

youth a skill helped reduce crime. New Deal education, he concluded, fostered leisure time activities, pride in work, and helped place new graduates in useful employment. However, he concluded, the New Deal would require additional funds in order to continue its services.6

Nearly a decade before the Second World War, at the nadir of the Great Depression, the Roosevelt administration experimented with various policies to bring about economic recovery and furnish relief in the form of food, shelter, clothing, and the necessities of life. Although Americans opposed a federal “dole,” relief in exchange for work appealed to many. In the first New Deal, the Roosevelt administration had established the Federal Emergency Relief Administration (FERA) to provide the necessities of daily living to the unemployed and the destitute. It’s Civil Works Administration (CWA), calculated to last about six months in the winter of 1933-34, actually paid the unemployed to work on socially useful public works programs. New Deal agencies like the CWA, FERA, Works Progress Administration (WPA), and the Public Works Administration (PWA) assisted public education by constructing or improving thousands of schools between 1933 and 1943. In addition to physical improvements, the CWA boosted the morale of unemployed Americans who exchanged their labor for a paycheck rather than taking money on the dole. Work relief proved enormously popular, but also expensive. In 1935, the administration extended work relief programs under the newly formed WPA, an expanded version of the CWA and FERA that included middle-class white-collar and professional workers as well as the blue-collar unemployed. The WPA intended to preserve skills and provide relief assistance while participants helped create physical and cultural works of social value. While most WPA programs employed workers on construction projects, Federal Project One included artists, writers, poets, and musicians, and the Service Projects promoted health, hygiene, homemaking, recreation, and adult education. The early New Deal offered few opportunities for vocational education or actual job training, but by the middle of the 1930s some administration officials and educators implemented job training and retraining programs.7

6 Charles W. Sylvester, “Vocational Education’s New Deal,” [address given to the Public School Association in November 1934] Industrial Arts and Vocational Education 24 (February 1935): 33-38; for the concern about reducing crime through education, see editorial [by J. J. Metz], “The Saving of Our Youth,” ibid. 27 (October 1938): 331.

To assess the need for training or placement, agents of the federal government not only monitored national labor markets, but also attempted to shore up those markets. In April 1936, for example, Isadore Lubin, Commissioner of Labor Statistics in the Department of Labor, informed the Secretary of Labor Frances Perkins that some officials in the private sector had expressed an interest in training workers where shortages of skilled labor existed. Others, noting a “mismatch” between areas experiencing a shortage of skilled workers and regional pockets having a surplus of skilled workers, considered transporting unemployed skilled workers from one locality to another. Lubin wondered if the WPA or the United States Employment Service (USES) could be induced to pay for relocation expenses. Furthermore, relying on data gathered by the USES and WPA studies, Lubin queried the secretary about retraining workers whose skills had become obsolete. Instead of wasting the knowledge and expertise gained from their own craft, why not transfer them to similar occupations that required only a modicum of additional training? The President’s Labor Advisory Committee, Lubin surmised, “could render a real service” by convincing the proper officials to provide an agency to retrain unemployed skilled and semi-skilled workers for current and future industrial needs. Lubin’s recommendations remained dormant until the WPA and wartime agencies adopted similar proposals for defense training after 1939.8

Lubin also recommended increasing family consumption by public and private means to stimulate the demand for goods and services and thereby increase demand for workers. Even with that goal accomplished, however, Americans required “training to fit into jobs as they arise,” and to “easily move from jobs where they are no longer required to jobs that are in need of workers.” That, he suggested, would become the “task of our educational system.” Education “must constantly prepare and re-prepare our citizens, so that their skills will fit the demands of a changing civilization. It must so educate our people that no one need fear the

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8 “Memorandum: Reported Shortages of Labor,” I. Lubin to The Secretary [of Labor Perkins] (29 April 1936), National Archives and Records Administration [NARA], RG-174, General Records of the Department of Labor, Frances Perkins, Secretary of Labor, Box 29, “Committees” file 2, “Federal Committee on Apprenticeship Training.”
future, that is, fear that the things that he has been trained to do will no longer be needed or wanted by our society."9

In another guise, Lubin agreed with a proposition by Floyd Reeves—the professor of public policy and administration at the University of Chicago on loan to the White House—who chaired the President’s Committee on Vocational Education. Reeves wondered if some kind of mechanism—one that encouraged cooperation between industrial and labor leaders—could be constructed for analyzing manufacturing output and gathering occupational data. Lubin assured Reeves that the Bureau of Labor Statistics possessed the expertise to perform national occupational forecasting. Furthermore, Lubin anticipated that, once the Depression ended, the demand for skilled labor would increase markedly and so would training. Lubin’s foresight proved useful during and after the Second World War.10

In a speech to the National Fibre Can and Tube Association in New Jersey in 1937, Lubin asserted that many unemployed “have had no opportunity to acquire the skills demanded by modern industry” and therefore needed additional training.11 Others in the administration agreed. Mordecai Ezekiel, economic advisor to the Secretary of Agriculture and a member of the President’s Advisory Committee on Education, stressed the need for retraining, especially for the “worn-out factory hands” over the age of 45: “these people must be retrained for other occupations,” he advised.12

The need for additional training and retraining predicted by Lubin became obvious to many by the late 1930s. Corrington Gill, assistant commissioner for the WPA, observed in 1939 that federal and state governments had begun a number of training programs, and that

9 Isador Lubin, Radio Address (28 November 1938), American School of the Air, Charles Taussig Collection, Box 1, Youth files, Speeches, FDR Library.

10 Isador Lubin to Floyd W. Reeves, Professor of Public Policy at the University of Chicago and Chair of the President’s Advisory Committee on Vocational Education, (20 December 1937), NARA, RG-174, Secretary of Labor Perkins, Box 31, file 2, “President’s Advisory Committee on Education.” Reeves also served on the American Youth Commission (1939-1941), the Office of Production Management (1940-41), the National Resources Planning Board (1941-1943), and he chaired the Conference on Post-war Readjustment of Civilian and Military Personnel (1942-1943).


12 Memorandum of John Dale Russell to Floyd Reeves and Paul David [secretary], President’s Committee on Education, regarding “Conference with Ezekiel” (14 September 1937), Staff Study No. 13, 1937/8, FDR Library.

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training could “be adapted to meet the requirements of persons whose occupations have been rendered obsolete by economic change.” Moreover, “assistance in migration and rehabilitation must accompany relief measures in many areas, lest relief needs become permanent and serve to perpetuate a maladjusted situation.” Gill also recognized the problems of unemployment arising from technological changes.13

In addition to Gill, Lubin, and others, Frank E. Hill, a prolific promoter for the American Association for Adult Education during the 1930s, argued near the end of the decade that the complex nature of the American industrial economy required a workforce prepared to utilize new technologies. He recommended training for new high school graduates who had no skills, retraining for those already in the workforce, and specialized instruction to prepare workers for occupations. Citing the Smith-Hughes Act of 1917 and similar public endeavors as examples of how to promote vocational education and job training for unemployed adults, Hill insisted upon training those displaced by technological changes, others who lost jobs because of an illness or injury that required retraining, and those who possessed “little in the way of work skills.”14

When the full effect of the “Roosevelt Recession” of 1937 emerged by the end of that year, AFL president William Green testified before a Special Senate Committee to Investigate Unemployment and Relief in January 1938. In one “element,” Green advocated a number of remedies, including shorter work hours, additional public works projects, maintaining current wage levels, expanding public housing and slum clearance, and stimulating private sector construction. “A second element,” Green remarked, “is a retraining program directed by the employment office administrators.” He added that, “Skill, if unused, rapidly deteriorates,

13 Corrington Gill, Wasted Manpower: The Challenge of Unemployment (New York: W.W. Norton and Company, Inc., 1939): 24, 65; and for technological unemployment, see pp. 31-32. Many respondents to the Community Improvement Appraisal of 1938 complained that WPA did little to preserve skills or to promote skills useful in private industry; see National Appraisal Committee, U.S. Community Improvement Appraisal, p. 34; examples of shifting trends of skilled labor during the war can be found in Chapter Six.

14 Frank E. Hill, Training for the Job: Vocational Education for Adults (New York: American Association for Adult Education, 1940): 73, 82, and 102-111.
especially with our rapid technological changes in production. Well-directed retraining will rehabilitate workers with appreciable savings to society.”

Meanwhile, between 1933 and 1940 the New Deal established some job training within the Tennessee Valley Authority (TVA) and in various work relief agencies such as the Civilian Conservation Corps (CCC), the National Youth Administration (NYA), the Federal Emergency Relief Administration (FERA), and the Works Progress Administration (WPA), all of which offered training on a limited scale.

**Tennessee Valley Authority: Education and Training Programs**

From the inception of the TVA, officials recognized that training employees would have to be part of the TVA project. In the process of erecting dams and electrical grids, the TVA had to build skills for those engaged in the construction and maintenance of the expansive hydro-electric system. Moreover, some form of adult education would not only contribute to the development of human capital in the region, but also help fill leisure time and maintain morale for those employed on the project. To create an interest in leisure time learning, TVA educational programs introduced practical, cultural, and craft courses aimed to pique local interests and local occupational needs with little assistance from outside governmental agencies. For practical courses, TVA workers learned about machine shop routines, welding, woodworking, auto maintenance, and electrical shop procedures. The TVA also offered apprenticeships to improve the efficiency and productivity of long-term skilled employees. At the Norris Dam site, for example, the TVA school offered classes in English, math, and blueprint reading. Like the opportunity schools that would flourish under the Federal Emergency Relief Administration and the Works Progress Administration, the TVA also offered community improvement courses at local schools in homemaking, cooking, sewing, child care, arts and crafts, and recreational programs. When the TVA extended operations to other locales, educators sought input from local institutions such as the Huntsville (Alabama) Library, local school boards, and local colleges such as the Alabama Agricultural and Mechanical Institute at Normal, Alabama, as well as Fisk and Atlanta

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15 William Green, statement before the Special Senate Committee to Investigate Unemployment and Relief, January 7, 1938, American Federation of Labor press release, pp. 3-10, citing p. 8, in the Isador Lubin Papers, Box 159, Speeches and Writings, 1924-1959, FDR Library.

16 The TVA largely constructed dams, reservoirs, and electrical grids along the Tennessee and Cumberland Rivers in six or seven states located in the upper South east of the Mississippi River and South of the Ohio River.
Universities. The TVA added programs for black Americans such as literacy training, basic education classes, and adult trade and job training classes, some taught by teachers from the WPA. However, officials often relegated black Americans to janitorial and service jobs; few enrolled in apprenticeships or trained for skilled occupations.17

After completing a network of dams, the TVA operated a flood control system and maintained hydroelectric generators and electrical transmission grids that required skilled workers largely absent from that region. The Tennessee Valley had evolved as an agricultural region, one that remained rather poor and isolated. As a result, few locals possessed the skills required for heavy construction, the generation of electricity, and the maintenance of power generators and electrical transmission lines. Therefore, the TVA established apprenticeship and job training programs to ensure timely maintenance. Because the TVA had not been classified a relief project, it hired its own workers. Screening 47,000 applicants—39,000 from the region alone—the TVA conducted examinations and interviews, and finally hired about 2,200 employees. Some recruits picked up additional work-related skills in their spare time, while others learned on-the-job. A number of employees volunteered to teach their co-workers. Officials tailored training to meet production goals at various stages of construction. By 1935, joint committees of TVA managers and workers developed employee policies that established workplace standards, wages and hours, grievance procedures, and the right to organize a union. The TVA by 1938 employed over 13,000 workers after peaking at over 14,000 in the 1937 fiscal year.18

During the 1930s, the TVA established nine types of formal apprenticeship programs in cooperation with management and labor, and in conformance with state and county


programs established by trade and industrial schools. Joint committees of vocational educators, managers, and union representatives oversaw screening for formal trade apprenticeships such as carpenters, electricians, and steamfitters. The TVA paid apprentice workers prevailing wages in programs taking 2 to 4 years that included formal class time. In April 1938, 237 apprentices (one-third electricians) tested for advancement. Workers honed their skills by continuous training, volunteered to instruct the public about hydro-electric plants, and formed their own joint certification committees. The TVA also promoted promising workers with high school diplomas to supervisory positions. Those injured on the job received rehabilitation through the state vocational rehabilitation agency. TVA schools offered local black workers some training and an opportunity to attend workers’ education, health education, and “home, family, and community relationships” classes. Churches, the YMCA and YWCA, the Red Cross, the American Legion, and other community groups offered over a dozen educational internships to regional black colleges to assist communities with health and education programs.

Floyd Reeves, director of the Personnel Social Development Divisions of the TVA, initiated programs for vocational education, general education, and recreation for thousands of employees on TVA projects. The modest program prepared workers for future projects, aided those entering professional engineering careers, and attempted to “promote safety, health, and employment” training for construction work on TVA projects. While the TVA trained workers already employed on its construction sites, the president recognized the utility of training youth, either those in school or unemployed, for future occupations. Young Americans entering the workforce lacked experience, training, or skills, and made up a large segment of the unemployed. Many came from impoverished families and had little opportunity to attend vocational schools or private trade schools. Young adults needed technical skills and work discipline. Thus publicly funded work programs for youth in the

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CCC and the NYA helped young adults gain experience for the transition from school to work while earning wages and aiding their families.\textsuperscript{22}

**The Civilian Conservation Corps: Education and Training**

As one of the first New Deal work relief programs, the Civilian Conservation Corps for youth proved to be one of the most popular. With passage of the Emergency Conservation Work Act, FDR established the CCC in April 1933 by executive order. President Roosevelt literally sketched the organizational structure of the CCC on paper and appointed Robert Fechner—a high school dropout, itinerant machinist, and labor lawyer who eventually rose to the vice-presidency of the International Association of Machinists—to head the CCC from 1933 until Fechner’s death in 1939. The contributions made by the CCC to conservation, recreation, and historical preservation are well-documented. In addition to enhancing the quality of national parks and the preservation of natural resources, the CCC proposed to boost the morale, improve the health, and guide the morals of young men aged 18 to 25, young men having no job and no hope, yet at risk for crime, delinquency, demoralization, and radical indoctrination. In other words the CCC endeavored to conserve both natural and human resources. A program for women apart from the CCC, sometimes called the “she-she-she,” set up twenty-eight camps for 2,000 unemployed women who received citizenship training, home making instruction, vocational education, and vocational guidance; that program, however, did not survive.\textsuperscript{23}


For an interesting survey of personal, vocational, and educational interests and backgrounds for youth in three camps in Ohio, including one camp for African Americans, see Lester Harold Gallogly, “A Study of the Personnel and Educational Program of Three Civilian Conservation Corps Camps,” M.A. thesis, The Ohio State University, 1936. For photographs, maps, and other useful
Enrollment in the CCC included mostly single, healthy, unemployed, young urban males, whose families qualified for relief as designated by the United States Employment Service and state relief agencies. In some cases, having served in the Boy Scouts or having experience with woodcraft enhanced one’s chances of enlistment. Some boys, however, joined to escape reform school or the ennui of their neighborhoods and home towns. According to figures gathered over twelve months in 1936 and 1937, nearly 58 percent of 282,000 enrollees that year never attended high school and forty percent had no prior work experience. Recruits received Army physicals and inoculations, swore an oath to observe rules and regulations, and promised to refrain from suits or claims against the CCC as a result of disease or bodily injury. Once accepted into the ranks, over three million young Americans eventually entered paramilitary camps to work on forestry and conservation projects. The CCC also enrolled over 85,000 American Indians on 75 reservations, enlisted local residents near camps who possessed particular skills unavailable through the Park Service, and allowed up to 30,000 unemployed veterans of World War I to join after screening by the Veterans Administration. (Eventually, 145,000 veterans served in the CCC.) Legislation initially allowed for an annual recruitment of 300,000 young men, increased in 1935 to 500,000, then reduced again to the original number in 1940. Young men earned $30 a month and sent $25 information, see Stan Cohen, *The Tree Army: A Pictorial History of the Civilian Conservation Corps, 1933-1942* (Missoula, MT: Pictorial Histories Publishing Company, Inc., 1980, 6th rev., 2003).


On FDR’s motives for the CCC, consider the anecdotes of Raymond Moley and Frances Perkins, in Appell, “Franklin Delano Roosevelt and Education,” pp. 166-168. For the possibility that the “Cadet Farm Camps,” organized in New York under the auspices of the New York State Military Training Commission, Bureau of Vocational Training, may have inspired FDR during the First World War, see Arthur D. Dean, *Our Schools in War Time—And After* (Boston, MA: Ginn and Company, 1918): 234-303. Other examples of precedents for recruiting youth for conservation projects before the New Deal are mentioned by Paige, *The Civilian Conservation Corps and the National Park Service, 1933-1942*, pp. 1-6; Holland and Hill, *Youth in the CCC*, pp. 15-24; and other histories. Also the Forestry Committee of the Denver Chamber of Commerce recruited youth from the Order of DeMolay between 1926 and 1929 to plant pine seedlings obtained from the U.S. Forest Service. Also during the 1920s, the Boy Scouts of America, the Forestry Club, various industrial schools, and girls from the Camp Fire Girls, planted trees according to Forest Service specifications, according to D.W. Thomas, “A Reforestation Project for Boys,” *Industrial Education Magazine* 30 (February 1929): 283.
home to their families. They generally served for six-months and could extend their service to a maximum of two years. By July 1, 1933, the CCC enrolled 250,000 recruits, but only 34,000 actually inhabited the 172 camps among the nine CCC Regional Areas in 35 states. The administration reduced the number of enrollees in 1936, when it cut funds for all emergency programs.  

While Fechner guided the CCC, a number of federal and state agencies competed for its attention. The War Department oversaw daily operations and supplied clothing, food, shelter, and transportation. Army and military reserve officers and enlisted men supervised the young men and the daily functions of the CCC camps. The Department of Agriculture, the U.S. Forest Service, and the National Park Service organized construction, reclamation, and forestry projects in various states with state cooperation. The Commissioner of Education supplied counselors and education advisors, took responsibility for instructing corps members in their duties, and later offered continuing education courses of various kinds. The multiple agency effort likely increased costs and reduced organizational efficiency. Fechner and the Army leaders objected to using the CCC as a substitute for high school or technical education because work relief remained the primary mission of the corps. Also they feared interference from professional educators and doubted tired young men working hard all day would have time for additional school work. William Green, president of the American Federation of

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Labor, feared that relief wages would depress wages in the private sector and that forest service jobs would compete with those of private firms. More importantly, Green opposed militarizing the nation’s youth. Regimentation, he believed, smacked of fascism or socialism. Despite Green’s concerns, he later praised the organization after given official tours of the camps and wooing by New Dealers. To assuage fears of militarizing youth, General Douglas MacArthur assured a joint congressional committee that CCC members would not receive military training and would be supervised by agents from the Department of Agriculture and the Department of Interior.25

Educators from the beginning attempted to wrest away authority from the Army and CCC officials, but Fechner resisted proposals that diverted CCC members from work to attend classes and sap time and money from actual work projects. Fechner had the support of FDR himself, who saw the CCC mainly as a work program, not as a program to augment public education. Nevertheless, educators finally squeezed in a Vocational Training Division in 1935 and made instruction available after work and on weekends in courses which actually proved to be popular with CCC youth. In 1935 alone class enrollment in study groups numbered 138,884 young men, roughly one in three. A year later more than three-fifths of all enrollees chose vocational education courses; auto mechanics proved to be the most popular course. Among three camps in Ohio, for example, forty percent of CCC youth enrolled in vocational education courses in 1935, while about thirty-five percent did so across the nation.26

The lack of education and training of the enrollees became obvious to CCC officials in the early years. Therefore, legislation enacted in 1937 establishing the Civilian Conservation Corps (as opposed to “Emergency Conservation Work”) included funding so that “at least ten hours each week may be devoted to general education or vocational

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training.” Educational components proved effective. By the middle of 1937, 62,000 young men had learned to read and write. Numerous camp newspapers sprang up, obliging prospective journalists and amateur poets with a forum for sentiments such as:

Roosevelt’s my shepherd; I shall not want;
He maketh me to lie down on straw mattresses;
He leadeth me inside a mess hall;
He restoreth to me a job.

Nearly half a million young men enrolled in elementary school subjects and 400,000 enrolled in high school courses over the CCC’s first four years. Congress approved an additional $5 million for education alone in the 1938 fiscal year. Although popular, the price tag for the CCC remained high: the president’s Advisory Committee on Education estimated that the government had spent about $1200 per enrollee a year. Although some of the cost could be defrayed as construction and reforestation expenses, CCC administrators, according to the committee, had erected “very serious obstacles in the way of its educational development.”

Howard Oxley, director of CCC education, stated his objectives for the education programs. Youth would benefit from “training on the job and training for future efficiency,” either by filling leisure time or learning a skill. Oxley reiterated in 1939 the need for education and training so that young men could “acquire skills” necessary “to secure permanent employment.” Educators utilized a range of learning devices—motion pictures, bulletin boards, charts, diagrams, specimens, models, and “hands-on” techniques—to stimulate interest. C.K. Morse, the National University Extension Association (NUEA) representative from the University of Nebraska, urged that extension programs be tailored to counsel and assist unemployed young men leaving the CCC to find useful employment. Correspondence courses and correspondence study groups, he said, allowed those from a variety of educational backgrounds to progress at their own pace. At about $1.50 per credit hour, correspondence courses proved affordable and popular among the “tree soldiers.”

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courses usually took about three months to complete, and part of their success owed to franking privileges allowed by the U.S. Post Office. By 1936, 1,900 educational advisers assisted nearly three-fourths of the more than 250,000 CCC members enrolled in various kinds of vocational or academic courses, ranging from literacy enhancement and elementary education to high school and college level courses.\footnote{Howard W. Oxley, U.S. Office of Education, “University Extension in CCC Camp Education,” and C.K. Morse, “Learning to Do Better the Worth-While Things,” Proceedings of the National University Extension Association [Twenty-first Annual Convention] at the Louisiana State University, Baton Rouge, Louisiana, May 7-9, 1936, 19 (Indianapolis, IN: Wm. B. Burford Printing Company, 1936): 43-48 and 116-123, respectively; Oxley, “Trends in CCC Education,” School Life 25 (December 1939): 77-79; on teaching aids, see “Educational Equipment and Facilities in CCC Camps,” ibid., 24 (May 1939): 250-252; Jessen, Trends in Secondary Education, p. 32.}

The teaching staff, however, remained inadequate. Some camps had few qualified teachers and relied upon military officers or camp staff, unemployed or moonlighting local teachers, or CCC members themselves who displayed evidence of skill or education. Camp advisers sometimes resorted to in-service training for available teachers. CCC members absorbed the practical techniques of surveying, forestry, soil conservation, and road maintenance as a matter of course. The Office of Education appealed to vocational educators who developed manuals for instructors that encompassed sixteen titles in the Civilian Conservation Corps Vocational Series. The manuals outlined subjects in electricity and radio servicing, masonry and bricklaying, automobile repair, cooking, and conservation. They also included sections about how to analyze jobs, how people learn, methods of teaching, and responsibilities for camp instructors. Educational advisers constructed course curricula on the basis of interest shown by CCC members, many of whom, ironically, had joined to avoid formal schooling. Eventually, occupational or vocational education consisted of “on-the-job” training and conventional courses in the trades (carpentry, masonry, construction, printing), business subjects (typing, bookkeeping, accounting), mechanical pursuits (auto mechanics, electronics, welding, surveying), and other subjects. Only the lack of qualified instructors limited the curriculum.\footnote{Hawkins et al., Development of Vocational Education, p. 514. The committee published a concise “how to” manual, utilizing techniques honed by vocational educators and professional managers, to instruct and guide students in practical subjects. See United States Office of Education, Department of the Interior, Manual for Instructors in Civilian Conservation Corps Camps (Washington, DC: U.S. Government Printing Office, 1935).}
To evaluate the efficacy of the CCC, the American Youth Commission, funded by the Rockefeller Foundation and also directed by Floyd Reeves, undertook a five-year study of the CCC in 1936. By 1939, as Kenneth Holland and Frank Earnest Hill noted, preliminary findings of the American Youth Commission reported that, despite some attempts to prepare youth for future employment, the CCC offered poor guidance or lacked standards of instruction for young men seeking to fulfill vocational or occupational interests and talents. The success of preparing CCC youth for the workforce remained ambiguous. In a small sample of CCC members “honorably discharged” from camps in Pennsylvania, for example, neither experience gained nor the courses taken while in the CCC prepared members for employment, except perhaps for improving work discipline. Very few, however, obtained jobs commensurate with either their CCC experience or their vocational training, a finding that supported the establishment of vocational training on the basis of local needs, which advocates of vocational education recommended. Some in the sample of former CCC men who took no vocational courses found jobs, while a few resorted to employment with the WPA or NYA. A small number returned to school.

In June 1937, Congress extended the corps for another three years, to July 1940, and it gave more attention to the educational functions of the CCC after lobbying by educators. Meanwhile, the Youth Protective Committee—an affiliate of the American Youth Congress—urged Floyd Reeves and the President’s Advisory Committee on Education to place the CCC under the administration of the National Youth Administration and out of the hands of the Army. The military, the Youth Protective Committee believed, neglected “to provide an adequate educational program” and denied youth “their elementary civil rights.” The Protective Committee called on educators, trade union activists, social service groups, and welfare and religious organizations to participate in a Round Table Discussion on “Education for Democracy in the Civilian Conservation Corps,” held in New York City on May 25,

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30 Holland and Hill, *Youth in the CCC*, pp. 148-165. For closer analysis of education and an optimistic portrayal of the CCC, see Hill, *The School in the Camps*.

31 From 128 members sampled, 68 responded, see Brenneman, “Industrial Arts in the Civilian Conservation Corps,” pp. 44-51, and 72-99.

Whether or not the Round Table succeeded, by 1938 the education division of the CCC offered 249 vocational subjects and over 10,000 separate courses that included auto mechanics, construction trades, office work, cooking, and other useful skills. W. Frank Persons, the Department of Labor representative for the CCC (and future director of the United States Employment Service), observed closer cooperation between the CCC and the USES during the 1938 fiscal year. He claimed that, “the Corps is a work and training program which assists its enrollees in preparing for employment in industry and agriculture.” Supporting evidence remained dubious, however. After reorganization of the executive branch in 1939, the president transferred the CCC to the Federal Security Agency.

While the CCC rescued urban white youth from industrial cities and families on relief, African American families faced similar challenges. Black families experienced higher unemployment rates than whites throughout most of the country. While official policy prohibited racial discrimination, Fechner restricted the number of blacks to ten percent of the total enrollment. African Americans, he deduced, “constituted” ten percent of the population and he sought to avoid the perception of favoritism. Between 1934 and 1938, annual enrollment of African American youth varied from 15,400 in 1934 to nearly 41,000 in 1936. In the early years of the program, the CCC assigned black members to segregated camps under white supervision, usually in isolated areas away from white populations thought to be hostile to blacks. Fechner believed racism outside the South to be as bad or worse than that of his home region. In rare cases the CCC formed integrated units. After protests by African American newspapers and civic organizations, and supported by recommendations from the Youth Commission, the Roosevelt administration ordered the appointment of qualified black officials and the assignment of black supervisors, camp chaplains, and medical officers. Despite persistent racial tensions within the program and threats to reduce the number of camps, black officers and officials eventually supervised many of the 153 segregated camps.

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33 Edwin Berry Bergum et al., Youth Protective Committee, to Floyd F. Reeves, President’s Advisory Committee on Education, Box 2, General Correspondence, C – Ezekiel, file: E – General. For criticism of the educational programs, see Wirth, *Civilian Conservation Corps Program*, p. 4.

34 O’Coin, “Vocational Education,” pp. 111-129; Hawkins et al., *Development of Vocational Education*.

Camp newspapers, prevalent in nearly all of the camps, encouraged black members to take advantage of educational opportunities, although in one Ohio camp, for example, relatively few did so. An all-black camp in California, however, afforded on-the-job training in auto mechanics, cooking, carpentry, cabinetmaking, and welding, in addition to formal courses in writing, math, history, and geography. In January 1938, just over 38 percent of black enlistees enrolled in vocational education classes. While the CCC helped thousands of black youths achieve literacy, schooling did little to help black or white members gain subsequent employment despite the fact that over 300,000 black youths and 30,000 black veterans served in the CCC by 1940.36

Given the circumstances as a job of last resort, indifference on the part of some individuals, and perhaps poor guidance from CCC camp leaders, morale among some enrollees deteriorated. Nearly one-in-five “tree soldiers” deserted their CCC posts in 1937 alone. Between 1933 and 1942, nearly 500,000 deserted or left because of disciplinary problems. Incidents of mutinies, fraud, and disintegrating morale tarnished the image of the CCC. Reductions in funding after 1938, even in the face of public opposition to cutbacks, reduced personnel and closed, relocated, or phased out camps. After Fechner’s death in December 1939, his successor, James L. McEntee, faced low morale, constricted budgets, and


the loss of reserve officers called to active duty. Recruitment waned as many unemployed youth preferred factory jobs after defense production expanded in the early 1940s.\(^{37}\)

While the CCC occupied some 3.4 million unemployed youth, aided families on relief, improved the quality of health for many, helped conserve national resources, promoted a rigorous work ethic, and assisted young Americans to become literate, complete high school, or enroll in college courses, the majority of CCC youth remained unprepared for the workforce as the nation primed for war. Even though the CCC provided useful preemployment services and added funds for defense training, it left no record of how well it prepared prepare youth for the industrial workforce. After war erupted in Europe and Asia, the CCC focused almost entirely in defense preparations. Like other New Deal work relief programs, the CCC quietly succumbed to budgetary strangulation in 1943.\(^ {38}\)

While the CCC offered modest education and training classes, CCC youth left the “forest army” ill-equipped for the skilled occupations or trades. To be fair, students in public vocational high schools fared little better. Public vocational schools enrolled about 2 million students in 1939, but the vast majority of those studied agriculture and home economics. In 1939, relatively few young Americans prepared for skilled or semi-skilled work. Educators estimated that 1.2 million youth would graduate in 1941. While 400,000 would attend college and another 100,000 enter the trades, a half million youth stood unequipped to enter the industrial workforce with marketable skills. Most faced the prospect of finding no job at all. The National Youth Administration (NYA), however, experienced better success than most schools and the CCC in facilitating the transition from school to work.\(^ {39}\)

The National Youth Administration: Education and Training

Because of the poor prospects for employment that many young people experienced upon leaving school, the CCC and the National Youth Administration served not only to delay the entry of youth into the workforce, but also to aid the transition by furnishing a modicum of preemployment experience, training, or additional education. The NYA fell under the

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\(^{39}\) Lorwin, *Youth Work Programs*, pp. 33-36, Table 5, p. 34.
financing umbrella of the WPA, but focused on young men and women aged 16 to 25 (or sometimes from ages 18 to 24) whose families qualified for relief. Headed by Aubrey Williams for the duration of the agency, the NYA developed “work opportunities, job training and retraining for unemployed youth, . . . utilizing all existing public and private agencies, industries, schools and various training facilities.” The agency spent over $662 million between 1935 and 1943, over seventy percent of which it paid in wages to over 2.7 million young people on work and training projects. The remainder paid for the formal education of over two million high school, college, and post-graduate students and $22.5 million went for administrative overhead. Planners anticipated costs ranging from about $6 a month for high school students, $10 a month for job trainees, and $15 a month for colleges students and work relief recipients. Like many New Deal programs, the policies of the NYA seemed contradictory in both intention and in effect. One historian, for example, described the NYA as both “conservative and reformist” simultaneously, a description equally applicable to the entire New Deal.

Most NYA youth came from low income families. More women benefited from the NYA programs than men in high school programs, but more men than women attended college and postgraduate schools. In 1939, officials found that over 80 percent of students came from families having four or more members (the average American family size at the time), 42 percent with six members, and 17 percent from families with eight or more. Over half of black youth came from families having six or more members, and 28 percent had eight or more family members. Twenty-five percent of NYA students, black and white, came from families that had no person in the household employed, although black families usually had more than one person employed. A 1939 survey also revealed that three of five students less than 18 years of age, while 98 percent of all NYA youth were less than 20 years old. From

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1939 to 1942, the percentage of non-white high school students varied from 12 to 18 percent, although fewer than 8 percent of black NYA youth attended college and graduate programs. NYA high school students engaged in part-time work—usually community service jobs averaging about $4.50 a month (roughly $60 in 2005 dollars). College students earned about $12.50 a month, and graduate students about $21 a month (or $280 a month in 2005 dollars).\footnote{Final Report of the National Youth Administration, pp. 53-73. Estimates for converting 1930 dollars to year 2005 dollars are made by using S. Morgan Friedman’s inflation calculator at http://www.westegg.com/inflation/. He uses the Consumer Price Index data from the Historical Statistics of the United States.}

Lewis Lorwin, who studied the NYA in its heyday, argued that of all the work-relief programs the NYA endeavored more than others to assure equal opportunity for young men and women, and to assist impoverished youth from all regions of the country. Lorwin identified three “premises” upon which the NYA operated. First it offered assistance for needy youth out of school and unemployed to help support families on relief. Second, it made part-time employment with work-relief preferable to the dole. Third, although an extension of the WPA, the NYA not only prepared socially useful projects for the community, but it also focused on “work experience and training” to enhance one’s job prospects. Like other work relief agencies, the NYA eventually instituted training programs for national defense.\footnote{Lorwin, Youth Work Programs, pp. 18-20.}

Progressive traits and values clearly informed the NYA. For example, the historian Richard Reiman asserted that the NYA initiated “the first federal affirmative action program” by helping to educate African Americans while posing “no threat to segregation.” In addition, the NYA encouraged citizenship and strove to instill the values of democracy and individual self-worth. Similar in motive to the CCC, officials feared that a lack of opportunity and demoralization among young adults could threaten democratic institutions; they pointed to the flourish of totalitarian ideas and institutions in Europe during the mid-1930s as examples. Homer Rainey, director of the American Youth Commission, reported in 1936 that unemployment remained the “crux of our youth problem.” Of the 20 million young people between the ages 16 and 24 who comprised more than a fifth of the labor force, over 5 million remained unemployed and out of school. Many, about seventy percent according to some surveys, had no training or qualifications for employment; others simply had no desire to work in dead-end jobs. The unemployment rate among black and non-white youth, as well as that
of young women, remained higher than that of white males in general. Unlike the CCC, the NYA included women and, according to the NYA Final Report, offered a broader range of training and work experience that prepared young men and women “for private employment.” Rainey suggested creating new kinds of jobs in both the public and private sectors, extending compulsory education to the age of 18, and encouraging vocational training in schools along with guidance and placement programs. In addition, he recommended forecasting future labor market needs in order to begin training early, or at least inform those with portable skills, so that potential workers could respond to changing markets.44

While training remained the chief goal of the NYA, Reiman identified three foci of the agency. First, the NYA sought to democratize education by serving a large cross-section of unemployed youth and training them for the workforce rather than mirroring the “elitist” (“traditional humanist liberal arts”) curriculum of the public educational system. The NYA also fostered the local administration of NYA projects in order to avoid the “specter of federal control.” The NYA did little to address directly the problem of unemployment among youth, however. Rather, it supported learning by doing in work-study programs and by granting outright student financial aid, a hallmark of the Great Society and later federal programs. The American Federationist, reflecting the attitudes of the American Federation of Labor, acknowledged the NYA conserved and reinforced “the nation’s human resources” by employing a “flexible, experimental attitude” toward assisting needy youth with vocational education, guidance, and placement in jobs. In fact, the journal opined, the educational results of the NYA challenged public vocational schools and “institutional rigidity.” “The teachers of

44 Reiman, The New Deal and American Youth, pp. 2-3; Homer P. Rainey, “Problems of Unemployment Among Youth,” paper prepared for American Youth Commission meeting, New York City, July 10, 1936, Charles Taussig Collection, Box 1, Youth files, FDR Library. Rainey lamented the lack of an accurate census of unemployed youth. Final Report of the National Youth Administration remains a valuable source; see p. 23, for comment on CCC unable to prepare youth for the private sector. According to the Final Report, unemployed youth varied in number from 5 million unemployed among 15 to 24 year olds in 1933 to 3.9 million in 1937 to 2.6 million in 1940; see pp. 10-20. The NYA provided grants or part-time work-study jobs so young people could continue their education and gain work experience. The agency also establish job-training and placement services, and provided leisure activities for “youth in school who needed financial assistance” as well as for the needy and unemployed youth out-of-school; see p. 24.
vocational education,” labor editors remarked, “could well profit by studying how the results were obtained.”

A second focus of the NYA was citizenship. It sought to guide the nation’s youth in the “interest of national security” and the interest of “young people themselves” by offering citizenship training. Citizenship training proved to be a kind of battle for the mind, one that pitted the growing threat of communism and national socialism in Europe to democracy in the United States. The NYA offered “ideological guidance” to sustain the practice of self-government. Reiman, however, argues against indoctrination as a goal and questioned the efficacy of the NYA as an agent of indoctrination because it was decentralized and controlled at the local level, a system quite different from Soviet Pioneers or Hitler youth. As long as young adults had no work or work experience, however, they remained vulnerable to disillusionment and demoralization and prone to seek out radical alternatives. The NYA, Reiman observed, diminished social “anomie,” the social isolation or alienation of individuals in mass society. Moreover, by 1940 the threat to democracy emanating from Europe had been communicated to all Americans through various media, and most Americans became united in the cause of national security.

The third focus of the NYA, Reiman suggested, was political. The NYA contributed to the president’s political agenda and support for the Democratic Party. Charges of using work relief for political purposes permeated the New Deal, leading to passage of the Hatch Act in 1939 which forbade donations from and political campaigning by officers and employees of the executive branch. Even assuming the politicization of the NYA, the training of youth in industries after 1939 likely reflected the growing fears of war and the need of industries to prepare for national defense rather than for aiding a political agenda or catering to the career goals of students.


46 Reiman, The New Deal and American Youth, pp. 5-6.


Aubrey Williams, in his contribution to a 1937 symposium on “The Prospect for Youth,” emphasized the government’s responsibility to guarantee “equal opportunities for all.” The NYA promised opportunity through education and training. The nation’s youth tended to remain in school longer because of mandatory education laws, child labor restrictions, and the lack of employment opportunities created by the Depression. Diminished tax revenue, however, forced school boards to reduce the number of teachers and curtail the construction of school facilities. Furthermore, many students left school to help support their families. In his presentation, Williams recalled the various forms of private and public aid to youth, but he emphasized the work of recent federal agencies such as the FERA, CWA, WPA, the CCC, and his own agency, the NYA. The NYA offered vocational education, guidance, and placement services. Well-educated and well-trained youth, he asserted, would be a wise “investment in human resources of the Nation.” The task of education, however, had always fallen upon state and local governments, but now they faltered during hard times. Williams concluded that every American “should have an equal chance to share in the manifold and lasting benefits that are bound to result” from the investment in human capital. Thus “the burden of responsibility,” he declared, “will rest upon the government.”

To demonstrate equal opportunity for all Americans, official NYA and WPA policy banned racial discrimination. Mary McLeod Bethune, president of Bethune Cookman College in Florida, headed the Bureau of Negro Affairs for the NYA. A 1939 survey showed that blacks comprised 12.1 percent of NYA youth, although 29 percent of black youth were on relief in urban areas and over 15 percent nationally in 1935. Once war began in Europe, opportunities arose for black Americans to acquire education and training. Robert Weaver, an African American educator who held a number of posts in the Roosevelt administration, urged a conference of black educators in November 1940 to take advantage of federally funded training programs. In the 1940 fiscal year, the NYA recorded three eligible black candidates for every one accepted into training for the Out-of-School program. In early 1942, “other-than-white” youth ranged from 13 to 18 percent, although the percent in defense training programs remained lower. By June, over 96,600 black youth (16.3 percent of total NYA enrollment) finished or engaged in training. The next year, higher percentages of non-whites

trained for defense jobs, although wages remained low throughout the program. The average monthly wage ranged from $15 to $22 for part-time employment, and that amount sometimes varied by geographical region. The NYA limited wages to $25 month (about $325 in 2005 dollars) for a maximum of 46 hours worked, and later raised the minimum hours to 70 and higher in its last year during the war. Younger NYA members, presumably those under age 18, worked only 8 hour days.50

Like his boss Harry Hopkins, who headed the FERA and WPA, Williams avoided competing for jobs with the private sector and restricted enrollment in the NYA to those 18-25 years old. Owen D. Young, Chair of the General Electric Corporation, recommended that businesses and the National Industrial Conference Board consider the utility of NYA in combining work with education as an alternative form of vocational education and one useful to industry. Cooperative programs with businesses, he believed, had the potential to induce students to complete school and prepare themselves for the workforce. In addition, the NYA published pamphlets on industrial and occupational research through its Division of Information. The guides outlined the kinds of work performed in various occupations, the kind of training required, and the opportunities for income and advancement in particular occupations. The NYA also cooperated with state employment agencies to provide “junior placement services,” or special job counselors for youth. Through this service, the NYA registered over a half million youths and placed 219,000 in private employment over its first three and-a-half years.51


The National Youth Administration: In-School vs. Out-of-School work

The NYA divided youth into two major NYA projects: The In-School youth program supported high school, college, and postgraduate students who worked with the NYA part-time. The Out-of-School work program included 18 to 24 year olds who no longer attended school, but had no jobs. The American Youth Commission stated in a report that, in addition to traditional subjects, “Young people need to learn to work.” Following its advice, the NYA In-School program attempted to offer practical work in addition to formal classroom instruction. In-School job assignments usually fell to one of two extremes: on one hand, the NYA sought out academic work for those academically competent; on the other hand, it imposed “leaf raking” kinds of jobs for those less ambitious or less capable. For the most part, the NYA endeavored to employ students in useful jobs for the public schools without replacing regular school staff. Yet many assignments probably duplicated those formerly filled by school employees such as the construction and repair of facilities and equipment, campus landscaping, auto repair, and clerical assistance. Research and statistical surveys, classroom assistance, and recreational leadership programs fell to older and better educated youth. Like the WPA and PWA, the NYA required state and local governments or public agencies to co-sponsor projects by underwriting part of the costs. Co-sponsor portions varied over the years, rising from ten to over eighteen percent of a project’s cost with the remainder matched by the federal government, mostly for wages. When defense projects began, the local co-sponsors’ portion declined. In addition, communities planned, supervised, and furnished material for projects. Prior to the demise of the NYA, the National School Work Council, in cooperation with state organizations, served as an advisory body to find ways to incorporate real work experience into formal academic education. The NYA, however, dissolved before implementing those changes.52

The NYA Out-of-School Work program offered part-time jobs for unemployed students no longer attending school. The program sought practical work experience for young people without skills. For the Out-of-School program, the NYA selected youth between 18 and 24 years old (with a few exemptions for those under 18). Families had to qualify for public assistance, and the candidate had to be in need of work experience, not be the primary

wage earner in the home, and be a citizen of the United States. One had to register with the U.S. Employment Service (USES), and then NYA representatives evaluated the candidate’s ability to perform the work and benefit from the experience. The number of enrollees in the Out-of-School programs ranged from less than 180,000 a month in 1935-36 to a peak of 470,000 in February 1941. Overall, some 2.7 million youth took advantage of the NYA Out-of-School programs.53

The NYA offered more education and training than any New Deal program up to the Second World War, but the agency limited participation to young people under age 25. Guided by Aubrey Williams, the NYA functioned as a democratic alternative to national socialism or to communist youth organizations. Over its lifetime the NYA spent $662 million. The NYA paid out $467.6 million on wages for out-of-school unemployed youth and $169.5 million for young people in school. By March 1940, NYA Out-of-School projects employed about 325,000 young men and women earning about 26 cents an hour on thousands of projects. Over its tenure, the NYA employed 4.8 million young people before the agency liquidated in 1943.54

While the CCC and NYA kept spotty records on employment after participants entered the workforce, a WPA study of trained youth in 1938 attempted to gauge the impact of vocational education on the supply of skilled labor and evaluated its own capacity for training workers. The study paid special attention to unemployed youth and older workers. The study found that youth (workers under 25 years old) lacked experience, skills, and maturity. Six million young people entered the workforce during the Depression between 1929 and 1939. The lack of jobs, the lack of training, and low wages sapped the morale of young workers who comprised 36 percent of the unemployed in 1937 and March 1940. Older workers, some displaced by technology, possessed obsolete skills and faced a deterioration of physical ability. Workers in those age groups epitomized a condition of wasted talent and low wages.


The belief that education helped one “get ahead” among young and old led to demands for increased education and training for adults.55

**The Works Progress Administration: Education and Training**

While the CCC and the NYA assisted youth, the Works Progress Administration furnished work relief for unemployed adults. When WPA began in the summer of 1935, it continued many of the Federal Emergency Relief Administration programs and added more of its own. The WPA “made work” to preserve the work routines of unemployed heads of households. Moreover, the WPA helped support families by offering a paycheck in exchange for work.56 Few local or state governments at the time dispensed unemployment insurance. Wisconsin became the first state to do so in 1932 and by 1939 all states had established some form of unemployment insurance in conjunction with the Social Security System.57 Work relief programs included construction projects and service work. The WPA designed


56 Executive Order 7034 established the Works Progress Administration on May 6, 1935, and Congress funded the WPA with the Emergency Relief Act of 1935. The WPA largely continued and expanded upon the activities of the Federal Emergency Relief Administration (FERA) and the Civil Works Administration (CWA), see *Final Report of the WPA*; Doak S. Campbell, Frederick H. Bair, and Oswald L. Harvey, *Educational Activities of the Works Progress Administration*, Staff Study Number 14 (Washington, DC: U.S. Government Printing Office, 1939): 11. Harry L. Hopkins administered the WPA from 1935 to 1938, aided by a deputy administrator, four assistant administrators, and five field representatives. The four assistants directed the Divisions of Engineering, Employment, Finance and Statistics, Women’s and Professional Projects. At a lower level, directors took responsibility for the Divisions of Procedures, Recreation Projects, and Education Projects. The five field representatives had authority over five, then eventually eight, regions of the continental United States and its possessions, and oversaw major divisions at the regional level. State administrators mirrored the higher levels of the organization and supervised local administrators. See Campbell et al., *Educational Activities of the Works Progress Administration*, pp. 12-15. In some states governors obstructed or interfered with the activities of the WPA, which prompted Hopkins and the president to “federalize” some state programs, see James T. Patterson, *The New Deal and the States: Federalism in Transition* (Princeton, NJ: Princeton University Press, 1969), and for conservative opposition, both Republican and Democrat, to New Deal programs, see James T. Patterson, *Congressional Conservativism and the New Deal: The Growth of the Conservative Coalition in Congress, 1933-1939* (Lexington, KY: University of Kentucky Press, 1967).

57 Ewan Clague and Leo Kramer, *Manpower policies and Programs: A Review, 1935-75* (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 1976): 4-5. In addition to its numerous construction projects, the WPA conducted quarterly surveys of the unemployed, later taken over by the Bureau of the Census after the WPA’s demise in 1943. In the postwar period, surveys like those performed by the WPA gathered data used to formulate public polices.
educational projects largely to employ thousands of jobless teachers rather than offer workforce education or occupational training.  

Instead of training, the New Deal work relief programs originally intended to preserve skills and work routines until Americans could return to their previous lines of work. L.R. Alderman, educational adviser to the Navy and Army and long-time advocate of adult education, headed the WPA Division of Education. The New Deal education and small-scale training projects employed over 100,000 unemployed teachers by 1937. They conducted classes that focused on improving adult literacy, Americanizing immigrants, offering adult or workers’ education, and encouraging general cultural, family, and leisure time activities. The adult education movement, which grew in popularity during the 1920s, served as the bedrock for the WPA “Opportunity” or “Emergency” schools.

WPA administrator Harry Hopkins appointed Hilda W. Smith to head the Workers’ Service Program in 1933, a project to prepare unemployed teachers for the FERA and later WPA worker education projects. Smith, who formerly headed the Bryn Mawr Summer School for Women during the 1920s, created many teaching projects requested by trade unions, social service organizations, communities, and unemployed teachers seeking work. Smith believed that employing teachers would extend adult education to ordinary Americans who required rehabilitation, vocational training, literacy instruction, and general education.

58 Under FERA, education programs employed nearly 50,000 teachers in schools kept open with the aid of federal funds. About 40,000 unemployed teachers taught courses in various CWA and FERA projects; see Proffitt et al., “Adult Education,” pp. 22-25 on the WPA; and Arthur E. Bestor, “Federal Emergency Education,” in Mary L. Ely, Adult Education in Action, pp. 107-110. The FERA also cooperated with the National University Extension Association and local schools to register students in full-time correspondence courses; see A.A. Reed, President of the National University Extension Association, “Some Significant Features of University Extension Work,” Proceedings of the National University Extension Association [Twenty-first Annual Convention] at the Louisiana State University, Baton Rouge, Louisiana, May 7-9, 1936, 19 (Indianapolis, IN: Wm. B. Burford Printing Company, 1936): 20-21.


Smith stressed that Workers’ Education was not vocational education; rather, it instilled confidence and attempted to overcome deficiencies in elementary and secondary education. Workers’ Education classes covered social and economic science, history and politics, and explored current events and labor issues, all in an effort to produce potential leaders for shops and unions, or as advocates for consumers and community.61 The various construction and service projects of the WPA, especially school building renovations, health screenings, and school lunches for children, have been well-documented by historians, while the adult education and training projects have received less attention. The WPA continued the Division of Education Projects begun under the FERA in the autumn of 1933 to assist white-collar workers and teachers. In the 1933-34 fiscal year, FERA spent over $12 million to support college students or unemployed Americans with vocational training, vocational rehabilitation, and literacy classes, and FERA earmarked nearly $820,000 for CCC education programs until the WPA began in 1935.62

Like most WPA programs, the organizational structure ran from the administrative level in Washington to regional, state, and local administrators and boards of education. Upper level WPA administrators gave final approval for the appointment of state and regional officials, and for the funding of various programs. Aside from providing work relief for

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Although workers’ schools like the Brookwood Labor College (discontinued in 1937), the YMCA, and private donors continued to fund workers’ schools, Smith initiated workers’ education under the WPA Workers’ Education Project. The Workers’ Service Program ultimately reached 75,000 workers taught by 5,000 to 10,000 teachers from 1933 to 1939, when Congress reduced funding; Mark Starr, “The Current Panorama,” in Theodore Brameld, ed., Workers’ Education in the United States (New York: Harper and Brothers Publishers, 1943): 89-113, esp. 95-97, for WPA schools. For a brief history of the Workers’ Education Bureau, see references from Chapter 3; and Spencer Miller, Jr., “Workers’ Education,” in American Association for Adult Education, Handbook of Adult Education in the United States, 1934 (New York: American Association for Adult Education, 1934): 299-305.

teachers, WPA education programs followed the trends already underway in adult education, workers’ education, nursery school and kindergarten programs, and continuation schools. Nursery schools allowed parents time to work on WPA projects or to attend WPA classes. The WPA educational programs also included sporadic vocational training for the unemployed and vocational rehabilitation for the handicapped.63

Adults who enrolled in WPA schools favored vocational education and literacy courses. The WPA eventually offered courses in trade, industrial, commercial, and business subjects, and classes in agriculture, subjects in household and domestic service, nursery assistance, and arts and crafts. WPA instructors usually held classes in public schools or at work sites. WPA instructors sometimes petitioned local libraries for book loans for use with class assignments. The WPA made correspondence instruction available for those unable to pay for schooling, who lived in isolated areas, or who for whatever reason were unable to attend colleges. Like their counterparts enrolled in public and private correspondence schools, however, about one-half to two-thirds of correspondence students never completed their courses. Complaints occasionally arose about the poor quality of WPA teachers, the lack of teachers actually qualified to teach adult classes, and charges of political patronage.64

During its tenure the WPA helped 1.3 million foreign-born and illiterates achieve basic literacy, and taught language skills to 4.5 million adults. Over 200,000 adults enrolled in occupational classes and courses pertaining to parenting, homemaking, health, and leisure-time activities. In some states the WPA representatives observed or acted as liaisons or consultants; in other states the WPA educators operated the training or education programs. Local and state educational entities usually proposed education projects and estimated the number of persons to employ, the skills teachers required, the costs and benefits to the community, and the amount of money required of the sponsor. Although cash poor states often had difficulty meeting the sponsor’s share, the WPA sometimes provided outright grants. As of March 1937, the WPA recorded nearly two million men and women enrolled in


over 139,000 classes. That month over 206,000 attended some 15,600 vocational training classes.  

The WPA Division of Training, in cooperation with local and state boards of education, employed vocational education teachers in WPA schools. The Opportunity Schools taught commercial subjects and some technical courses such as radio and electrical theory and repair, welding, carpentry, drafting, business subjects, and auto mechanics. Vocational Training under the Adult Education Program offered courses similar to those offered by high school vocational education programs (and occasionally the used the same facilities or employed the same teachers). The placement into private employment of states reporting on those who attended vocational classes, however, averaged only about three percent of enrollees per month.  

The WPA Opportunity School

The prototype for the Opportunity School originated in Denver, Colorado, in 1916. The school’s founder proposed to solve social ills and unemployment by “up-grading” the education of those already employed, “sustaining the morale” of the jobless, and providing occupational instruction for the “temporarily unemployed.” The brainchild of a primary school teacher, Emily Griffith, the Opportunity School endeavored to aid immigrants, the impoverished, and persons of any age who desired a chance for additional education and training. Expecting perhaps a few hundred when it opened, administrators enrolled nearly 2,400 the first year; that number shot up to 9,000 annually during the late 1920s. “You Can Do It” became the identifying motto of the Denver Opportunity School. Eventually integrated into the Denver Public School system, the Opportunity School developed day and evening classes for elementary education, trade instruction, commercial occupations, academic interests, citizenship training, and other subjects. Over 3,000 students enrolled in 1931 alone, ranging in age from 13 to 78; the most common age (for 2,385 people) ranged between 20 and 49 years old. The school required no special prerequisites and introduced a curriculum that

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cooperated with local employers, trade union apprenticeships, and social service agencies; it
fostered social and economic mobility “through industry, effort, and training.”

The Denver Opportunity School’s reputation and the movement for adult education
and workers’ education during the 1920s influenced the WPA Opportunity School which
offered a variety of adult education courses. Hundreds of thousands enrolled in WPA literacy
classes. Some taught English to immigrants as well as citizenship classes to prepare foreign-
born for naturalization in January 1942 alone, while Americans with little or no schooling
benefited from literacy classes to learn reading and writing for use in daily living such as
reading a newspaper. After the war began, WPA schools provided literacy training for men
unable to read or write disqualified from the armed forces. WPA schools also held vocational
training schools trained over 55,000 persons. Parenting and homemaking classes instructed
over 87,000 low-income or families on relief in hygiene, cooking, and child care. Some adult
education courses focused on general academic education on the high school level, current
affairs, and consumer education, or leisure-time activities that included music, art, crafts,
drama, writing, nature study, science, and physical education. The WPA schools in some
areas even served youth reformatories and penitentiaries.

The WPA Division of Education Projects spent over $93 million between July 1935
and March 1, 1938 supporting anywhere from 30,000 to 60,000 employees, having a median
of 43,000; their numbers declined to 33,000 near end of 1937. Sponsors—required by WPA
to contribute a portion of the costs ranging from 10 to 25 percent for all WPA projects—
supplied only about ten percent of the cost for educational projects or just over $10 million. In
addition to instruction, the WPA spent over $131.6 million on the construction or repair of
school buildings. Of the nearly 30,300 WPA employees on Education projects in November
1937, teachers numbered about 23,400. Harry Hopkins succinctly summarized the WPA

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68 Swift and Studebaker, *What is This Opportunity School?*, pp. 10-14, 27-52, and p. 81, for

69 *Final Report on the WPA*, p. 61, and see pp. 133-134, Tables XVI and XVII for numbers
enrolled. Also see Ice, “Adult Education Programs of the New Deal: The Case of Oklahoma.” For
general observations about adult education, see Cyril O. Houle, *The Literature of Adult Education: A
Bibliographic Essay* (San Francisco, CA: Jossey-Bass Publishers, 1992); and Morse Adams Cartwright,
*Ten Years of Adult Education: A Report on a Decade of Progress in the American Movement* (New

70 Campbell et al., *Educational Activities of the Works Progress Administration*, p. 29, Table 4;
p. 31, Table 5; p. 38, Table 9; and p. 40, Table 10.
educational and service programs in 1938: “Public works programs in the past have been chiefly devoted to construction projects—to building physical resources. The recent depression taught us that the conservation and development of our human resources is even more important.”

**Household Workers: Steering Black Women into Domestic Service**

While WPA policy prohibited discrimination, the WPA sustained racial and sex stereotypes by upholding or encouraging a segmented workforce. Jean Collier Brown, in a study for the Women’s Bureau in the Department of Labor, perused the Census of 1930, WPA Surveys, and other sources that demonstrated the condition of black women in the workforce by the late 1930s. Having to rely on “very limited data,” Brown nevertheless sketched the conditions and work experience of two million black women in the workforce, most of whom lived in southern states and who faced discrimination, poor working conditions, and the prospect of low wages. Black women, she discovered, had a greater workforce participation rate (two of five) than did white women (one in five). The percentage of black women on relief rolls, however, outnumbered that of whites. Moreover, data showed nearly one-fourth of black women listed as heads of households. While relatively small numbers of black females worked in clerical, professional (about 6,000 nurses and 48,000 teachers), transportation, communication, and manufacturing jobs (especially glass, textile, tobacco, meat packing, food processing, and paper production), the vast majority—nearly ninety percent—found employment in agriculture and domestic work. Nearly a half million women worked in agriculture, especially cotton production, and over a million worked as domestics in households, laundries, hotels, and restaurants. Domestic workers, usually uneducated and unskilled, earned low wages and received little protection and few benefits from social and labor reforms passed during the New Deal.

WPA service programs, mostly for unemployed women, supported traditional notions of women’s work, included sewing, canning, school lunch and nursery programs, library

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assistance and book repair, home housekeeping aid, and commodities distribution. The demand for domestic work led to the WPA Household Workers Training program, begun in 1936. The Household Workers Training program prepared women for domestic service after a 12 week course in cooking, housecleaning, serving, and household duties. The WPA, in this instance, reinforced racialized occupations by training black women for low-wage, semi-skilled work that blocked their opportunities for education and access to better paying jobs. In fact, Florence Kerr, Assistant Commissioner for the Professional and Service Division of the WPA, noted that some women joined the program only as a “last resort.” Furthermore, domestics—as well as agricultural laborers and WPA workers—did not benefit from the Fair Labor Standards Act of 1938 and, at the time, remained ineligible to contribute to or benefit from the Social Security system. By August 1941, the WPA trained about 26,500 household workers and placed 17,000 in jobs, but wages for domestics often proved to be lower than those paid by the WPA itself.73

While the WPA desired to facilitate the return of unemployed workers to private employment, it had no mandate to instruct workers in skills for the job market before 1940. WPA Service programs, for example—sewing, school lunch and nursery programs, library assistance and book repair, home housekeeping aid, and commodities distribution—were extensions of household chores and required little or no formal training. Nevertheless, before defense training programs began in 1940, the WPA offered some general instruction. One educator remarked in 1939 that, “the WPA educational project has given a tremendous impetus to the whole adult education movement.” The success of the WPA Opportunity School demonstrated that the federal government could provide opportunities for adult education in states unable to afford them.74 The various New Deal “Emergency” or “Opportunity Schools” offered low-cost, usually non-credit courses to adults and created jobs


for unemployed teachers who taught primary and secondary school classes and college level
courses. Opportunity Schools offered classes to those in need of new skills and they claimed
to reduce illiteracy in many communities. With a few exceptions, work relief programs rarely
supplied unemployed Americans with new skills for technical jobs, yet the New Deal
continued trends that supported a variety of adult and continuing education programs.75

Floyd Reeves—Professor of Education at the University of Chicago and head of the
President’s Advisory Committee on Education—expressed his views of adult education to the
National Education Association in 1937. Reeves took a broad view of adult education, noting
its cultural rewards and useful ways to spend leisure time. The Adult Education Movement,
according to Reeves, had taken on greater responsibilities than teaching English and
citizenship to immigrants. While continuing to help illiterates and immigrants with language
skills, it also offered “occupational retraining” for those wishing to return to work. Adult
education, he believed, should be available to all: to employer and employed, rich and poor,
men and women, or urban and rural dwellers; it could assist those migrating from rural to
urban areas and increase an individual’s understanding of and stimulate one’s participation in
community activities. Several problems faced adult education, however. There seemed to be
a general lack of organization and little integration into school and work life. Significant gaps
in courses remained, and more specific problems included the lack of library access for many
Americans, a paucity of good reading materials, a dearth of facilities for vocational retraining,
and little vocational guidance. Reeves recommended more research into the needs of adults
and improvements in teaching, administrative, and supervisory personnel, all of which
required increasing financial support for public education.76

Before the large-scale training programs for critical skills began in 1940, the WPA
offered instruction for the workforce, some of useful and some of dubious merit. Between
1937 and 1939, for example, the Foremen Training program provided in-house instruction for
supervisory personnel. Foremen Training served about 46,700 WPA foremen and supervisors

75 L.R. Alderman, Director Education and Training Section, Progress Report, Education and
Training Section, 1933-1940 (Washington, DC: Work Projects Administration, 1940).

76 Floyd W. Reeves, “Adult Education—What It Is and Where It Is Going,” address delivered
to the Adult Education Department of the National Education Association meeting, Detroit, Michigan,
29 June 1937, President’s Advisory Committee on Education, General Correspondence, C – Ezekiel,
file: Campbell, Doak S., FDR Library. Reeves also studied adult education for the state of New York
that offers insights into methods of adult education; see F.W. Reeves, T. Fansler and C.O. Houle, Adult
in over 30 states and eventually reached over 60 percent of all WPA foremen by May 1939.
The WPA did not offer specialized training for relief workers, but foremen trainees learned to
plan and manage WPA projects. Foremen learned leadership and administrative skills, as well
as some technical aspects of construction. Foremen training remained voluntary, yet over 85
percent of foremen enrolled at a cost of less than a dollar per hour. WPA construction projects
required a range of unskilled, semi-skilled, and skilled building tradesmen and certainly
unskilled workers could learn techniques on-the-job in various trades from experienced
workers. Building Trades union leaders, however, complained about the lack of skilled
workers on WPA projects. Moreover, WPA construction degraded the industry and on-the-
job training offered no substitute for formal trade apprenticeships.77

The histories of the WPA overwhelmingly focus on construction projects and Federal
Project One, the cultural programs that employed musicians, writers, actors, artists, and other
white-collar workers. These certainly were important, especially to those who saw the WPA
as the employer of last resort.78 A large portion of the federal budget that financed WPA,
however, supported only a relatively small number of the nation’s jobless, from 25 to 30
percent, and at its highest point and only briefly, about 35 percent. The intractable
unemployment of the thirties may have been a byproduct of larger changes in the national
labor market. As the historians Richard Jensen and Michael Bernstein suggest, labor demand
shifted from the unskilled to a more skilled and educated workforce, and from a producer to a
service economy. As a result, some economists suggest, the New Deal work relief programs

77 R.O. Beckman, “The WPA Trains Its Foremen,” Personnel Administration 1 (May 1939): 4-
6; Howard, The WPA and Federal Relief Policy, pp. 128; Final Report on the WPA, p. 90; for
complaints by the Construction industry, see Ernst L. Flentje, Executive Secretary, National
Association of Master Plumbers, to the Secretary of Labor, on behalf of the General Committee on
Apprenticeships for the Construction Industry (12 January 1939), NARA, RG-174, Box 29, file 2.

The Federal Board for Vocational Education developed Foremen Training programs in 1919
[see Bulletin 36, pts. 1 and 2]; it also conducted research in foremanship training which led to
instructional methods eventually adopted by a number of states and corporations; see U.S. Federal
Board for Vocational Education, Ninth Annual Report of the Federal Board for Vocational Education,
1925 (Washington, 1925): 17, 23-27. Also, see Harold B. Maynard, ed., Effective Foremanship (New
York: McGraw-Hill Book Company, Inc., 1941); the text included 14 contributors, but see Chapter 9 on
training.

78 For WPA’s role in national defense, see Frank J. Rader, “Harry L. Hopkins: The Works
Progress Administration and National Defense, 1935-1940,” Ph.D. dissertation, University of Delaware,
1973; John J. Corson [former Director of the United States Employment Agency], Manpower for
Victory: Total Mobilization for Total War (NY: Farrar & Rinehart, Inc., 1943); and Millions for
Agency, 1940).
may have actually hindered in some ways training for a skilled workforce and economic recovery by “preserving” existing skills and waiting for the private sector to recover.79

Despite the WPA’s modest assistance to the unemployed and the obvious physical, cultural, and educational benefits, the American public often expressed mixed views about the WPA.80 Gallup pollsters in May 1939 asked Americans to name President Roosevelt’s greatest achievement and his worst failing over the past six years. Respondents credited “relief and WPA” as FDR’s greatest accomplishment; heading the list of failings was “relief and WPA.” The ambiguities in public perceptions seemed to reflect the vagaries and inconsistencies of the WPA itself. Was it “leaf-raking,” “boondoggling,” and “make work” relief as critics charged, or was it “useful employment” provided by the government? Interestingly, a poll taken only weeks earlier queried the public about whether it preferred work relief or direct cash relief for the unemployed. The overwhelming consensus indicated a preference for “work relief” by a margin of almost nine to one.81 WPA training programs, however, began late in the decade. In fact, one respondent to a national survey of WPA services conducted in 1938 commented that, “a weak point in the [WPA] Program . . . is that not enough training is provided so that those on the WPA rolls can be definitely prepared for jobs in industry and commerce.”82

Most WPA training programs evolved as war approached in Europe and Asia, especially training for national defense. The WPA training for defense industries in 1940 contrasted sharply with the earlier goals set by the New Deal to merely provide work relief


80 See for examples: editorial, “WPA Record,” Boise Statesman, 5 December 1942; editorial, “The End of WPA,” Chicago Daily News, 5 December 1942; and see the reply by H. M. McCullen, District Manager, WPA, ibid., 16 December 1942; editorial, “WPA Liquidated,” Columbus Dispatch, 5 December 1942. Nearly every newspaper in the United States commented upon the end of the WPA; for many examples see the State Reports, passim; The Gallup Poll, poll released 14 May 1939, p. 157.

81 Criticisms of the WPA were plentiful: see most daily newspaper during the period; The Gallup Poll, poll released 26 May 1939, pp. 155-156; Mordecai Ezekiel, Jobs for All Through Industrial Expansion (New York: Alfred A. Knopf, 1939).

82 U.S. Community Improvement Appraisal, p. 27.
and maintain skills. When the nation began to mobilize for the Second World War, the WPA
established in 1940 vocational training programs in a cooperative effort between the public
and private sectors on a scale unseen since the First World War.

The Revival of Apprenticeship Training: the Federal Committee

While the New Deal attempted to preserve workforce skills and offer a modicum of
training before 1940, New Deal officials had noted the declining number of skilled and semi-
skilled workers and resolved to maintain an adequate supply for the future. To do so required
a reliable system of apprenticeship training. The apprenticeship system in the United States
had degraded since the late 19th century for a number of reasons, not the least of which were
the costs of training, immigration restriction, the shift to mass production industries, and the
persistent tensions between capital and labor. While national data on apprenticeship training
remained incomplete, the decline in training programs had been publicized by educators,
businesses, and labor organizations. One economist reported in 1939 that the looming
shortage of skilled labor resulted in part from job obsolescence, mortality, and the “cessation
of immigration.” More importantly, he noted that from 1930 to 1937, “Almost no new skilled
men were trained during the depression,” that “the ranks of those already trained were
depleting by superannuation, abandonment of skilled craft for other occupations, [or the] loss
of skills through disuse.” Furthermore, a large component of the unemployed consisted of
“new” workers who possessed no useful skills.83

Early in the century, the American Federation of Labor, while representing craft and
the skilled trades, eventually influenced some state legislators and departments of labor to
issue licenses to ensure the quality of skilled tradesmen. By licensing, states began to control
in greater or lesser degree the amount and quality of skilled laborers such as plumbers, gas


pipe fitters, electricians, and barbers.\textsuperscript{84} In fact, only the building trades experienced more success in retaining apprentice training than most other industries. In 1910, for example, twenty-one percent of construction workers were unionized and trained by unions; in 1939, over three-fourths were unionized.\textsuperscript{85} As union membership declined after the First World War, the AFL managed to retain some modicum of control over training in traditional craft unions and the building trades.\textsuperscript{86}

Daniel Jacoby concluded in his study of apprenticeships that a transformation of apprentice training occurred during the first three decades of the 20th century. Ultimately, businesses and trainees bore the costs of training. American workers remained independent and mobile agents seeking high wages while firms had to modify their practices lest they lose their investment in human capital when graduates left to work elsewhere. Some states managed to enact regulations to the mutual satisfaction of employer and trainee: a firm could pay a bonus upon completion, or bond a trainee, who would have to pay a fee for withdrawing from instruction prematurely. State departments of labor could investigate abuses, since there were instances when apprentices received little training and performed low-level work for paltry wages. While the National Personnel Association called for “self-regulation,” some states issued regulations for the training of employees. Unions always remained concerned with the quality of training, however, since that affected the reputation of the trade. In addition the union could control the market for specialized labor and keep wages high. By 1930, Jacoby concluded, the transformation of apprenticeship training in the U.S. was complete. Some states had formulated reliable apprentice training and state regulation. Thus, while employers and employees bore the risks of training, some states required commitments on the part of both. In addition, many new semi-skilled occupations—clerical, service, and transportation industries, for example—required no formal apprentice training. As a result,


employers increasingly utilized public and private trade schools, thus shifting the costs and risks of training to public institutions and to the trainees themselves.87

Public vocational schools and private trade and commercial schools, illustrated by the demand for education and training during the 1920s (discussed in Chapters Three and Four), managed to train a sufficient number of American workers to maintain high productivity in many industries throughout the 1920s. The Great Depression, however, created uncertainty, reduced public spending for education that cut into vocational education, and limited job opportunities to the degree that all forms of training declined during the first years of the 1930s. One of the attempts by the New Deal to bring about recovery included the National Industrial Recovery Act passed during FDR’s first “hundred days.” Hidden within the maze of NRA codes were plans to resume, promote, and protect apprenticeship training through a committee appointed by the president. William Patterson, the first commissioner of apprenticeships under the NRA, reported the existence of 41 state committees covering 50 trades and 220 occupations. Recognizing the growth of a national labor force, he believed that a national apprentice system “distributes responsibility for training throughout employers of a given occupation” transcending state lines, and for corporations operating in many states.88

In spite of the NRA’s demise in 1936, the president transferred the Federal Committee on Apprenticeships to the Department of Labor. By reviving the spirit of the NRA codes, Secretary Perkins sought to establish “standards and organization” in apprentice training. Control over apprenticeships would ensure “full training” and prevent “overcrowding” in specified trades, and agencies could guide trainees to locations where opportunities for employment developed or where shortages arose. The Committee established standards agreed upon for each industry by representatives of labor and management with input from state and federal agencies, a configuration not unlike that proposed by the American Federation of Labor as early as 1909. The uniform standards, members hoped, would halt the persistent decline of skilled workers and apprenticeship programs since the turn of the century.


Management as well as organized labor, both the American Federation of Labor and the Congress of Industrial Organizations (CIO), supported the legislation.\textsuperscript{89}

Another avenue for national standards emerged after the First World War, largely at the behest of the construction industry. The American Construction Council—a body composed of professional engineers and architects, contractors, suppliers, financial institutions, insurance companies, real estate developers, chambers of commerce, national building trades employers, and federal, state, and local officials—appointed a General Apprenticeship Committee in 1920. The council recommended a standardized apprenticeship system to meet the national and local needs of the construction industry. The council’s president, Franklin D. Roosevelt of New York, asserted that the council arouse “the country to the need of placing skilled manual labor on a par with the clerical and nonmanual [sic] occupations in public esteem,” and appreciate “the dignity of craftsmanship.” Through the Council’s efforts, a report from the Associated General Contractors of America, and a 1928 survey by the Bureau of Labor Statistics, national attention began to focus on apprenticeship training. A survey carried out in 1931 by the Federal Board for Vocational Education revealed just over 31,000 apprentices in skilled trades and industry enrolled in full-time, part-time, and evening schools. In some trades, this measured “an increase of 200 percent in the number of apprentices for a given group of States over a 7-year period” since 1924. When the Supreme Court declared the NRA unconstitutional in 1936, the Federal Committee continued activities within the National Youth Administration, but employers, unions, and federal officials pressured Congress for a federal law.\textsuperscript{90}

\textsuperscript{89} NARA, RG 174, Secretary of Labor Frances Perkins, Box 29, file 2, “Federal Committee on Apprenticeship Training.” Also see, for example, the letter from William Green, President of the AFL, to President Roosevelt (30 October 1936), NARA, RG-174, Box 29, “Committees,” file 2; “Report of the Conference of International Presidents [AFL] and Resolution adopted by the AFL at its convention (November 23, 1936), ibid. For the proposal by the AFL in 1909 regarding the cooperative arrangement between business, labor, and government to oversee apprenticeship training, see Chapter 1. The National Trade Extension Bureau and the National Association of Master Plumbers called for national standards as early as 1923; see “A National Apprenticeship Program for the Plumbing and Heating Industries,” \textit{Vocational Education Magazine} 1 (April 1923): 630-631. The Federal Committee on Apprenticeships included the Secretary of Labor and representatives from the United States Employment Service, state departments of labor, the NYA, organized labor, and employers and employees from selected industries.

\textsuperscript{90} William F. Patterson, “Twenty-Five Years of Apprenticeship in America—1913-1938,” \textit{Industrial Arts and Vocational Education} 28 (January 1939): 10-12. For additional discussion of federal interest in apprenticeship training, see Eugene Danaher, \textit{Apprenticeship Practice in the United States}, Business Research Series No. 3 (Stanford University, CA: Graduate School of Business, 1945):
To support the apprenticeship effort, the President’s Advisory Committee on Education suspected that some shortages of skilled labor had been “greatly exaggerated,” but that the Depression was responsible nevertheless for exacerbating the decline in apprentice training. Danger lay in the fact that skilled workmen were approaching retirement age and, although schools offered some vocational guidance, the committee sought “a revival of intensive apprentice training on a limited scale throughout the Nation.” To do so, the committee report continued, “the Federal Government must take an interest and exert leadership” with input from both employers and trade unions. Legislation for a Federal Committee on Apprenticeship Training would help meet this problem and enlist the cooperation of labor and management. Congress obliged unanimously in 1937 when it passed the Fitzgerald Act in August.91

William F. Patterson, who headed the Federal Committee on Apprenticeship within the Department of Labor, led seventeen representatives from organized labor, various industries, the Department of Labor, and the Department of Education. An Advisory Committee also made recommendations to the standing Federal Committee. Some states established apprenticeship councils to influence state legislation regarding apprentice training. While federal officials possessed little data on compliance, contractors recommend in early 1940 a national survey of skilled mechanics, especially since war had erupted in Europe and they perceived that the construction industry was “ill prepared” to participate in an “urgent program.”92

The Advisory Committee on Education reported that, once the Fitzgerald Act passed, the federal apprenticeship committee would help set standards and coordinate state boards of labor, management, organized labor, and educators, all working on behalf of the interests of employers, workers, and the public. Training for skilled trades, the Committee suggested,

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91 NARA, RG-174, Secretary of Labor Frances Perkins, Box 29, file 2.

required on-the-job experience and would “relieve the schools . . . of a burden which they
never will be fitted to carry in its entirety.” The Committee on Apprenticeship Training would
become even more important when training for national defense began in mid-1940. In
addition, the President’s Advisory Committee on Education recommended “Occupational
Outlook” studies already undertaken in local surveys and overseen by the Department of
Labor in cooperation with other agencies. The Occupational Outlook surveys, as Isador Lubin
and others had suggested a few years before, projected the demand for certain occupations
and, on the basis of need, assisted in the development of strategies for planning vocational
education programs.93

Planning also occupied those concerned with setting standards. The American
Federation of Labor recommended that joint-apprenticeship committees could police formal
apprenticeships while the Office of Education and the Federal Committee on Apprentice
Training could monitor vocational education and help maintain educational standards for
public schools. The AFL also sought to keep new workers within their communities, control
the supply of trained workers to meet the specific needs of local industries, provide pre-
employment and refresher courses, and minimize the “dilution” of skilled occupations. In
addition, the AFL recommended separating schools from work and training “for local
employment only.” By the late 1930s, the AFL convention passed resolutions supporting
federal aid to education, including the right of Negroes to education, but it urged that aid be
administered according to local needs. In addition, national standards also applied to
vocational education—with protections similar to those of the Fair Labor Standards Act:
maximum hours, decent pay, workplace safety, and mutual duties and responsibilities between
employers and students—but under local control and designed to meet local needs. In March
1939, the Assistant Secretary of War Louis Johnson, anticipating the growing potential for war
in Europe, recommended increases in apprenticeships and vocational training. Once war
broke out, the AFL pledged its cooperation for national defense and for supporting America’s
defense industries. However, the effort would require training and retraining, especially for

93 Floyd W. Reeves, chairman, Educational Advisory Committee to the President (24 April
1937), NARA, RG-174, Secretary of Labor Frances Perkins, Box 29, file 2, “President’s Advisory
Committee on Education.” Organizations lobbied government officials and committee chairs to place
sympathetic representatives on various committees. The American Federation of Teachers lobbying
efforts to place a chosen representative on the Committee of Education is illuminating; see
correspondences in NARA, RG-174, Box 31, file 2. The Fitzgerald Act established in law the Federal
Committee on Apprenticeship Training, effective July 1, 1937.
the ten million Americans still unemployed in 1940. As AFL president William Green editorialized in June 1940, labor would assist “in working out training or retraining programs necessary to supply emergency numbers of workers for defense production,” while maintaining or improving “standards and safeguards” established over recent decades. World War Two would demonstrate the efficacy of a large-scale investment in human capital.

**Conclusion**

The Great Depression complicated job preparation by reducing or eliminating opportunities for investment in human capital. Firms large and small pruned their workforces. Training and apprenticeship programs languished. Congress continued to fund vocational education, but those students comprised a tiny portion of the future workforce. Despite high levels of unemployment, some policy makers recognized that the number of skilled workers had diminished because of retirement or the disappearance of particular occupations. Over the decade of the 1930s, however, many New Dealers insisted on the investment in human capital through education and training, but the administration and Congress had neither the resources nor the political stamina to invest heavily in public education and job training. While the New Deal attempted small-scale vocational training, mostly for young adults, New Deal school projects contributed to adult education and the education infrastructure, but offered little to achieving actual workforce education before 1940. Educators and economists feared that, whenever recovery arrived, industries would lack skilled workers. As a result, after 1937 the federal government took modest steps to renew the industrial and commercial skills of the American workforce with funds for vocational education and the birth of a cooperative, national apprenticeship training program. As the Second World War approached, fresh opportunities arose for the training and retraining of workers for new occupations in defense industries. Accomplishing those tasks required cooperation of business, organized labor, educators, and all levels of government. A poignant example of that multi-layered cooperation is the subject of Chapter Seven.94

CHAPTER 7

NEW INDUSTRIES AND OCCUPATIONAL CHANGE:
THE CASE OF AVIATION, 1900-1940

“There are a lot more people seeking aviation employment than there are jobs available, and yet there is actually a scarcity of the right kind of persons for some jobs. The right kind of person, I mean, is one who has training, of course.”

-- Airline executive to prospective trainees in a novel for youth by Robert E. Johnson, *Flight Seven*, 1940

In Robert Johnson’s novel for youth, an airline administrator explained to young trainees that,

Aviation is a mighty fast-growing business. The speed with which air transportation, for instance, has grown has surprised even the people long associated with the industry. It is also true that commercial aviation has a long way to go yet, and so there is plenty of opportunity for a future in aviation—for the right persons.¹

The “right persons” included those with schooling and training in addition to intelligence and the ambition necessary to succeed in a highly technical industry. This chapter draws together a number of points and themes already made in this study. It describes the impact of a new industry—here the aviation industry—on structural changes in the national economy and the creation of new occupations during the first five decades of the twentieth century. Aviation not only established a new mode of transportation and new methods of manufacturing, but it also required specialized training for skilled and semi-skilled workers. The formation of the industry and the subsequent training of its workforce demonstrate the increasing interaction between the public and private sectors. State and federal governments subsidized, developed, and regulated the industry by erecting an infrastructure and assisting the private sector with aeronautical research and indirect subsidies, and by training pilots, mechanics, and ancillary

personnel for the industry. This chapter reviews some of those interactions from the end of the First World War and up to the beginning of the Second World War.

**Government and the Growth of Aviation**

The basis for aircraft manufacturing generally evolved between 1900 and the First World War. The earliest aviation technicians included Wilbur and Orville Wright, a pair of bicycle mechanics from Ohio. While their successful flight in 1903 presaged the potential revolution in transportation, the aviation industries in Europe, subsidized by their respective governments, dwarfed the miniscule industry in the United States up to and during the early years of World War One. The war stimulated aircraft production in the United States, but aircraft manufacturing contracted after the war. The private sector in 1917 established the Aircraft Manufacturers Association, which became the Aeronautical Chamber of Commerce in 1919. The chamber promoted aviation and coordinated the collection of data useful to the air transportation and aircraft manufacturing industries. The chamber’s annual *Aircraft Year Book* compiled information about the latest designs, current legislation, state of education and training, and recent innovations in civil and military aviation.²

During the First World War, skilled and semi-skilled workers converted from established trades—automobile or bicycle manufacturing, for example—or learned new ones in order to construct and maintain thousands of airplanes for the military. At the close of the First World War, the aircraft industry in the United States employed about 27,000 workers who produced nearly 14,000 planes in 1918 alone. As commercial and recreational flying captured the imagination and interest of Americans after the Great War, demand for technicians and pilots accelerated. In 1920, civilian pilots and navigators numbered 1,312, but by 1930 that number exceeded 6,000. By November 1925, however, the aviation industry reduced its workforce to 4,000 workers and produced only 789 aircraft that year. Unlike European governments that invested in commercial and military aviation, the U.S. government offered no direct subsidies. A Joint Committee on Civil Aviation concluded in 1926 that the

potential existed for a vibrant commercial aviation industry with the aid of federal intervention.³

Although the Federal government refrained manufacturing aircraft or operating a national airline, it helped promote the development of commercial aviation and, in conjunction with the states, shaped the legal structures that governed it. The National Advisory Committee for Aeronautics (NACA), established in 1915, recruited government officials and leading universities to undertake aeronautical research.⁴ Federal agencies funded experiments and innovations and shared those with civilians—sometimes for a price. Without directly subsidizing commercial aviation—except for the design, development, and purchase of military aircraft—the federal government promoted aviation in a number of other ways. First, the federal government indirectly subsidized the industry in 1911 when pilots began transporting mail. During the First World War Army pilots flew a route for the U.S. Post Office between Washington, D.C., and New York City. The Post Office began sending mail with civilian pilots in 1919, and then offered lucrative air mail contracts after the Kelly Act of 1925 which, some have argued, stimulated commercial aviation in the United States. The federal government subsequently guaranteed profits by protecting the market and regulating prices for the industry (until 1978, with passage of the Airline Deregulation Act). After 1927 private contractors carried the mail and the federal government provided infrastructure and guidance systems that enhanced speed and safety.⁵ A survey in 1929 by the Commercial National Bank and Trust Company of New York reported on over 600 commercial aviation


enterprises that year. Most, however, remained small-time operations and could ill-afford to build the infrastructure necessary for commercial success.⁶

State and federal governments contributed much of the crucial infrastructure that fostered and encouraged commercial aviation, just as public roads and federal highway legislation helped promote the automobile and trucking industries. Herbert Hoover, while serving as Secretary of Commerce, aided the industry with federal regulations overseen by the Bureau of Civil Aeronautics within the Department of Commerce. “It is not necessary,” he intoned, “that the Government should subsidize commercial aviation in this country, but it is highly necessary that it should provide certain services which are essential as a basis for its development.” Indeed, the Joint Committee on Civil Aviation, comprised of engineers and government officials, studied the efficacy and problems of civil aviation. It recommended that “air navigation facilities” become a “public responsibility,” and that states and municipalities “acquire and maintain” air fields in order to avoid direct subsidies to commercial aviation firms. The committee made numerous suggestions that included Congressional regulation of the industry as well as the establishment of a Bureau of Civil Aeronautics. In addition the committee suggested a mechanism for licensing pilots, a program promoting the aircraft manufacturing and transportation industries, and a way to foster cooperation with the industry in scientific research and design. The committee report considered the importance of insurance underwriting, declared the sovereignty of air space, and recommended that the President and the Senate ratify the International Air Navigation Convention. Many states, however, had already begun to regulate the airways during the early 1920s by licensing pilots and establishing regulations, especially those that discouraged “daredevil” stunts that threatened public safety.⁷

⁶ See the Aeronautical Chamber of Commerce, Aircraft Year Book; Bilstein, The American Aerospace Industry. An industry survey in 1930 profiled pilots regarding preferences of design, style, speed, and other factors they considered when choosing an aircraft, and elicited personal information such as age (most non-commercial flyers were over 30 years old, while 50 percent of commercial pilots were 20 to 30 years old), income (more than thirty percent of non-commercial and fifty percent of commercial pilots earned over $10,000 annually, while forty-one percent of non-commercial and over fifty-six percent of commercial pilots earned less than $5,000 per year), and sex (predominantly male and over sixty percent single). Over three-fourths of married student pilots surveyed reported that their wives approved of flying; see Commercial National Bank and Trust Company of New York, Financial Handbook of the American Aviation Industry, July 1929 (New York: The Commercial National Bank and Trust Company of New York, 1929).

⁷ U.S. Department of Commerce, Joint Committee on Civil Aviation, Civil Aviation: A Report by the Joint Committee on Civil Aviation (New York: McGraw-Hill Book Company, Inc., 1926), citing
Stunt flying and other gimmicks, often performed in surplus airplanes piloted by veterans of the Great War and others with less training, attracted public attention to flying but created concern for public safety. Flying antics prompted some states to enact restrictive legislation. Subsequent regulations licensed pilots and encouraged safety standards to discourage or prohibit “dangerous flying.” High insurance rates, or the refusal by insurance companies to underwrite fliers and passengers at all, discouraged air travel. Early passenger travel remained not only dangerous but also expensive, only for the well-to-do. Federal air mail contracts ensured steady incomes that allowed air lines to profit with or without relying on consistent passenger travel. After charges of corruption, Congress passed the Air Mail Act of 1934 to more closely regulate the distribution of contracts. The legislation also separated airplane manufacturing from air transportation, thus establishing commercial transportation as a distinct branch of aviation, and thereby creating many new firms and increasing competition. Inefficient firms and a rash of mergers, however, led to the creation of a relatively few major carriers. Air mail contracts shaped the industry by favoring a dozen or so large airline companies that dominated commercial aviation until after World War Two.8

Like the states, federal agencies also applied safety standards to the new industry and imposed regulatory authority through the Bureau of Standards and the Air Commerce Act of 1926. The Bureau of Standards provided guides for the construction of plastic windshields (made of cellulose acetate and acrylate resins), the quality of fuels and lubricants, and tolerances for metals and air frame fabrication. It also imposed engine design standards. Furthermore, federal agencies such as the U.S. Forest Service, the Bureau of Fisheries, and the State of Oregon each had a separate statute enabling their agencies to provide support and assistance to aviation. But the most important support came in the form of federal aid for the construction and operation of airports. Air mail contracts shaped the industry by favoring a dozen or so large airline companies that dominated commercial aviation until after World War Two.8

U.S. Geological Survey, relied on aircraft for their operations. The Weather Bureau, the Federal Communications Commission, and the Department of Commerce directly assisted air navigation.\(^9\) The National Advisory Committee for Aeronautics collaborated with academia and industry to develop important innovations to aircraft design between the 1920s and World War Two. NACA constructed one of the first wind tunnels at Langley Field, Virginia, in 1923, and contributed to the study and application of aerodynamics, engine, wing, and propeller design, jet propulsion, and the earliest de-icing equipment. More importantly, NACA disseminated its own findings along with academic and industry research in NACA bulletins, issued at minimal cost and used by industries both foreign and domestic.\(^10\)

While the federal government shared in aviation research, the Air Commerce Act of 1926 created the Bureau of Aeronautics which regulated the industry. The Bureau required the licensing of aircraft, pilots, and mechanics, which it incorporated into the Civil Air Regulations of 1938. Engine or airplane mechanics—persons who repaired, inspected, overhauled, or adjusted aircraft on the ground or in flight—had to be licensed or supervised by a licensed mechanic to work on licensed aircraft. Certification for an engine mechanic required two years experience with internal combustion engines, including one year of work solely on airplane engines. An airplane (airframe) mechanic had to have one year experience servicing aircraft. Both had to pass a theoretical and a practical examination, which stimulated private instruction and public school courses. States incorporated federal standards along with their own legislation.\(^11\) Industry acknowledged the importance of government


assistance—federal, state, and local—that awarded military contracts and air mail routes, licensed pilots, regulated travel routes, and provided weather information and radio communications.¹²

Federal regulations and legal structures governing the industry owed a great deal to Herbert Hoover. As Secretary of Commerce, Hoover referred to maritime law as a way lawmakers could envision the parallel between air and nautical navigation. Because the federal government produced navigation aids, charted channels, and inspected ships, and because state and local governments improved ports and waterways for the maritime industry, Hoover recommended that similar instruments and standards be applied to civil aviation as a practical matter. Even navigational terms and the designation of “ports,” as in airports or as in Port Columbus, Ohio, depicted parallel activities between the navigation of sea lanes and airways. Moreover, the Department of Commerce under Hoover promoted economic growth and infrastructure to support commercial aviation with the cooperation of the states. For example, the Florida State Planning Board, in cooperation with the Federal Emergency Relief Administration (FERA), proposed to spend in 1935 about $112 million over ten years on the

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construction or improvement of over sixty air fields in addition to erecting radio
communications towers and installations around the state.13

The federal government also aided pilot training and maintenance occupations that
required specialized training. While pilots trained at nearly any airfield, specialized schools
for training mechanics and ancillary personnel remained sparse. The Aeronautics Branch of
the Department of Commerce issued bulletins to aid pilots and maintenance crews in search of
training. In 1928, for example, the Commerce Department questioned 43 aircraft
manufacturers about training for aviation employment. While many companies primed
engineers for executive positions, only five companies actually employed executives with
degrees in aeronautics. Moreover, only half of the companies reported job seekers with
degrees in aeronautical engineering. Thus the industry relied upon ground mechanics who
presented, at minimum, a high school diploma. The majority of ground engineers and
mechanics employed by air transport companies gained experience in the military, while about
thirty percent acquired training on the job. The Commerce Department, however, noted in
1928 a shortage of qualified mechanics. Employers desired skilled workers having experience
in aircraft manufacturing, automobile mechanics, or certificates from trade schools.14

Training Aviation Personnel: Public and Private Cooperation

In addition to federal assistance, private benefactors proved instrumental in educating
the public, contributing to technical innovations and safety, and training aviation personnel.
The Daniel Guggenheim Foundation for the Promotion of Aeronautics at New York
University funded aviation instruction and research in colleges and universities. Working
closely with government, especially the Commerce Department, the foundation aided research
and development, the study of meteorology and aeronautical design, and commercial growth.
In addition the foundation promoted interest among primary and secondary school students by

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13 Solberg, *Conquest of the Skies*, p. 117; also see David D. Lee, “Herbert Hoover and the
*Herbert Hoover and the Republican Era: A Reconsideration* (New York: University Press of America,
1984): 36-65; Florida, State Planning Board, *Report of the Transportation Committee, Aviation*
(Tallahassee, FL: Aviation Division, Florida State Road Department, April 1935): 59, for the estimate
of costs.

14 U.S. Department of Commerce, Aeronautics Branch, Bulletin No. 19, *Aviation Training*
(Washington, DC: GPO, 1 August 1928).
forming in 1928 the Committee on Elementary and Secondary Aeronautical Education, which helped prepare vocational education teachers.  

The Guggenheim Fund partnered with the Aeronautical Chamber of Commerce to hold its first conference on aeronautical education in February 1930. John W. Withers, dean of the School of Education at New York University, noted the rapidly changing nature of work in the United States. He presciently highlighted the importance of preparing for new occupations and the value of continuing education over one’s lifetime. Responsibility for educating children and “furnishing further education and re-education of adults” fell upon the public schools and private industries, he believed; the investment in human capital varied according to the needs of particular communities. Withers recommended formal training and the publication of texts for instruction in aeronautics. He mentioned the accomplishments of the Guggenheim Fund, which had been instrumental in promoting commercial aviation, aviation safety and education, and funding research at a number of engineering schools. Withers also reported on a recent survey of urban schools by the Guggenheim Fund to determine the number of courses related to aeronautics. A 1930 survey revealed that about 300 school systems offered some form of aeronautical instruction at the elementary and high school level. In fifty cities, public schools offered vocational education courses related to aviation occupations, while fifty others used aeronautics in a peripheral way to teach about cultural and geographical issues. In 200 schools, aeronautical instruction remained confined to junior and senior high school courses.


16 Proceedings of the First National Conference on Aeronautical Education, St. Louis Missouri, February 17-19, 1930 (New York: Daniel Guggenheim Fund Committee on Elementary and Secondary Aeronautical Education, 1930). For the presentation by Withers, see pp. 12-15. The Guggenheim Fund combined with the Aeronautical Chamber of Commerce to host the conference concurrently with the International Aircraft Exhibition held in St. Louis.
At the 1930 National Conference, one educator from a trade school in Louisville, Kentucky, raised the question, Do manufacturers want to train mechanics or do they prefer the public schools to prepare them? William Dings of the Universal Aviation School in St. Louis, Missouri, replied that industries preferred mechanics with school training, but firms would then build upon that knowledge. Yet because few public vocational schools for aviation training existed, some students “self-invested.” They attended night schools or private schools at their own expense to become qualified mechanics. Educators also pressed for national standards by recommending that the Aeronautical Chamber of Commerce make recommendations to the Department of Commerce. Willis B. Haviland, director of Schools for the Universal Aviation Corporation in St. Louis, made specific proposals for improving Ground Schools and training qualified instructors (his school trained 1,800 a year). He also proposed training support personnel in addition to employing standardized texts, instructional tools, and equipment. He suggested that the private sector surpass government standards for training and licensing. Although participants selected a committee to gather information on the current state of ground training, the private benefactor for aviation education, the Guggenheim Fund, dissolved in 1930.17

A year later, an educator asked, “Shall High Schools Teach Aviation?” Upon noting the dearth of trained mechanics in both the military and in the private sector, he implied that the private sector would likely fall short in training, thus necessitating cooperation with public schools.18 Later, a graduate student in 1937 examined the availability of courses in air transportation for junior high school industrial arts students. He discovered extant courses in Detroit, Atlanta, Boston, Elizabeth, New Jersey, and Toledo, Ohio, which provided models for vocational educators to emulate. In addition, noting the new occupations generated by the industry, he believed the subject would appeal to adults as well as to youth.19 Training

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17 See the discussion of the Committee on Ground School Education, A.H. Near, director of the YMCA Trade School in Louisville, Kentucky, and William Dings, registrar at the Universal Aviation Schools in St. Louis, Missouri, in Proceedings of the First National Conference on Aeronautical Education, p. 51, and pp. 50-52 for standards.

18 Charles Fleischman, Tulsa, Oklahoma, Central High School, “Shall High Schools Teach Aviation?,” Industrial Arts and Vocational Education 20 (March 1931): 89.

aviation mechanics also fell under the definition of vocational training according to the Smith-Hughes and George-Deen Acts.\textsuperscript{20}

Training workers for aviation brought together both the public and private sectors. Employers trained workers for unique skills while public schools introduced aviation subjects and offered job preparation, often in a cooperative effort between public schools and private firms. California public schools led the nation in aeronautical education beyond flight training by orienting courses towards commercial aviation. Earl W. Hill, professor at the University of Southern California, headed the California Advisory Board on Aeronautical Education and served as the educational director for Western Air Express. Addressing a conference in 1930 about aeronautical education in colleges and universities, Hill noted that in addition to flight training some schools offered university extension courses for aviation business, airport management, and aviation law. Andrew Althouse, an instructor at the Cass Technical School in Detroit, Michigan, reported that over a thousand students had enrolled in that institution’s ground schools seeking credentials as pilots, airplane or engine mechanics, or draftsmen and engineers. In addition, Althouse recommended some form of testing—in cooperation with the Department of Commerce, the Aeronautical Chamber of Commerce, and the Guggenheim Fund—to ensure that aviation schools recruited the best qualified students. More importantly, he noted, aviation schools needed to recruit competent instructors. Therefore, the nation required aviation teacher training programs.\textsuperscript{21}

Courses in various kinds of aeronautics and aviation technology took hold in public schools roughly after Charles Lindbergh’s trans-Atlantic flight in 1927. George Washington High School in Los Angeles, California, established a vocational aviation course in the late 1920s for students pursuing occupations in maintenance and airport operations rather than in piloting aircraft. When public school administrators solicited assistance from the aviation


industry, a number of firms responded by offering hands-on training to students and hiring those who demonstrated talent. The school consulted industries such as Western Air Express, Maddux Air Lines, the Naval Air Station at San Diego, and the Army Air Corps Headquarters located in Riverside. The Navy contributed an airplane and the Army Air Corps loaned an instructor, a reserve officer who enrolled twenty students in the class from any school within the Los Angeles school system.\(^{22}\)

The U.S. Office of Education offered limited assistance to aviation education by answering queries related to training, advising local school boards regarding the kinds of training programs and extension courses useful to local manufacturers, and cooperating with aviation associations and organizations that sponsored aeronautical education. In 1937 the Office published *Aviation in the Public Schools*, a guide to high school subjects related to the fundamentals of aviation. The guide included illustrations for building models and suggestions for establishing clubs of interested students. Over 9,000 certified mechanics worked in the industry in 1937; that number increased to over 11,000 by 1940. During the war, the number of certified aircraft mechanics soared to over 27,000 by 1945.\(^{23}\)

Demand for trained workers in aviation occupations increased during the 1920s and 1930s. About 9,000 trainees applied for student pilot permits from the Department of Commerce. Beginning in 1926, the Department issued over 27,000 permits, although only about 15 percent of permit holders went on to become licensed pilots. American flight schools trained nearly 7,000 student pilots in 1929 and over 3,700 received licenses that year. Public schools and private commercial schools increasingly offered technical courses in


\(^{23}\) Aeronautical Chamber of Commerce, *Aircraft Year Book for 1938*, pp. 120-121; and see the table, “160,000 Certified Aircraft Pilots in 1945,” in *Automotive and Aviation Industries* 94 (15 March 1946): 98.
mechanics and aviation, meeting a demand similar to that of automobile mechanics during the 1920s. By 1929 sixty-one universities and colleges offered courses in aeronautics while 93 junior high schools, 130 high schools, 17 evening schools, 7 continuation schools, 3 trade schools, and one vocational high school offered some form of aviation-related training. The Division of Aeronautical Education at New York University supplied information on aeronautical education to schools desiring to establish courses. By the early 1930s, eighty-five high schools across the nation boasted aviation clubs and many offered aeronautics courses. As the number of programs increased, useful material and course outlines proliferated.

Training Aviation Personnel: The National Youth Administration

While state and local schools and private trade schools promoted aviation occupations in the classroom, federal training programs in the 1930s stumbled into aviation training. Some students helped shape their own curriculum. The National Youth Administration (NYA), a New Deal Agency developed for high-school aged youth, gave students “hands-on” classroom experience while preparing them for the workforce. Students enrolled in NYA automotive shops discovered they “liked to tinker with airplane motors” and requested work on airplane engines. Instructors acquired obsolete motors and equipment from the Army, Navy, and municipal airports. In 1939 and 1940, the Civil Aeronautics Administration (CAA) cooperated with the NYA by introducing classes in aircraft mechanics, sheet metal work, and welding, in addition to classes in radio repair and electrical shop. The Army Air Corps sponsored an NYA project in Middletown, Pennsylvania, in conjunction with the Harrisburg School System and the Pennsylvania State Department of Public Instruction. A committee of thirty residents from education, industry, and labor helped plan and develop the project.

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Students learned blueprint reading, the fundamentals of electricity, and basic aircraft production. When officials adjudged a boy competent in the basics, they assigned him to work two weeks each month in the Middletown airport refurbishing engines and propellers; repairing sheet metal and instruments; applying doping materials to fabrics for wing or airframe repair; or learning about electrical systems and machine shop routines. About a third of the students worked as clerks, stenographers, warehousemen, and helpers, all supervised by airport staff. Some eventually passed civil service examinations to qualify as mechanics. In Dayton, Ohio, public schools experimented with similar projects that furnished 360 youths six months training in 1941. Most took civilian jobs in the Army Air Corps.26

Training Aviation Personnel: Ancillary Occupations

Apart from the need to prepare pilots and aircraft mechanics, ground operations required workers who designed, constructed, staffed, and maintained airports and air fields. Air traffic hubs required more than scratching-out dirt air strips and raising barn-like hangars. State and municipal governments incurred considerable costs to purchase or lease land, construct runways and hangars, provide passenger accommodations, and maintain airport facilities. The number of airports and landing fields increased from 1,036 in 1927 to 2,299 a decade later; that number nearly doubled again by the end of World War Two. Both commercial and military air operations required seaplane anchorage and shore facilities, mooring towers for airships, equipment rooms and repair shops, field lighting and navigation beacons, fuel storage and delivery services, hospitality accommodations for travelers, communication towers and signaling devices, organized ground crews, government regulatory inspectors and officials, and all sorts of informational publications. Thus during the 1930s, various levels of government contributed in significant ways to the investment in air commerce infrastructure.27


Aviation support skills grew out of a number of existing mechanical occupations and created many new ones. In addition to pilots and mechanics, the fledgling industry required electricians, radio technicians, and communicators to operate radio directed navigation aids. Ground operations managers became essential. New technologies associated with aeronautics required manufacturers, machinists, draftsmen, skilled tradesmen (sheet-metal workers, welders, instrument technicians), and meteorologists. Commercial aviation desired experts in sales and marketing, insurance underwriting, and suppliers of parts and accessories. Workers with skills had an advantage, since a little additional training added to the “portability” of their skills when transferring into aviation fields, just as the army had done with auto and bicycle mechanics during the Great War. Although the number of women employed in aviation remained small, opportunities arose for women to become not only pilots and instructors but also service and ancillary personnel. For example, Katherine and Marjorie Stinson, sisters of the airplane manufacturer, trained American and Canadian pilots during the First World War. Most women, however, succeeded in traditional women’s trades such as textiles—sewing fabric and making parachutes—or served as clerks and hospitality hostesses. During the early years of flight, manufacturers fashioned airplane wings and fuselage from wooden frames covered with cotton, linen, or silk fabric. Women sewed the fabric in place with heavy thread, and then applied several layers of “dope,” a substance made from cotton particles dissolved in nitric or acetic acid and painted onto the fabric to toughen it. Workers usually learned these skills “on-the-job.”

Outside of public schools, firms and individuals relied largely upon their own resources for training in the aviation industry during the 1930s. Aircraft manufacturers reported training hundreds of production workers by 1938. The Boeing School of Aeronautics in Oakland, California, for example, offered training in seven ground courses for engine and numerous topics useful to pilots and to the industry in general. For the number of airfields, see U.S. Department of Commerce, Bureau of the Census, *Historical Statistics of the United States: Colonial Times to 1970*, Part 2 (Washington, DC: U.S. Government Printing Office, 1975): 768-769, and 772; and Bilstein, “Prelude to the Air Age,” pp. 107-111, and idem, *The American Aerospace Industry*.

metal mechanics, electronics and instrument technicians, meteorologists, radio operators, managers, air traffic controllers, and flight engineers. The Casey Jones School of Aeronautics in Newark, New Jersey, enrolled over 500 students, who paid a tuition of $1000 each (about $13,800 in 2005 dollars), in a two year program for aeronautical engineers. The school also offered a fourteen month program for master mechanics at a cost of $525 each. In 1937 alone, the school managed to place over 160 students in jobs. Most schools required a high school diploma for admission and provided courses that led to licensure in various skilled occupations as well as other jobs in the industry. By the end of the decade, observers noted a host of aviation-related occupations, most of which required some form of training available in both the public and private sectors.29

In addition to training, civic organizations and commercial firms popularized and promoted aviation in radio broadcasts during the late 1920s. The Curtiss-Wright Company owned station WRNY in New York and devoted air time to aviation programs. The Aeronautical Chamber of Commerce, the industry trade association, produced “Roads of the Sky,” a series of programs broadcast by over thirty NBC affiliates across the nation between July and November 1929. The series began as fifteen minute lectures, but turned into half-hour programs a few months later. The Secretary of Commerce Robert P. Lamont opened the first half-hour program, and pilots, military aviators, and aeronautical experts spoke on a variety of topics. The network aired “Around the World in Aviation,” “Why Airplanes Fly,” lectures on commerce, and “Woman’s Influence on Air Transport Luxury.” Aviation promoters also advertised and popularized aviation in motion pictures, newspaper articles, public and private libraries, and air shows and expositions. While public and private efforts informed the public about the importance of aviation, increasing commercial activities and the approach of World War II presented additional opportunities for training in aviation occupations.30

29 The Aircraft Year Book for 1938, pp. 218-222. Other schools reporting training programs included the Parks Air College in East St. Louis, Illinois, registering over 300 students; the Ryan School of Aeronautics in San Diego, California, with 100 students; the Roosevelt Aviation School in Long Island, New York; the Curtiss-Wright Technical Institute of Aeronautics in Glendale, California; the Spartan School of Aeronautics in Tulsa, Oklahoma; the New England Aircraft School at Boston Airport; the Stewart Technical Trade School in New York City, enrolling 300 students; and various university and college programs. Also see Rogers, “Vocational Opportunities in Aviation,” Industrial Arts and Vocational Education 28 (September 1939): 281-282.

The Aviation Industry During the 1930s

During the early 1930s, commercial aviation suffered declines in production and the number of passenger miles flown. Production workers absorbed wage and benefit cuts from time to time during the Depression. Aircraft exports never exceeded 500 units until 1936, while the export of aircraft engines fluctuated between five hundred and two thousand units between 1932 and 1939. After 1936, the industry increased production for the domestic market, added civilian air transportation miles, and attracted more pilots and wage earners to the industry.\footnote{See the table, “U.S. Exports of Aeronautic Products, by Years, 1912-1945,” and “Aircraft Production: Airplanes, Seaplanes, and Amphibians, 1919-1945,” in Automotive and Aviation Industries 94 (15 March 1946): 99 and 93, respectively; The Aircraft Year Book for 1934 (New York: Aeronautical Chamber of Commerce of America, Inc., 1934): 63, citing the U.S. Department of Labor, “Wages and Hours of Labor,” Bulletin No. 575, p. 14, for wage earners from 1927 to 1933. The Chamber also helped write codes for the National Recovery Administration, see pp. 61-80; for the connection of secondary school education to aviation, see pp. 165-168; and Historical Statistics of the United States, Part 2, pp. 768-773. For additional information about the finances and revenues of aircraft manufacturing for the period 1936 to 1942, see John Detjens, Jr., Looking Up with Aviation (New York: National Credit Office, 1939); K.W. Tibbitts, Looking Up with Aviation in 1942 (New York: National Credit Office, 1942); Bilstein, The American Aerospace Industry, pp. 35-36; and see Ben B. Follett, Careers in Aviation (Boston, MA: Waverly House, 1940).}

Although the demand for aircraft manufacturing remained rather flat during the Depression, vocational educators recognized the need to train not only pilots, but also competent mechanics, radio operators, ground crews, and airport service personnel.\footnote{Joint Committee on Civil Aviation, Civil Aviation: A Report by the Joint Committee on Civil Aviation, pp. 17-18. For examples of vocational training in aeronautics, see Fleischman, “ SHALL HIGH SCHOOLS TEACH AVIATION?” Industrial Arts and Vocational Education 20 (March 1931): 89; Emory W. Bryan, “Vocational Aviation,” ibid. 20 (June 1931): 364-365; J.W. Grachino, “Aviation in the High School,” ibid. 25 (August 1936): 236-238; and John B. Leake, “Experimental Aeronautics As a Secondary-School Subject,” Industrial Education Magazine 37 (January 1935): 14-18.}

The romance of flying attracted plenty of pilots, but airplanes required mechanics and support personnel “on the ground.” Some estimated the need for 100 ancillary workers for every commercial aircraft. During World War II, the Army Air Force required “four technical specialists for every man who flew,” and seven ground personnel for every one who flew (including navigators, bombardiers, radio men, and gunners).\footnote{Ibid., pp. 14-18; Wesley Frank Craven and James Lee Cate, The Army Air Forces in World War II, v. 6, Men and Planes (Chicago, IL: The University of Chicago Press, 1955): 629. For the training of technicians and maintenance personnel during World War II, see pp. 629-673.}

An incomplete survey of aviation classes in colleges and universities revealed over 9,800 students enrolled in aviation classes in 109 schools that offered the subject. Participation in aviation classes increased after
passage of the George-Deen Vocational Education Act of 1937, when 7,000 students enrolled in daytime, evening trade, and part-time-trade extension classes to learn the rudiments of the industry. A survey of secondary schools near the end of the decade, of which less than half of the 26,000 replied, found that one hundred thirty offered aviation classes, enrolling over 32,800 students in various types of aeronautics classes. Nearly 25,000 aviation clubs existed around the nation, where students built models, took field trips to manufacturing plants, and learned basic aviation skills—some even took flying lessons. In 1938, the Civil Aeronautics Authority (CAA) began pilot training at thirteen universities, including six Negro colleges, and many private schools and manufacturers trained pilots as well. The CAA counted over 24,000 licensed pilots that year.34

In March 1939 the president established the Interdepartmental Committee on Mechanics Training for the Aircraft Industry. The committee fostered teamwork among various federal agencies, and encouraged cooperation between federal agencies, management, and labor in the aircraft industry. The president directed the Office of Education in May to “Encourage the public vocational and trade schools to assist aircraft companies in job training of employed workers and apprentices” and utilize state boards of education to “furnish instruction” in aircraft trades to qualified youth or mechanics from the NYA and WPA. The industry rapidly increased to 100,000 workers and anticipated three times that number. As war in Europe loomed, firms boosted the number of apprenticeships and in-plant training classes, and initiated joint training programs with vocational education schools. In addition to vocational schools, firms trained or upgraded semi-skilled workers from the unskilled within their plants and utilized pre-employment courses from vocational schools and in-plant training programs. The committee requested a half million dollars for apprenticeships and over $5 million to support aviation occupations in vocational education schools.35


Labor wished to avoid shortening training time for apprenticeships, but for the war effort it would soon foster accelerated training for semi-skilled and skilled workers in critical industries. The U.S. Office of Education in 1939 provided federal aid to 68 schools offering aviation courses, although many communities had no aircraft plants. Soon thereafter, the enrollment in trade schools and the number of aviation classes increased near aircraft producing plants.36

**Pilot Training for National Defense**

As Germany, Italy, and Japan increasingly threatened international peace during the late 1930s, the prospect of war in Europe and Asia intensified. In 1938, the aviation industry employed 36,000 workers who produced about 3,675 planes, including 1,800 military planes, many slated for export. On January 12, 1939, President Roosevelt asked Congress to appropriate over $550 million for national defense, with $300 million earmarked for the development, testing, and production of aircraft for the Army, and $65 million for the Navy. Congress also appropriated $10 million a year to begin training 20,000 civilian pilots a year for national defense overseen by the Civil Aeronautics Authority (CAA). It approved additional funds shortly thereafter. As Congress increased appropriations, it granted the industry larger profit margins on the sale of military aircraft under the Air Corps expansion program. To meet the president’s goal of 5,500 military planes a year as war approached in 1939, the industry would have to double its workforce and expand some of its facilities to meet new production quotas. At the time, the Aeronautical Chamber of Commerce estimated that training new workers took at least six months, so training combined with retooling factories would take about eight or nine months for the industry to reach full production. As demand increased for skilled and semi-skilled workers, the federal government eventually established training programs through work relief agencies such as the NYA and the Work Projects Administration (WPA), and large-scale vocational training programs.37


37 “Aviation Education,” in *Federal Activities in Education*, pp. 40-42. The Vinson-Trammel Act limited profits on Navy aircraft purchases to ten percent. When the nation prepared for defense after 1939, Congress allowed the industry to increase profits to twelve percent or higher, see Detjens, *Looking Up with Aviation*, pp. 6 and 9-10; Howard Mingos, ed., *The Aircraft Year Book for 1939* (New York: Aeronautical Chamber of Commerce of America, Inc., 1939): 29-30 and 33-36; nearly half of the industry’s dollars in sales for 1938 came from exports, over $68 million, see p. 104, and Table of “U.S. Aeronautical Exports,” pp. 508-09; the War Department restricted the release of industry sales statistics after October 31, 1938, p. 36. The Aeronautical Chamber of Commerce, founded “to promote the use
The early success of the Civilian Pilot Training program prompted Congress to pass the Civilian Pilot Training Act in August 1939, parceling $4 million to train 10,000 students in 460 colleges. At least five percent of those trainees joined the programs from outside of the designated colleges. The number of student airplane pilot certificates exceeded 110,000 in 1940, over five times the number issued in 1937. The number of certified airplane pilots more than doubled in 1940 from the previous year, over 63,000 in 1940 compared to 31,000 in 1939 or 17,600 in 1937. After war began in Europe, Congress offered additional funding to continue the program into the following year. As the nation produced for defense, hundreds of private schools profited from the anticipated demand for pilots and occupations related to aircraft production and maintenance. 38 By 1943, the Army and Navy, under the auspices of the War Training Service and the Civil Aeronautics Administration, utilized some 10,000 civilian flight instructors to conduct pilot training for 207,000 college students. 39

**WPA Airport Servicemen**

With passage of the Defense Training Act in 1940, three federal agencies—the WPA, the Office of Education, and the Civil Aeronautics Administration—cooperated to train airport ground crews under the WPA’s Airport Servicemen’s Project. The project responded both to the growth of commercial air travel and to the demands of national defense. Administrators of airports, air terminals, and auxiliary landing fields collaborated with federal agencies to instruct, and oftentimes hire, WPA trainees. Robert W. Hambrook, director of aviation education for the U.S. Office of Education, helped shape the project. The Office of Education supervised instruction, oversaw the selection and training of instructors, developed courses of study, and distributed teaching materials. While a small number of trainees who showed “aptitude” qualified for apprenticeships in aircraft or mechanic training, most learned to service and prepare aircraft for flight. Airport servicemen worked in four major areas of flight operations: guiding pilots and directing aircraft in flight; servicing, fueling, and cleaning airplanes; inspecting and maintaining equipment; or assisting airport administration and

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management. Airport servicemen also learned to use fire equipment, administer first aid, and remove damaged craft from flight lines.\textsuperscript{40}

Candidates for the Airport Servicemen’s program, screened and usually selected by the instructors, had to be high school graduates aged 18 to 35. The WPA anticipated training between 5,000 and 6,000 servicemen in small classes of a dozen or less over the course of about ninety days. Upon graduation, airport administrators and airlines usually hired graduates for immediate employment. John Studebaker, Commissioner of Education, remarked in 1941 that graduates would help “eliminate congestion and danger to life and property in civilian airports [that] will be invaluable in a national emergency.”\textsuperscript{41} By December 1941, over half of the wages paid out to trainees in the Airport Servicemen programs went to those in the District of Columbia, Massachusetts, Michigan, Texas, Colorado, and California. The nation’s capital took far and away the largest share.\textsuperscript{42}

Louis Gray, who headed the Airport Servicemen Project, wanted men with mechanical experience. He rejected any plan for training men for menial tasks such as janitorial work or window washing airport lounges, dead-end jobs with no future. Rather, he urged WPA officials to prepare servicemen as mechanics’ helpers or train them to prevent and fight fires and uphold field flight regulations. Vocational training promised more interesting and valuable work and better pay. Gray fought to prepare airport servicemen for jobs at military air fields and Air Corps “contract fields” (leased by the military for the duration of the war), and as flight line maintenance crewmen.\textsuperscript{43}

Learning a trade while employed by the WPA created a special appeal for black Americans. Before the WPA program, the aviation industry restricted black Americans to unskilled service jobs such as janitors and “sky caps.” Among the Airport Servicemen


\textsuperscript{42} WPA Division of Statistics, “Earnings of Persons Employed by the WPA on national Defense Vocational Training Projects, by State, December 1941,” (6 February 1941), Box 4, file 1.

\textsuperscript{43} Memorandum, Louis M. Gray to Bruce Uthus, “Airport Servicemen Course Outline,” 2 December 1941, RG-69, Division of Training, Box 1, file 3, Gray, L.M. - Reports.
trainees, ten blacks taken from WPA rolls trained at Tuskegee, Alabama, formed the initial class established there. The trainees learned to service airplanes and equipment, and perform general ground services. While earning a “security wage,” they attended daily classes twelve hours a day, checked mechanical and electrical parts, and worked on aircraft donated by the Army Air Corps. Airport Servicemen Projects operated in 46 states and graduated more than 2,000 trainees by the time the program ended on December 1, 1942.\(^4\) Having only minimal training, Airport Servicemen did not compete with licensed mechanics, but they acquired experience as mechanics’ helpers and kept airfields and runways operational.\(^4\) The opportunity offered African Americans a path to other airport service jobs, although their numbers in the industry increased only slightly between 1940 and 1950, from about 760 in 1940 (comprising 3.3% of aviation-related jobs) to 3,993 in 1950 (only 4.1% of those jobs). They often held a larger percentage of aviation-related jobs in the South, more than in other regions of the country, but they usually held jobs in service occupations. Only a small number of black women and a miniscule number of black pilots, navigators, mechanics, and repairmen found employment in the aviation industry by 1950. Still other opportunities for training emerged for African Americans as the demand for manpower rose once war began.\(^4\)

**Aviation Training During World War Two**

As defense preparations expanded after 1940, millions of workers trained for numerous production jobs in aviation. After Nazi Germany toppled nations in Northern and Western Europe, FDR signed the National Defense Training Act in June 1940, and astonished the industry by proposing the manufacture of 50,000 planes a year. As the production of airplanes fed the war effort, aviation emerged as a key industry. Federal programs supported training by offering preemployment training and supplementary training; then the private sector furnished the bulk of in-plant training for the production of warplanes. Engineers and

\(^4\) *Final Report on the WPA Program*, p. 92.

\(^4\) “Airport Service Men Trained Here,” *Columbus Citizen*, 19 April 1942, in RG-69, Division of Information, Vocational Training, Box 2, Ohio.

technicians restructured assembly to accommodate the semi-skilled who trained for specific occupations—similar to the “dilution” of skills in order to speed up training utilized during the First World War. To reduce the need for highly skilled workers, engineers designed aircraft to be mass produced and easily constructed by semi-skilled workers. The design of the Boeing B-29, for example, fabricated sub-assemblies of the plane around the country and shipped those to an assembly plant, where less-skilled workers operated simple tools, yet could quickly construct the craft with fewer mistakes. Training films illustrated production techniques and procedures, and focused on hundreds of individual tasks. Training departments distributed a large manual for the craft and other training aids with easy to read texts and illustrations.  

As a result, aircraft production, according to one observer, achieved “an industrial miracle.” In one year the industry more than doubled the output of warplanes, from 2,141 in 1939 to 5,800 in 1940. A year later, from January 1940 to January 1941, employment in the industry doubled from 65,677 to 144,583. With orders for 37,000 planes that year at a cost of $544 million, the number employed nearly tripled by the end of 1942. Employment in wartime aviation during the war now included hundreds of thousands of women and minorities; employment peaked in 1943 at about 2.1 million workers. The historian Roger Bilstein estimated that women comprised nearly 40 percent of aircraft production workers in Los Angeles alone.

The public and private sectors together trained an enormous amount of skilled and semi-skilled workers during the war. The aircraft industry attracted a plentiful supply of labor, but one lacking sufficient skills. Utilizing government programs and its own resources, the aviation industry provided instructors and funds to train workers in their own schools. Once a worker established competency at one level, he or she received additional training for other jobs, some even to the point of moving into supervisory positions. In the military programs, the Army trained about 53,000 thousand mechanics annually in courses that lasted from 4 to 24 weeks in five Air Corps Technical Schools or in one of 15 privately owned schools contracting with the Air Corps. The Navy conducted vocational training and

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48 Mingos, ed., The Aircraft Year Book for 1941, pp. 17, 22-23.

apprentice programs in aircraft trades at three Naval Trade Schools and at the Ford Trade School in Detroit, Michigan. The schools produced mechanics, metalsmiths, radio men, and ordnance men.\(^{50}\)

In the private sector some of the lessons regarding the abilities of women in aircraft production during the Great War had been forgotten by the 1940s. In 1918 women comprised twenty-three percent of employees in 40 airplane factories.\(^{51}\) In the early 1940s, forty to fifty percent of aircraft workers in Germany and Great Britain were women. The Department of Labor in early 1941 studied seven representative aircraft producers to determine which jobs women performed well. Few of the small number of women then employed in the industry worked in production; those generally applied fabric to wings and airframes, or painted or assembled electrical devices. Three of the firms employed no women at all. The study concluded, however, that indeed women with adequate training could perform, as a “conservative estimate,” one-fourth to one-third of all production work for the aircraft industry. Women eventually filled occupations in machine shops and metal fabricating shops, assembled fuselages, wings, and cowlings, and painted, welded, anodized, riveted, and wired aircraft on assembly lines.\(^{52}\)

A follow-up survey of those firms by the Department of Labor reported that foremen believed women performed as well, and in some instances better, than their male counterparts, and that “men and women could work side by side without completely disrupting factory discipline and production.” The federal government led the effort to recruit and train men and women by funding public vocational and trade schools, colleges and universities, and public school shops that trained around the clock.\(^{53}\) After December 7, 1941, the number of women employed by aircraft manufacturers had increased fivefold by January 1942, and training

\(^{50}\) Mingos, ed., *The Aircraft Year Book for 1941*, pp. 104-07; and for a description of private schools and firms involved in training, see pp. 108-128.

\(^{51}\) Ibid., pp 181-183.


accelerated thereafter. In addition to production work, women performed inspections, managed tool rooms, and served as engineering draftsmen or technicians. Women also moved into clerical positions, jobs previously filled by men in the aviation industry before the war. The Labor Department report concluded that, “Women have demonstrated in aircraft that industrial capability is not based on sex and that the line of demarcation for men’s and women’s jobs is largely imaginary.” Many firms, however, hesitated to elevate women to supervisory positions.54

Eventually the conscription of men aged 20 to 35 challenged the ability of defense industries to sustain high levels of war production. A Labor Department survey found that women could perform 25 to 33 percent of all jobs in aircraft plants.55 The Curtiss-Wright aircraft company became one of first firms to offer complete training programs for production workers, foremen, engineers, and managers. It hired a large percentage of women and sent some college women to one of ten engineering schools for a 44-week course in engineering; the firm then placed them in a Curtiss plant.56

The federal government provided crucial screening, advising, and training of workers for the aviation industry during the war, and established precedents for postwar training. It also raised awareness of how important aviation had become to the economy and to national security. Bruce Uthus, who headed the WPA Division of Training, later wrote articles on the importance of integrating aviation courses into public school curricula.57 Civilian educators offered another important resource: textbooks and stories to attract high school and college students. The Dodd, Mead publishing company enlisted the aid of pilots and airline executives for a number of books that described flying and the aviation transportation industry


for teenagers in the late 1930s and early 1940s. In *Flight Seven*, Johnson especially emphasized the importance of mechanics, radio technicians, and meteorologists.58

Educational literature aimed to attract youth to the aviation industry. The Teachers College of Columbia University, in cooperation with the Civil Aeronautics Administration, published the “Air-Age Education Series” in 1942. The series made available over a dozen books for primary and secondary school students and teachers about aviation-related topics such as mapping, geography, and the social sciences. Contributors also included current technical and scientific knowledge related to flight, instructions for building models and gliders, illustrations of how airports functioned, descriptions of the various occupations performed in aircraft manufacturing, and the kinds of training required for employment. The authors recommended that students gain a broad understanding of the aviation industry, appreciate its connection to other industries, know its basic materials and products, identify types of airplanes, visit airports and manufacturers, and engage pilots, engineers, and those who work in ground occupations for their knowledge and experience in the industry. For those serious about careers in aviation, the authors recommended that students become familiar with the kinds of training available, the physical qualifications necessary, and the prerequisites required for aviation-related careers.59

Additional guidebooks appeared during the war and into the postwar years. Employment commissions and books enticed potential employees into aviation careers and presaged future aviation instruction. *How To Get a Job in the Aircraft Industry* appealed to Americans seeking “a bright future after the war has been won.” In cooperation with various public and private agencies, the author provided useful information about aircraft production, the kinds of occupations available, a comparison of wage scales, sources of public and private training, where to seek employment, and how to interview for a job. Moreover, he noted the

58 Johnson, *Flight Seven: A Story of the Airlines*, pp. 82-83.

opportunities for the 4.5 million women needed to replace men in aircraft factories during the war.\textsuperscript{60}

Another source published in 1942, \textit{Air Workers Today}, illustrated the importance of civilian and military ground crews and ancillary personnel in aircraft production, air traffic communications, and airport operations and maintenance. Only one-tenth of the millions employed within the aviation industry actually flew, according to the text. The enormous changes in air travel and air traffic during the war prompted the Aviation Education Committee of the American Association of Colleges for Teacher Education to report after the war on the need for introducing aviation-related courses into primary and secondary schools, to familiarize teachers with pedagogical aids to help students understand the rudiments of the science related to aviation, as well as to introduce students to the political, economic, and social importance of aviation in the postwar world. The committee recommended bibliographies, teaching techniques, and instructional aids, and held workshops and symposia for teachers ranging from the primary grades through junior colleges and universities.\textsuperscript{61}

Shortly after the war, aviation promoters looked to the future of aviation. Although the industry braced for a contraction during the reconversion period, skills and innovations developed during the war presaged a vibrant industry that promised to produce small, private aircraft, helicopters, jet propulsion engines, missiles, and commercial transportation.\textsuperscript{62} In the following decade, the American Council on Education, in cooperation with the Civil Aeronautics Administration, published in the 1950s \textit{Aviation in School and Community}, designed to close the “cultural lag” between current affairs and future needs by designing curricula for schools and communities. Every student, the authors believed, should leave school with a minimal understanding of aviation—its political, economic, social, and geographical impact—and possess a modicum of knowledge about mapping, navigational


instruments, government regulations, and a general knowledge of civilian and military aircraft. Aside from the importance of a general education, specialized aviation courses—flight training and shop courses—prepared students for careers and employment in the billion dollar aviation industry. Thus the growth of aviation, and the concomitant change it brought to the occupational structure of the U.S. workforce, required the cooperation of both the public and private sectors to prepare workers for skilled jobs during and after World War Two.\(^63\)

Opportunities for training continued even as war production slowed near the end of the war. Government and industry together trained military and civilian aircraft workers. Industries helped employees return to school and offered apprenticeship programs to disabled veterans so they could acquire CAA licenses as aircraft and engine mechanics.\(^64\) In the immediate postwar world, large aviation corporations downsized operations and workforces. Mergers, new technologies, military cutbacks, labor disputes, and the lack of foresight by

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\(^63\) Harold E. Mehrens, ed., *Aviation in School and Community* (Washington, DC: American Council on Education, 1954); Mehrens also directed readers to Paul H. Hanna, et. al., *Aviation Education Source Book* (New York: Hastings House, 1946), a detailed compilation of sources for primary and secondary schools “prepared for, and in cooperation with, the Civil Aeronautics Administration.”


\(^64\) Thomas P. Faulconer, Industrial Relations Department, Consolidated Vultee Aircraft Corporation, San Diego, California, “Training for Victory,” *Industrial Arts and Vocational Education* 34 (September 1945): 286-287.
some companies led to fewer but larger aviation corporations. By the 1950s, however, the aviation industry further expanded in size and scope. Jet engines and new jet fleets fed the demand for both commercial and military aircraft. The space program under the National Aeronautics and Space Administration (NASA), established in 1958, created another new albeit related industry. As the newly charged “aerospace industry” emerged, it required a highly skilled workforce and created new opportunities for employment within the industry. By 1959, the aerospace industry had become one of the largest employers in the nation.  

Conclusion

Aviation demonstrated a number of trends in workforce training that began after the First World War. First, the aviation industry in particular benefited from local, state, and federal contributions to research and development, the construction of infrastructure, training for thousands of workers required by the industry, and regulations that guaranteed competent workers and public safety. The industry, however, took over a decade to develop resources and technical personnel. Job growth in aviation during the Great Depression remained sluggish, but the demand for trained personnel eventually skyrocketed during the Second World War. In fact, more workers trained for aviation production during the war than for any other occupation. Second, aviation demonstrated how a new industry, one that required investment capital, infrastructure, and skilled managers and workers at nearly every level, grew and prospered with assistance from state and federal governments. Finally, like the automobile, electronics, broadcasting, and other innovative industries that followed the First World War, the aviation industry demonstrated a profound change in the structure of the American economy and consequently the structure of American occupations during the interwar years. After the Second World War, the aviation industry became the second largest employer in the United States and it contributed to the profound structural changes in the national economy for the remainder of the twentieth century.

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CHAPTER 8

FROM MAKING WORK TO MAKING WORKERS: 
THE NEW DEAL AND TRAINING FOR NATIONAL DEFENSE, 1939 to 1942

“[I]t is of utmost importance that Negroes take advantage of all training opportunities which are available.”
-- Robert Weaver, Council of National Defense, 1940

“The United States is building a greater asset of skill than ever before in its history.”
-- Floyd Reeves, Director of Labor Supply and Training, Office of Production Management, 1941

“During this emergency, we see clearly the trend that has been developing in recent years—a national labor market with a mobile labor supply.”
-- Employment Security Review, August 1941

Russell Walker and two other newly-trained welders from Florida searched for work among the shipyards of the Southeastern coast in the early months of 1942. They tested their new skills in Mobile, Alabama, and Pascagoula, Mississippi, but settled at the Shipbuilding Division of the Bethlehem Steel Company in Baltimore, Maryland, where they earned nearly a dollar an hour (over $13 in year 2005 dollars), and with overtime roughly $70 a week ($930 in 2005 dollars). Housing remained scarce, however. Rooms with board rented for $6 to $9 a week ($80 to $120 a week in year 2005 dollars) and furnished apartments nearly doubled that cost. Local police pressured newcomers to purchase Maryland driver’s licenses and

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automobile tags, together costing nearly $15. But the men could work all the overtime they could handle. The shop foremen asked for more men like Walker, who emphasized that he and the others owed their jobs to the experienced WPA instructor who prepared them at a WPA vocational school in Florida. Without the instructor’s patience and expertise, Walker believed, “we wouldn’t have made the grade at all.” Once employed, the three men wrote their instructor, thanking him “from the bottom of our hearts.” After reading the letter, WPA administrators began funneling new trainees from North Carolina and Kentucky into Maryland. Similar training programs around the country prepared millions of workers for skilled and semi-skilled jobs between 1940 and 1945, eventually reducing unemployment to nearly one percent. Indeed, federal labor policy now focused on training rather than public works; instead of making work, it poured money and expertise into making workers.2

The costs of training and workforce education the previous three decades fell largely on the shoulders of individuals, public schools, and private manufacturers. This chapter explores the background for wartime mobilization and the infusion of federal funding for national defense training. It illustrates how New Deal work relief agencies formed the initial core of defense training, examines the various federal agencies and programs that oversaw training, and identifies the important agents of training that included professional educators, business leaders, organized labor, and bureaucrats in state, local, and federal government. Eventually, conscription into the armed forces and mass hiring into wartime industries virtually eliminated unemployment. Unemployment fell from nearly fifteen percent in 1940 to less than two percent in 1943. The federal government now exerted powerful control over labor markets and, by the end of the war, federal programs would train millions of civilian workers and millions more Americans in uniform.3

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2 Russell M. Walker and Walter P. Bell to Mr. Marshall, 8 March 1940 [sic], a letter forwarded to Colonel John J. McDonough, Director, Division of Training and Reemployment, WPA, from Harold J. McCormack, Chief Regional Supervisor, Division of Training and Reemployment, Atlanta, Georgia, 16 March 1942, NARA, RG-69, Division of Reemployment, Box 64, file # 6, 045 AAAA, January to September 1942. The date of Walker’s letter may be erroneous. Judging from the date of the administrator’s letter [and the stamp of receipt on the original], Walker may have written on 8 March 1942. Of course, the letter may have taken two years to filter up to the higher levels of the WPA bureaucracy. While most WPA vocational training for semi-skilled occupations such as welding began after June 1940, the possibility exists that the men attended a WPA vocational class in early 1940.

3 For changes in the national economy, for example, see Harold G. Vatter, *The U.S. Economy in World War II* (New York: Columbia University Press, 1985): esp. 11-21; for an official report on the organization and administration of the war, see U.S. Bureau of the Budget, *The United States at War: Development and Administration of the War Program by the Federal Government* (Washington, DC:
The New Deal and National Defense

Plans for wartime mobilization began prior to the Second World War. The Army Appropriation Act of 1916 created the Council of National Defense before the United States entered the First World War. Then led by Secretary of War Newton Baker and several civilian leaders, the council established the War Industries Board (WIB), headed by Bernard M. Baruch from 1917 to 1919, because mobilization for the First World War had been frenzied and chaotic. Firms and public agencies competed fiercely for scarce resources, so much so that firms actually compromised war production and necessitated intervention and control by a centralized authority. The muddled nature of production, transportation, and distribution led to the establishment of powerful agencies under the Industrial Mobilization Plan (IMP), the centralized plan favored by the military. The WIB coordinated resources and industries for the war in Europe and exerted near-dictatorial command over the economy during the war.4

In the years that followed, industrial preparedness became an important component of national defense, one that compelled Congress to pass the Defense Act of 1920 and similar kinds of legislation thereafter. The Great War, as the historian Paul Koistinen notes, “introduced the concept of industrial mobilization,” prompting strategic planning during the interwar years that readied the nation for the possibility of “total war” in the future. Henceforth, national leaders entrusted planning for total war to “experts,” industrial and financial leaders such as Baruch. Planning for the next war accelerated the growing collaboration between the nation’s business elites and the federal government during the

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interwar years, one that presaged a nascent “military-industrial complex” that grew more powerful during and after World War II.\(^5\)

The Defense Act charged the Assistant Secretary of War with planning mobilization and coordinating industrial production during a national emergency. The Assistant Secretary of War oversaw the acquisition and distribution of resources to various firms manufacturing war matériel. Preparations for national defense fostered the growing interdependence between business and government that marked the “New Era” and the emergence of the “associative state” during the 1920s. Over the next decade government, business, and, to a lesser extent organized labor, increasingly cooperated on a number of defense issues during the administration of Franklin D. Roosevelt. Throughout the interwar years, selected agencies within the defense establishment planned for “M-Day,” or Mobilization Day, when the president would issue orders for the nation to prepare for war by raising an army and navy, and by converting industry from consumer to wartime production.\(^6\)


The literature on mobilization for World War II is dwarfed by the extensive historiography of the New Deal domestic policies, the administration’s treatment of women and various minorities, and the impact of the New Deal upon the U.S. political economy, institutions, and American culture. For a narrative of mobilization by a contemporary, see Eliot Janeway, *The Struggle for Survival: A Chronicle of Economic Mobilization in World War II* (New Haven, CN: Yale University Press, 1951).


Planning for industrial mobilization during the interwar years paralleled the military and naval contingency plans for war as outlined in “Plan Rainbow.” Plan Rainbow prepared strategies to defend against and conduct war with major countries in Europe, Asia, and the Americas. Specific colors of the “rainbow” identified potential foes: for example, “Plan Orange” outlined strategies for warfare with Japan between 1900 and 1940. Preparations for domestic economic and industrial mobilization came to be dominated by prominent businessmen, led with some authority by the “godfather of M-Day,” Bernard Baruch. The Assistant Secretaries of War and their advisors—some from the War Department Planning Branch and officers from the Army Industrial College, begun in 1924—achieved modest success during those years creating contingency plans for the procurement of resources, supplies, and munitions, and for cooperating with industries to develop new technologies with military applications, especially those in the nascent aviation, communications, and electronics industries. While mobilization planners carefully considered the material needs for a national emergency, sources demonstrate little evidence that planners considered the importance of training an adequate supply of skilled workers for critical occupations—whether civilian or military—necessary to sustain wartime production. Such an omission proved to be especially egregious in light of the shortages of skilled labor that occurred during the First World War! (Luther Gulick, the public administrator and adviser to the president, later wrote that the lack of planning for “the allocation of manpower” proved to be the “worst blunder” of the war.) Perhaps with millions unemployed during the Great Depression, a manpower shortage seemed unlikely. Moreover, military planners remained reluctant to consult with the Department of Labor or leaders of organized labor, thus ignoring an important component of industrial


Military and Naval strategists, according to Edward Miller, created nearly two dozen such plans before the Second World War. Planners designated the colors black, orange, and red, for example, to identify strategies for war with Germany, Japan, and Great Britain, respectively. See Edward S. Miller, War Plan Orange: The U.S. Strategy to Defeat Japan, 1897-1945 (Annapolis, MD: Naval Institute Press, 1991): 2, and p. 1, n. 1.
production. Even though FDR eventually scrapped much of the interwar defense plans anyway, preparedness for war did not escape the president and his advisers.⁸

During the 1930s, the New Deal not only spent billions of dollars attempting to provide relief, recovery, and moderate reform for American workers, farmers, and businesses, but it also disbursed over a billion dollars for national defense, even before mobilization for World War II began in earnest. In contrast to the post-Vietnam War stereotype of Democratic politicians leading the way to slash defense budgets and viewing the military with suspicion, President Roosevelt had always advocated national preparedness and a strong military. While serving as Assistant Secretary of the Navy during the Wilson presidency, FDR gained experience in administration, procurement, and labor relations with civilian agencies and


Robert K. Lamb, Staff Director of the House Committee Investigating National Defense Migration, noticed the lack of mobilization planning by Baruch and others in “Mobilization of Human Resources,” *The American Journal of Sociology* 48 (November 1942): 323-330. Lamb also mentioned the problem of awarding defense contracts to clusters of manufacturers dispersed in a way that caused labor shortages and production “bottlenecks.” Luther Gulick, the public administrator who helped reorganize the executive branch in 1939 and who had extensive experience in various government agencies, lamented that the U.S. leadership “learned little about industrial mobilization and war economic institutions from World War I.”; see Luther Gulick, *Administrative Reflections From World War II* (Birmingham, AL: University of Alabama Press, 1948): 43, 49, and 51.

employees. He negotiated with industrialists who managed wartime boards and whose firms supplied war matériel. In his capacity as assistant secretary he expanded naval operations, established new bases and training facilities, and enthusiastically followed the lead of cousin Theodore by advocating a “big navy.” Moreover, FDR led the effort in 1914 for military preparedness and later doggedly insisted that President Wilson establish a Council of National Defense. FDR also reveled in the company of military brass and expressed a life-long regret for missing the opportunity to serve in uniform during the Great War.  

Although President Roosevelt directed his primary attention to domestic problems during his first administration, he remained attuned to world affairs and the importance of collective security. In fact, from the earliest months of the New Deal the administration had begun quietly to revitalize the nation’s defenses. Moreover, FDR and the Democratic Party during the 1930s worked closely with the armed services. For example, the War Department supervised young men in the Civilian Conservation Corps (CCC), FDR’s seminal contribution to work relief. In the summer of 1935, an observer noted, Congress passed “the largest peace time appropriations for the Army and Navy in the history of this country.”

After the election of 1936, FDR began to consider reorganizing the executive branch and preparing for possible war as fascism and communism took hold in Europe. FDR shifted military spending toward naval construction and, even before the Munich Conference in 1938, expanded a program for air power. The president’s foresight eventually led to the creation of the War Resources Board (WRB) in 1939. In addition, because of low defense budgets and restrictions on the construction of large naval vessels during the interwar years, the infrastructure of the military and naval services had deteriorated considerably. Work relief agencies during the Depression helped restore military hospitals, barracks, roads, shipyards,

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coastal defenses, and air fields. The Civil Works Administration (CWA) and the Federal Emergency Relief Administration (FERA), both administered by FDR’s trusted adviser Harry L. Hopkins, put unemployed Americans to work constructing National Guard and naval armories, building or improving hundreds of airports and runways, and refurbishing military bases.11

Other New Deal agencies contributed to defense as well. The Public Works Administration (PWA), led by the Secretary of Interior Harold Ickes, allocated $238 million for the construction of aircraft carriers—notably the *USS Yorktown* and *USS Enterprise*, both launched in 1936—and for additional cruisers, destroyers, submarines, and gunboats. The PWA also constructed military hospitals, shipyards, and docks, and spent $15 million on aviation: half for Army aircraft, pilot training, and the construction of airfields, and half for naval aviation and pilot-training. When forecasts in 1937 noted much of the American shipping fleet would become obsolete within five years, the administration ordered the construction of fifty ships a year, and increased that number after January 1941.12

In addition to PWA construction, the Works Progress Administration (WPA) built Coast Guard cutters and lighthouses, and expanded the Coast Guard Academy in New London, Connecticut. The WPA, headed by Hopkins from 1935 to 1938, continued projects begun by the CWA and FERA. Although forbidden by Congress from spending relief money for the production of war machines and munitions, the WPA indirectly contributed to national defense before the war by constructing roads, bridges, and waterways, in addition to civilian and military airports that together linked cities and strategic bases with highways and air routes. The Army Quartermaster Corps and Corps of Engineers received over $52 million from the WPA for hundreds of projects employing thousands of men and women. According

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11 Rader, “Harry L. Hopkins,” Chapter 3, for airport construction and improvements; Blum, “Birth and Death of the M-Day Plan,” pp. 79-83; Paul Koistinen suggests that American mobilization began in April 1939, after the Reorganization Act of 1939. After war broke out in Europe on 1 September 1939, the president issued Executive Order 8248, which established on paper the Office of Emergency Management (OEM), the agency responsible for economic mobilization. FDR initiated economic mobilization with actual creation of the OEM on May 25, 1940, but the agency remained rather weak and ineffective, see *Arsenal of World War II*, pp. 15-17.

to one historian, the War Department became one of the largest WPA sponsors for the renovation of installations and infrastructure before war preparations became urgent in 1940. Hopkins also heeded the warnings of impending war in 1938 from Bernard Baruch, former head of the War Industries Board and a chief advisor to the Assistant Secretaries of War during the interwar years. After the Munich conference in September 1938, for instance, Hopkins ordered the WPA to build aircraft factories. Eventually he became one of the administration’s chief proponents of defense preparedness. In addition, Hopkins served as an indispensable liaison between the president and Generals George C. Marshall, chief of the Army, and Henry H. “Hap” Arnold, chief of the Army Air Corps, who also encouraged Hopkins to build additional airports, produce more airplanes, and train aviation mechanics.\textsuperscript{13}

\textbf{War Begins in Europe}

With the onset of World War II in September 1939, the president declared a state of limited national emergency. The war prompted a surge in demand for American manufactured goods that required the talents of trained workers. Like the Great War, the Second World War demonstrated a critical shortage of skilled and semi-skilled labor; it also confirmed the degraded state of occupational training during the Great Depression of the 1930s. Industrial idleness, the reduction of vestibule schools, and the paucity of apprenticeship programs had either limited training in many occupations or induced skilled workers facing unemployment to compete for less-skilled jobs and thereby diminish their own skills. In addition, the Bureau of Labor Statistics noted that skilled workers generally comprised about twenty to twenty-five percent of a manufacturer’s workforce in the 1920s and 1930s, nearly equal to the number of semi-skilled workers. Once the war began, newly established defense industries utilizing new technologies restructured America’s workforce. Thus, after 1941 industries required about thirty-five percent of their work forces to be highly skilled and over 40 percent to be semi-skilled.\textsuperscript{14}

\textsuperscript{13} Emergency Relief Act of 1935 forbade work relief appropriations to be used for “munitions, warships, or military and naval materiel”; see Donald S. Howard, \textit{WPA and Federal Relief Policy} (New York: Russell Sage Foundation, 1943): 132; Rader, “Harry L. Hopkins,” pp. 97-98, and especially, pp. 141-168; \textit{Final Report on the WPA Program, 1935-1943} (Washington, DC: U.S. Government Printing Office, 1946), pp. 84-89, 119. In 1941, the \textit{WPA Week in National Defense} reported on WPA defense projects around the nation; see any issue for interesting examples. On Hopkins and Baruch, see Rader, p. 29. By the summer of 1939, Rader reports, the WPA had spent over $134 million on 1,500 airport projects, one-third of all expenditures on airports since 1911, p. 105.

\textsuperscript{14} Donald H. Davenport, Chief, Employment and Occupational Outlook Branch, Bureau of Labor Statistics, U.S. Department of Labor, “The Supply of Trained Workers in Relation to the
The number of WPA workers on construction projects solely for the Army peaked in February 1941 at 370,000, but dropped thereafter as national WPA enrollment figures declined to about 1.6 million in April 1941. The defense work of the WPA paid off. Shortly after the bombing of Pearl Harbor, a report in the *Army and Navy Register* noted that, “United States military posts and Naval bases are far better equipped today than they were in 1918, due largely to the fact that for more than six years the Works Progress Administration has been steadily at work expanding, rehabilitating and improving them.”

An additional rationale for close cooperation between the WPA and the military is suggested by the large number of army officers and former officers among the ranks of WPA engineers and administrators. Col. Francis Harrington, a West Point graduate, army engineer, and assistant administrator for the WPA, replaced Hopkins as the administrator upon Hopkins’ departure for the Commerce Department in 1938. In addition to Harrington, several administrators had served in the armed services during World War I. Howard O. Hunter, who succeeded Harrington upon the latter’s death in September 1940; Aubrey Williams, who led the National Youth Administration (NYA); Fred Rauch, assistant commissioner for the WPA Division of Employment and the Division of Training in 1940; all served in the army during World War I. Corrington Gill, Director of Research and Statistics before his promotion to head the Federal Works Agency in 1939, served in the Navy, while his successor at the Federal Security Agency (FSA), John Carmody, served in the army. Lewis R. Alderman, promoter of adult education and director of the New Deal adult education programs, had been educational advisor to the Navy and served with the Army Educational Corps in France and Germany in 1919. Reserve and Active duty officers occupied important posts in federal training programs. For example, Col. John J. McDonough, the State WPA administrator for Massachusetts, became Director of the Division of Training and Reemployment in 1941. The


15 Federal Works Agency, Work Projects Administration, Division of Research, “Industrial Activity and the Need for WPA Employment, April 1940” (10 May 1940), NARA, RG-69, Box 65, pp. 7-8, 12, Training and Reemployment; Rader, “Harry L. Hopkins,” p. 69, citing *Army and Navy Register* (16 May 1942): 27.
administration appointed Lt. Colonel Edmond H. Leavey Assistant Commissioner and Chief of Engineering for the WPA in 1940. Major (eventually Major General) Frank J. McSherry, who directed Defense Training for the Federal Security Agency and worked closely with the WPA Training Division, assumed the post of Deputy Director for Labor Supply and Training in the War Production Board after 1941. Finally, although she did not serve in uniform, Florence Kerr, Assistant WPA commissioner for Community Service projects, headed the Gulf [Coast] Division of the American Red Cross during the First World War.16

Despite cooperation between the armed services and the WPA, the military application of WPA resources remained limited for a number of reasons. First, Congress restricted the amount of funding for military use and the kinds of military projects the WPA could perform before 1939, when the WPA had been controlled by the administration. After the Reorganization Act of 1939, however, Congress exerted more control over relief agencies. Second, the sporadic nature of WPA funding during its lifetime cancelled or slowed all kinds of projects, both civilian and military, precipitating crises in some cities burdened by high unemployment and even causing strikes against the WPA by relief workers at various times. Third, the geographical distribution of relief funds and the number of available relief workers simply precluded the use of WPA funds for projects in sparsely populated regions such as Alaska or in localities having limited tax revenues to underwrite the sponsor’s portion of a WPA project. Various restrictions limiting the use of WPA resources for the military eased after the Reorganization Act of 1939, when Congress assumed control of the WPA in July and placed it within the Federal Works Agency. Congress increasingly utilized the WPA to bolster the nation’s defenses over the following year in response to lobbying from WPA staff members. WPA staffers sought to remove certain limitations on the hiring of unemployed workers and to streamline the requirement for sponsor funding. More importantly, Hitler’s victories in Europe reinforced the urgency for defense preparedness. Finally, President Roosevelt himself asked Congress to loosen restrictions, because the WPA clearly benefited national security.17

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16 Biographies of various WPA administrators may be found in the NARA, RG-69, WPA, Division of Information, Photographs and Biographical Information About WPA Officials, 1933-1942, Box 1.

17 Rader, “Harry L. Hopkins”; Final Report of the WPA, pp. 7, 90-93; Floyd W. Reeves, “University Extension and Total Defense,” Proceedings of the Twenty-Sixth Annual Convention of the National University Extension Association at Oklahoma City, Oklahoma, May 5-7, 1941 (Bloomington,
While WPA defense work became increasingly important, the number of WPA workers declined after 1940 because of improved conditions in the private sector brought about by increasing employment among defense industries. Employment of WPA workers solely on certified defense-related projects—mostly constructing roads, buildings, airports and airfields—tripled from 72,000 in July 1940 to 239,000 in June 1941. The WPA committed about one out of five WPA workers to defense preparations before the attack on Pearl Harbor. As war in Europe and Asia intensified, Congress modified the Emergency Relief Appropriations Act of 1941, which funded WPA for the following fiscal year, and reversed earlier proscriptions against the overt employment of WPA personnel on military and defense projects. Congress also allowed WPA to disburse additional funds for non-labor expenses and removed certain spending caps on certified defense projects. As a result, the use of WPA for defense purposes and for vocational training dramatically increased after 1940. For instance, according the historian Frank Rader, between July 1935 and July 1940 the WPA and project sponsors spent over $430 million on defense projects for all of the armed services and for municipal airports, a sum which accounted for about five percent of all WPA expenditures. In 1941, however, after Congress moderated spending caps and restrictions, the WPA expended nearly twenty-five percent of its budget on defense projects. After Pearl Harbor, Congress in 1942 ordered that any new WPA projects be used only for defense purposes. Because unemployment fell so dramatically in 1942, WPA administrators became desperate to justify the agency’s existence that year, so the WPA helped construct and staff internment camps for the 120,000 Japanese Americans removed from their homes by the War Relocation Authority. Rather than a work relief program, the WPA after mid-1940 became a training and defense


Luther Gulick, an expert in public administration, assisted FDR’s reorganization of the federal government; he also participated in postwar planning for the National Resources Planning Board and the Department of the Treasury. Gulick organized the War Production Board, the Advisory Committee on Education, the Foreign Economic Administration in the Department of State, and advised U.S. officials at the Potsdam Conference, in addition to consulting and working with numerous government agencies. The child of American missionaries, Gulick grew up in Japan and received a Ph.D. from Columbia University; see Luther Gulick, Administrative Reflections from World War II (Birmingham, AL: University of Alabama Press, 1948): vii-xii; Lyle C. Fitch, Making Democracy Work: The Life and Letters of Luther Halsey Gulick, 1892-1993 (Berkeley, CA: Institute of Government Studies Press, 1996).

program; it altered its mission from making work to making workers in preemployment and supplemental training programs. Nevertheless, despite the modest construction and defense preparations made by various New Deal agencies since 1936, the United States remained unprepared for the enormous mobilization of manpower and resources required by the war.  

**The Defense Education Act of 1940**

The crucial turning point for large-scale training began in the late spring of 1940 following the “phony war” or “sitzkrieg,” the lull between the conquest of Poland and the invasion of Northern Europe. After Nazi armies overran Northern Europe and the Low Countries, the president declared a state of unlimited national emergency. The National Defense Advisory Commission, recalling the lessons of the First World War, advised the president early in 1940 to launch a national training program for 1.5 million workers. Sidney Hillman appointed Floyd Reeves to head the Labor Supply and Training section of NDAC, which supervised vocational training and the “training-within-industry” programs. NDAC, however, generally excluded the participation of organized labor. The Defense Training Advisory Committee, on the other hand, incorporated administrators from various federal agencies. Congress passed the Defense Education Act in May and the president signed the bill authorizing the Vocational Training for Defense Workers program—sometimes referred to as Vocational Education for National Defense (VE-ND)—in June 1940. Subsequent amendments funded the War Production Training Program for five years, from July 1, 1940 through June 30, 1945. The Office of Education disbursed the funds and the United States Employment Agency (USES) recruited, classified, and placed workers in training programs or factories according to their skills. In a well-organized layering from federal to state and local bureaus, the WPA Bureau of Training (within the Division of Employment) determined

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training needs, planned community training programs, offered technical assistance tailored to particular factories, and coordinated the services provided by training agencies. Existing work relief agencies—the CCC, NYA, and the WPA—provided immediate training in conjunction with public vocational schools because they had already in place small training projects for unemployed workers. The Department of Labor also expanded apprenticeship training for current skilled and semi-skilled workers in defense industries. The United States now embarked on the path to mobilization for defense and war.  

The idea to train WPA workers for defense purposes originated with high-level WPA leaders and administrators. Colonel Francis Harrington, Commissioner of the WPA—after conferring with Harry Hopkins, then Secretary of Commerce, and Aubrey Williams, who headed the NYA—requested of the president in June 1940 “approval of a plan to utilize the facilities of the vocational schools of the country to train persons for key industries connected with national defense.” The plan echoed that suggested by the Federal Board for Vocational Education in the early months of World War One. The Senate Committee on Appropriations, meanwhile, had been deliberating on the WPA budget, which included funds for defense-related training programs. Confident the bill would pass, Harrington proposed a “nation-wide training project” in states having adequate facilities. Believing that training programs could be funded at little cost, especially since facilities would otherwise be vacant during the summer, Harrington anticipated a training period of two or three months with trainees drawn from groups of volunteers, the NYA, and the WPA, especially those unemployed who had previous work experience. Relief workers continued to receive a security wage as they

\[21\] Musser, *Vocational Training for War Production Workers*, pp. 14-17; Beatty, “Mobilization of Manpower for War Production,” pp. 151-152; U.S. Department of Labor, Federal Committee on Apprenticeship, [press release], 16 August 1940, in NARA, RG-174, F. Perkins, Secretary of Labor, Box 28, file 3. Interestingly, domestic politics dictated use of the term “defense” in the titles of government agencies and various programs before the United States entered the war. After the Japanese attack, most “defense” agencies and programs became “war” programs. For example, Vocational Training for National Defense became Vocational Training for War Production after December 1941. The Defense Education Act eventually included Vocational Training for War Production Workers (VTWPW), Food Production War Training (FPWT), Apprenticeship Training Services (ATS), Engineering, Science, and Management War Training (ESMWT), Training Within Industry (TWI), Job Relations Training (JRT), and Job Instruction Training (JIT). Eventually the WMC established the Bureau of Training in April 1942; see the introduction to Musser, *Vocational Training for War Production Workers*, p. x.
trained. Harrington also urged an official mechanism to place graduates into private employment, but his staff had not yet formulated detailed plans.\textsuperscript{22}

Earlier that June, Aubrey Williams held two conferences with industrialists, labor leaders, and military and naval officers for the purpose of identifying military needs, industrial capabilities, and the kinds of training required to produce an adequate supply of workers in time to meet production goals. While business, labor, and government had confronted one another in disputes during the 1930s, the looming international crisis in 1940 fostered increasing cooperation among the major sectors of the polity despite a vocal anti-war movement. In the first conference, participants formed a consensus about a method of training, one which emphasized the importance of pre-plant training to determine the aptitudes and work habits of young workers. In addition, they proposed to increase NYA shop facilities, especially those related to aviation, radio and electrical work, welding, forge and foundry skills, carpentry, pattern making, and health care. Local industries supervised the unemployed who volunteered for training—using local unemployed first—then they could turn to rural areas for volunteers. Acknowledging the utility of local control, the conferees emphasized how important recommendations from local industries, labor leaders, and local governments would be for solving the manpower needs of a particular community.\textsuperscript{23}

In a follow-up conference a week later, members reported that approximately 1,500 schools would become available for training that summer. Like the training centers established in schools during the First World War, the fortuitous discovery of classroom resources prompted Major Frank McSherry to recommend the use of classrooms for Army schools as well. However, some at the conference objected—the labor representatives emphatically. They recommended instead the need to determine just how many workers would participate and what kinds of skills would prepare them for jobs without flooding existing labor markets. Frank Fenton, representing the American Federation of Labor (AFL), noted that 30,000 skilled mechanics remained unemployed and he voiced criticism about the

\textsuperscript{22} Memo, F. C. Harrington to the President, “WPA Project for Vocational Training,” 15 June 1940, NARA, RG-69, WPA Division of Training and Reemployment, Box 65, file 5.

capabilities of vocational schools in general. Ralph Hetzel, representing the Congress of Industrial Organizations (CIO), suggested finding skilled men who were unemployed or working in another capacity to relocate to industries in need of their expertise. In addition, Hetzel recommended expanding apprenticeships, training skilled and semi-skilled workers for better jobs, providing funds for transporting workers to areas in short supply, expanding programs like the NYA, and awarding defense contracts to “stranded areas” or regions inhabited by a surplus of unemployed workers where no factories or industries existed. A number of participants, however, warned that moving or pilfering skilled workers from one firm to another would disrupt existing production and create a “bottle-neck.” And while apprenticeships were the best way to train, such programs generally took four years, much too long to meet urgent production needs. While all raised cogent points, they failed to appreciate the enormity of the manpower problems required for the coming war.  

The conference also recommended the inclusion of girls in defense training and suggested that other relief agencies such as the CCC initiate training as well. The role of educators in the growing collaboration between business, government, and labor, became apparent. The facilities of private and public vocational schools would become instrumental for training. More importantly, the conference recognized the need for “good supervision” and a staff of “qualified experts” to study essential jobs and design projects. Furthermore, the conference suggested that industry and the NYA identify the ten percent of youths who showed talent in order to encourage their “highest possible development.”

Federal officials also foresaw the importance of speedy training. The National Defense Education Act initially allocated $15 million in June 1940, and added another $26 million in October. FDR had promoted a similar program in 1916 for the Wilson administration and now had the foresight to do so after hostilities commenced in Europe in 1939. The legislation enabled two types of training immediately: preemployment and supplementary training. The WPA, having already evaluated the skill levels of unemployed workers in its ranks, possessed the administrative infrastructure to organize programs quickly.

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It responded to the call for training at once and the NYA followed. Preemployment training consisted of intense refresher courses for the unemployed worker to renew his or her skills and work discipline. Officials also screened applicants from the WPA and USES for “in-plant” training. The agencies then assigned trainees to learn specific jobs with an employer while receiving WPA wages. The employer hired WPA trainees once they achieved minimal competence, and then furnished additional on-the-job training. Supplementary training upgraded those already employed with additional skills while earning wages from their respective employers. Working closely with the USES, WPA gathered 11,500 trainees by the last week of July, with nearly 3,300 trainees enrolled in auto and machine shop training. A week later, over 16,000 had joined up in forty-one states, Hawaii, and the District of Columbia, operating in “nearly 500 schools,” to train in auto and aviation mechanics, welding, woodworking, radio and electrical work, machine shop techniques, and a few other occupations. By March 31, 1945, the Vocational Training for War Production Workers program spent nearly $327 million training over 2.6 million in Preemployment courses and over 4.7 million workers in Supplementary courses throughout 2,600 schools around the nation.26

Other administrators in WPA recommended ways WPA workers could aid the defense effort in 1940. They recommended collaborating with organized labor and management and recognizing the importance of local input to meet community requirements. Hilda Smith—who had been active in workers’ education at the Bryn Mawr Summer School during the 1920s and now directed the Workers’ Service Program of the WPA—wrote a memorandum suggesting a number of ways that “experienced consultants” from labor and industry, many of

whom had previously assisted the WPA, could help train defense workers. Her points revealed an essential commitment to grassroots democracy, progressive values, and sense of federal and state cooperation. First, she advised, establish “local labor advisory committees” to generate cooperation with trade unions, farmers’ organizations, and the unemployed. Second, enlist the aid of community organizations in “finding suitable housing, recreation, and library services,” and in “conducting community surveys and research studies.” Third, supplement vocational education by including adult education and citizenship training programs in school curricula. Fourth, create “listener groups” for industrial and rural workers who could receive “accurate information” about government programs by radio. Fifth, provide useful information to workers regarding legal matters, social security, housing legislation, workmen’s compensation, and other issues “in cooperation with state departments of labor.” In addition, the WPA could distribute state and federal materials such as exhibits, films, and pamphlets, and conduct workshops informing the public about national defense needs. Finally, Workers Service programs could expand adult education, especially for aliens, and assist migrating workers and refugees, or establish training camps for youth. While the effect of Smith’s memo on higher officials is unknown, many of her recommendations surfaced in subsequent administration policies.

WPA officials also solicited suggestions from private sector trade schools. For example, Bruce Uthus, Director of WPA Training, sought in November 1940 the expertise of the Ford Motor Company trade schools. Frederick Searles, Superintendent of the Henry Ford Trade School, responded with a history of training schools, teaching objectives, and school curricula. Uthus sent C.R. Dooley a detailed outline of the In-Plant Training Program to solicit his comments. While Dooley warned that legal constraints might restrict trainees to government jobs in arsenals and armories, Uthus initiated his training recommendations

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27 Memorandum, [penciled “File From Hilda Smith], “Workers’ Service Program in relation to defense,” 1 July 1940, NARA, RG-69, Division of Training and Reemployment, Box 5, File 8, “Vocational Training for Women and Workers’ Service Programs,” pp. 1-2. For additional elaboration of these items and critical remarks, see Hilda W. Smith, “Summary of Educational Suggestions from Miss Elliott’s Conference of Community Organizations,” 6 August 1940, ibid., “Vocational training for Women and Workers’ Service Programs.”

28 Bruce Uthus to F. E. Searles, 26 November 1940, and Searles to Uthus, 29 November 1940, both in Division of Training and Reemployment, Box 65, file 7, “A-Z.” The apprentice training school at Ford began in 1915; it incorporated a trade school for teenage boys in 1916 and established the Ford Training School for high school graduates in 1935.
without delay. 29 A year later, in preparation for training foremen, Howard Sinclair of WPA elicited information and advice from the National Foremen’s Institute, which responded with pamphlets and consultants for training supervisory personnel that presaged the Training-Within-Industry (TWI) program. The American Management Association also updated a volume originally edited in 1938 by Alvin E. Dodd and James O. Rice, How to Train Workers for War Industries; it proffered a compendium of training and management techniques developed since the First World War. The authors later adapted a number of chapters in a 1942 version from material used by the Training-Within-Industry branch of the War Manpower Commission (WMC). 30 Private schools not only contributed curriculum outlines, but offered their facilities. The Jewish Occupational Council undertook a survey to locate and describe various training facilities and compiled government statistics on the needs for various occupations in each state. 31 By 1942 the National Association of Manufacturers and the WPA established the Auxiliary Shop Training Program. The WPA leased idle shops to train workers awaiting job assignments or seats in specialized schools; it also welcomed workers furloughed by firms converting to war production. 32

While federal agencies enlisted the cooperation of educators and industries, educators organized their own committees to assist with defense preparation. The National Committee on Education and Defense, organized in August 1940, encompassed nearly 60 national

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29 Memo, Bruce Uthus to Channing Dooley, “Project for Plant Training of Defense Workers,” 22 August 1940; C.R. Dooley to Uthus, 30 August 1940, in WPA Division of Training and Reemployment, Box 65, file 7, “A-Z.”


32 See, for example, John J. McDonough, Director, Division of Training and Reemployment to Walter Chamblin, Jr., Executive Director, National Association of Manufacturers, 9 March 1942; Chamblin to McDonough, 17 March 1942; Chamblin to McDonough, 26 March 1942; and Sybyl S. Siegel, Industrial Relations Department, National Association of Manufacturers, to McDonough, 7 April 1942, in Box 65, file 7, “A-Z”; Final Report on the WPA Program, p. 92, for Auxiliary Shop Training.
educational organizations, including the NEA, the American Council on Education, the American Vocational Association, and the American Association of School Administrators. Together these agencies disseminated information and advised defense agencies on educational matters, as well as coordinated training with universities and federal agencies.33 Vocational educators loaned their expertise in developing curricula and acquiring public school facilities to train or retrain workers for essential industries. For example, by September 1940 the journal *Industrial Arts and Vocational Education* foresaw “numerous problems” for training routines. However careful and scientific the application of training techniques, all-round mechanics could not be trained in a few months. However, those who displayed an existing skill or trade could return to work with a little crossover training, and thousands more could enter production with intensive training and expert supervision. While authorities often had little idea about what kinds of skills and how many workers industries required, vocational educators stood “ready to do their part.”34 While the real burden of training fell upon manufacturers, schools and industries cooperated to prepare the nation’s growing workforce. Public schools opened shops and classrooms, and offered night classes that prepared workers for the transition to on-the-job training at the work site.35 Finding qualified instructors to train millions of new workers also proved challenging, especially before the Training-Within-Industry program commenced. The Educational Policies Commission recommended the recruitment of skilled workers who qualified for temporary teaching certificates. Educators at the University of Buffalo in 1941 created an experimental program of in-service training for “provisionally certified” vocational school teachers in a short, broad, intensive course. Problems similar to those experienced during World War I arose, particularly the dilemma of finding competent workers with a talent for teaching or finding competent teachers able to instruct skilled technicians and tradesmen. The Educational Policies Commission recommended standardized curricula for instructors chosen


from technicians and skilled workers already employed. Standards, the commission affirmed, increased productive skills and provided essential technical knowledge (for reading blueprints, performing mathematical calculations, and using precision instruments). Instructor Training programs honed existing skills and introduced teaching techniques for all kinds of workers, for those with or without instructional experience. Universities also established programs to train qualified vocational education or industrial arts high school teachers as in-plant or on-the-job instructors.36

Public and private cooperation in local training programs had begun in 1939 and intensified after the summer of 1940. Federal agencies prompted communities to survey manpower resources and needs with occupational surveys in 1939. Community advisory groups then coordinated the kinds of training available with the needs of local industries, similar to the vocational programs that evolved over the previous decade tailored to local labor markets.37 Most public vocational schools already possessed facilities for training skilled mechanics of all kinds. In Williamsport, Pennsylvania, for example, the defense training program accepted only qualified, employable applicants. Educators there recommended that schools, through testing and the evaluation of work experience, select workers for local industries on the basis of labor market needs in the community.38


Training programs in Bridgeport, Connecticut, offered another example of public and private cooperation. In May 1940, shortly after President Roosevelt challenged the nation’s aircraft industry to produce 50,000 airplanes a year and ships for a two-ocean navy, the Bridgeport Trade School initiated courses for aircraft riveters and sheet metal workers in a three-month program preparing workers for the Vought-Sikorsky aircraft company. The state provided facilities, the manufacturer provided shop instructors, and the U.S. Employment Service screened and referred applicants. As demand for workers increased, the school added two additional shifts by the end of July 1940, and operated 24 hours a day. Vought-Sikorsky, maker of naval aircraft such as the F4U Corsair, loaned nine more instructors and the state added another school. The program placed over 250 men in jobs by the end of the year. State and local training programs, however, remained subject to inspection by the Office of Education, which oversaw funding for defense training.39 Similar programs allowed the military aircraft industry to double its workforce between January and November 1940, which produced 721 planes in November, 100 more than the previous month. According to NDAC, in the first six months after passage of the Defense Education Act, the combined efforts of government agencies, vocational educators, and private firms trained ten times as many workers than the total trained “during the entire period of the First World War.”40

Historical Reports on War Administration: War Production Board, Special Study No. 21, (Washington, DC: 1946): 1, citing the New York Times, 17 May 1940, for the president’s order. For the workings of one local training program which illustrates the functions and interactions of various agencies to train workers for defense, see Charles F. Bauder, “The Philadelphia Program of Vocational Education for Defense,” Industrial Arts and Vocational Education 31 (March 1942): 83-87.


In December 1941, Walter Reuther, who headed the United Auto Workers, proposed increasing aircraft production by converting the automobile industry—using its underutilized plant capacity and reserve of skilled workers—into airplane production. William Knudsen, president of General Motors and Director of NDAC, concurred. Historians concluded that authorities eventually discarded Reuther’s plan, but see the chronology of NDAC showing orders for the conversion of the automobile industry to aircraft production a few months later; Walter P. Reuther, 500 Planes A Day (Washington, DC: American Council on Public Affairs, 1941); and Sitterson, Aircraft Production Policies Under the National Defense Advisory Commission and Office of Production Management, pp. 2-3, and 165. John B. Rae, in Climb to Greatness: The American Aircraft Industry, 1920-1960
The WPA and administration officials recognized the paucity of skilled labor by the end of 1939, when the British and French placed orders for American-built aircraft. Shortages of skilled workers, as one official put it, arose from a decade of discarded apprenticeship programs and the erosion of in-plant training during the 1930s. New inventions and scientific discoveries applied to production required the talents of trained workers.41

Many training programs early in the war evolved from those developed by New Deal work relief agencies. In its initial phase, the WPA served to provide relief and to preserve occupational skills and work habits. Later, the WPA offered sporadic, informal, on-the-job training in its emergency schools and adult education curricula at the local level. But by preserving outdated skills during its first few years of operation, the WPA may have prevented the upgrading of skills or the acquisition of new ones. By requiring unemployed workers to be certified for relief by local agencies, the WPA hampered the mobility of workers willing and able to relocate. Those policies changed, however, when the nation began mobilization in 1939. By 1940, the WPA established regular vocational training programs for qualified workers in national defense industries.42

The WPA became one of the first agencies to begin occupational training after Congress established the Defense Vocational Training Program in June 1940. Instructors integrated job training techniques developed during the First World War with methods developed thereafter to establish training on a mass scale.43 The Division of Training

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42 National Archives and Records Administration [NARA], Records of the Works Progress Administration, Record Group-69, Box 64, file 3.

employed vocational education teachers who taught in WPA adult education schools, often in cooperation with local and state boards of education.  

The WPA Division of Training also included “in-plant” training, a cooperative effort between the WPA and private manufacturers. Initiated in 1941, in-plant training allowed workers who demonstrated aptitude to attend plant-supervised training sessions in one of 375 defense plants in 28 states. While the newly organized Division of Training and Reemployment designed and funded in-plant training, the actual classes took place under the supervision of plant foremen or vocational educators. Once plant foremen or instructors observed a desired proficiency, firms usually hired the trainee, placed him or her in production, and then followed up with additional training thereafter. While workers trained, the WPA paid them relief wages for up to 160 hours a month. Once the hours of training time in the plant exceeded the maximum allowed by the WPA, however, problems ensued. The Fair Labor Standards Act of 1938 that regulated the hours of work required additional pay for overtime. The acting WPA administrator in 1942 placed the burden of conforming to the Fair Labor Standards Act upon employers. When employers allowed trainees to work overtime, the WPA refused to pay as part of its policy and maintained that employers pay for overtime. While designed to protect workers, labor legislation and WPA regulations created problems for employers, government agencies, and the trainees, and temporarily inhibited training in some cases. Nevertheless, in-plant training became an important component of mobilization.

A variety of WPA training defense projects took priority, especially those designated for the War and Navy departments, for airports and defense-related aviation projects, for “strategic road networks” that connected industrial centers with military bases, for the

44 Final Report on the WPA, p. 90.


46 See the letters from Merle D. Vincent, Director of the Hearings Branch in the Department of Labor to Franklin Dewald, Acting Director of the WPA Division of Training and Reemployment (14 July 1942); Dewald to Vincent (22 July 1942); William Grogan, Acting Administrator of the Department of Labor Wages and Hours Division, to Gordan A. Sugg, WPA Welfare Department of the Untied Automobile, Aircraft, Agricultural, and implement Workers of America (n.p., October 1942); Grogan to Dewald (n.d., October 1942); Grogan to Lester Brown, Field Supervisor, WPA Regional Office, Chicago, Illinois (n.d., October 1942); Grogan to Sugg (9 October 1942); all in NARA, RG-69, Division of Information. Box 65, file #4, “D-W, 1941-1942.”
construction of buildings and infrastructure, and for the National Guard and Reserve Officer Training Corps (ROTC) projects. In addition, WPA public health projects near military bases constructed or repaired sewerage systems, drained swamps, improved water quality, and initiated mosquito and malaria control. WPA instructors even taught Spanish to members of the armed forces. Between July 1, 1940 and March 31, 1943, expenditures for WPA projects, both sponsor and WPA funds combined, exceeded $639 million. Nearly every local politician described his “pet project” as important to national defense and, amidst the political swirl of Washington politics, WPA officials began to justify their very existence as crucial to defense. Therefore, it should come as no surprise that Millions for Defense, a report on the New Deal’s contribution to national defense since 1933, appeared during the presidential campaign of 1940. The report inoculated FDR against charges that he had neglected defense efforts during the 1930s while Germany rearmed and Japan fortified the Pacific. That December, shortly after the first peacetime draft in the nation’s history and the inauguration of “lend-lease” to Great Britain and FDR’s reelection for a third term, FDR declared the United States to be the “arsenal of democracy.”

Meanwhile, the Second Deficiency Appropriations Act of 1940 authorized the WPA to spend funds training workers “for manual occupations in industries engaged in production for national defense purposes.” As more workers found employment in defense industries, the WPA and other agencies provided training for the unskilled. The critical shortage of skilled and semi-skilled workers, said Lt. Col. Frank McSherry, Director of Defense Training for the FSA, reflected “a 10 year harvest of lethargy in training of workers” since 1930, when training programs by industries fell-off and public schools cut funding for vocational training. While thousands of WPA workers attended vocational schools and training programs, others remained on various “made work” projects. About a third of all WPA workers engaged in defense-related projects. From July 1940 through December 1942, when the president began

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47 Rader, “Harry L. Hopkins,” pp. 154-167; Final Report on the WPA, pp. 84-89, and see Tables 30 and 31, p. 89. Presumably, the WPA taught Spanish to military personnel in preparation for collaboration with South American allies. Curiously, no documents refer to instruction in Japanese or German languages to armed forces personnel. FDR coined the “arsenal of democracy” phrase in a “Fireside Chat” given December 29, 1940.
dismantling the New Deal work relief agencies, the WPA defense training programs alone trained 330,000 persons at a cost of $74.7 million.\(^{48}\)

The shortage of skilled workers in many localities stemmed from the geographical distribution of defense contracts that distorted existing labor markets. Areas of heavy war investment caused labor shortages, housing shortages, and the migration of workers to areas where wage incentives remained high. In the early 1940s, New England industries absorbed 12 percent of contracts, while the Middle Atlantic States, which included the shipyards of Philadelphia, Baltimore, and coastal Virginia, acquired 32 percent. Both regions had relatively few available workers on file with the USES. The northern industrial states and far western states attracted the largest number of defense contracts, while the southeastern states only garnered 5 percent and the Gulf States attracted only 4 percent. Eventually, some redistribution occurred to regions with a labor surplus, but the geography of war contract distribution remained largely intact. Other problems surfaced while industries retooled for war. While Detroit manufacturers converted existing facilities from automobile production to fabricating airplanes and tanks, about 50,000 to 100,000 workers remained idle. In other instances, “labor piracy” and “competitive dislocations” caused rapid turnover that disrupted regional labor markets as workers flocked to industries paying high wages. As a result, the federal government eventually took measures to stabilize the workforce by capping wages and prices, regulating “job shopping” and labor “piracy,” and restricting job referrals through local offices of the USES.\(^{49}\)


Despite the many successes, some WPA training projects failed in their mission. In states having few defense industries, trainees continued classes longer than required. In Utah, for example, graduate trainees found no available jobs, so administrators began shipping graduates to areas in need of workers, especially to industries on the West coast. A few state offices neglected to notify qualified persons already on WPA rolls or to fill classes with idle workers referred from other agencies. In states where labor shortages occurred, WPA and other training agencies failed to meet local demands. In Seattle, Washington, so great was the demand for workers in the aircraft and shipbuilding industries that employers hired nearly all available WPA trainees before they completed training courses. Large companies like Boeing Aircraft Company in Seattle, Washington, for example, established their own on-site programs in addition to hiring WPA workers. Boeing often hired WPA trainees before they completed their classes and the firm’s plan for expansion anticipated 6,000 additional workers between August 1941 and February 1942.\footnote{Chauncey B. Brewster, Training and Promotional Representative, to Bruce Uthus, Assistant Director of Training and Reemployment, 25 August 1941, NARA, RG-69, Division of Training and Reemployment, Box 1, file 2.} A preliminary report in December 1941 showed that the WPA paid out over $2 million in wages for the month to trainees on Defense Vocational Training projects, most of whom received their instruction in local vocational schools. Unsurprisingly, the distribution of training funds remained skewed to favor the major industrial states. The largest share of training expenses, about 40 percent, went to a half-dozen states: New York, California, Illinois, Wisconsin, Michigan, and Pennsylvania.\footnote{WPA Division of Statistics, “Earnings of Persons Employed By The WPA On the National Defense Vocational Training Projects, by State, December 1941,” (6 February 1942), NARA, RG 69, Division of Training and Reemployment, Box 3, file 1.} By December 1942, nearly one-third of WPA employees worked on defense projects. Many joined WPA defense training schools where qualified jobless entered preemployment training programs.\footnote{For figures on WPA projects and the number of workers, see \textit{Final Report on the WPA}, pp. 88-89. The Emergency Appropriations Act of 1939 required local sponsors of WPA projects to provide twenty-five percent of a project’s costs. In addition, the act rescinded the prevailing wage ruling, increased the hours of employment without a comparable increase in wages, excluded aliens and radicals, and dismissed from WPA anyone with eighteen or more consecutive months of WPA employment; see \textit{Final Report on the WPA}, pp. 9, 29, 41. The Executive Reorganization Act of 1939
Objectives of Defense Education

The all-out effort to train defense workers raised questions about the kinds of training needed and to what purpose. Professional trainers from the private sector called for specific objectives in the National Defense training programs. A personnel director from Wisconsin proposed in early 1941 that training should begin immediately for jobs in high demand and that public agencies should coordinate training and placement in order to locate workers with “special aptitudes.” Echoing the mantra of professional trainers, he recommended programs to refresh latent skills, identify abilities, and foster a “belonging to the group.” Another suggested that preemployment training help develop an insight and understanding of industrial work and foster habits that allowed one to apply newly acquired skills to practical problems.53 Committees of educators and technical instructors conducted seminars aimed to assist firms engaged in war production to increase efficiency by conducting experimental programs.54

The civilians who held government posts during the First World War supplied their talent and expertise. Bernard Baruch and others assisted in wartime preparations, although FDR scrapped the Baruch Plan. The Plan, opposed by business and organized labor, would have frozen wages and prices and exerted total administrative control over the economy. Other administrative veterans of the First World War answered the call. WPA officials sought advice from those who had previously administered vocational training programs—Channing Dooley, for example—during the First World War. WPA administrators also consulted with

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the Department of Labor to ensure WPA conformed to wage and hour laws under the Fair Labor Standards Act of 1938.55

Once defense preparation and training began in earnest, the president created additional agencies to oversee various aspects of production, although agencies sometimes worked at cross purposes. President Roosevelt revived in mid-1940 the National Defense Advisory Commission (NDAC), also called the Advisory Commission to the Council of National Defense.56 A seven member board whose members included representatives from business, government, education, and organized labor comprised NDAC. Following the precedent begun during the First World War, the administration recruited hundreds of corporate executives, as well as a few labor leaders and educators, for their technical and organizational expertise. The “dollar-a-year” men received one dollar from the federal government while remaining on the payroll of their respective firms. Others advised or consulted the government “without compensation” (WOC) while employers continued to pay their salaries. Some executives resigned from their respective firms or arranged furloughs to avoid a conflict of interests. Washington rewarded some CEOs with commissions in the armed services—both William Knudsen, president of General Motors, and Robert E. Wood, Chairman of the Board at Sears, Roebuck and Company, for example, served as generals in the Army. Following precedents from the War Industries Board and the National Recovery Administration, large industries dominated NDAC, relied upon their own personnel and institutions, and shaped mobilization policy in ways that raised fears of cartelization detrimental to smaller businesses. Until its demise in early 1941, NDAC planned and coordinated industrial production, employment, housing, transportation, munitions and armaments, finances, the movement of labor, price stabilization, and consumer protection

55 Memo, Bruce Uthus to Fred Rauch, “Plant Training,” 14 August 1940; Colonel Philip Fleming, Administrator, Wage and Hour Division, Department of Labor, to Fred R. Rauch, Assistant Commissioner, WPA, n.d., 1940, in NARA, RG-69, WPA Division of Training and Reemployment, Box 65, file 7, “A-Z.” For additional funding for defense training in October, see “Vocational Training for Defense Industries,” p. 1149.

agencies. After NDAC, the Office of Production Management (OPM), the War Production Board (WPB), or the War Manpower Commission (WMC) fulfilled these functions. Congress and the administration authorized naval construction, underwrote new weapons, and expanded the number of airplanes and pilots, all paid for with a tax increase of $700 million. While the administration attempted to avoid the disorderly mobilization of the First World War, various agencies sprang up only to replace or overlap the functions of others. As mobilization intensified, one historian contends, the lack of coordination and the rapid succession of various wartime agencies resembled the experimental and chaotic nature of the early New Deal. Civilian committees and advisory groups added to the whirl of activity as the nation prepared its defense.


The Office of Production Management (OPM), co-directed by Knudsen and Hillman, replaced NDAC in 1941, see Gulick, Administrative Reflections, p. 5; Koistinen, Arsenal of World War II, pp. 15-32 and pp. 29-30, on “dollar-a-year men”; and James A. McAleer, Dollar-A-Year and Without Compensation Personnel Policies of the War Production Board and Predecessor Agencies, August 1939 to November 1945 (Washington, DC: War Production Board, 1947). The “dollar-a-year” men received per diem and travel expenses. Members of the Advisory Commission to the Council of National Defense and their assistants (which became NDAC), authorized by the Defense Act of 1916, served “without compensation,” pp. 5-6. For enumeration of the backgrounds of WOC and “dollar-a-year” personnel, see pp. 22-23, 56-57, and Appendices B and C, pp. 104-114. No attempt is made here to evaluate whether or not conflicts of interest occurred. Federal agencies investigated the backgrounds of appointees and charges of abuse. A senate committee, led by Senator Harry Truman, investigated allegations of abuses and advised against appointing executives to federal posts without compensation. The War Production Board increasingly scrutinized experts from the private sector, but continued the practice of non-compensation until the end of the war; see pp. 21-56, and the author’s conclusions, pp. 95-97. For an insightful institutional history of these agencies, see U.S. Civilian Production Administration, Historical Reports on War Administration, Industry and Labor Advisory Committees in the National Defense Advisory Commission and The Office of Production Management, May 1940 to January 1942, by Edythe W. First, War Production Board Special Study no. 24 (Washington, DC: Civilian Production Administration, 1946), esp. pp. 1-54.

While individual corporate leaders often led government agencies, business associations offered expertise and proposals for influencing policies and war production. At its annual meeting in May 1941, speakers at a meeting of the National Industrial Conference Board (NICB) warned Americans to be vigilant of international events. Colonel William Donovan, who eventually led the Office of Strategic Services (OSS) during the war, alerted Americans to the danger of a Europe united under Adolph Hitler. Sidney Hillman—who headed the Congress of Industrial Organizations (CIO) and then became associate director for the National Defense Advisory Commission (NDAC) and later the Office of Production Management (OPM)—also addressed the conference. Seemingly resigned to the conflict ahead, Hillman asked the NICB to consider the case for collective bargaining, ensure a “fair standard of living,” expand employment rather than increase the work week, provide good working conditions, and eliminate discrimination against workers in their industries. Judging from Hillman’s insights during his tenure in government service, he understood better than most the enormous effort required to win the war. Pleading for business, labor, and government cooperation, he advised, “We cannot have too much plant—we cannot have too many trained workers—for the task which we confront.” The number of workers trained under the Defense Education Act by May of 1941 approached one million. In his concern for industrial relations after the war, Hillman noted that, “It is only through cooperation in this defense program that we can build solidly for the future on the foundation of justice and freedom, which alone can fulfill the promise of American life and be the final answer to dictatorship.”

Floyd Reeves, who continued to direct Labor Supply and Training when NDAC became the Office of Production Management (OPM), oversaw the coordination of locating and training workers through seven public agencies. Noting the progress of defense training at a meeting of the National University Extension Association, Reeves stressed the importance of non-traditional learning afforded by adult and continuing education. The National University Extension Association (NUEA), he said, could help upgrade professionals, teachers,

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59 National Industrial Conference Board, *National Defense and Economic Reconstruction* (New York: National Industrial Conference Board, Inc., 1941), citing Hillman, p. 29. This pamphlet includes addresses at the Board’s Twenty-Fifth Meeting held in May 1941 presented by Virgil Jordan, president of the NICB; Col. William J. Donovan, who headed the Office of Strategic Services during the war; Sidney Hillman, Associate Director of the Office of Production Management and president of the Congress of Industrial Organizations; and Philip D. Reed, Chairman of the Board, General Electric Company.
engineers, and scientists, and provide up-to-date information to strengthen democracy and national morale through its extension and correspondence schools. In this “crucial hour,” Reeves concluded, “The greatest educational need today is for adult education.”

Other agencies publicized the need for additional training in defense industries. The Bureau of Labor Statistics recognized the need for skilled and semi-skilled labor to produce aircraft, ships, and armaments and attempted to estimate manpower needs for various industries. For example, the Bureau estimated a need for over 2 million workers at construction sites and over 4.4 million for the production, manufacture, administration, and transportation of war materials. Specifically, the Bureau estimated that in January 1941 the aircraft industry required over 200,000 workers, more than twice the number employed by the industry in 1939, for plants fabricating air frames, engines, and propellers, and for assembly sites. By August 1941, over 455,000 would have to be employed to meet military and foreign contracts on time. An additional 100,000 workers had to be trained to supply non-military aircraft. Like the aircraft industry, shipbuilding required additional skilled and semi-skilled workers. While shipbuilders already employed over 125,000 workers in November 1940, the BLS estimated a tripling in the size of the shipbuilding labor force. Of nearly 225,000 required to man private shipyards, over 46 percent of all employees had to be skilled and 23 percent semi-skilled. Skilled workers most in demand included machinists, electricians, sheet metal workers, and welders.

The Training-Within-Industry Program

Meanwhile, new training programs, ones that required the close cooperation of government, industry, labor, and educational institutions, evolved to meet wartime production demands. One of the most innovative programs developed during the war grew out of the

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60 Floyd Reeves, Director of Labor Supply and Training, Office of Production Management, “University Extension and Total Defense,” Proceedings of the National University Extension Association at Oklahoma City, Oklahoma, May 5-7, 1941, 24 (Bloomington, IN: Feltus Printing Company, Inc., 1941): 129-137. The seven agencies coordinating with the Division of Labor Supply and Training included the U.S. Civil Service Commission, which recruited civilians for military facilities, arsenals, and shipyards; the USES, which cooperated with state agencies to procure and screen workers, direct them to appropriate training programs, and place them in jobs; the Office of Education oversaw the distribution of funds for defense vocational training; the WPA proffered preemployment and supplementary training; the Federal Committee on Apprenticeship Training offered appropriations for apprentices through state and local vocational schools; NYA students worked part-time, especially in defense occupations that included mechanical, metal, radio, electrical, and construction work; and the Labor Division oversaw the Training-Within-Industry program.

professional training and workforce education experiments during the First World War and subsequent decades. The Training-Within-Industry program (TWI) influenced a large body of wartime training and established precedents for training in the postwar world.62 The TWI program focused on training managers and instructors, a crucial aspect of war production and mobilization. As head of NDAC’s Labor Division, Sidney Hillman in July 1940 appointed a twelve-member advisory committee on Training-Within-Industry, comprised of six members from organized labor and six from large industries (including two from aircraft companies). The TWI later fell under the authority of the Office of Production Management (OPM), the War Production Board (WPB), and finally the War Manpower Commission (WMC). TWI consulted with contractors to help train managers and instructors for war production industries; it established methods and objectives for training and offered guidance to plant managers and foremen. The advisory committee decentralized the program into twenty-two districts overseen by local management and labor representatives. Channing Rice Dooley—the Personnel Director of the Socony Vacuum Oil Company of Cleveland, Ohio, and one of the key administrators who oversaw the U.S. Army Training Detachments for the War Department in 1918—accepted an appointment by Hillman in 1940 to supervise training for NDAC. Dooley, aided by his longtime colleague J. Walter Dietz, consulted with the advisory commission in August 1940 and helped organize the TWI Program. The TWI issued bulletins and advised firms regarding in-plant training programs that served to upgrade personnel according to their talents, instruct production specialists, train skilled mechanics through apprenticeships guided by federal standards, and develop supervisors by utilizing modern foremanship and management techniques. Bulletins offered detailed advice to contractors about how to implement training programs, how to convince middle managers of the efficacy of training, how to select and coach instructors and supervisors, and other useful suggestions for training personnel.63


63 First, Industry and Labor Advisory Committees in the National Defense Advisory Commission and The Office of Production Management, pp. 21-22, and 60-61; The Training Within Industry Program [italics mine]. Also see War Manpower Commission, Bureau of Training, Training Within Industry Materials [Bulletins Issued by the TWI] (Washington, DC: War Manpower Commission, 1945); and selections from Dodd and Rice, eds., How to Train Workers for War
Dooley and Dietz experimented with various training techniques in a lens grinding study reminiscent of Frederick Taylor, whose classic metal cutting experiments helped establish his reputation as an “efficiency” guru.\(^{64}\) TWI associates generally interacted directly with top executives and managers to help analyze needs, plan training programs, and groom supervisors. In addition the TWI furnished methods with which to evaluate programs and utilize the successes and failures of other firms. TWI trainers, recruited from the ranks of professional managers and union representatives in established industries, conducted intensive training programs for supervisory personnel on a purely voluntary basis—volunteered by their employers, that is, because the instructors remained on the payroll of their respective firms. Congress in October 1940 appropriated additional funds to expand preemployment refresher courses, augment intensive engineering courses, train out-of-school youth, and train youth at work on NYA projects. By mid-June 1941, TWI had already advised 892 firms employing 1.5 million workers.\(^{65}\)

Those involved in TWI also helped establish other federally-guided, in-plant assistance such as the Job Instructor Training (JIT) and Job Relations Training (JRT) programs. In 1942 the JIT trained 325,000 foremen and “straw bosses” at the rate of nearly 10,000 per week, totaling 410,000 by early 1944. The JRT trained nearly 190,000 who

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\(^{64}\) The Training Within Industry Report, 1940-1945, Appendix, pp. 269-292 for the lens grinding study; for Taylor’s classic study, see Frederick Taylor, “On the Art of Cutting Metals,” Transactions of the American Society of Mechanical Engineers 28 (1907).

learned how to promote group efforts toward production goals. After three and-a-half years, TWI assisted over 12,000 plants by training over 800,000 supervisors. TWI also advised the armed services and government offices using Charles Allen’s experience from World War I, explained in his tome, *The Instructor, The Man, and the Job*. Another colleague of Dooley, Clifton Cox, developed Job Methods Training (JMT) as a way to efficiently utilize scarce manpower and resources. The JMT attempted to simplify and improve job methods; it functioned to “produce greater quantities of quality products in less time by making the best use of the manpower, machines, and materials now available.” Many of these methods employed knowledge derived from World War I production such as dilution or “job breakdown” at key points. They questioned every detail of production, and developed new methods by eliminating, combining, rearranging, simplifying, and applying successful training methods that increased efficiency and productivity.66

Critics identified a number of shortcomings with TWI, however. For example, they noted that TWI overemphasized on-the-job programs that allowed too little time to instruct workers properly. The program stringently adhered to training manuals, gave little feedback, and certified large numbers of trainees as an end in itself. But the war effort created “unprecedented demands” while accomplishing a great deal. The WMC reported that the TWI trained 355,000 foremen in 1942 alone. When the TWI dissolved in September 1945, the agency had trained over 887,000 persons in over 16,500 plants.67

**Apprenticeships**

In addition to training managers and instructors, defense training included apprenticeship training for critical occupations likely to require skilled operatives after the war. The Defense Education Act funded the training of apprentices while the Federal

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Committee on Apprenticeship explored ways to train apprentices quickly for specific jobs. The Committee recommended that apprentices continue the usual course of study where feasible, that programs respond to the manpower requirements of plants where apprentices trained, that business and labor together construct programs to prepare apprentices quickly and efficiently, and that apprentices graduate upon demonstrating sufficient competence. Moreover, the Federal Committee encouraged plants to train employees least likely to be called into military service—the disabled, discharged veterans, older workers, and women—and establish apprenticeship programs for 16- and 17-year old boys while the latter attended high school. Interestingly, older workers who entered apprentice programs performed “about as well” as younger workers, but they generally received a higher wage because of their experience.68

Because apprenticeship programs had stagnated for so long, many firms lacked the facilities or the knowledge with which to construct adequate apprenticeship programs. Therefore, the Department of Labor provided field staff to help defense industries establish apprentice training, helped upgrade programs in others, and gathered information for refresher courses from vocational schools and from public and private agencies. Six months after implementation of the Defense Education Act, William Patterson, who headed the Department of Labor’s Apprentice program, reported that 825 apprentice programs operated in 36 states. After receiving preliminary training in the WPA, NYA, or the CCC, some workers qualified for apprentice programs within plants in order to “maximize” their abilities. The Apprenticeship Unit of the Labor Department also worked with the TWI, especially in the shipbuilding and aircraft industries.69

Later the War Manpower Commission, through the Training-Within-Industry Bulletins, issued guidelines for apprentice training. The Federal Committee on Apprenticeship made a number of recommendations that included maintaining peacetime standards while training apprentices rapidly, shortening the learning period by increasing supervision and regular testing, and for plants having more advanced apprentices than needed,


transfer them to plants with a critical need for their skills. The TWI also helped offered expertise with apprentice training by advising firms how to properly select candidates and maximize the training experience. In addition, the TWI recommended that smaller plants with fewer resources join together with other small firms to share resources and the costs of instruction, and to provide apprentices with a broader training experience.\textsuperscript{70}

**Vocational Education**

Just as experienced professionals from the private sector applied training techniques that had evolved since the First World War, vocational educators prepared to meet renewed demands for training. The vocational education system in Florida offered an interesting example. Anticipating an eventual end to the Depression and a concomitant demand for skilled workers thereafter, Florida educators had the foresight to prepare for training before the war began. Although the economy of Florida had been mistakenly viewed as dependent upon tourism, Florida also possessed significant extraction and manufacturing industries such as lumber, box and paper milling, tung oil production, limestone quarrying, phosphate and kaolin mining, cement manufacturing, and construction for tourist hotels, apartments, houses, and restaurants. With Florida’s proximity to Latin America, the state’s commercial aviation, shipbuilding, and shipping industries stood poised to expand operations overseas. As a result of defense training, vocational educators accelerated their training curricula. The state purchased and renovated the unfinished Hotel Roosevelt in Miami, converting it to a modern trade school in the spring of 1941. The cities of Jacksonville, Pensacola, West Palm Beach, and Tallahassee followed suit and constructed vocational schools with programs for training workers in the aircraft industry. The existing vocational schools, closed for the summer, reopened shortly after the signing of the Defense Training Act in 1940 to initiate refresher courses for those with existing skills. When schools opened in September, vocational classes operated around the clock: regular high school classes functioned during the day, trade extension classes in the evening, and defense training during the night. Nearly 900 men, mostly recruited from WPA rolls, enrolled for pre-employment refresher courses. By the spring of 1941 over 1,500 men attended classes to upgrade their skills or to retrain in related occupations, some crossing over from auto mechanics to airplane mechanics. Many 40 to 55 year old men enjoyed a “second chance” at decent employment, one observer noted. While

the military trained its own personnel in military schools, soldiers and sailors sometimes enrolled in civilian schools hoping to acquire more desirable military occupations or preparing for civilian life. The naval air station at Jacksonville, Florida, for example, allowed 3,000 enlisted men to attend vocational schools. Federal money for training and defense projects augured favorably for Florida workers and manufacturers after the war.⁷¹

**Training on the Eve of Pearl Harbor: Problems and Accomplishments**

By January 1941, defense training had yet to reach target objectives. Four federal agencies initially formed the core of defense vocational training: the Work Projects Administration, the National Youth Administration, the Office of Education, and the United States Employment Service (USES). The latter agency, according to a report by H.J. McCormack, Director of the WPA Division of Training and Reemployment, had “shown definite deficiencies.” In his report, McCormack outlined a number of problems. First, three primary agencies—WPA, USES, and the Office of Education—lacked coordination. Second, one had to take responsibility to follow-up trainees, register them with employment offices, and assist them with finding jobs. Third, McCormack acknowledged the need for cooperation between state and regional WPA representatives to take the initiative in placing graduates in defense plants, to confer with other agencies about employment needs, and to avoid “mixing together” WPA and USES trainees. In addition, McCormack complained of “overcrowded classes” but, on a positive note, he observed high levels of motivation and discipline on the part of WPA trainees. State Employment Service (SES) trainees, on the other hand, were young, had little job experience, and exhibited less motivation and discipline than their older counterparts in the WPA. Thus McCormack preferred separate classes for the WPA and SES trainees, because state agencies had rushed classes “without proper facilities, equipment, and planning.” Furthermore, he charged that the Office of Education had neglected to inspect facilities in some cases, and that state employment agencies had passively waited for

employers to contact them. In addition state agencies had rebuked WPA administrators for sending job seekers across state lines, even though employers desperate for workers often sought out trainees from other states.  

In addition to McCormack’s criticisms, another report in January 1941 noted some “factors retarding expansion” of training. The anonymous report cited “a dearth of information” on the kinds of skills needed by industry, because state agencies and advisory committees had made little information available about state and local needs. A lack of equipment in training schools also delayed training. Furthermore, some regions lacked qualified applicants or lacked the means of transporting potential trainees from outlying areas. The WPA eventually arranged to transport trainees to training sites. Finally, some training programs experienced a shortage of trainees, struggled to keep supervisory personnel—because qualified trainers took lucrative positions in private industry—or lacked sufficient facilities or equipment.

American manpower experts learned that production bottlenecks in England stemmed from the lack of skilled workers. With cooperation between public schools and manufacturers, American schools and industries helped overcome the lack of trained personnel with intensive training programs. While the National Defense Training Act had produced over a million trainees by the end of June 1941, demand for labor did not slow.

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73 “Factors Retarding Expansion of Training Program,” NARA, RG-69, WPA Training and Reemployment, Box 64, file 3, 045 AAAA (January-October 1941).


L.S. Hawkins, Chief of Trade and Industrial Service in the U.S. Office of Education, urged the expansion of defense training in June 1941 by various means. He deemed training for specific occupations in critical industries a priority, especially in newly established occupations in aircraft manufacturing. While the U.S. Office of Education administered vocational courses, Hawkins did not lose sight of the need to continue apprenticeships and vocational education in order to ensure “highly skilled craftsmen” in the future. Defense training “would be an extension of, rather than substitute for, the regular federal-state program of vocational education,” he remarked. State and federal cooperation continued, although states submitted training plans for federal approval in order to receive grants.\(^{76}\)

By December 1941, Fred Rauch, Assistant WPA administrator, drafted a summary of vocational training progress after the reorganization in July 1941 of his Division of Training into the Division of Training and Reemployment. The revamped agency divided WPA training into three programs: vocational training; the airport service training program—which had trained 600 men at 77 airports in 37 states for an entirely new occupation—and in-plant training, another innovative program begun by WPA in cooperation with the private sector. The WPA placed workers in nearly a hundred cities scattered among twenty-eight states. Those having prior work experience or demonstrating aptitude qualified for additional on-the-job training for skilled or semi-skilled jobs in defense-related industries. The WPA paid workers the usual WPA allowance while they trained (about 160 hours for every four weeks). Once the trainee demonstrated minimum competence, the employer hired him or her at rates established by the Walsh-Healey and Fair Labor Standards Acts, both established during the 1930s, which applied to all industries accepting federal contracts. Raush explained that the program directly benefited the defense program by cooperating with the USES and state employment agencies, and by showing a 95 percent placement record. The program acted as a screener for industry and the usual training period lasted only two-and-a-half weeks, when most trainees achieved minimum competence.\(^{77}\)


African Americans, many of whom had little access to vocational education and job training prior to 1940, secured access to new sources of training when in July 1941 the WPA expanded the Division of Training and Reemployment. The division endeavored to move WPA workers into the private sector through vocational training, job retraining, and upgrading skills. Over 34,000 workers trained for defense jobs that July and 100,000 had been enrolled since the summer of 1940; nearly two-thirds of the 66,000 who left training programs over that period had taken industrial jobs. Rauch explained that the WPA channeled thousands of workers into defense industries. The WPA spent over $74 million on vocational training (including $12 million from the sponsors’ portion) by the end of its tenure, and it reported that placements during the existence of the program remained high. While black Americans had faced discrimination in training during the early years of the war, the New York Workers’ Alliance of America complained of discrimination by the WPA against foreign-born workers.

In the Chicago area, for example, the WPA trained over 2,000 trainees per month from February to August, 1941. Black participation there increased from 39 percent to 65 percent (of 2,800 trainees) during that time. By June 1941, nearly 30 percent of all single, Chicago WPA workers, male and female, were African American. In September 1941, African Americans comprised 43 percent of WPA enrollees in Chicago and 67 percent of those awaiting assignment. However, the WPA and the Employment Service could place only 30 percent of black trainees in jobs. Even though many blacks could not be placed, despite the

“Vocational Training Program,” and the draft in Box 1, “Nationwide”; Final Report of the WPA, p. 99, for the date of the division’s reorganization.

78 Federal Works Agency, Works Projects Administration, press release (12 June 1941), NARA, RG-69, Division of Information, Box 1, file “Alabama-Michigan.”

79 Fred R. Rauch, draft of “Training for Defense Industry,” (c. 20 October 1941), NARA, RG-69, Division of Information, Box 1, file “nationwide”; and see his letter to William Green, President of the American Federation of Labor (13 September 1941), ibid., file 7, “A-Z”; Final Report on the WPA, p. 92, and for costs, see Table X, p. 122.

80 Sam Wiseman, President of the Workers’ Alliance of America to Howard O. Hunter, Federal WPA Administrator (23 October 1941), NARA, RG-69, Division of Information, Box 65, file #4.

81 C.B. Brewster, field investigator for WPA, to Bruce Uthus, Assistant Director, Division of Training, “Investigation of Vocational Training in Chicago, Illinois,” (16 September 1941), NARA, RG-69, Box 1, file 2, “C.B. Brewster Reports.”
large number trained, Sidney Hillman told Earl Clark, Director of the Division of Employment in Chicago, “to continue to train negroes as there would be jobs for them later on.” In 1941 between 3,000 and 4,800 black Americans enrolled in WPA defense vocational training programs, accounting for about 11 to 14 percent of all trainees during the year. By the end of 1942, African Americans leaving WPA vocational education training found jobs in public and private employment in record numbers. Like many trainees, some abandoned training to take actual jobs before the end of their training cycle: nearly 29 percent in January 1941 did so, and that percentage increased to 72 percent in October, tallying 5,745 persons. The numbers of black Americans trained and placed in jobs indicated the motivation of individuals and the requirements of industries that helped erode racial barriers, however briefly.

Conclusion

Within the first 18 months of the Vocational Training for Defense Workers Program, nearly 4 million Americans enrolled in preemployment and supplementary training in a cooperative effort between the WPA, the NYA, the USES, and the U.S. Office of Education. The federal government spent nearly $207 million for training during that time and authorized additional funds thereafter. According to a follow up survey, 93 percent of trainees sampled eventually utilized their skills in industry or the military. Once they achieved minimal proficiency, most found jobs after directly contacting employers (usually those with whom they trained), or through vocational schools and the USES. About one-fourth migrated to industrial areas experiencing high labor demand, although women and blacks tended to remain less mobile. Coordinated training between the federal government and the private sector set


83 “Memorandum,” M. Justin Herman to John J. McDonough and Bruce Uthus (31 December 1941), NARA, RG-69, Division of Training and Reemployment, Box 4, “Statistical Reports, Re: Project, Employment, September 1942 to February 1943,” file “Inter-Office.”

84 African Americans constituted an important “reservoir” of labor; see Corson, Manpower for Victory, pp. 115-116; and “Our Reservoirs of Labor,” Employment Security Review 8 (August 1941): 12-15. For labor force participation by race and sex in 1944 and 1945, see “Nonwhite” participation in the labor force increased rapidly after June 1944, then declined after August 1945; see War Manpower Commission, Reports and Analysis Services, The Labor Market (December 1945): pp. 58-60, Table: “Nonagricultural placements by sex and color, by major occupational group, by month 1944-1945,” especially the sections labeled “Total,” “Manufacturing,” “Clerical and sales,” and “Government.”
precedents for public guidance in matching labor market skills to private sector production needs.85

About the same time the Japanese attacked Pearl Harbor in December 1941, thirty percent of WPA projects were defense-related and one out of three WPA workers labored on defense projects. In cooperation with the Advisory Commission to the Council of National Defense and the United States Office of Education, the WPA Division of Employment established vocational education and apprenticeship programs. WPA trainees prepared for employment in aircraft construction, shipbuilding, radio and electronics repair, and armament production.86

Between the Spring and Autumn of 1941, defense production accelerated. By the end of the year most industries offered extra shifts, extended the work week, and continued to hire workers trained on-the-job and in vocational schools funded by the federal government. Yet shortages of skilled workers remained despite the efforts of nearly 2.5 million Americans who had already enrolled in courses among 1,200 vocational and trade schools, 10,000 public schools, and 155 colleges and universities, all preparing for jobs in defense industries. About 800,000 workers received supplementary training and nearly 700,000 preemployment training under the Defense Vocational Education Act passed the previous year. In addition 2 million people received in-plant training from the private sector. Not all found jobs immediately and some jobs proved to be temporary when factories retooled for war production. During most of 1941, according to the Bureau of Employment Security, a survey of 79,600 workers demonstrated that 87 percent obtained jobs for which they trained. Other surveys illustrated that skilled and semi-skilled workers, over 94 percent, utilized their training; clerical and unskilled workers had more difficulty finding employment, and only five percent of service workers found jobs. Even short-term training courses began to meet industry demands for labor by June 1941. Given the eventual full employment economy, when the unemployment

85 Preemployment Trainees and War Production, pp. vii, 2-4. “Vocational Training for Defense Workers” eventually became “Vocational Training for War Production” under the War Manpower Commission, pp. 2-3, 8-10.

rate fell below 2 percent in 1943, some form of training likely proved beneficial to both workers and employers.87

Once the United States entered the war, training opportunities arose for additional millions of Americans, especially for marginal and marginalized workers. The increased demand for manpower and womanpower placed a tremendous strain upon government officials balancing the demand for workers and soldiers. The ensuing “manpower crisis,” and how government officials met training needs over the next couple of years is the subject of Chapter Nine.

MAKING MORE WORKERS:
THE MANPOWER CRISIS, 1942 to 1945

“Now that this country is actually at war it is more than ever necessary that we utilize to the fullest possible extent all of the manpower and womanpower of this country to increase our production of war materials. . . .”
-- Franklin Delano Roosevelt, December 19, 1941

“. . . important to this war effort is knowing how to train; for if manpower will win this war, then the creation of effective manpower is second to no other task involved in reaching our objective.”
-- Channing R. Dooley and Walter Dietz, 1942

“. . . we women have been working for years for recognition of our ability to do equal jobs with men. Now that we are in a war, why should we not make the sacrifice to equal what the men are doing . . .?”
-- Doris Corwith, former president of the American Legion Auxiliary, in testimony before the Senate and House of Representatives Committees on Military Affairs, 1943

In May 1942, the Public Affairs Committee, a non-profit organization concerned with social and economic issues, published *The Coming Crisis in Manpower*. Written by Maxwell S. Stewart, the pamphlet succinctly outlined the crying need for manpower that would soon emerge after the United States entered World War II. While millions of Americans had been unemployed just a couple of years before, the nation soon faced a critical manpower shortage. Training programs begun in 1940 accelerated after the Japanese bombing of Pearl Harbor.

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Two weeks after the attack, FDR affirmed to the nation that, “Now that this country is actually at war it is more than ever necessary that we utilize to the fullest possible extent all of the manpower and womanpower of this country to increase our production of war materials.”

This chapter continues the narrative of investment in human capital under the duress of wartime, and seeks to answer the following questions: how did the United States government balance the need for workers in industry with the demands for fighting men on a two front war? How effective were mass job training programs and who benefited from manpower training? The chapter also examines specifically three topics: First, previously unemployed and marginalized Americans—especially those who had little opportunity to learn a skill before the war—took advantage of the massive training programs underway in order to acquire skills for employment. Training programs within the Works Progress Administration and the kinds of workers engaged in work relief projects poignantly demonstrate the unemployable members of the workforce. Because the role of women during the war has been well-documented, the treatment here of women during the war will seem deficient, but their importance in supplementing industrial manpower should become obvious. Second, the chapter describes the use of “manning tables” constructed by manpower agencies and private industries to calculate national and local manpower needs. Finally, fighting a two-front war while producing military hardware, food, and other goods for America and its allies required the efficient utilization of human resources. Political leaders considered various strategies to mobilize the nation: should they conscript men and women, as the allies had done, or continue to rely upon voluntary labor?

In his pamphlet mentioned above, Stewart presciently analyzed manpower needs and anticipated a number of strategies that government officials implemented over the next few years. Federal manpower agencies planned to employ and train nearly every available man and woman, able-bodied or not, from every race and ethnic group, and from every region of the country. To use manpower efficiently, individual Americans shifted from non-essential, consumer production to critical war production by increasing their hours of work, learning a

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skill, and perhaps moving to another part of the country. While manpower flowed from farms to factories, the agricultural sector still required millions of hands for farming as well as skilled and semi-skilled persons for transporting food and fiber and maintaining farm machinery. Consequently, nearly a million women engaged in farm work in the Women’s Land Army as they had during the First World War. The Rural War Production Training Program established programs for training mechanics and the construction of farm repair shops by the National Youth Administration (NYA). For millions of Americans, opportunities for training and work arose nearly everywhere during the war.\(^3\)

**Labor Goes to War**

Once war broke out in Europe, both the American Federation of Labor (AFL) and the Congress of Industrial Organizations (CIO) pledged cooperation for national defense and support for America’s defense industries. Supplying sufficient manpower, however, called for massive training, especially for the ten million Americans still unemployed in 1940. As AFL president William Green editorialized in June 1940, mobilization necessitated the training or retraining of skilled workers and new entries into the workforce. Unions, in cooperation with the United States Employment Service, offered their expertise in locating skilled workers and “in working out training or retraining programs necessary to supply emergency numbers of workers for defense production.” At the same time, union leaders sought to maintain or improve workplace “standards and safeguards.” Labor shortages existed in highly skilled occupations such as toolmakers and machinists, and officials had to balance the number of men required for military service with an adequate labor supply on the home front.\(^4\)

Supporters outside the labor movement agreed with union leaders. Observers from the Labor Committee of the Twentieth Century Fund undertook a manpower survey during the late summer of 1940. Led by Lloyd Reynolds of Johns Hopkins University, the researchers


tended to underestimate manpower requirements, but they listed a number of workplace issues that required attention. They foresaw the dangers of compromising recent labor legislation and standards made during the 1930s that affected workplace conditions; they examined worker mobility, the standards of living, the dilution of trades, and workplace issues over grievance procedures and disputes, collective bargaining, seniority, wages, hours, and overtime. The committee also looked into the methods of training required for the anticipated growth in the labor force. Skilled labor, the committee determined, would shift from non-essential to important war producing industries. Labor demand would become so great, advised the report, that unemployment would cease by the end of 1942. Workers on the margins or outside the labor market would fill the heightened demand for workers. These included women, agricultural workers, minorities, youth, and the disabled. Expanded production likely would require overtime and a longer work week. Training highly skilled workers would take too long and thus hold up production. Therefore, a concerted effort between labor, industry, and government had to transfer skilled labor to critical industries and quickly train semi-skilled workers, especially machinists and workers in the metal trades.

The assessment of Reynolds and his colleagues proved accurate. Even as the pool of unemployed workers shrank, new jobs arose in the aircraft industry and shipbuilding, especially in semi-skilled occupations (sheet metal workers, riveters, welders, assemblers, machine operators, grinders). These occupations usually required at minimum two or three months training, and about 18 months experience on the job for a worker to become proficient. Industries generally relied upon local labor, but the demand for labor in the aviation and shipbuilding industries on the coasts became acute. Those industries became magnets for workers willing to relocate and undergo training. Most training occurred in plant vestibule schools, where employers preferred vocational education graduates but accepted talented new hires. The Training-Within-Industry service—which studied training methods and helped industries develop programs according to their specific needs—prepared foremen, trainers, and supervisors. The Office of Education supplied funding through the National Defense Education Act for short term vocational courses during the summer of 1940. Within a few months, Congress extended that program for the duration of the war. Often pre-employment

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training, supplementary training, and specialized training for the unemployed and for youth were limited by a local school’s available facilities.6

“The real problem,” Reynolds and his colleagues concluded, “is to prepare the available supply [of labor] to meet these existing shortages and those which may be foreseen.” The public sector could not assume the entire burden of training, however. “Effective training,” the committee wrote, “is far more an industrial than an academic matter.” In addition to training, industry would have to provide attractive wages and working conditions, and allow for the dilution of some skills and the upgrading of others. The federal government would have to offer exemptions from military service, maintain labor standards, and reduce labor disputes through a Federal Mediation Board. The committee proposed cooperative agreements between management and labor in order to avoid labor disputes. Training required the cooperation between government, labor, and industry. That trend, which began during the First World War, continued in some ways within New Deal training programs, local public schools during the interwar years, and now to meet the manpower crisis during the Second World War. New Deal work relief programs helped serve as models.7

**Defense Training for Youth: the CCC, the NYA, and Others**

The Smith-Hughes Vocational Education Act had become instrumental in preparing workers with vocational training during the Great War. Now in 1939, planners who anticipated the possibility of another war surveyed public vocational schools in the United States. Through the Office of Education, Congress allocated funds for preemployment or refresher courses and for the rental or purchase of equipment. The Defense Training program in 1940 allocated $9 million for the Civilian Conservation Corps (CCC) and $7.5 million for the Supplemental Training for Youth program. Nearly 360,000 young adults enrolled in the National Youth Administration (NYA) for the 1941 fiscal year. The earliest core of training evolved from the remaining New Deal work relief programs. These provided some initial vocational and job training just before Pearl Harbor.8

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6 Ibid., pp. 21-31.
7 Reynolds et al., Labor and National Defense, pp. 114-130.
When preparations for national defense began in 1940, a number of CCC camps relocated to military bases where the “forest army” constructed airfields, artillery ranges, training areas, living quarters, and various structures. The Defense Education Act, disbursing funds through the Office of Education, allowed the CCC to support various kinds of vocational training. The CCC hired vocational education teachers in the building trades, sheet metal fabrication, welding, electricity, radio operations, machine shop functions, and other courses that enrolled tens of thousands of young men. Some CCC enrollees attended classes in vocational schools and high schools near the camps, while others underwent military training. The lure of higher pay in defense industries in 1941, however, reduced recruits to the CCC. After December 7, 1941, the CCC directed all projects for military and defense work. About 13,000 former “tree soldiers” joined the armed services. By late 1942, Congress refused to fund the CCC to the detriment of the National Park System.9

Like the CCC, the National Youth Administration accelerated defense training for young Americans. In August 1938, the Assistant Secretary of War, Louis Johnson, asked FDR to allow the CCC and NYA to begin training programs for skilled occupations to supplement the lack of formal apprenticeships, especially “skilled work men and airplane mechanics.” The Secretary of War noted a shortage of airplane mechanics and that “foreign governments” had already been training for large-scale aircraft manufacturing. Hopkins later met with Johnson to discuss government aid for training aircraft workers through various public work relief agencies.10

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Between 1935 and 1938, the NYA trained youth to meet local labor needs in industry, the trades, various kinds of service occupations, and other pursuits. After the Munich crisis in 1938, however, the NYA began preparing young workers for defense industries in occupations such as aviation, radio assembly, drafting, and welding. By training for national defense, the NYA altered course from enriching individuals and preparing youth for the work force to meeting the needs of national security. Williams, who once believed the army threatened democratic values, now set out to have the NYA train youth for national defense. In 1939, after the reorganization of government began, Congress controlled the NYA and other relief agencies and placed them under the Federal Security Agency (FSA).11

Because of the lack of training and apprenticeships over the previous six or seven years, the NYA anticipated the need for training workers for industries, machine shops, and the building trades. By the spring of 1940, NYA officials purchased surplus and junk machinery in order to train youth in machine, sheet metal, and foundry techniques, as well as woodworking, electricity, radio, and aviation subjects. In June Sidney Hillman, head of Labor and Training for the Office of Production Management, devised a plan to train youth and the unemployed in the CCC, NYA, and WPA in “basic skills” during the summer months. While already training over 90,000 youth for construction and shop work that year, the NYA prepared to expand training to accommodate some 450,000 young men and women in basic mechanical skills. The NYA operated 2,500 mechanical shops to train NYA youth for defense work in the summer of 1941. The NYA also began clerical and stenographic training, and initiated smaller projects to train hospital aids, nursery school and recreational assistants, and specialists in arts and crafts, photography, ceramics, music, libraries and museums. 12

The NYA employed over 111,000 young women in 1941-42 and, like the WPA, officials often shunted young women and girls into “domestic” work such as sewing, which benefited hospitals (linen supplies and uniforms) and textile industries (especially industrial sewing for wartime textiles, producing uniforms, sleeping bags, tents, and parachutes). Some males, including black males, trained with girls in locations having a cluster of garment


industries. From 1937 to 1942, the project produced over 11 million garments, 30 million hospital related supplies, 144,000 flags, and 4.6 million household articles. As war production demanded additional workers for industry, the number of women trainees increased. In 1941 over 105,000 women left NYA training for employment in various kinds of manufacturing; over 8,760 found work in the textile industry. The following year, over 121,500 left NYA for the private sector, with nearly 12,000 women filling jobs producing textile products. Another 1,000 women joined the iron and steel industry, 1,400 entered the electrical machinery and equipment industry, and over 2,300 filled jobs in the aircraft and aviation parts industries. In 1943, 10,600 women left the NYA program to fill positions in factories producing aircraft engines and airframes, 4,650 undertook shipbuilding work, over 3,000 entered ordnance plants, and nearly 3,400 began working in foundries, machine shops, and steel processing plants. After the attack on Pearl Harbor, millions of women trained for industrial jobs through federal Vocational Education for War Worker programs and various plant training programs. The NYA had become a proving ground for the abilities of women and youth.13

One program consisted of general preemployment training that included 236,000 young men and 350,000 young women at a cost of nearly $86 million. Another program designed specifically for defense training included 298,000 men and 82,000 women, costing nearly $57 million. During the NYA’s final fiscal year, 1942-43, Congress allocated over $49 million for training 75,000 unemployed youth a month; women comprised 42 percent of those trainees.14 When the NYA first established shop training in 1938, girls showed little interest in factory work and private employment for girls in manufacturing barely existed. Few union locals accepted NYA applicants. When the War Manpower Commission called for semi-skilled occupations, the NYA prepared workers for jobs in welding, sheet metal fabrication, foundry and machine shop techniques, radio and electrical technology, auto mechanics, woodworking, and industrial sewing. Training time varied from 2 to 6 months for most occupations (welders, radio assemblers, and wire winders) and from 6 to 12 months for aircraft assemblers and lathe operators. Women became eligible to work as welders, drill press operators, and technicians in various kinds of radio and electronics assembly work.

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13 Final Report of the National Youth Administration, pp. 93, 111, 143-146, and 234, and see pp. 258-262, Tables 18-23, for female participation, and for the accomplishments of the NYA, see the Tables on pp. 139-142; Lorwin, Youth Work Programs, p. 169, Table XVI.

14 Ibid., pp. 109-111.
Among all trainees under the Defense Education Act, women generally exhibited more schooling than men and they comprised about one-third of trainees by 1942. In the Chicago school system, the industrial-arts classes enrolled only 15 girls in 1939. In 1943, 25,000 girls had enrolled. Educators believed that girls would be attracted to vocational subjects after the war.15

Training opportunities for black Americans improved after conscription pulled workers from defense work in 1940 and 1941, but they often found themselves at the end of employment lines or stuck in work relief jobs. In many instances, trainees for defense work never finished their courses; demand became so acute that employers hired trainees after only a few weeks, and then continued to train them for specific occupations on-the-job.16

The National Youth Administration Appropriation Act of 1942 prepared some 368,000 out-of-school youth for defense employment, especially in aviation, shipbuilding, and machine tool industries. Some training shops incorporated living quarters or camps, where students lived as well as worked with costs for subsistence deducted from their pay. The NYA required young employees, ages 17 to 24, to register with state employment agencies; the candidate had to be jobless and have need of work, and agree to accept private employment when offered it. In addition, the NYA placed some restrictions on members similar to those imposed on WPA workers after 1939. NYA enrollees, for example, had to be citizens of the United States, swear a loyalty oath, and refrain from membership in organizations advocating the “overthrow of the Government by force or violence.”17

Some NYA youth trained in Army and Navy factories in 1939 and 1940 to gain experience in welding, sheet metal fabrication, or in radio and electronics work. By 1942, 35 aircraft mechanic and engine mechanic shops served as training centers. After passing civil service examinations, mechanics helpers earned $110 a month. Similar programs arose in


Dayton, Ohio, and later in California, Texas (where girls also found employment), and Minnesota. The Secretary of Labor allowed girls 16 and 17 to work for industries having government contracts, but girls under 16 could not work more than 8 hours a day or between the hours of 10 p.m. and 6 a.m., nor in ways that violated state or federal labor laws.

An additional 2.8 million teens, aged 14 to 19 years old, entered the workforce in April 1944. While not included among the New Deal training programs, teen workers comprised three groups. The first group, nearly half (1.1 million) worked part-time jobs but remained in school. A second group, another million, included about half who left school early to work and half who entered the armed forces. A third group, about 700,000 who would have left school under any circumstances, took a job in farming or in industry. Many of the latter included young women, newly married or single, who otherwise would have remained at home.

Professional educators supported the effort to prepare youth for military and defense training. The Education Gospel now focused on education as a central component of winning the war with informed citizens able to contribute to the war effort. The military required skilled servicemen and servicewomen to maintain armor, airplanes, ships, and communications. John J. Metz, editor of *Industrial Arts and Vocational Education Magazine*, echoed in March 1941 the ideas of Lt. Col. Verne Fryklund, the author and vocational educator now on active duty in the Army. Fryklund urged preinduction training for older high school students, training that provided a “sound knowledge of science and mathematics” in addition to specialized knowledge about electricity, auto mechanics, and first aid. Moreover, American youth required a broader understanding of the reasons for fighting the war. Knowledge of America’s strategies and goals in addition to the rudiments of military organization became the responsibility of all schools and teachers. In December 1943, a professor of Vocational Education at the University of Michigan reiterated the call for preinduction training. Younger men undergoing draft evaluation often revealed a general lack of

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experience and skill displayed by older men who had joined or been drafted early in the war. The U.S. Office of Education, in cooperation with the Army, prepared bulletins for distribution in schools that introduced subjects covering two basic types of pre-induction training. The first included subjects common to all branches of service: the background and issues of the war, military life and organization, the process of induction and assignment, physical fitness and health, basic reading and language skills, and simple mathematics. The second type included specialized training that prepared a soldier or sailor for various trades and skills. Evening or part-time schools offered pre-induction training for men out of school or at work who wished to prepare for military occupations. The federal government provided no funds for such training, although state vocational education departments had the authority to use funds allotted by the Smith-Hughes Act or the George-Deen Act. Acquiring a specific skill, however, did not guarantee one’s assignment to a particular job in the military which, more often than not, made assignments according to the needs of the service. While many servicemen lost their civilian skills during the war or rechanneled their interests to other endeavors, 13.7 percent of all soldiers discharged in 1945 had been trained in skilled occupations equivalent to members of the civilian workforce, according to the Selective Service. Nine percent held occupations equivalent to professional and managerial personnel, although over six percent of the latter held similar positions before their military service.21

Educators saw the High School “Victory Corps” as a way to prepare youth either for the workforce or for military service. Once Congress lowered the draft age to 18 in 1942, the induction of eighteen year-olds became imminent. Selective Service medical screeners testified to the poor physical quality of potential recruits, many of whom suffered the effects of malnutrition during the Depression. Army and navy officers believed high school students

needed physical conditioning. Preparation in the high schools would later save time and money for training. Academic preparedness also became important, especially for technical fields. Some occupations in the Army Air Corps, for example, required knowledge of physics and mathematics, electricity, mechanics, military drill, physical conditioning, and esprit de corps. Girls entering the workforce would also benefit. The financial burden for high school training, however, fell upon local school districts. While critics conjured up images of regimentation and Hitler Youth, interest in military preparation on the part of students waned by 1944. In addition, federal and state governments relaxed child labor laws so that many youth interested in earning high dollars took jobs in war plants. In fact, educators came to decry the declining enrollment, regimentation, and potential harm to those who failed to return to school.

Vocational educators believed they had an important role in preparing and guiding students for the war effort with pre-induction training. J.J. Metz offered two reasons to support preemployment and military training in the high schools. First, it allowed students the opportunity to participate in the war effort and prepared them for wartime service or employment after graduation. Training also promoted citizenship, made youth physically fit, and prepared them for technical occupations through math and science courses related to technical occupations. The High School Victory Corps program proposed in 1943 offered vocational or technical training, college preparation courses, and preinduction training. According to the Commissioner of Education, John Studebaker, about 80 percent of 16 to 18 year-old males would likely be inducted into military service after graduation.

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State public schools widely accepted the Victory Corps program and students in general felt they were part of the war effort. As in World War I, the program supplied insignias and uniforms and included participation by girls. Curiously, given the purported impact of “Rosie the Riveter,” girls rejected “boy” jobs or junior ROTC training. Females occasionally became “honorary members” of such groups, however. Girls joined the Girl Scouts and volunteered for local civilian defense and local Red Cross agencies. High School students purchased bonds, worked part-time, and participated in scrap drives to aid the war effort. A sample taken by the National Education Association in 1942 found that 52.2 percent of high schools adopted the Victory Corps program, and 70 percent participated by July 1943, although mostly in large cities. Some schools, however, resisted “federal regimentation.”

The Victory Program apparently held little attraction for the majority of the nation’s youth. Working high school seniors in preemployment classes numbered 15,800 during the last year of the preemployment program. Even though many schools initiated the program, the Office of Education reported that the Victory Corps enrolled only about 22 percent of eligible students after the first year, and nearly as many girls joined as boys. Congress cancelled appropriations in 1943 and focused on training adults.

WPA Defense Training for Marginal and Marginalized Workers


workers, especially women, youths, older workers, African Americans and other minorities, and the disabled.\(^{28}\)

In addition to the CCC and the NYA, the Works Progress Administration offered opportunities for training after 1940. The WPA increasingly employed marginalized workers and it formed one of the core training programs for those who sought training or retraining. The Select Committee Investigating National Defense Migration in early 1941, for example, opined that the WPA was the “only Federal agency equipped to provide or pay for defense training” for tens of thousands of workers. However, legal restrictions limited the WPA to assisting only unemployed workers certified by local relief agencies, “those unemployed who have been pauperized,” the committee declared. The senate committee further noted that, “local certification discriminates against nonresidents,” and thereby discourages labor mobility. As a result, the Senate Select Committee recommended eliminating the WPA certification requirements.\(^{29}\) Other legal issues plagued federally funded training programs. In addition to restrictions placed upon work relief agencies, mobilization created legal dilemmas stemming from labor laws recently established during the 1930s regarding wages, hours, seniority, and the right to bargain collectively, not to mention federal and state laws governing the hours and working conditions for women and youth. Despite restrictions on employment and training in some cases, opportunities arose for unemployed Americans willing to work.\(^{30}\)

By the end of 1941, thirty percent of WPA projects were defense-related and one out of three WPA workers labored on defense projects. In cooperation with the Advisory Commission to the Council of National Defense (NDAC) and the United States Office of Education, the WPA Division of Employment (later replaced by the Division of Training and

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\(^{29}\) U.S. Congress, House Select Committee Investigating National Defense Migration, 77th Congress, 1st Session, Report Number 1553 (Washington, D.C.: U.S. Government Printing Office, 1941), p. 16. In addition, the committee understood the reasons for deterring labor migration during the early years of the Depression: on one hand, local certification discouraged the fruitless search for jobs; on other hand, preventing mobility kept workers from seeking employment in areas where industries began to recover.

Reemployment) established vocational education programs with schools and apprenticeship programs. Over 330,000 trainees between July 1940 and December 15, 1942, received a “security wage” (a relief wage or stipend) while attending classes in skilled trades, machine shop operations, and mechanical pursuits. These trainees prepared for employment in aircraft construction, armament production, radio and electronics repair, and shipbuilding.31

Those who studied labor trends observed by the middle of 1941 that, “a national labor market with a mobile labor supply” had developed over the previous decades. As a result, these new conditions required a national employment service, one fitted to a “national outlook” that focused on recruiting the reserve of male and female workers, preparing them for work, and placing them in jobs. The U.S. Employment Service (USES) and the WPA maintained that national focus.32 While foreign workers also helped in the war effort—especially in agriculture, food processing, and railroad maintenance—the training available to foreign workers is not undertaken here. Native workers previously marginalized and unable to compete with trained workers comprised the majority of those who benefited from the proliferation of training opportunities. Like Russell Walker and his colleagues, newly minted semi-skilled workers migrated to industrial regions after acquiring a skill from the WPA or other training agency.33


33 Mexican workers contributed to manpower during the war, but there is little evidence that regarding any formal training for skilled or semi-skilled occupations; but see, for example, Robert C. Jones, Mexican War Workers in the United States: The Mexico-United States Manpower Recruiting Program and Its Operation (Washington, DC: Pan American Union, Division of Labor and Social Information, 1945); Erasmo Gamboa, Mexican Labor and World War II: Braceros in the Pacific Northwest, 1942-1947 (Austin, TX: University of Texas Press, 1990). Roger Daniels reported that the U.S. and Mexican Governments contracted for about 200,000 Mexican workers during the war; see his Coming to America: A History of Immigration and Ethnicity in American Life (New York: HarperCollins Publishers, 1990): 310. Jones reported that U.S. firms employed a peak of 68,000 agricultural workers and over 80,000 railroad track workers in 1943 and 1944. California hired the
While the original mission of the WPA meant to preserve the skills of blue-collar and white-collar workers, marginalized workers in need of skills dominated remaining WPA rolls after 1940. Marginalized workers included unemployed women, African Americans, older adult males, and the disabled, groups that often faced workplace discrimination. Even the WPA during the 1930s reflected prevailing prejudices regarding race, sex, and age. Women, for example, remained underrepresented on WPA work relief projects when compared to the numbers of unemployed women in the work force, and they earned lower wages on WPA.\textsuperscript{34} For African Americans, unemployment approached fifty percent in many industrial communities while the percentage of blacks on WPA rolls, at least in the first few years, remained much lower. While the African American press often praised the New Deal for its accomplishments in assisting black Americans, the editorialists of black-owned newspapers pressured the administration for additional projects and assignments for blacks; they complained of favoritism for whites, referred to the WPA as “white people always,” and pointed to abuses in some regions where local WPA officials laid off rural workers so that farmers would have cheap labor during harvests or planting.\textsuperscript{35}

One of the strategies for increasing employment for war work included soaking up every available jobless worker. Because many long-term WPA employees had become discouraged or barred altogether from WPA jobs in 1939, and since most skilled workers began to find employment in defense industries, the demographics of the WPA shifted after 1940. For example, the Indiana WPA administrator remarked that most of those who remained on WPA rolls in late 1942 were unable “to secure employment because they were too old, physically handicapped, or had no training in skills useful to the war effort.”\textsuperscript{36} The state WPA administrator for North Dakota mentioned that one of his major problems was the largest number of Mexican farm workers to replace Japanese agricultural workers relocated from the West Coast. Recruitment ceased in September 1944; see especially pp. 24-28, and 34-39. The WMC recruited Puerto Ricans to work in food processing; see War Manpower Commission, Reports and Analysis Service, \textit{The Labor Market} (June 1944): 3.


\textsuperscript{35} For examples of such abuses at the state and local level, see \textit{WPA State Reports}, Georgia, pp. 5-6; South Carolina, cover letter, p. 2; Colorado, p. 2; Montana, pp. 10-11; North Carolina, pp. 33, 43-44, 86, 95-96; Louisiana, p. 17; and Texas, p. 17.

\textsuperscript{36} \textit{WPA State Reports}: Indiana, p. 53.
“large number of unskilled, middle-aged women.” Between 1936 and the end of 1942, the median age for WPA workers fluctuated, but eventually rose by ten years, from 40 years old in 1936 to 46.4 years in February 1942, and finally topping out at 51.1 years old in October 1942. The South Dakota administrator reported that each study of age revealed an increase “by several years.”\(^{37}\)

After 1940, the growth of defense industries helped reduce mass unemployment caused by the Great Depression when U.S. manufacturers received government contracts or orders from European nations at war. Skilled workers and young adult males rushed from unemployment lines to assembly lines in American factories. Retooling and the conversion to defense production moved slowly, however. By the end of February 1941, WPA researchers noted, only 761 of more than 3,000 counties in the U.S. had received primary defense contracts; 114 firms, dispersed within 20 industrial areas, accounted for 95 percent of primary contracts. Nearly 58 percent of contracts through the end of March 1941 went to warship and aircraft manufacturers located on the coasts. Women, older unskilled white males, and blacks began to dominate the remaining unemployment and WPA rolls in many parts of the country. In May 1941 the WPA Division of Research estimated that 1.4 million employable persons required WPA assistance. Defense industries in some cities hired young, unskilled workers from rural areas before hiring marginal workers on WPA rolls. The WPA survey found that “employers tend to prefer younger workers to older workers, white workers to Negroes and men to women.” The prospects for steady employment continued to elude marginalized workers. Even as WPA enrollments declined, marginalized workers tended to enroll in WPA training programs or worked on WPA defense-related projects while those in areas having few or no defense industries continued routine, non-defense WPA work.\(^{38}\)

As younger, white males entered the labor force, the age, sex, and hue of the unemployed on WPA work relief projects changed. The percentage of WPA women, many of whom were unskilled and nearly half of whom worked in sewing rooms, doubled between


\(^{38}\) Federal Works Agency, Work Projects Administration, Division of Research, “Industrial Activity and the Need for WPA Employment” (10 May 1941): 1-4, and citing p. 9, in National Archives and Records Administration [NARA], RG-69, WPA Division of Training and Reemployment, Box 65; also, see “The Distribution of Defense Contract Awards,” NARA, RG-69, Central Files, 1935-1944, Box 64, file 3; and WPA press release to Cincinnati Times-Star, 26 March 1942, NARA, RG-69, Division of Training, Box 2, Ohio.
1935 and 1942. Their representation in the WPA rose from 12.1 percent in 1935 to about 17.0 percent in 1937, hovered between 13 and 16 percent in 1938 and 1939, then jumped to nearly 20 percent by the middle of 1941. By mid-1942, the percentage of women on WPA rolls crested at over 25 percent. In Cincinnati, Ohio, WPA women trained in machine shops at a vocational high school in the evening; their ages ranged from 35 to 51 years old and demonstrated the trend for women in war industries. When FDR ordered the liquidation of WPA in December 1942, women comprised 41 percent of all WPA workers. Although many women had been excluded from vocational training in some areas, an Assistant Regional Director in charge of Training for the War Manpower Commission (WMC) declared that the solution to the wartime labor shortage was “Womanpower.” Indeed, the WMC began “calling all women,” and the WPA redirected its training of women from “household workers” to “industrial workers,” despite some initial resistance by private manufacturers. Industries in Vermont, for example, originally refused to hire women trained by WPA in 1940, but by the end of 1942 they were eager to accept women.39

Everywhere black women had the most difficult time finding jobs let alone work on the WPA. The Michigan WPA administrator wrote that black women were the most difficult to place after training, while the Nebraska administrator complained that, “Omaha had the only negro problem” in the state, because there was a surplus of “many unskilled negro women who could do nothing but maid service or day work.” The Texas WPA administrator opined that “none [of the defense industries in Texas] would accept Negro women,” but eventually female Texans, including black women, comprised seventy percent of WPA trainees before their training project terminated in January 1943. Apparently many of the remaining women on WPA were deemed too old for factory work. With the growing demand for war-related production, however, more women received training in assembly work, bench machinery, riveting, welding, and machine shop techniques.40


Like aging men and unskilled women, African Americans were among the last to benefit from the WPA training programs and the increased demand for workers in the defense industries. The National Resources Planning Board estimated that nearly 26 percent of all black Americans in 1935 received some form of relief as compared to 16 percent for whites and other races. African Americans, who comprised about ten percent of the population, were last to be hired into the growing defense labor force. As a result, their numbers increased steadily on WPA from 14 percent (387,138 black men and women) in February 1939 to 16 percent in 1941, later rising to almost 20 percent by October 1942. While many African Americans had settled in northern cities during and after World War I, over seventy percent of all blacks in 1940 still lived in the Southern and Southeastern states. Black Americans made up 37 percent of WPA workers in Georgia, 39 percent in South Carolina and Louisiana, and 67 percent in the District of Columbia. By 1939 African Americans comprised 20 percent of the Illinois WPA rolls, although their numbers remained small in New England, the upper Plains States, and the Northwest, all regions with small African American populations. Black Americans occupied various WPA positions in music and the arts, the skilled trades, and clerical and white collar jobs, and they took advantage when possible of the various training programs that prepared them for employment in the private sector during the war. According to WPA state administrator reports, twenty-five percent of the 20,540 trainees in the Michigan WPA were black Americans as were forty percent of vocational trainees in Louisiana in October 1942.  

Despite the various impediments noted by WPA state administrators in the early stages of manpower training, the training programs proved to be quite successful. For example, the WPA administrator in Michigan reported that, “As rapidly as persons were trained in manual occupations they were absorbed by private industry.” The administrator for Missouri believed that, “The war provided a stimulus to training and was greatly instrumental in rehabilitating older personnel who otherwise were barred [from private employment].” Other state administrators mentioned high rates of placement, including states with small or no defense industries such as Louisiana, Kentucky, and South Dakota. The latter referred

trainees to states with defense industries and boasted the success of trainees in obtaining work elsewhere. By 1942 the demand for labor became so acute that the War Manpower Commission and other agencies established training programs for the physically disabled, prisoners, and parolees.

**Training Marginalized Workers: African Americans**

In addition to women, African Americans perennially remained among the nation’s marginalized workers. Discrimination in the early 1940s kept African Americans, even those with skills or training, from taking jobs in defense industries. Maxwell Stewart complained in *The Coming Crisis in Manpower* that, “This failure to make full use of the abilities of one-tenth of the nation has greatly aggravated the manpower problem.”

Lawrence A. Oxley, a Consultant on Negro Employment at the USES in 1935, recommended a number of policies and procedures to accommodate black applicants and to expand employment opportunities for African Americans. Oxley became director of the Negro Placement division within the Bureau of Employment Security when USES transferred to the Federal Security Administration in 1939. A few states established similar services. While black Americans had faced high unemployment throughout the Great Depression, by 1940 nearly a third of the 7 million able-bodied black Americans remained unemployed. The largest pool of employed black women worked as domestics or in the service industries; only one in five black men found unskilled work. Oxley reported that African Americans generally

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competed for unskilled and semi-skilled work with whites, and received extremely low wages in industrial occupations or less-prestigious service jobs. Rarely did blacks enter occupations that required formal training.45

Some qualified African Americans began finding jobs in the Spring and Summer of 1941, when the demand for labor began to overpower the resistance to race. Past excuses for excluding blacks— their inability to “work harmoniously with whites,” objections by white customers and employees, discrimination by unions, or simple prejudice—began to fall away with increasing labor market demand. A Federal Security Agency pamphlet, Matching Men and Jobs, urged employers to hire “solely on the basis of ability to do the work.” Sidney Hillman, Associate Director in the Office of Production Management, wrote that discriminatory practices “are extremely wasteful of our human resources and prevent a total effort for national defense.”46

African American leaders also pressed for training and the opportunities for employment in the growing defense industries. Dr. Malcolm S. MacLean, president of the Hampton Institute, summarized a conference held at the Institute in the autumn of 1940. He pointed out a number of ways to magnify the role of black Americans in the nation’s defense, and proposed that their participation required the assistance of the government through training, housing, and better health. He reiterated a number of times the importance of education and training, cooperation between the public sector and private organizations, and harmony between businesses and organized labor. In addition, conferees, representing government, business, labor, and academia, sought for black Americans understanding, cooperation, fairness, patience, and respect. Black educators mentioned that opportunities for education, training, and employment would benefit black Americans in the postwar period.47


46 William H.H. Wilkinson, Manager, Jamaica Office, New York State Employment Service, “Placing the Negro Worker,” Employment Security Review 8 (June 1941): 3-6, and see the Hillman quote in the box at the bottom of p. 3.

47 Findings and Principle Addresses: The Hampton Institute Conference on the Participation of the Negro in National Defense, November 25-26, 1940 (Hampton, VA: The Hampton Institute, 1940). Conferees included administration officials: for example, Frank S. Horne, Acting Special Assistant, U.S. Housing Authority; Aubrey Williams, Administrator, National Youth Administration; Harold Benjamin, Dean of the College of Education, University of Maryland; and Sidney Hillman, Winthrop Rockefeller, Mrs. Andrew Carnegie, and Eleanor Roosevelt. The conference also included notable African American officials and academics such as the sociologist Charles Johnson; Robert
African-American businessmen desired to participate in the defense program by collaborating with public and private agencies such as the Chamber of Commerce, the Department of Commerce, the USES, and the National Negro Business League. Government procurement agencies, they argued, could support Negro businesses by awarding contracts and purchasing their goods. Defense agencies could enhance the purchasing power of black Americans with employment opportunities and work relief programs, and “by the training of workers through the Office of Education.” Furthermore, the federal government could support black Americans during the postwar readjustment period by maintaining “an adequate flow of consumer goods,” by increasing employment in African American enterprises, by allowing black veterans to resume their civilian jobs, and by placing African Americans on the various Advisory Councils at the federal, state, and local levels. Wartime agencies and African American groups appealed to the administration to prohibit industries with government contracts from discriminating against persons “because of race, color, or creed.” They also recommended the addition of black Americans to the staffs of federal and state departments of education. Training opportunities aided those without skills and black teachers could assist in training black Americans for wartime industries. Moreover, national black organizations stood ready to disseminate information and stimulate “local action.”

Concern in 1940 that blacks would be omitted from or reluctant to seek out training programs, Robert Weaver, who moved from the Interior Department to the Advisory Council of National Defense (NDAC), and Ambrose Caliver, affiliated with the Office of Education, convinced the NDAC to explicitly affirm a “policy of non-racial discrimination in the selection and training of workers.” Republican Congressman Louis Ludlow of Indiana, with support of the Federal Security Agency and the NDAC, introduced language to that effect in the Deficiency Appropriations Bill of 1940. Weaver and others understood that the enormous

48 Ibid., pp. 3-11, and p. 29.

demand for millions of workers required training and that the absorption of Negro workers was “an inevitable result.” Likewise, Rayford Logan, chair of the Committee on Participation of Negroes in the National Defense Program, testified before the House Military Affairs Committee in 1940. He sought Congressional support for training African American youth for defense industries and for equal opportunity in the armed forces. As a result of the efforts of Logan, Weaver, Charles Houston, Dean of Howard University Law School and legal counsel to the National Association for the Advancement of Colored People (NAACP), and other black leaders, the Selective Training and Service Act of 1940 barred discrimination in Selective Service drafts on the basis of race or color. A year later, after pressing for wartime opportunities that culminated with the threat of a mass march on Washington, D.C., in June, A. Philip Randolph and other civil rights leaders convinced FDR to affirm equal opportunity for black Americans in the military and in defense industries. As a result, the president issued Executive Order 8802, which established the Fair Employment Practices Committee (FEPC), a weak but symbolic attempt to bar discrimination in defense industries.50

In April 1941 discrimination persisted on the basis of race, religion, and nationality. Some skilled and semi-skilled occupations, especially in the aircraft industry, remained closed to black Americans. A few industries relaxed previous restrictions by age, sex, and physical handicap (to those ineligible for the draft), but imposed new restrictions on the basis of citizenship, especially against German and Italian immigrants, even in non-defense industries. In some states, the VE-WPW programs remained segregated to comply with state school laws. Employers also balked at hiring single, draft-age males who would likely leave for military service. The long-held prejudices against the WPA and relief workers declined, but discrimination against women and blacks remained, especially in the shipbuilding industry. The hiring of marginalized workers in many industries, especially for black Americans, eventually improved as the demand for labor intensified, federal guidelines proscribed discrimination, and unions affiliated with the CIO adopted anti-discrimination policies.51


Robert Weaver reported that most agencies had no enforcement capacity and they merely publicized non-discrimination policy. The Labor Division of the Office of Production Management (OPM) in 1941 included the Negro Employment and Training and Minority Groups Branch, which urged employers to make use of minorities. The Federal Security Agency issued a non-discrimination policy in war production and enrolled black Americans in defense training. While laudatory, reforms within agencies and by executive order carried little enforcement power. Thus action at the “grass-roots” and “grass-tops” calling attention to discriminatory practices eventually pried open some avenues for black Americans. The “Double V” campaign—victory over fascism abroad and victory over racism at home—and the threat to march on Washington that led to Executive Order 8802 became the precursors to the Civil Rights Movement a decade or so later. The Committee on Negro Americans in National Defense Industries also pressed for the employment of skilled black mechanics. In a statement released in May 1941, the Committee declared that, “An ‘all-out’ defense effort cannot disregard the Negro tenth of our population which is known for its loyalty.” After Executive Order 8802, black workers by the end of 1941 found employment in service occupations and unskilled jobs. The USES minority referrals to war production training remained miniscule, however, amounting to less than 3 percent in 1941. Weaver retained his optimism after Executive Order 8802, because the OPM received commitments from a number of war production industries promising to hire African American workers. With the intervention of federal guidelines and critical labor market demand, the placements of black Americans eventually increased after 1941.52

In the summer of 1941, a year after the Vocational Training for National Defense began, WPA field investigators recounted the quality of training and the effectiveness of placement. In a report on black trainees in Chicago, one investigator recounted that, while a large number of blacks had trained, few found work in private industries. While sixty percent

Review 52 (June 1941): 1390; Musser, Vocational Training for War Production Workers, p. 78; and The Labor Market (September 1942): 19, for discrimination in the shipbuilding industry. For analysis of African Americans in key industries during World War II, see Herbert R. Northrup, Organized Labor and the Negro (New York: Harper and Brothers, 1944): 186-231.

of trainees in Chicago were African American in August 1941, they represented nearly 67 percent of those awaiting assignments. Sidney Hillman, co-director of the Office of Production Management (OPM), reassured WPA administrators about the importance of continued training despite the slow pace of placement. Perhaps recalling the shortage of labor during the First World War, Hillman urged those in the field to keep training minorities, asserting there would be plenty of jobs later, especially in those industries receiving large numbers of defense contracts. Despite its size and the large number of industries in the metropolitan area, however, Chicago ranked only thirteenth among regions or cities receiving defense contracts. Most black WPA workers, along with older white males in Chicago, continued to work on construction projects.53

During all of 1941, black trainees in Chicago increased their presence in WPA training programs, from just over 3,000 in January (about 11 percent of all trainees) to over 4,500 after July (over 12 percent). In New York City, blacks comprised about twenty-three percent of WPA trainees in October 1941. The placement of black Americans nationally increased as well, from about 29 percent in January to over 70 percent in October, although the actual number of trainees remained rather small, roughly 4,500. A year later, the number of black WPA trainees continued to increase. Some trainees, however, failed to qualify for or pass various courses. Among the 18,918 trainees rejected nationally in 1941, blacks comprised about 1,700, or nine percent. By October 1942, black Americans numbered over 5,000 or nearly 23 percent of all WPA trainees. Elsewhere the hiring of black Americans for manufacturing jobs in 1941 remained low. A survey of 20 defense industries found blacks represented only three percent of new hires, although black Americans began to move into construction and service jobs with less difficulty.54 By May 1942, 23,958 African Americans

53 Report of C.B. Brewster to Bruce Uthus, “Investigation of Vocational Training in Chicago, Illinois” (16 September 1941), NARA, RG-69, WPA Division of Information, Box 1, file 2, “C.B. Brewster Reports,” esp. pp. 7-9; “Negro Participation in Defense Work,” *Monthly Labor Review* 52 (June 1941): 1388-1390. Robert Weaver noted in 1940 that, “Sooner or later, in many of these industries [now closed to black Americans], the use of Negro labor, skilled and unskilled, will be required. We have but to look back to our experience in the last World War to know that this is so”; Robert Weaver, “Education and National Defense,” *Proceedings of the Seventeenth and Eighteenth Annual Conference of the Presidents of Negro Land Grant Colleges*, November 13-15, 1939, Howard University, Washington, D.C. (n.p., n.d.), and November 12-14, 1940, Metropolitan Community Center, Chicago, Illinois, (n.p., n.d.): 195-201, citing p. 198. Both conference proceedings were published together.

54 “New York City: Number of Trainees Employed by WPA on Defense Projects by Course and Race As of October 22, 1941,” NARA, RG-69, Division of Training and Reemployment, 1940-
had trained in WPA programs. John McDonough, like Hillman and Robert Weaver, remained confident that, “eventually industry will require the services of these workers.”

To encourage the entrance of African Americans into defense jobs, the American Management Association (AMA) in 1942 published *The Negro Worker* in cooperation with the National Urban League and the Council for Democracy. The study examined the state of industrial employment for black Americans in the early 1940s. It found nearly a half-million still idle in June 1942. Businesses and labor unions resisted integration. Some union affiliates discriminated despite the stated policies of national federations. The AMA cited evidence of black Americans who possessed skills or who had recently acquired training, yet remained underutilized or shut out of advanced courses. The AMA encouraged industries to “educate” their employees, supervisors, and their communities about individual abilities and tolerance, and to hire the large reserve of African American labor. While black women faced obstacles because of race and sex, the AMA recognized that some had become “a valuable addition to industry.” Even though black Americans began to achieve gains in industries such as shipbuilding, race friction continued on various levels throughout the war.

*The Negro Worker* specifically mentioned the importance of training. The Training-Within-Industry program certified black supervisors to train colored personnel. Higgins Industries, the maker of landing craft used in amphibious operations, trained tens of thousands of black Americans and gave equal training to blacks and whites. Non-discrimination, “if adopted,” “must be carried into every phase of personnel administration,” declared the AMA.


55 John J. McDonough, “Discussion for War Manpower Regional Meeting,” 23 September 1942, Speeches of John J. McDonough, Director Division of Training and Reemployment, 1942, NARA, RG 69, Division of Training and Reemployment, 1940-1943, Box 5, file 11, p. 4.

In 1942 the Urban League reported favorably on auto plants that had been upgrading skilled and semi-skilled black workers, but cautioned that black supervisors of whites remained a problem.\textsuperscript{57}

When the President created the War Manpower Commission in April 1942, the WMC included a Negro Manpower Division, succeeding the Negro Employment and Training and Minority Groups Branch (NETM) of the WPB. Although the USES discouraged employers from narrow-minded hiring practices, the agency continued to honor requests for workers from firms known to harbor prejudices. Furthermore, despite the procedures for reporting employers who violated anti-discrimination policies, many black jobseekers simply avoided firms known for intolerance. Nevertheless, the demand for workers became so acute after 1943 that minority workers, as Sidney Hillman predicted, found employment in essential industries such as shipbuilding, aviation, and ordnance as well as in federal employment.\textsuperscript{58}

While discrimination in some industries persisted, the federal government policies coupled with the sheer demand for labor loosened restrictions on African American labor. The USES, the Committee on Fair Employment Practice, and the War Manpower Commission worked in 1942 to eliminate discrimination in hiring. Some plants integrated black with white workers while others created black production “units and shifts.” Black employment in major industries increased to 4.7 percent in July, while blacks comprised nearly 16 percent of construction workers. The numbers remained low in aircraft and ordnance manufacturing, however. Jim Crow laws in some states inhibited black employment because of the added expense for “equal” facilities. Training for blacks remained limited in some regions when employers refused to hire them or few enrolled in training courses. As a result, many blacks increasingly migrated to areas experiencing labor shortages.\textsuperscript{59}

\textsuperscript{57} Ibid., pp. 23-25, citing p. 23.

\textsuperscript{58} One exception occurred in New York, where USES complied with a state law that prohibited discrimination in hiring practices; see Beatty, “Mobilization of Manpower for War Production,” pp. 188-196.

Despite discrimination on a number of fronts, from July to December 1942 over 58,000 blacks enrolled in pre-employment training and another 13,000 enrolled in supplementary training programs. About 12,000 trained for aircraft industries, nearly 11,000 for shipbuilding, and almost 22,000 for machine shop occupations. The shipbuilding industry experienced high turnover and absentee rates because of outdoor work interrupted by weather conditions, safety issues, wage disparities, scheduling, and work-weeks of up to 64 hours long. Nevertheless, the shipbuilding industry—more so in the South, ironically—opened up for black Americans, although often relegating them to service jobs. Still, federal efforts and market demands created jobs for African Americans during the war.

Writing in 1950, Robert Weaver identified 1942 as a turning point for African American job seekers: opportunities for work improved, even in non-defense jobs that had been deserted by whites attracted to higher wages in defense industries. One report found that, for all war industries, non-white workers, mostly black Americans, increased their percentage of defense employment as a result of training for skilled and semi-skilled industries from 5.8 percent in July 1942 to 8.2 percent in January 1945. In shipbuilding, their percentage increased from 5.7 percent in July 1942 to 11.7 percent in January 1945; in tank production, their percentage of the workforce increased from 2.2 percent to 13 percent; and in aircraft production from 2.9 percent to 6 percent in July 1944, and back to 5.8 percent in January 1945. Black Americans in the aviation industry seemed to make their largest gains in the West and the Midwest. “[T]he combined force of labor shortages and government pressure,” Weaver observed, “brought greater training opportunities to Negroes.” Training opportunities, both civilian and military, led to higher earnings and increased median family incomes for non-whites. However, blacks made little headway in clerical and sales jobs, or in professional and managerial occupations. Interestingly, Weaver noted that black Americans largely retained their wartime jobs in the postwar years.

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By the end of 1942, WPA officials reported even larger numbers of trainees among black Americans. Between May 19 and October 20, 1942, the number of African Americans on all WPA training projects increased, from 4,192 (12% of WPA trainees) to 5,234 (23% of trainees). The number of those completing training since the program began numbered 35,722, or about 12.3% of all trainees; their representation remained especially high in Illinois (51%), Michigan (49%), and Ohio (44%). Opportunities arose for black women in Michigan: the Detroit district trained 338 black women and 200 black males in late 1942, nearly half of the 1000 WPA trainees.63

Although disappointments for black Americans stemmed from the failure of various federal agencies to enforce anti-discrimination policies, African Americans benefited from training and work during the war. Black organizations, the major labor organizations—the AFL and the CIO—business associations, and interracial groups favored laws and policies to protect the rights of all working Americans and publicly denounced discrimination. Congress and state legislatures began to consider or pass laws to ensure fair employment. The FEPC closed 3,700 cases brought before the committee in 1944 alone. Black Americans comprised over 11 percent of all federal employees in 1944. In the final analysis, federal regulations and labor market demand proved to be the most important elements for increasing black training and employment during the war. As a result, the employment of black Americans peaked in 1944 and 1945. During the five years of training from 1940 to 1945, nearly 370,000 black Americans trained under the Vocational Education for War Production Worker Training program (VE-WPW), with the largest enrollments in aviation, shipbuilding, machine shop, and welding. Industries employed some 5.4 million blacks in April 1944 compared to 4.5 million in April 1940.64

Training Marginalized Workers: Older Adults

In addition to women and black Americans, older males in 1938 swelled unemployment and work relief rolls. A WPA committee preliminary report on older workers

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described the difficulties of older workers finding jobs. Despite claims to the contrary by business establishments (see Chapter 5), the committee established the “seriousness of the problem” and the “unfairness of arbitrary age-hiring limits.”65 In June 1940, the Civil Service Commission increased the maximum employment age from 48 to 55. The War and Navy Departments followed shortly thereafter. The president in April 1941 issued a proclamation to designate the week following May 4th as National Employment Week. In his remarks the president noted that many unemployed older workers, whose experience and skills could be utilized in the nation’s defense, had yet to be hired into the defense industries. He urged “employers review carefully their standards of physical qualifications to assure that these valuable workers are not barred from employment.” Thus opportunities for older Americans for training and work also emerged during the war.66

By 1943, the labor market created opportunities for older workers. Previously thought less productive or unable to be trained, studies confirmed that older workers had fewer accidents and suffered only a slight drop in productivity with age. Permitting idleness for the able-bodied not only wasted human resources, according to one physician, but also contributed to societal “parasitism.” A survey in Wisconsin garnered mixed opinions, but the consensus suggested that older workers in good physical health remained capable employees. Steady work and continuous education and retraining fostered long-term productivity. In fact, Carl Gray, asked to study the problem of older men by the Governor of Connecticut, noted that, “The prejudice was not entirely against men over 40, but against men who had no useful trade.” In fact, between January 1942 and January 1943, workers 45 years and older (some in their 70s and 80s) increased their labor force participation by 1.5 million men and 800,000 women. The total for those over 45 years old in January 1943 reached a high of 18.1 million or about a third of the workforce. Of these, five percent were 65 and older. At the same time, the number of Americans receiving old-age insurance benefits declined and “several hundred


thousand” eligible for benefits postponed retirement. Older women, however, remained underutilized, yet nearly fifty percent of those sixty-five and older worked in April 1945.67

As younger men answered the call to military service, older workers, especially those over 45 years old, returned to the workforce with vigor. Firms now altered standards for age and physical ability. While some observers argued that older men on fixed incomes—living on pensions, social security, interest, or savings—would seek employment to offset the effects of price inflation, few over the age of 55 did so. In fact, as the Department of Labor reported, the opposite occurred. The demand for labor had become acute in 1943. The War Manpower Commission in June urged employers to hire individuals on the basis of merit, not age; that firms recruit older men and women, especially in areas experiencing labor shortages; that maximum ages be eliminated; and that employers offer equal pay for equal work “regardless of age.” The key to the success of employing older workers remained “proper placement.” By late 1945, the Social Security Board estimated that 750,000 older workers had postponed claims for retirement benefits. At the end of the war, as work opportunities diminished, claims for old-age benefits increased. In the end, labor demand again proved that older workers, like blacks, women, and the disabled, could not only be trained, but also perform productively in the workplace. Another trend had emerged during the war: older Americans, especially older women, remained in the labor force longer.68

Training Marginalized Workers: The Disabled

Employment and the investment in human capital during the war also benefited physically handicapped workers. A number of agencies in both the public and private sectors helped with the placement of trained handicapped workers. The Bureau of Productivity and


Technological Development in the Department of Labor found that disabled workers provided a useful reserve of efficient workers. States since the turn of the century had passed workmen’s compensation laws that helped train and place disabled workers in useful occupations. Veterans wounded during the Great War trained or retrained for various jobs under the Federal Board for Vocational Education and the Veterans Bureau, which became the Veterans Administration (VA). The VA rehabilitated 129,000 veterans and placed 125,000 in jobs during the interwar years. Some states, in cooperation with the Federal Board for Vocational Education, established vocational rehabilitation programs for disabled civilians after the Civilian Vocational Rehabilitation Act of 1920. The neglect of disabled workers in the past, one report declared, simply wasted human resources.  

During World War II, the USES handicapped placement service and the vocational rehabilitation service in the U.S. Office of Education, aided by various state boards, recruited and placed disabled workers in suitable jobs. The Connecticut State Department of Education, for example, established an experimental rehabilitation clinic offering preemployment training, training within industry, medical care, and “artificial appliances.” A state survey found over 3,600 people could be placed within Connecticut firms.  

At the federal level the USES alone placed over 91,000 disabled persons in 1942, nearly 230 percent higher than the total number placed in 1940. The Vocational Rehabilitation Division in the Office of Education reported training and placing 3,349 persons in defense industries during the third quarter of 1942 alone. Just over 40 percent of these functioned in skilled occupations, 23 percent in clerical and sales jobs, 13 percent in government jobs, 11 percent in professional and managerial posts, 5 percent in semi-skilled jobs, and 6 percent in unskilled or service jobs. On one hand, some industries noted the disadvantages of using disabled workers. The disabled required special training needs, added to liability risks if injured on the job, and limited the flexibility of production units. State workmen’s compensation laws also generated some reluctance to hire the disabled on the part of employers.  

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of employers who feared placing workers at risk of further injury. On the other hand, various surveys demonstrated that handicapped workers had lower rates of absenteeism, fewer accidents, equal or higher productivity than “normal” workers, and many demonstrated superior abilities. The Ford Motor Company, for example, employed over 11,000 disabled persons, ten percent of whom were blind. Sightless workers performed a myriad of tasks from inspecting cannon shells to cutting diamonds and performing as stenographers. The WPA trained sightless sheet-metal workers. In one plant, blind workers separated nuts, bolts, and parts by touch; in others, deaf workers adapted comfortably to extremely noisy conditions. The U.S. Civil Service Commission placed 10,500 disabled persons in government service. As of 1943, however, no accurate number of employable disabled Americans yet existed, although the Public Health Service anticipated their successful training and placement.71

The War Manpower Commission estimated that 2.5 to 3 million disabled persons from a population of 5 million qualified for work in industry. In July 1944 the Bureau of Labor Statistics found that, among 300 firms surveyed, the efficiency of 87 percent of over 63,000 handicapped workers equaled that of their unimpaired colleagues. A study by Western Electric showed fewer accidents and fewer absences as well as good production records among handicapped workers. The Bureau of Labor Statistics estimated that eight percent of those exceeded the work efficiency of physically able workers, and deemed only five percent less efficient. In general, disabled workers in the same survey proved superior to their “normal” counterparts in reduced absenteeism and turnover, and they experienced fewer accidents and injuries on the job. Having faced the hurdles of finding work, disabled workers exerted a greater effort to keep their jobs. Over half of disabled workers labored in large plants, especially in the industrial northeast where firms provided special training and accommodations. The Bureau feared that many would lose jobs once large numbers of disabled veterans entered the workforce or when the war ended.72


Early in the war, manpower planners expected large numbers of wounded veterans. “In view of the unhappy casualty prospects of a national war,” said the president a week after Pearl Harbor, he ordered the WMC to create vocational rehabilitation programs for disabled veterans during and after the war. In January 1942, officials began to consider the problems of disabled veterans reintegrating into the workforce. Surveys of military installations attempted to determine the physical demands on workers in order to accommodate disabled vets who desired positions in the federal civil service. Over 22,000 disabled veterans and non-veterans found positions in the federal service by the end of 1943. In 1944, the U.S. Employment Service, with the assistance of the Veterans Administration, Selective Service, and public and private rehabilitation agencies, placed 300,000 disabled workers in jobs, about 100,000 more than in 1943. Employment services trained and/or placed in jobs just under 435,000 handicapped war veterans. New York state alone placed over 57,000, followed by Michigan with 26,000, and Ohio with over 23,000. Thus politicians and federal bureaucrats included the disabled in the plans for both the war effort and the postwar economy.73

Hiring disabled workers, however, slowed considerably after Victory Day despite such efforts as “Employ the Physically Handicapped Week,” an annual national drive begun in October 1945 by an act of Congress. Advocates continued to laud the abilities of disabled Americans and encouraged employers to hire them. In March 1946, nearly 14,500 disabled entered the workforce, bringing the total number of USES handicapped job applicants to 74,400; veterans comprised over seventy percent of these. By July 1945, over 222,000 disabled veterans sought employment, but placements averaged about 7,000 to 8,000 a month. Even World War I veterans received vocational rehabilitation under the newly established GI bill. Subsequent surveys comparing disabled workers with their unimpaired counterparts continued to favor the handicapped. The National Foremen’s Institute, using research data conducted by the Division of Occupational Analysis of the USES, published a guide after the war to assist foremen and supervisors in charge of disabled workers. Despite the important contributions of disabled Americans to the war effort, they constituted a small percentage of USES job placements. Near the end of the war, when labor shortages ceased, employers

found disabled workers less desirable despite pleas from officials and advocates for the disabled. Like many marginalized workers, having been hired last they were among the first to be laid off.74

**The Demise of Work Relief Agencies (CCC, NYA, WPA)**

Having provided the core of training early in the war, the New Deal work relief agencies fulfilled a unique role on the eve of the Second World War. As young and skilled Americans took employment in defense industries, unemployed marginal and marginalized workers increasingly sought out jobs and training in the NYA and especially the WPA. Unemployment declined to an all-time low, less than two percent in 1943, and dropped further the following year to about 1.2 percent. The remaining unemployed, according to the BLS and the Census Bureau, consisted largely of the ill, about one-third, or the “frictional unemployed,” those seeking work. The number registered with the WPA diminished to 371,000, the lowest since its formation in 1935. FDR advised the Federal Works Administrator that the WPA “will be confined largely to those persons who, because of age, lack of skill, or other handicaps, cannot find employment in war industries.” Hopkins suggested keeping the agency flexible in order to avoid “undue hardship. . . . especially to the Negroes, older workers, and women, . . .” Yet Hopkins, ironically, recommended that the president close state WPA offices by issuing an executive order transferring WPA functions to the Federal Works administrator. Hopkins believed that “proper training” would help women and older WPA workers prepare for the industrial workforce. He anticipated a return to work relief for these groups after the war ended. With fewer unemployed, the relief agencies that evolved under the New Deal—the CCC, the WPA, and the NYA—no longer served their original functions. If full employment could be achieved after the war, work relief agencies

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would have no purpose. Echoing the president, the War Manpower Commission noted that, “every employable American should be employed at prevailing wages in war industries, on farms, or in other private or public employment.” When the U.S. reached full employment in 1943, the president “honorably discharged” the WPA and other work relief programs, but the training programs overseen by the Office of War Mobilization and others remained intact until late in the war.75

The War Manpower Commission and “Manning Tables”

Finding and ensuring an adequate supply of war workers and soldiers posed the largest immediate challenge after the attack on Pearl Harbor. The USES collected data and labor market information but had no authority over state employment agencies until FDR federalized state agencies January 1, 1942.76 The War Department demanded carte blanche access to manpower, threatening the manpower needs for industrial and agricultural production. To organize and train a national workforce, the First War Powers Act gave the


76 The original mission of the USES grew out of efforts to help immigrants find jobs before the First World War. It became an official agency in January 1918 for the purpose of controlling the labor market and integrating state employment agencies during the First World War in order to place 5 million workers in war production. By 1919, however, the USES existed as a paper organization after Congress in 1921 dropped funding from $6 million to $200,000, and reduced the number of agency offices across the country to a mere thirty-nine. The USES remained nearly idle during the prosperous New Era years. Congress voted in 1932 to expand USES functions and initiate employment services, but President Hoover vetoed the bill. The Wagner-Peyser Act of 1933, however, created the modern USES, established as a federal and state cooperative effort. The USES referred the unemployed during the Great Depression to federal agencies such as FERA, PWA, and CWA. The agency grew from 1934 to 1937, establishing 51 state agencies that gathered statistics and data related to labor market trends. It also placed veterans in jobs and offered occupational analysis to government agencies. After the Social Security Act of 1937, those seeking unemployment compensation registered with the USES. In 1940, the agency began to funnel workers into defense jobs.

president extraordinary control over the administration of national defense. The War Production Board (WPB) became the major contracting agency for defense procurement and oversaw the Office of Production Management (OPM) for a short time. Sidney Hillman, Associate Director of the OPM, commented that, “This program calls for the largest mobilization of industrial power ever undertaken, and it must be accomplished without the loss of a single hour. . .” To assuage those who feared centralized control, federal agencies utilized incentives to gain the confidence of employers reluctant to cooperate or those previously ignored by government agencies. No precedents existed for such a massive mobilization, not even World War I because it never reached an equivalent scale. In February 1942, the USES and Selective Service System inventoried the male population 18-38 years old, and recorded each one’s education, training, and experience. Using that data, the Selective Service administration deemed 9 million of 17.5 million men fit for military service, and also used the information to determine deferment status for those with critical skills. The armed forces, however, argued that the Selective Service System should have priority for manpower. To prevent a manpower drain, however, FDR created in April 1942 the War Manpower Commission (WMC) within the Office of Emergency Management (OEM). The WMC centralized the labor supply and oversaw training.

By the Spring of 1942, the civilian sector began to experience a “brain drain,” the loss of skilled workers and professionals to military conscription. The losses threatened essential manufacturing and services at home. In a Senate hearing on manpower resources, the president of a construction company in Florida testified that his company—a firm building airfields and roads—had lost to the draft a number of engineers, supervisors, and skilled men, many of whom had trained for five or ten years. The loss of skilled men not only threatened his operation, he maintained, but also in the long term threatened the war effort. Frequently, local draft boards succumbed to local pressures seeking to make all eligible males equally exposed to the draft. One of Smith’s employees, for example, had received a deferment, but the parents of men who had been drafted from his hometown complained to the local draft board, which then refused to extend his employee’s deferment despite support from the Army.

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Corps of Engineers and the U.S. Engineer Office. Nor did government agencies find immunity from high turnover and the loss of personnel. When FDR federalized state employment services in January 1942, state agencies lost many employees to federal jobs or to the private sector which offered higher pay. Many states reported turnover rates of 30 to 50 percent and complained of “labor pirating,” incentives offered to skilled workers to jump from one employer to another. One manager complained, “I do not see why you have got to train two men to keep one job.”

Manpower uncertainty threatened the production of important weapons and the loss of skilled workers as well. In testimony before the Senate Committee on Education and Labor, the president of a firm making precision instruments—bombsights—reported the loss of half his workforce. Some men with skills enlisted shortly after receiving a 1-A classification (making them prime candidates for induction). By enlisting some men choose a particular specialty or branch of service, but his replacement could take a firm six months or more to train. Others enlisted in the military out of peer pressure or a sense of national duty. Local draft boards applied policies haphazardly and without guidance from Selective Service, and neglected the importance of keeping skilled workers on the homefront.

The Senate Committee heard testimony from Philip Houser, assistant director at the Bureau of the Census, regarding the problem of how to distribute the labor force and guide the migration of workers. For proper planning, officials needed to know immediately how large a force the Army and Navy required. In addition, the kind and quantity of matériel needed to

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79 Paul C. Winner, Assistant Director of the USES for the State of Wisconsin and president of the National Association of Public Employment Services, ibid., Part 1, pp. 67-80; also, see the Table, p. 70, and cartoon, p. 71.


outfit an army, or to build munitions, weapons, and various naval craft, required a schedule of
delivery, the types of civilian production which “can and should be cut,” and the timing of
those cuts. The USES compiled an inventory of skilled Americans and a list of 190 critical
occupations. The committee found that the manpower levels of state, local, and federal
governments had “increased considerably” over the past 2 years. Officials also had to make
decisions about how to define “essential” versus “non-essential” workers. When the Selective
Service halted enlistments in late 1942, draft-age young men entered the workforce to await
later call ups. One can only surmise how many young men, who first worked in war
industries producing arms and ammunition, later found themselves in uniform using the same

Farmers, physicians, and union leaders also complained to the Senate Committee on
Education and Labor. Labor leaders from all quarters—notably Philip Murray of the CIO,
William Green of the AFL, J.G. Luhrsens, of the Railway Labor Executives Association (which
represented many railway unions), Van A. Bittner, of the United Steelworkers of America, and
Reid Robinson, of the International Union of Mine, Mill, and Smelter Workers—registered
complaints about the distribution of manpower. Labor leaders warned of the need for a
national planning mechanism rather than merely allowing Selective Service to drain away
skilled workers from critical industries. James Wishart, research director for the United
Automobile, Aircraft, and Agricultural Implement Workers of America, declared that
manpower shortages hampered war production. Representatives from the Farmers
Educational and Cooperative Union of America and the Ohio Farm Bureau raised the issue of

To grapple with the manpower problem, planners consulted demographers and
statisticians who calculated the nation’s human resources. The Sixteenth Decennial census of
1940 fortuitously gave officials a sense of the distribution of manpower, the age and number
of available workers and fighting men, and data with which to predict the number of young
workers entering the labor force within the next few years. The population in 1940 numbered
131.7 million. The entire workforce numbered roughly 55 million men and women, including about 8 million unemployed. (Recall that the labor force includes those at work, members of the military, and the unemployed actively seeking work.) While the unemployed constituted the “first line of labor reserves,” the “second line” of labor reserves included housewives, students, and others of working-age who remained outside the labor force. To bring the workforce level to 65 million, a substantial expansion could only be achieved by employing millions of women, youth, older Americans, and marginalized workers.84

To coordinate and develop human capital, Paul McNutt, director of the Federal Security Agency, chaired the War Manpower Commission and facilitated training through the Office of Education, the CCC, the NYA, and the WPA. The WMC also coordinated scientific personnel, health and welfare services, a Negro Employment and Training Division, the Training-Within-Industry program, and the apprenticeship training program. Other federal agencies helped plan production and train workers. The mission of the WMC focused on estimating manpower resources, collecting and coordinating data, recruiting and training workers, and stabilizing the workforce. The administration authorized the WMC to “formulate legislative programs designed to facilitate the most effective mobilization and utilization of manpower of the country,” and to coordinate civilian and military manpower resources. Architects divided the WMC into 12 regions and placed the U.S. Employment Service (USES) under its jurisdiction in September. To forestall the military from scooping up all available manpower for military service, FDR (temporarily) placed Selective Service under direction of the WMC in December 1942. The WMC halted voluntary enlistments and began to calculate the manpower requirements for both the military and the civilian workforce. For a few months the WMC controlled most manpower resources through the USES, which coordinated civilian labor, and Selective Service, which conscripted men for the armed services. The WMC also ordered workers to transfer from nonessential industries to war production jobs wherever possible. The WMC, in cooperation with various agencies, introduced “manning tables,” a device to estimate the manpower needs for the military services and for civilian industrial and agricultural production. Manning tables resembled the

tables of organization and equipment used by the military and included census data and reports from individual firms to quantify and distribute manpower by regions, states, and industries. Even state and local levels of the WMC created tables for their respective levels of government, and firms created manning tables for individual plants. Over 8,700 war plants, employing some 5 million workers, used manning tables to inventory workers and equipment, and thereby ensure an adequate supply and distribution of manpower. Manning tables promised to reduce the uncertainty of conscription and labor shortages for critical industries.85

In September 1942, J.C. Capt, director of the Bureau of the Census, reported to the Senate Committee on Education and Labor that the labor force totaled 58.4 million, including 4.3 million men in the Army and 1.7 million unemployed. Women in the work force had increased by 1.5 million over the previous two years. The census also showed that 40 million Americans over age 14 were not in the labor force. These included 7.2 million males, but less than a million stood available to begin work. Among the 6.3 million males remaining, half were students and half were retired, imprisoned (less than 300,000), institutionalized (767,000 men), or disabled (2.95 million men); almost two-thirds were either over 60 years old or awaiting induction into the armed forces. Many students, both boys and girls, already worked seasonally or part time. The largest group of those not yet in the workforce included housewives, who numbered 29.2 million. If the armed forces had to increase their number to 10 million, coupled with a projected labor force requirement of 62 to 65 million workers, the fact became obvious that women still at home, some 4 to 7 million, would have to fill labor’s ranks.86 Because industries failed to achieve an adequate supply of labor, elected officials considered drafting civilian labor as well as military personnel.

National Service: Proposed Legislation to Draft Civilians Workers

To ensure adequate supplies of manpower for war production and fighting a two-front war, officials considered drafting men and women for national service. The Selective Training and Service Act of 1940 drew a million men into the military. While unemployment

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stood at 12 percent that year, by the end of 1942 severe manpower shortages loomed. The administration considered a labor draft in late 1942, in part to unite the nation in a common cause and in part because some officials believed that voluntary labor would become unreliable. While FDR vacillated in support of universal conscription, advisers and agency heads within the administration remained divided. Some supported the War Department’s claim that all manpower—combatants and production workers—be subject to military control. Others, notably the Secretary of Labor, feared military control and the consequences of dissipating skilled labor required for production. McNutt favored a draft of labor but only if it remained under control of the War Manpower Commission.87

In February 1943, Republican Congressman James W. Wadsworth of New York proposed a National War Service bill that would draft civilian men and women into industry and the armed forces during the wartime emergency. There had yet been no inventory of women, their abilities, skills, or family obligations, in contrast to the surveys of all men aged 18-64 who were classified according to occupation, skill, and aptitude. Wadsworth’s co-sponsor of the National War Service bill, Republican Senator Warren R. Austin of Vermont, sought to register men from ages 18 to 56 and women between the ages of 18 and 50. The Austin-Wadsworth bill became the first serious attempt to draft men and women into national service. The bill exempted pregnant women and those with dependents under the age of 18. Defense work would at first be voluntary, but if voluntary attempts failed, the Selective Service system would induct workers into industries just as America’s allies had done in Australia, New Zealand, the United Kingdom, and Canada. Those nations inducted women into industry, the military, or the transportation services. Ostensibly the conscription of labor, “the natural and logical sequel” to the Selective Training and Service Act of 1940, which Wadsworth co-authored in 1940 (the Burke-Wadsworth bill), would shorten the war through full mobilization by assigning workers to industries, avoiding labor shortages and turnover, and thereby helping meet production quotas and schedules. The bill, endorsed by the president and favored by the military services, the American Legion, and major newspapers, proposed to stabilize the labor force, provide aptitude testing and training, and compensate families for travel and housing expenses. Voluntary labor, however, had worked thus far, and

the president never gave enthusiastic support, allowing the bill and others like it to slowly die in Congress.88

A coordinated national effort and unity of purpose—total mobilization—proponents believed, would in the long run demonstrate resolve, coordinate manpower resources, save American lives, and shorten the war. McNutt and others testified before Congress that voluntary service had failed, but they offered no clear evidence. In addition to the American Legion and others, support for national conscription gained favor from various members within the administration. The sponsors of the bill expressed no intention of issuing a “work or fight” order similar to that of the Great War, and emphasized the democratic nature of bill: it included all citizens, men and women regardless of race, and inducted them through local draft boards. Universal conscription guaranteed the “orderly enrollment of manpower” and stability for industries in regions where the USES failed to meet employment goals. National service would prevent labor shortages and high turnover rates, and moderate “labor hoarding” and “labor piracy.” The policy had proved successful in the U.K.89

American opinion seemed to favor national service. A Gallup poll conducted in early December 1940 had asked Americans, “Would you be in favor of starting now to draft American women between the ages of 21 and 35 to train them for jobs in wartime?” Despite questions about the validity of opinion polling in the 1940s, the responses are insightful. Nearly half of those polled favored drafting women for training: forty-eight percent approved and fifty-two percent opposed. Among women, fifty-two percent assented. Interestingly, the responses from women actually affected, 21 to 35 year-old women, revealed that fifty-four percent favored the proposal. In addition, a poll the following month asked whether boys


89 Manpower (National War Service Bills): Summation of Testimony, pp. 1-17, 20-21, and especially pp. 21-24, for training.
between the ages of 16 and 21, no longer in high school, should spend a year learning skills related to national defense. Seventy-nine percent of those polled answered “yes.” When asked if girls between 16 and 21 under similar circumstances should attend training camps, fifty-six percent of respondents agreed and thirty-four percent opposed. Responses to similar polls after Pearl Harbor are remarkable: the percent of Americans who answered “yes” to drafting women increased to 68 percent and the percentage of women aged 21 to 35 who answered “yes” increased to seventy-five percent. Similar polls conducted over the course of the war increasingly supported the conscription of women for work in critical defense industries or for service in the armed forces.\footnote{George H. Gallup, \textit{The Gallup Poll: Public Opinion, 1935-1971}, vol. 1, 1935-48 (New York: American Institute of Public Opinion, 1972), polls released December 18, 1940, pp. 253-254; February 2, 1941, p. 262; for the poll taken in late December 1941, released February 9, 1942, p. 316; and for additional polls supporting the registration or conscription of women for defense work and the military services, see ibid., March 27, 1942, p. 327; April 10, 1942, p. 329; March 28, 1943, p. 378; August 18, 1943, p. 401; March 10, 1944, p. 435. For a survey of Philadelphia, Pennsylvania, that parallels the Gallup survey, see Albert J. Wood and Albert B. Blankenship, “Getting Women Workers,” \textit{The Public Opinion Quarterly} 8 (Spring 1944): 100-103.}

Those early polls in 1940, which suggested modest support for women working in defense industries, found enthusiastic support from the National Federation of Business and Professional Women. Indeed, the November 1940 issue of the Federation’s publication, \textit{Independent Woman}, demanded of Congress, “Draft us, too!” after passage of the Burke-Wadsworth bill. The women’s federation, born out of the War Work Council created in 1918 to muster women for war production during the First World War, represented in 1940 over 73,000 women in business and the professions. In various issues, the \textit{Independent Woman} demanded a role for women in wartime preparations and mobilization.\footnote{“How to Mobilize Womanpower?” \textit{Independent Woman} 19 (November 1940): 348; and report on the Gallup poll, ibid. 20 (January 1941): 3. Also, see \textit{War and Post-War Demands for Trained Personnel}. Women organized “Molly Pitcher Brigades” and other home defense organizations; see “Molly Pitcher Brigade,” \textit{New York Times} (19 June 1940): 14:2; (7 July 1940): 6:6; 21 July 1940): Section IV, 9:2. In 1940 the labor force included 12.8 million women, employing twenty percent of all women aged 16-60; and see “Reveals WPB Plan to Sign Up Women,” \textit{New York Times}, 5 February 1942, p. 18.} Doris Corwith, a former president of the American Legion Auxiliary, remarked that, “we women have been working for years for recognition of our ability to do equal jobs with men. Now that we are in...
a war, why should we not make the sacrifice to equal what the men are doing and . . . speed up the conclusion of the war?” Yet no national consensus to draft for women emerged.92

Despite public support for the conscription of women and civilian labor, a cross-section of business, labor, and interest groups opposed the Austin-Wadsworth bill. Representatives from the Methodist Society of Christian Workers, the Women’s League for Political Education, the Society of Friends, the National Association for the Advancement of Colored People, and others opposed drafting women altogether. Opponents feared for the “sanctity of the home.” Interestingly, business associations and organized labor joined forces to oppose conscripting civilians. The National Association of Manufacturers and the U.S. Chamber of Commerce supported voluntary manpower policies rather than coercive ones. The bill falsely assumed, the Chamber declared, that production problems stemmed from a lack of support or the unwillingness to work, rather than from poor planning by government agencies. Coercion would retard production, the Chamber argued, and arbitrarily assign workers to industries and regions in need of workers, thereby destroying the rights of free labor and perpetuating inequalities. States that forbade absentee voting would disfranchise workers. Furthermore, what prevented workers from assignments to private employers outside the country? Besides, production in the United States already outpaced that found anywhere in the world.93

In addition to business associations, organized labor vociferously opposed the conscription of industrial manpower. Labor unanimously opposed conscription, at least for the moment. Daniel J. Tobin, president of the International Brotherhood of Teamsters, testified that the nation could not win without support from American workers. Therefore, leaders must centralize manpower planning and perhaps draft labor eventually, but only if necessary to achieve victory. A.L. Wegner, assistant to the president of the International Brotherhood of Electrical Workers, warned that the WMC support for the conscription of labor “is a confession of its own failure in a great administrative task.”94 Others charged that the bill allowed employers to establish an “open shop,” where employees remained free to join


93 Ibid., pp. 17-18, 24-32; Chamber of Commerce of the United States, Should Labor Be Drafted?

94 Hearings before a Subcommittee of the Committee on Education and Labor, Investigation of Manpower Resources, pp. 479-492, and 507-519, and citing p. 509.
or reject an established union. It restricted collective bargaining and the choice of job assignments, and provided no protections for seniority. Additional complaints declared that conscription was drastic, a threat to democracy, violated the Constitution, and created “involuntary servitude.” African American leaders protested that the bill made no effort to prevent discrimination toward minorities. Most labor leaders, with some justification, blamed the government for poor planning, and reminded lawmakers that production remained high. The conscription of labor, they believed, should be a measure of last resort.95

In addition to business and organized labor, politicians opposed the Austin-Wadsworth bill. Senator Edwin Johnson of Colorado argued that the Army was a common institution for mutual defense, whereas private industry was an institution for profit. He opined that the bill violated the 13th amendment and that conscription destroyed freedom and placed an undue burden upon women, especially homemakers, who already had demonstrated their willingness to join the workforce. In addition, shipping women to regions of high labor demand proved disturbing to some, and labor laws that applied to women varied across the states. Passage of the bill suggested that free enterprise and free labor had failed in the crisis. Such despotism was antithetical to the nation’s founding principles, said Johnson, and marked “a decided step toward state socialism.” Even Bernard Baruch, veteran of mobilization efforts during World War I, opposed the Austin-Wadsworth bill. The bill failed, of course, and manpower remained voluntary throughout the war, but the attempt to conscript civilian labor highlighted the crisis in manpower predicted by Maxwell Stewart and others.96

After the failure of the National Service bill, calls for universal national service attenuated briefly, but resurfaced again late in 1944 and early 1945. In his State of the Union address in 1944, FDR requested a national service law to ensure an adequate supply of “able-bodied adults” for war production and for “other essential services.”97 The successful invasion of Normandy and victories in the Pacific, however, reduced the urgency for a civilian draft during the summer and fall 1944. But setbacks in Europe after a German offensive in


December 1944 revived the call for national service. A new bill introduced in January 1945 by Democrats, Congressman Andrew J. May of Kentucky and Senator Josiah Bailey of North Carolina, proposed to draft men aged 18-45 classified as 4-F (unfit for military service) to work in war industries if they not already engaged in wartime work. FDR and the bill’s supporters endeavored to show support for American servicemen. Opponents of the bill, including management and labor, found that supporters of the labor draft had exaggerated shortages, and continued to argue that voluntarism had worked quite well. While the House passed the May-Bailey bill after an amendment to give control of the draft labor to the WMC, former supporters—the Navy and War Departments—lobbied the Senate committee to kill it. A substitute bill, sponsored by New Deal Senator Harley M. Kilgore of West Virginia and Democratic Senator Joseph C. O'Mahoney of Wyoming made its way through Congress. The O'Mahoney-Kilgore substitute placed all war production workers under McNutt at the WMC, and subjected employers and employees to fines or jail penalties for avoiding compliance with the War Manpower Commission. The bill also protected seniority and labor rights along with those of farm workers. Labor gave considerable support, while the bill faced opposition from the War Department and its allies. The O'Mahoney-Kilgore bill passed in the Senate, but stalled in the House committee in March 1945. Opponents—the Navy and War Departments—lobbied the Senate committee to kill it. Meanwhile, the Army and Navy in January 1945 opposed resuming civilian consumer production and warned that it would divert workers from war production to consumer industries. The Secretaries of the Navy and the War Department continued in April 1945 to lobby for a national service act to draft workers, but the end of hostilities in Europe silenced calls for national service. The two strategies to utilize manpower efficiently—manning tables and conscription—made little difference in the outcome of the war. While manning tables helped officials and employers account for manpower resources, they failed to stabilize the workforce or fill the needs of industry. The War Manpower Commission terminated the use of Manning Tables in August 1944.

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98 May later served jail time for accepting bribes in exchange for his influence in the awarding of munitions contracts during World War II. He served nine months in prison before receiving a full pardon from President Harry S. Truman in 1952; see “So Many Voices,” *Time* (26 February 1945).


Civilian Training Program for the Military Services

While the private sector competed for manpower during most of the war, workers also trained for jobs in local, state, and federal governments. The Navy and War Departments hired hundreds of thousands of Americans for their Civilian Training Programs, making special attempts to recruit professionals or those with skills. Army Without Uniform, a publication used to entice civilian workers in 1942, read like a radio script, breathlessly cajoling civilians: “The Civilian Army of the War Department needs recruits. It needs you. Not sometime later, but now, today.” All of the armed services required specialized manpower and actively recruited men and women for occupations in health care, administration, ordnance, engineering, supply, and various trades. The Civil Service Commission screened applicants as the ranks of the federal government swelled to roughly two million by the end of the war. The Vocational Education for War Production Workers program also trained 207,000 uniformed personnel in 52 kinds of vocational courses, and taught 403,980 civilian employees skills needed for federal service. The numerous opportunities for training and employment obviated the need for conscription when Americans found opportunities for useful work at decent wages. ¹⁰¹

Federal Training for Nurses and the Attempt to Draft Nurses

While Congress never passed a law to conscript American women, one measure to draft women nearly passed in the Spring of 1945. The exigencies of wartime required medical and nursing personnel not only for the military, but also for replacing domestic health care workers. In June 1941 Congress allocated over $1.8 million to the Public Health Service to train nurses, and it added an additional $3.5 million in 1942. Still Paul McNutt by mid-June 1942 deemed medical services for the armed forces a failure. ¹⁰² Thus opportunities arose for women in medicine, nursing, and allied health care. Dr. Sara M. Jordan, Chair of the Women’s Committee on Defense Assignment and Procurement of the American Medical


Association, celebrated the opportunities for women to train as physicians and welcomed women as “potential warriors in the defense of their homes and families.” Training as a physician or nurse offered women a chance to enter a profession and serve her country.  

As total manpower demands increased, however, civilian and military nursing services continued to lag. Many civilian hospitals remained understaffed during the war. Even though nurses remained well-compensated among women’s occupations, many nurses who married no longer practiced.  

The nursing shortage early in the war arose for a number of reasons. First, the number of nurses and nursing students dropped off during the late 1930s because many nursing schools either closed or reduced enrollments when hospital-affiliated schools lacked paying customers during the Depression. Although 1,300 nursing schools existed in 1943, a shrinking pool of nurses forced many civilian hospitals to close wards or cut services. In addition, during the war full employment and higher wages allowed more Americans to utilize medical and hospital services, thus increasing the demand for health care and nursing services. Representatives of Bellevue Hospital in New York City, for example, claimed a shortage of 385 nurses. At the same time, significant numbers of nurses were diverted to the war effort after the bombing of Pearl Harbor, and women found new opportunities in non-traditional, defense-related jobs. Semi-skilled jobs in factories required shorter training periods and the prospect of relatively high wages. By contrast nursing required lengthy training and a deferred payoff. Finally, by early 1943 over 30,000 nurses, nearly one-third of the extant population of nurses, volunteered for the armed services, but 20,000 more would be needed by the end of the year. Since planners estimated the need for 2 to 2.5 million more women to fill industrial jobs in 1943, the “competition for womanpower” became acute, making the recruitment of nurses increasingly difficult. A statement by the

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103 Sara M. Jordan, M.D., “Women in Medicine,” in War Demands For Trained Personnel, Proceedings of the Conference held at The Mayflower Hotel, Washington, D.C., March 20 and 21, 1942 (New London, CN: Institute of Women’s Professional Relations, 1942): 45-50, citing pp. 45 and 47. Jordan reported that 990 women trained as physicians in 1931 (4.5% of medical students), and 1146 trained in 1941 (5.4%); 217 graduated from medical school in 1931 and 280 in 1941. Internships and residencies already increased by 300%; see p. 48. Since the military refused to commission women physicians, women doctors replaced men called to military service. Jordan saw the war as an opportunity to reduce professional and cultural prejudice against women physicians; p. 49. According to the surgeon general, of the 160,000 physicians in the United States, women numbered about 7,000, or less than 5% of all physicians; see R.H. Spencer reporting for the assistant Surgeon General, National Institute of Health, ibid., p. 55. Spencer also noted the importance of women for medical research, and noted that 50% of the physicians in Russia were women, most in the civilian sector; see p. 59.

Office of War Information (OWI) appealed to “womanly virtues” of sacrifice and forbearance in order to attract student nurses. A nurse assigned to the front lines, the OWI maintained, could very well find herself tending to her “own brother or sweetheart or former school chum in some far-off base or field hospital.”\textsuperscript{105} In addition, stories of heroic nurses captured in the Philippines or decorated in North Africa appealed to the patriotism of young women.\textsuperscript{106}

With sponsorship from the Federal Security Agency in 1943, Congresswoman Frances Payne Bolton of Ohio shepherded a bill to recruit 65,000 nursing students for training programs in accredited nursing schools. Similar to the Student Nurse Reserve during the First World War, Congress established the Cadet Nurse Corps, originally titled the Student War Nursing Reserve, to supplement the military and public health services.\textsuperscript{107} The bill provided federal grants to supply “nurses for the armed forces, governmental and civilian hospitals, health agencies, and war industries.”\textsuperscript{108} The grants paid or reimbursed schools of nursing for tuition and fees, training, uniforms, and a monthly stipend for students over a period of 24 to 30 months. The grants also included upgrading skills for professional nurses seeking additional education or refresher courses. In return for training and allowances, nurses served in the military—or in any hospital or public health facility approved by the Surgeon General—for the duration of the war plus six months. They earned wages equal to the rank of second lieutenant or ensign. One problem remained, however: prospective candidates had to produce at least a high school diploma or evidence of college work, but only 643,000 women according to the census, had graduated from high school in 1940, further limiting the pool of

\textsuperscript{105} “Witnesses Tell War Nursing Need,” \textit{New York Times} (8 May 1943): 10:3; improved disposable income as a factor, (26 January 1945): 11:1, 2. Also, see \textit{Recruiting and Training of Nurses}, and the testimony of Mrs. Henry James, Chair of the Women’s Board, Bellevue Hospital, New York City, in Hearings for HR 2326, p. 29.


\textsuperscript{107} \textit{Recruiting and Training of Nurses}, p. 1. The Senate version was named the Bailey subsidy bill. Nurses today might object to the portrayal of nursing as a skilled trade rather than as a profession, but nursing is highly skilled and most nurses work for hourly wages rather than for a fee as physicians, lawyers, or architects do. Some nurses belong to trade unions.

\textsuperscript{108} \textit{Recruiting and Training of Nurses}, 1.
applicants. As a result, only 11,000 nurses a year trained between 1940 and 1943. During Congressional hearings, countless individuals and various state nursing associations, the American Hospital Association and state hospital associations, the Army, Navy, and Office of War Information, the Surgeon General and the Public Health Service, all pooled their efforts to support the bill, which passed the House in April 1943 and eventually became the Bolton Act in June.\footnote{Ibid., p. 3.}

Despite increased federal funding, the supply of nurses remained inadequate for the duration of the war. Yet, even when the nursing shortage became especially critical in 1943, the armed services displayed conspicuous discrimination toward black nurses. Nearly 2,000 black women benefited from the Public Health Service training fund and joined the Cadet Nurse Corps by the end of 1944. However, the Army had accepted only 160 black nurses in 1943, who ministered only to black soldiers and German prisoners in North Africa and Europe. Of the 8,000 African American nurses practicing in 1944, only 225 served in the Army Nurse Corps, and their number reached only 479 by the end of the war. Worse, the Navy Nurse Corps remained segregated until early 1945 and had no African American nurses until then. Before the war, neither service had ever admitted black nurses, although over a dozen black women had served with the Red Cross in France during the First World War. Within a couple of months, however, after political pressure from the National Association of Colored Graduate Nurses, African American organizations, and allies such as Eleanor Roosevelt, black women increasingly won the opportunity to serve their country. Even if every African American nurse had been integrated into the civilian and military nursing, however, manpower projections showed that the nursing shortage would have persisted.\footnote{"Professional Nurses," p. 11.}


When questioned by reporters in January 1945, after the president had proposed the conscription of nurses, Major General George F. Lull, deputy Surgeon General of the Army, and Rear Admiral William J.C. Agnew, acting chief of the Navy’s Bureau of Medicine, both denied that the
Perhaps anticipating a lengthier war after setbacks in December 1944, the president in his state of the union address the following January proposed “that the Selective Service Act be amended to provide for [the] induction of nurses into the armed forces. The need is too pressing to await the outcome of further efforts at recruiting.” The American Nurses Association, after polling many of its 178,000 members, supported conscription, but only if all women who conformed to the age limits and other criteria were included in a National Service Act. Eleanor Roosevelt concurred.\(^{112}\) While hostility to a National Service draft persisted, Congress seriously considered drafting nurses in early 1945. Some advocates favored conscripting only single women, married women without dependent children, and male nurses, whom the Navy refused to recruit. Increased recruiting drives by women’s organizations induced fresh enlistments of nurses. At the end of January, for instance, 400 women enlisted in one week, more than in the last two months of 1944. The Navy, meanwhile, changed its policy of discharging nurses who married. The House version to draft nurses 20 to 44 years old passed in March 1945, with overwhelming public approval. The Senate conducted hearings in May for its version of the bill, amidst growing opposition. By the end of the month, following additional nursing enlistments and victory in Europe, the Acting Secretary of War, Robert Patterson, asked the Senate Military Affairs Committee to cease its efforts. The bill died in committee and the war ended five months later. In its contribution to the war effort, the Cadet Nurse Corps trained 179,000 nurses in only two years. Shortly after the war ended, however, President Truman disbanded the Cadet Nurse Corps in October 1945. Legislation for the Cadet Nurse Corps set a precedent for the Practical Nurse Training Act of 1957, the Health Professions Educational Assistance Acts of 1963 and 1965.

and the Comprehensive Health Manpower Training Act of 1971. The shortage of nurses and other health personnel, however, persisted for decades thereafter.113

**Training Women for Wartime Industries**

On the eve of Pearl Harbor, statistics revealed that about 5 to 6 million women remained available for work, and one million already had registered with employment agencies. Mary Anderson, still Director of the Women’s Bureau in the Department of Labor, wrote in the Spring of 1942 about women’s contributions to war production during the First World War. Anderson predicted the need for millions of women workers after the nation’s industries completed the conversion to war production. Instead of waiting, however, Anderson recommended that public agencies facilitate training even before vacancies occurred. Women, she declared, could learn to operate milling machines, punch presses, electrical and mechanical devices, or skills for polishing, welding, soldering, riveting, and calibrating tools and precision instruments. Women, she reminded readers, also worked in arsenals and in munitions and small arms factories during World War I. Women could also man assembly lines for aircraft and airframes production as well as fill the benches for electronics and radio assembly. While only 6,000 did so in January 1942, that number increased after conversion later that year.114

Because the role of women workers during the war has been well-documented, this section offers only a brief discussion with the focus on training women. In August 1941, women comprised three percent of new trainees, but a year later in July 1942, they filled nearly 30 percent of all new training billets, mostly in aviation, machine shop techniques, shipbuilding, and radio assembly. C.R. Dooley recommended screening women for natural ability and work experience. Women, he said, brought no bad habits regarding the proper use of tools and machinery. Moreover, the British had shown women to be adaptable and


dexterous, able to perform successfully in many manufacturing jobs. Instructors modified training programs to accommodate women, although most surveys showed that women need not be trained differently from men. Women still required physical exams and had to follow safety guidelines regarding proper work attire, the use of gloves and goggles, and hair protection. Appeals to women and the promise of good wages lured them into vocational education classes or training on the job. By the end of 1943, 4 million women had entered the labor force, bringing their total numbers to 16.4 million in October. Despite the continued demand, the number of women seeking work began to taper off.115

The War Manpower Commission reported in 1943 that recruiting women and black Americans followed the precedents of the First World War, but on a larger scale. Although women began to receive training through the WPA and NYA, additional opportunities for training arose as men left the civilian workforce. Some firms preferred women, even married women, instead of draft eligible men who received training but then left for military duties.116 While new workers entered training, especially paid training in wartime factories, enrollments in public vocational training courses dropped throughout 1943. The WMC noted that the marked decline reflected “not a decrease in the need for training but rather an unwillingness to take unpaid training when so many unskilled jobs with an opportunity for advancement are available” in well-organized programs in defense plants.117 Women employed during the First World War also expressed a willingness to return to their old jobs after refresher training.118


Early in 1942 the USES issued a bulletin, *Occupations Suitable for Women*, which included the kinds of jobs available and estimated lengths of training time. Later bulletins by the Women’s Bureau emphasized placing women in jobs “for which they are best fitted.” A “good fit” matched talent with physical ability. The Women’s Bureau reiterated the need for women to demonstrate their competency to foremen and male colleagues, while employers adapted jobs to women and provided special accommodations. Despite attempts to treat women as equals with men, women brought special problems to the workplace: many had family responsibilities and sometimes required extra time off. They required supervision and follow-up evaluations, and wanted a chance to upgrade their skills or take additional training for promotion. They also demanded equal opportunity and equal pay for equal work.119

Obviously, women differed physically from men. With women workers, employers had to consider their physical capabilities and limitation in addition to their “special aptitudes,” aptitudes such as better concentration, patience, precision, and manual dexterity, all widely-held views about women’s capabilities in the workplace. The Women’s Bureau

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published guides such as *Choosing Women for War-Industry Jobs, Part-Time Employment of Women in Wartime, When You Hire Women*, as well as information about housing, counseling, and community services for women. The Office of Education prepared *Training Women Defense Workers* in 1942. Women’s relations with supervisors, according to Glenn Gardiner in *How To Train Workers Quickly*—reflecting not only the new managerial style but also the stereotypical views of women workers throughout the century—were especially poignant. He noted that women disliked favoritism and showed little interest in promotions or long-term employment, but that they deserved equal pay for equal work. Employers, he warned, should expect higher rates of absenteeism and should pay special attention to regulations governing women in the workplace. In addition, employers should understand that women would not take men’s jobs permanently, so, he urged, make them “feel at home” on the job, “avoid scare tactics,” and ensure that clothing, shoes, hair, and jewelry do not compromise workplace safety. Keep them interested by demonstrating the “tangibles” such as pay, respect, encouragement, praise, and promoting “pride in accomplishment.” Maintain congenial, “pleasant working conditions” by removing hazards, but do not focus on future opportunities. While women preferred to be supervised by men, experts urged male supervisors to avoid favoritism.120

If women encountered problems different from men, they also found flexible solutions. For example, while housing in rapidly growing areas posed a problem for many workers, as Russell Walker and his friends experienced in Baltimore, the lack of housing proved a heavier burden for single women. Boarding houses preferred male tenants, and even

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poor housing incurred high rents and overcrowding. Part-time work, however, attracted women unavailable for full-time employment. Women enrolled in “Victory shifts” or part-time employment. They filled a gap left by the lack of full-time employees, helped decrease absenteeism, and performed service as a “relief force,” allowing time off for full-time workers. The shorter hours reduced fatigue and allowed a working woman additional time to care for her family, contribute to the war effort, earn extra money, and gain experience and training. By May 1943, 16 million women had joined the workforce, 3 million more than in May 1942, and 5 million more than December 1940.

Did the training of millions of women differ substantially from the training of men? Training-Within-Industry (TWI) officials told instructors to treat the female hire as “just a new worker,” adhere to state laws (some of which were modified for wartime), and consider safety regulations and physical limitations. Since women experienced greater rates of absenteeism than men—usually because of attention to children—the TWI recommended creating a pool of reserve workers able to “fill-in.” TWI also recommended promotion incentives for women and that female supervisors possess the same authority as males. In addition, TWI suggested selecting women candidates on the basis of “education, training, [and] aptitude,” and recognize the fact that women did not lack mechanical ability; rather they merely had little “mechanical familiarity.” Train them the same as men; be open-minded and “Recognize that there is, as always, a training job to do.” The WMC trained 4 million women in 1942, especially for semi-skilled metal working and mechanical occupations.

As early as January 1942, government officials, businesses, labor leaders, and educators recognized importance of women workers. The federal government began “Calling All Women!” with posters, radio and print advertisements, and publications such as Wartime Jobs for Girls and Women at Work in Wartime. These and similar promotions not only

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121 Progress Report on Women War Workers’ Housing.

122 Part-Time Employment of Women in Wartime. Also, see Eugene J. Benge, Breaking the Skilled Labor Bottleneck: How to Subdivide Labor Skills to Gain Maximum Production (New York: The National Foremen’s Institute, 1942). Time for learning skill tables may be found in the Appendix, which reprinted an article by Charles S. Slocombe, “Skilled Workers for Defense Industries” (New York: Personnel Research Federation).


appealed to the patriotism of women and girls, but also touted opportunities for training, education, equal pay for equal work, and child care for working mothers. Women reportedly manned Merchant Marine vessels, worked in mines and heavy industry, and 190,000 trained for various railway jobs by October 1942.\(^{125}\) To facilitate the entry of women into the workforce, the Congress of Industrial Organizations in November 1942 supported the Lanham Act, which allocated funds to help defer the costs of child care. The CIO also resolved to end discrimination, to support equal pay for equal work, to create additional opportunities for training, and to identify the problems peculiar to women in industry in order to ease their transition to the workplace.\(^{126}\)

By the summer of 1942, female employment approached historical peaks. Shortages of male workers, especially in aviation and shipbuilding, became acute and officials expected increasing shortages within the coming months. While few women worked in shipyards before the war, training prepared them for shipbuilding occupations; they comprised nearly ten percent of wage earners in the shipbuilding industry by January 1944. Pacific Coast shipbuilders accounted for the largest percentage of women workers, roughly 15 percent of shipbuilders there. Furthermore, many workers moved to full-time positions or worked overtime. Still, in some parts of the country employers had not yet utilized the entire reserve of women and minorities. Women and black Americans, however, increasingly enrolled in


public pre-employment training. Inadequate housing and a lack of transportation also contributed to labor shortages by slowing migration to areas in need of labor. \(^{127}\) Female employment began to decline early 1944, however, when as many women left the labor force as joined. Males entering the armed forces, however, diminished the civilian workforce by 2.1 million in a year. \(^{128}\)

By the spring of 1943, women had become the major new source of labor for all industries. Women in large numbers took jobs in manufacturing communications equipment, electrical devices, small arms, and scientific instruments, and made significant gains in aircraft and shipbuilding. Employers relieved some of the burden of homemaking—offering child care and flexible time—to induce women into the workforce. \(^{129}\) Over 2.4 million females trained in public vocational schools and colleges by the middle of 1944. \(^{130}\)

In January 1945, industries still needed a half million war production workers to stabilize the workforce in war industries. While 53 million civilian workers remained employed, unemployment crept up because of cutbacks in some industries, the discharge of veterans, and a drop in demand for agricultural workers. Despite impending victories, military demands increased for a final push against the nation’s enemies. By V-E Day in May 1945, the administration expected large layoffs. President Truman asked for emergency legislation from Congress to provide unemployment compensation for war workers not usually covered, but Congress refused. When V-J Day arrived in August, reconversion had already begun.

The War Manpower Commission had announced its seven-point program for employment and reconversion utilizing the USES to maximize worker relocation, query employers about future labor supplies, and channel workers into suitable employment. While few women had entered the Vocational Training for National Defense programs before January 1942, 1.5 million had


\(^{129}\) Ibid. (March-April 1943): 1-2.

\(^{130}\) “Vocational Training, 1940-1944,” *Monthly Labor Review* 59 (October 1944): 820-821. Over a million women trained in vocational schools for war production workers: 687,000 in food production; 230,000 in college-level engineering, science, and management courses; 160,000 in the TWI program; and over 256,000 in the NYA. More specifically, 484,254 trained in aircraft production; 198,871 in machine-shop occupations, and 115,000 in shipbuilding.
done so over the next few years, nearly 20 percent of all VT-WPW trainees. By the end of the war, the WMC had made no provisions for retraining war workers, and the agency dissolved on September 18, 1945.  

Conclusion

The Vocational Education for War Production Workers program alone trained 7.5 million persons at a cost of $297 million by May 1945. Training for supervisors, engineers and scientists, and other vocational training programs ceased on June 30, 1945. For over five years, from July 1940 to July 1945, local, state, and federal governments cooperated with industries, educators, and organized labor to train millions of Americans in 2,600 training centers around the nation, spending nearly $327 million. The previously unemployed or marginalized workers included 1.47 million women and 363,000 black Americans. Over half of all trainees filled vocational training classrooms in seven states: California, Illinois, Michigan, Ohio, New York, Pennsylvania, and Washington State. The WMC reported that for all kinds of Federal-State war production training programs—Vocational Training for War Production Workers, Engineering, Science, and Management War Training, Food Production War Training, the National Youth Administration, and Training Within-Industry Service between July 1, 1940 and October 1, 1944, amounted to over 14 million Americans. The numbers trained solely by the private sector are unknown, but add those to the official statistics and the number of Americans who trained during the war becomes astronomical.

In addition to the investment in human capital for training millions, the output of manufactured goods and war matériel by production workers offers a measure of success.

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132 Musser, *Vocational Training for War Production Workers*, pp. 78 and 133.


Ships and aircraft accounted for almost fifty percent of all money spent on munitions manufactured during the war (nearly $86 billion of $183 billion spent from July 1940 to August 1945). The aircraft industry during that period fabricated nearly 296,000 airplanes of all types (96,000 in 1944 alone). The Army Air Corps trained nearly 769,000 pilots (excluding navigators and bombardiers), and listed over 360,000 aircraft maintenance personnel at their peak number in April 1945. American shipbuilders produced over 127,000 vessels of all types between July 1, 1940, and June 30, 1945, including 1,200 combat ships, 3,000 cargo and “liberty” ships, and 500 tankers. American farmers and agricultural workers fed and clothed Americans at home and at war, as well as allies in Europe and Asia.\footnote{Howard Mingos, ed., The Aircraft Yearbook For 1946 (New York: Lanciar Publishers, Inc., 1946): 474, 476, and 478. Interestingly, while the Army Air Forces lost nearly 23,000 airplanes to combat from 1942 to August 1945, they lost 21,500 (roughly a third) within the continental U.S. alone; see pp. 461-462. For maritime and naval vessels produced, see U.S. Civilian Production Administration, Shipbuilding Policies of the War Production Board, January 1942-August 1945, by William Chaikin and Charles H. Coleman, Historical Reports on War Administration and the War Production Board, Special Study No. 26 (Washington, DC: Civilian Production Administration, 1947): 200, Table 7, “All Vessel Programs and Deliveries, July 1, 1940-June 30, 1945.” Also, see, Harold G. Vatter, The U.S. Economy in World War II (New York: Columbia University Press, 1985); and Industrial Mobilization For War, pp. 941-986, esp. p. 962, Table 13, for production of war matériel.}

Wartime training, however, produced no panacea for those seeking careers or secure jobs. As the editor of Industrial Arts and Vocational Education opined in May 1941, workers trained under the National Defense Training Program “cannot qualify later as skilled tradesmen. They may become good machine hands, but unless they take advantage of courses offered in the schools to advance themselves, they will never become all-round mechanics.”\footnote{John J. Metz, editorial, “What of the Future?,” Industrial Arts and Vocational Education 30 (May 1941): 198.}

CHAPTER 10

“COMING HOME TO A JOB”:
EDUCATION AND TRAINING FOR THE POSTWAR ECONOMY

“When Johnny comes marching home, he is not going to want to come home to unemployment or relief or selling apples on the street. He is going to want to come home to a job.”
-- Floyd Reeves, September 1943

“Nothing will be more conducive to the maintenance of high morale in our troops than the knowledge that steps are being taken now to give them education and technical training when the fighting is over.”
-- Franklin D. Roosevelt, October 1943

“Just as we needed training programs for war, we will need retraining programs for peace.”
-- Mordecai Ezekiel, October 1944

Shortly after the Japanese surrender in September 1945, the War Manpower Commission estimated unemployment rising to 6.2 million by the end of the year. Federal wartime agencies planned to drop 400,000 employees, while the military prepared to discharge 2.2 million soldiers, sailors, and marines by the end of the year. The aircraft industry, whose employment had peaked at 2 million in 1944, planned to reduce its workforce

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from over a million on V-J Day to 210,000 by October 1945. By the end of the 1945, the government cancelled over $21.5 billion in aircraft contracts alone. Many recalled the chaotic demobilization following the First World War that led to inflation, racial and labor conflicts, and unemployment. Experts and average citizens predicted a resurgent depression. A Gallup poll the year before had queried Americans: “After the war, do you think that everyone who wants a job will be able to get one?” Sixty-eight percent of Americans answered “no.” Economists registered gloomy predictions as well, fearing a postwar recession or resurgence of mass unemployment. Unemployment claims swelled to 960,000 in August 1945. With the Japanese surrender, war production virtually ceased by September 1, except for ship repair and maintenance. The government cancelled orders for military ordnance and hardware. Industries prepared to inventory equipment and retool for peacetime production. The transition time would exact an additional round of layoffs for the nation’s workforce.2

Dire predictions suggesting the return of mass unemployment never materialized, however, to the surprise of many economists and public officials. By the end of 1945 the “work week approached pre-war levels.” The furniture, textile, and apparel industries sought 250,000 additional workers by late 1945. Even disabled workers increased their numbers in


The National Association of Manufacturers (NAM) in February 1941 surveyed members of the American Economic Association about the possibility of a postwar depression. While less than twenty percent its 2,900 members replied, economists offered varied opinions about how to manage the postwar economy. Often they qualified their answers on the basis of one or a combination of factors: for example, whether or not the U.S. joined with the Allies, or whether or not the Axis won, the duration of the war, and the kind of peace arrangements thereafter. Of the 480 who did respond along with comments, roughly 80 percent expected some kind of postwar recession, while only 4 percent did not. Many economists foresaw government planning or some form of corporatist cooperation between government, business, and labor. While a few mentioned “vocational guidance,” continued public works, income redistribution, or unemployment compensation, few considered investing or reinvesting in human capital. The consensus seemed one that girded for a resumption of the Great Depression. A minority saw no indications of a returning depression; National Association of Manufacturers, Can We Avoid A Post Armament Depression? (New York: National Association of Manufacturers, 1941): esp. pp. 13, 20-26; and see pp. 63-70, for the minority view.
the workforce after the launch of the “National Employ the Physically Handicapped Week” in October. The steel industry foresaw expansion after the auto industry had already begun limited reconversion in May 1945. Despite huge layoffs in the aircraft industry, especially in the far Midwest and the Great Lakes regions, the automobile industry absorbed large numbers of skilled and semi-skilled aircraft workers as did the manufacturers of consumer durables such as washing machines and refrigerators. Those industries expected to hire additional workers in early 1946. The construction industry expected to fill 800,000 new jobs in 1946, when housing construction surged. At the time, neither industry leaders nor public officials mentioned that an enormous pool of trained workers stood ready to transfer their war production skills into peacetime industries and contribute to a “full employment economy.”

As employment fell in war industries, the number of workers hired into converted industries steadily rose. Matching jobs with skills in some instances remained a problem. Worse, old prejudices returned. Women, the War Manpower Commission (WMC) reported, “lost jobs faster than men”; their fraction of the workforce declined from 33 percent during the war to about 23 percent in late 1945. Among the unemployed, two and-a-half times as many women sought jobs as there were jobs for women because, the WMC asserted, “most of the job openings were for men.” Unemployment compensation and social security measures reduced the pressures on some women to work. A poll in the summer of 1943 had revealed that half of all married women and “a seventh of all single women in war jobs” would return to the home. In the meantime, however, women’s attitudes changed. A Gallup poll in early 1945, found that 61 percent of women hoped to keep working after the war, while ten percent remained uncertain. If women, the disabled, and minorities benefited from wartime work,

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3 The Labor Market (September 1945): 6; ibid. (October 1945): 1-4; and see ibid. (November 1945), for similar observations, and p. 26, for handicapped; ibid. (December 1945): 1-2, 8, 15, and 17; Director of War Mobilization and Reconversion, Sixth Report to the President, The Senate and the House of Representatives: Production Moves Ahead (Washington, DC: U.S. Government Printing Office, 1946); and W.S. Woytinsky, “What Was Wrong in Forecasts of Postwar Depression?,” The Journal of Political Economy 55 (April 1947): 142-151. Woytinsky noted that “proponents of Keynesian theory” formulated nearly all of the erroneous forecasts. Moreover, he criticized the false predictions of economic collapse that incurred serious consequences; they discredited the discipline of economics, inspired fears of a reversion to the Great Depression, and “undermined the international prestige” of the United States that emboldened foreign antagonists; see p. 143.

breaking down previous long-held barriers to employment, what did the postwar labor force portend for them? Would wartime cooperation carry over into peace time? What rewards could veterans and war workers expect from their government for a job well done?²

To answer those questions and others, this chapter examines various proposals made by economists, educators, businessmen, labor leaders, and public officials regarding the importance of education and workforce training after the war. It explores the ways Americans prepared for the postwar world, and especially considers the attention given to education and training as part of a plan for full employment. Some postwar preparations began before the Japanese attack on Pearl Harbor, and various public and private agencies recommended postwar policies throughout the war years. While the national economy had improved when industries increased production to supply belligerents in Europe after 1939, Americans feared a return of the Great Depression. Therefore, policy makers contemplated a number of strategies for creating and maintaining full employment after the war. Some of those considerations included education, training, and social welfare programs, especially for veterans, that eventually culminated with the Employment Act of 1946. In the meantime, analysts searched for policies and programs that provided Americans security. But like those generals who fight the previous war, some policy makers constructed their analyses on the basis of fighting the Great Depression all over again. For others, policies and programs shaped by the war led to new insights that changed conceptions about full employment, deficit spending, and the avoidance of mass unemployment. Nearly every plan for future growth included the input from and cooperation between federal, state, and local governments, and between the public and private sectors, particularly industry, agriculture, and organized labor. Indeed, American leaders heeded the lessons of the previous war.

**Postwar Planning Before Pearl Harbor**

Even before the attack on Pearl Harbor, various organizations and government agencies undertook “post-war” planning shortly after war broke out in Europe in 1939. Businessmen, union leaders, politicians, and policy makers wished to avoid the chaotic demobilization that followed the First World War and the economic dislocations caused by the Great Depression. In addition, public sector planning had come to be perceived during the

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New Deal as a government responsibility. American leaders at the time, commented a recent historian, decided that, “No last-minute, piecemeal, poorly conceived programs could predominate this time.”

To avoid the kind of abrupt demobilization that followed the First World War, organized labor, government agencies, and business leaders pondered studies and reports undertaken during late 1939 and the early 1940s. After war erupted in September 1939, the American Federation of Labor proposed a plan for postwar America and Europe at its annual convention in December. Anticipating the need for training, the AFL passed resolutions supporting federal aid to education and recommending the creation of a permanent agency for adult education within the states, one modeled on the WPA education programs but funded directly by the federal government. The AFL also recommended assisting the nations of Europe after the war through physical reconstruction and education for youth and adults as a way to promote democracy.

The Secretary of Labor in 1941, concerned about postwar unemployment, initiated studies to determine the efficacy of “retraining men and women for peacetime occupations” in an effort to achieve a full employment economy. Full employment became interlinked with mass consumption. Secretary Perkins insisted that, “To increase the consumption of necessary goods and of luxuries will be greatly to improve employment opportunities and at the same time raise the standards of living for people the world over.”

Similarly, the National Resources Planning Board, successor to the National Planning Association, provided analysis and advice to the White House. Unemployment, still hovering around fourteen percent in 1941, remained a principal concern. “Our greatest resource is men-at-work,” the NRPB wrote; full employment remained “the key to national prosperity.”


NRPB plans for the future included full employment with decent workplace standards that included a forty hour work week, a fifty week year, health and safety regulations, minimum wages, and the right to bargain collectively. In addition, social programs would ensure adequate housing, clothing, food, medical care, education, economic opportunity, and basic freedoms. Policy makers feared unemployment as the chief problem of demobilization once the war ended and war production receded. To keep people at work, public works projects like those created during the New Deal guaranteed employment and security. A timely recovery required cooperation between federal, state, and local governments, in addition to consultation with industry and organized labor. Training and retraining for critical occupations served “to avoid serious shortages” of skilled workers and professionals such as doctors, nurses, teachers, and engineers. The NRPB recommended as well that the United States address international problems after the war to avoid future conflict.\(^9\)

**Postwar Planning After the Pearl Harbor Attack**

Shortly after the United States entered the war, organized labor in particular desired a planned reconversion in the postwar period to avoid the abrupt cancellation of contracts and lack of planning that characterized the Wilson administration following the First World War. Labor also wished to prevent a rapid escalation of unemployment that would likely lead to labor conflict and racial strife. A rapid demobilization, labor leaders argued, gave large corporations an advantage over small businesses and would lead to rising and uncontrolled levels of unemployment. In December 1943, the heads of organized labor and organized industry conducted a public seminar before three thousand industrialists regarding “jobs in peacetime.” William Green, president of the American Federation of Labor, and Philip Murray, President of the Congress of Industrial Organizations, met with Paul Hoffman, President of the Studebaker Corporation and Chair of the Committee of Industrial Development, Frederick C. Crawford, President of Thompson Products, Incorporated, and President of the National Association of Manufacturers. H.L. Derby, President of American Cyanamid and Chemical Corporation and Vice-President of the NAM, presided. The panel

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spoke optimistically of achieving full production and eliminating poverty, ending depressions, and preserving or extending health services.\textsuperscript{10}

The crucial question came to be, How will America achieve full employment? All of the panel members admitted astonishment at the successful mobilization and economic expansion at the beginning of the war, created by cooperation and unity of purpose. Hoffman noted that early increased productivity derived from government and business cooperation and overseas expansion. Cooperation between industry and labor also entered the equation. Furthermore, the federal government would have to provide an “environment” for growth by offering incentives and avoiding unnecessary production. Hoffman wanted a quick conversion to civilian production: “full employment” or “jobs for all” were unrealistic, but “abundant employment” through high productivity seemed possible. Phil Murray of the CIO responded that full employment had to combine the “highest possible degree of employment” with public works. Management and labor cooperation, he believed, could overcome the challenge of postwar unemployment and insecurity. William Green of the AFL said, “I regard ‘jobs for all’ as America’s No. 1 postwar objective.” Cooperation between labor and management had solved national economic problems during the war. Neither industry nor labor could bring about economic changes alone. The federal government, however, remained conspicuously absent from the mix. While the federal government committed its resources to help veterans, the “soldiers of production” required assistance as well, whether with unemployment insurance or some other form of security. Ideally, there should be opportunities for everyone—including women, the disabled, or minorities—to earn a living. According to Green, there should be jobs for everyone willing and able to work, although he did not expect millions of women to remain in workplace. Crawford of the NAM foresaw a quick return to high levels of production after reconversion as long as firms had ready capital reserves. They needed confidence and capital to increase production and take advantage of pent-up demand. They also required, he added, a secure and stable world in which Americans could enjoy the fruits of abundance.\textsuperscript{11}

\textsuperscript{10} National Association of Manufacturers, Jobs in Peacetime: A Panel Discussion (New York: National Association of Manufacturers, 1944).

To avoid international conflicts and domestic economic dislocation feared by organized labor and government policymakers during the war, business organizations proposed a number of solutions. The National Association of Manufacturers (NAM), for example, issued at least two reports on postwar jobs after the attack on Pearl Harbor. The NAM published its first pamphlet, *Jobs—Freedom—Opportunity in the Postwar Years*, in 1941 and followed up in 1943 with a *Second Report of the Postwar Committee of the National Association of Manufacturers*. The pamphlets together prepared a litany of postwar concerns about jobs, freedom, and opportunity through limited government at home in order to ensure the maximum production of goods and services. Furthermore, the NAM joined a growing consensus about the role of the United States in the postwar world to promote political and economic stability. World leadership would help preserve peace and maintain domestic prosperity. The NAM in 1943 recommended allowances and bonuses for veterans, guaranteed employment for vets with their former employers, and training for peacetime civilian work—all before demobilization ensued. After all, veterans understood discipline and employers seemed eager to welcome them home. The NAM offered few thoughts about how to finance education and training, however.12

A few observers took notice in the stock of human capital developed during the war. Writing for *The American Economic Review* in 1943, Wilson Wright of the Armstrong Cork Company understood that, “it would appear possible to derive some important degree of national benefit from the occupational training and mobility that the working population is receiving during the war years.” It seemed reasonable to assume, he continued, that “a by-product of the war” would be additional “industrial development” and the development of workers’ organizations. Wilson might have added that the American workforce had trained quickly and efficiently, and could likely be retrained with minimal costs in time or treasure.13

In addition to policy makers and the leaders of organized labor and industry, educators and economists contributed thoughtful analyses and recommendations for postwar security

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12 National Association of Manufacturers, *Second Report of the Postwar Committee of the National Association of Manufacturers* (New York: National Association of Manufacturers of the United States, 1943): 5-6. The committee also suggested rolling back gains made by organized labor such as minimum wages and hours, resuming “right-to-work laws,” and collective bargaining agreements established during the 1930s; see pp. 29-31.

and prosperity. The economist Alvin Hansen in 1942 recommended cooperation between industry, labor, and government to achieve full employment and avoid the problems of unemployment and inflation that followed the First World War. Investing in human capital would sustain production and consumption. A “larger proportion of our population,” he predicted, “will be trained to perform skilled or semiskilled jobs.” As the nation turned from war mobilization to peace mobilization, Hansen reiterated the importance of “producing goods needed for civilian consumption.”

During the early years of the war, numerous individuals and agencies recalled the lack of planning for demobilization after the First World War. Scholars from the Department of Labor and the Civilian Production Administration researched and wrote monographs during the war on demobilization following World War One. The *Monthly Labor Review* published excerpts from one study, but *Industrial Mobilization for War: History of the War Production Board and Predecessor Agencies, 1940-1945* remained unpublished until after the war. James Mock and Evangeline Thurber published their assessment of demobilization following the Great War in *Report on Demobilization* in 1944. Mock and Thurber noted that FDR seemed more amenable to planning than Woodrow Wilson and they approved postwar planning measures underway in many circles, especially those promoted by the National Resources Planning Board as well as those supporting rehabilitation and reconversion measures for veterans. They stressed, however, the importance of cooperation between government, industry, and labor, and between other levels of government to implement well-laid plans. Other agencies began to consider the most effective public policies for reconverting the economy from war to peace. The problem for economists and policy makers lay in the means and pattern of reconversion. One budding economist in 1942, while agreeing with efforts to achieve full employment, departed from the wisdom of federal policy planners by recommending the avoidance of “make-work projects” or withdrawing workers from the labor market. Instead, he proposed to readjust all parts of the economy to maintain some “continuity of economic equilibrium” through reconstruction and long-term conversion.

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Another planner early in 1942 noted presciently that the “shape of the future is being fashioned by the methods, procedures, and institutions that are being established during the war.” E.J. Coil of the National Planning Association urged the nation to find ways in the postwar world to maintain high levels of employment and production. While focusing on industry, he urged postwar planning among both the public and private sectors in order to construct a speedy conversion from wartime to peacetime production. Part of his solution included retraining for both veterans and civilians, supporting federal aid for adult education, and planning and investing in a full employment economy. Whether or not a committed Wilsonian, Coil also desired that the United States assume international leadership through a “United Nations.”

Once the United States began converting from defense to war production in 1942, planners gave additional thought to postwar legislation. The National Resources Planning Board led the way in postwar planning, at least in the quantity of studies. Beginning in 1942, the NRPB proposed amending the Economic Stabilization Act of 1931 in order to provide continued public works construction projects to sustain employment after the war. Using as models the various Emergency Relief Acts passed during the 1930s, the NRPB sought to ensure long-term continuity in employment and to avoid the periodic interruptions in works programs because of inconsistent annual funding. In Security, Work, and Relief Policies, its last major document before its demise in 1943, the NRPB recommended a vigorous federal employment service and continuous public works program for workers not absorbed by the private sector. Among those recommendations, the NRPB urged “schemes for reconditioning, training, and retraining and, above all, that special grants be payable to enrollees on such programs.” The Planning Board also suggested financial assistance to move workers and their families to areas in demand of their particular skills and provide grants for purchasing tools. The NRPB recommendations bore the seeds of later programs such as the Manpower Development and Training Act of 1962 or the Job Corps of the late 1960s. Like the WPA and

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other wartime agencies, it urged paying workers who required training or retraining, and
recommended offering grants to help relocate workers to areas of high labor demand.
Following the example of the NYA, planners suggested formal and practical training for youth
and public support for all forms of education. The NRPB proposed an ambitious blueprint for

Lawmakers after 1940 took a conservative turn and shunned plans for constructing a
welfare state. Nevertheless, workforce education and training remained part of most postwar
strategies. Educators proposed reconversion training and education at the local level or within
universities. In the Spring of 1942, for example, the Institute of Adult Education at Columbia
University established a non-governmental Commission on Post-War Training and
Adjustment. Composed primarily of educators, the commission examined the need for
publicly supported adult education following the war. The commission report issued in June
advocated reeducation, retraining, and rehabilitation for veterans and civilians. Financing
education and job training, it noted, should be a “primary responsibility” of the federal
government, but without the addition of new federal agencies. The report emphasized the
need for state and local control of education and training. It also paid attention to local labor
needs and anticipated programs for guidance, counseling, and placement services.
Furthermore, the report recommended the inclusion of public schools, educational institutions,
churches, libraries, technical institutes, vocational schools, labor unions, clubs, and social
agencies to assist in a massive training and education effort. The commission recommended
that postwar training programs build upon the skills that veterans learned in military service
from technical training or from education received through correspondence and extension
schools. Following a trend that began during and after the First World War, the commission
urged the inclusion of private sector resources as well as cooperation between individual firms
and public schools. The commission emphasized the importance of retraining women on an
equal basis with men and noted that women profited from the same employment and training
opportunities. The commission urged the retention of state and federal workplace protections
as well as the training-within-industry programs for rural workers and minorities, especially
black Americans. Ideally, the military would provide guidance and training for the transition

In July 1942 the president appointed a “conference” assisted by the National Resources Planning Board and chaired by Board member and presidential advisor, Floyd Reeves. One panel included a dozen educators, training administrators, and representatives from the military and manpower training programs. This panel studied the problems likely to arise amidst the postwar readjustment of military and civilian personnel. Still preoccupied with the problem of a postwar depression following the First World War, the panel concluded that veterans and war workers alike required reassurance for the postwar recovery. Echoing the sentiments of the National Industrial Conference Board after the First World War, the committee concluded in early 1943 that, “Unpreparedness for peace can bring calamity as great as unpreparedness for war.” Readjustment, therefore, included retraining.\footnote{19 U.S. National Resources Planning Board, \textit{Demobilization and Readjustment: Report of the Conference on Post-War Readjustment of Civilian and Military Personnel} (Washington, DC: U.S. Government Printing Office, 1943): 3. The conference included Reeves; Edward C. Elliott, Professional and Technical Employment and Training Div., WMC; Francis J. Brown, Education Adviser, Joint Army-Navy Committee on Welfare and Recreation; William Haber, Director, Bureau of Program Requirements at the WMC; Brig. General Frank T. Hines, Veterans Administration; Maj. General Lewis B. Hershey, Director of Selective Service; A.F. Hinrichs, Acting Commissioner of Labor Statistics; Lt. Commander Ralph A. Sentman, Officer in Charge of educational Services Section, Bureau of Naval Personnel, Navy Department; and others military trainers. Also see the NRPB’s \textit{Wartime Planning for War and Post War} (Washington, DC: U.S. Government Printing Office, 1943). To recommend ways to stave off unemployment, the former head of the U.S. Employment Service and now Dean of the School of Business and Public Administration at Washington University, explored the causes of depression; William H. Stead, \textit{Democracy Against Unemployment: An Analysis of the Major Problem of Postwar Planning} (New York: Harper and Brothers Publishers, 1942).}

Many of the recommendations by Reeves and the NRPB reflected the influence of William Beveridge, the reputed architect of the welfare state in the United Kingdom. While Beveridge awarded no special priority to training or retraining, he saw workforce or human capital development as a transitional benefit, one “to facilitate change to new occupations” by those who lost their livelihood because of physical incapacities or ailments. He believed the

In a similar vein, Floyd Reeves articulated in 1943 a broad vision for education and training in the postwar world, one anticipating a full employment economy and extending the relief programs of the New Deal. For children and youth, he advocated equal access to nursery schools, kindergartens, elementary schools, and high school education. Reeves also encouraged the growth of junior colleges and technical schools, and promoted opportunities for adults out of school to learn workforce skills by having governments provide grants, loans, or work opportunities. He also proposed part-time education for adults, including correspondence schools, “educational broadcasting, libraries, and museums.” Moreover, Reeves wanted to expand opportunities for the handicapped, improve the quality of education, and retrain or resume the education of military veterans. In September 1943, Reeves participated in a radio discussion about how to assist returning veterans. His recommendations would have expanded existing New Deal programs such as meals in the primary schools and the construction of new schools, and they fostered formal education and occupational training as well. Reeves envisioned the participation of all levels of government to “give equal access to such education to all who need it or desire it.” Current spending levels, he believed, remained inadequate. The public needed to improve teacher salaries, add new learning facilities, and carry out educational research. He concluded that increased expenditures for education from the federal government (which stood at only 3 percent of all
spending for education in 1938) and the redistribution of federal taxes would help equalize the nation’s educational system.  

Because Reeves served on the National Resources Planning Board, many of their recommendations overlapped with his own. The NRPB plan of June 1943 revealed an abbreviated version of previous policy recommendations. In addition to assisting veterans, the NRPB proposed readjustment and retraining centers for war workers in order to avoid mass layoffs and unemployment. He also captured the sentiment nation grateful for the sacrifices of its veterans, observing that, “When Johnny comes marching home, he is not going to want to come home to unemployment or relief or selling apples on the street. He is going to want to come home to a job.” The NRPB also advised against discrimination toward women in the workforce, and proposed that women who wished to work outside the home use appropriate employment agencies. Various economists and the Planning Board proposed that the federal government aid economic stabilization and the expansion of peacetime industries by generating a “climate favorable” to the private sector. In addition, the NRPB demobilization plan included security on a number of levels. First, it recommended armed security for national defense as well as “some plan for world order.” Second, the nation required industrial security—a rapid and orderly conversion—to preserve its war-making capacity that had become inextricably linked with armed security. A controlled transition, unlike that which followed the First World War, offered incentives to resume peacetime, private enterprise. Third, the NRPB suggested a kind of labor market security, one that prompted the national government to oversee a rapid yet orderly military demobilization by controlling the rate of discharge and reemployment of veterans that avoided the large-scale disruption of labor markets. Fourth, full employment—employment “for every American who needs a job or wants a job and is capable of performing it or learning to perform it”—would be aided by the private sector and supplemented by public works. The NRPB avoided recommending “made work” jobs, but permitted them only as last resort. This fourth item suggested a plan for

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economic security. Finally, the NRPB foresaw both individual initiatives and group efforts: there needed to be cooperation between the national government—the locus of planning and coordination during the transition period—and intermediate governmental and private agencies, including businesses and all levels of labor. The costs for reconversion, the NRPB noted, represented “in fact a part of the cost of the war [leading to] economic stabilization, full employment and economic security.” While the NRPB dissolved along with other New Deal work relief agencies in 1943, many of its recommendations found adherents among policy makers.22

In a 1943 study for the Brookings Institution, Karl Schlotterbeck concluded that demobilization would be gradual and, despite predictions to the contrary, production levels would remain high, necessitating the retention of most of the wartime workforce. In addition, he anticipated that many women, older workers, and youths would exit the labor force. Americans had to face the cold fact, however, that true full employment might be unattainable. Influenced by the Beveridge Plan, Schlotterbeck agreed with the NRPB that unemployment insurance or public works projects would benefit the unemployed. The NRPB and numerous economists tended to find common ground over postwar planning.23

Economists like Robert Nathan made similar recommendations. Nathan—chief of the National Income Division of the Bureau of Foreign and Domestic Commerce, head of the Military Requirements Section and later the Planning Committee of the War Production Board—eventually became deputy to Fred Vinson, Director of the Office of War Mobilization and Reconversion in April 1945. While convalescing in 1943 at the Walter Reed Hospital in Washington, D.C., Nathan pondered the economic problems that had befallen the United States before World War Two. He weighed the concerns of ordinary soldiers he encountered in hospital with his own observations about economic matters, gauging the possibilities for abundance, stability, and peace in the postwar era. Mobilization for war, Nathan surmised, had been overwhelmingly successful. To sustain that economic success after the war,


America would have to “mobilize for abundance.” To achieve abundance, the United States would have to first, defeat the enemy, and then embark upon a plan to “win the peace.” Winning the peace required successful reconversion and readjustment, as well as a program to ensure long term prosperity. He recommended selling off surplus plants and machinery, extending wartime controls if necessary, expanding production to meet consumer demand, maintaining consumer confidence, and increasing the age for unemployment benefits. He considered massive government spending, however, a last resort. The growing consensus during the war increasingly favored public and private cooperation to design a planned reconversion and full employment economy as major goals for postwar America.24

Another insightful text published by the Russell Sage Foundation in 1944 examined changes in technology and its subsequent impact on the standard of living. Mary Fleddérs and Mary van Kleeck, former director of the Women’s Bureau in the Department of Labor, catalogued important structural changes in the economy between the two world wars. They mentioned the changes in energy resources—electricity, oil, and gas—and how those powered all kinds of tools and machinery that improved productivity. They discussed the growing importance of the chemical industry and the invention of new kinds of materials—alloys, plastics, and man-made fibers—for industrial and consumer products. They also considered how technologies had displaced labor in agriculture, mineral extraction, transportation, construction, and communications. Increased productivity accompanied a reduction of physical work while producing an abundance of material goods. All of these improvements, Fleddérs and van Kleeck noted, improved the standard of living and created a modern, increasingly technical infrastructure.25

While noting the impact on technological change and the likelihood of continuous change, Fleddérs and van Kleeck considered the labor requirements and employment


opportunities to come. Noting the shifts in labor demand over the previous decades, changes in the occupational structure, and the addition of women to the labor force, the authors, curiously—no, maddeningly—omitted a consideration of future workforce education and training! In a postscript, they mentioned the influx of workers into the wartime labor force and the “increased opportunities for employment,” but they paid too much attention to the problems following the First World War and dismissed the arguments for “full employment” planning following the Second. In spite of all the reasons cited for expecting a quite different economic outcome, given new technologies and changes in the workforce, Fedérs and von Kleck prepared to fight the problems of the previous postwar period. Yet somehow the anticipation of new technologies that required specialized workers escaped their interest. Sadly, the authors offered little advice about investing in human capital.\textsuperscript{26}

By late 1944, the distinguished economist Richard Lester, also reiterating the fear many Americans harbored about a recurring depression, recommended a number of ways to meet the problems of unemployment during the transition to a peacetime economy. Like many other economists and policy makers, he suggested unemployment compensation, job stability in the private sector during reconversion, public works projects (but only as a last resort), and job training and retraining. The latter is noteworthy because he proposed a federal program of training with state cooperation. Since the Smith-Hughes and George-Deen acts excluded to a large degree adult Americans, relatively few adults benefited from vocational education programs; nor had funding covered service and commercial occupations or preparation for self-employment. Some states and school districts prohibited night school courses for adults. In addition, states and localities spent funds on local residents and did not account for new arrivals from rural areas or other localities. Rural areas provided no preemployment training or industrial training for occupations that did not exist locally. Lester proposed education and vocational training for the unemployed or part-time employed. His plan also offered special exemptions for qualified adults seeking new careers. Because the federal government had induced workers into wartime occupations, and indeed paid for training in war work, Lester questioned why the federal government should not do the same during the transition to peacetime occupations. Reaffirming the Education Gospel, Lester averred that schooling would reduce illiteracy (which remained high), increase productivity

\textsuperscript{26} Ibid., pp. 193-203.
and occupational mobility, promote citizenship, and “develop intelligent voters and leaders” for the postwar world. In addition, he declared that, “education and training [were] preferable to ‘made work’” programs. Because educational facilities already existed, federal and state governments had successfully trained war workers in a matter of weeks or months. Moreover, educational programs “would not tend to displace regular work.”

Many could follow the example of the Armed Forces Institute and provide correspondence, extension, and self-teaching courses, in addition to training aids such as phonograph records, radios, lectures, and visual aids. Finally, he proposed “adequate salaries for instructors.”

Lester also reiterated the need for federal aid as had the NRPB and others. Because the federal government had trained Americans for defense industries, it now had “some obligation” to retrain them for new occupations, “to readjust the labor force to peacetime needs and to provide profitable use of time during industrial changeover.” While the Servicemen’s Readjustment Act recommended education and training for servicemen whose education had been interrupted by war, in its original form it required those over age 25 to prove that wartime service interfered with their education or training. (Congress dropped that condition in a subsequent revision of the bill.) Lester recommended that any worker, employed or not, “should be eligible to participate in the program upon referral by the U.S. Employment Service and acceptance by the educational authorities.” The entire program would be “basic” vocational and general courses. His program excluded those under age 18, college students, housewives “who return to full-time household” duties, and retired workers. His proposal would, however, improve “the quality of the labor force,” increase “occupational mobility,” avoid “made work” programs, and develop “more intelligent voters and leadership.”

Other economists voiced similar proposals. The economist Mordecai Ezekiel in October 1944 wondered if reconversion was enough. “Just as we needed training programs for war,” he affirmed, “we will need retraining programs for peace.” He also emphasized the
need to include rehabilitation and retraining for veterans and civilian workers. Like Richard Lester, the economist Charles Myers studied postwar reconversion in 1944 with the Committee for Economic Development. Myers examined how various firms managed human resources. He proposed that firms rehire servicemen with seniority, reduce working hours, shift workers to other jobs, and retrain. Training attracted workers, he believed, although poor training discouraged them. Contrary to most postwar planners, Myers insisted that employers, not the federal government, pay for retraining, although he recommended cooperation with the U.S. Employment Service. Myers, who later promoted manpower training and education as part of investment in economic development, warned policy makers to avoid the hasty demobilization that followed the First World War.

Similar proposals suggest a developing consensus among academics and policymakers regarding planning and cooperation to achieve full employment. William Haber—the University of Michigan economist on assignment to the War Manpower Commission—wrote in December 1944 that an orderly reconversion to a full employment, peacetime economy would take longer and prove more challenging than mobilization for war. Investing in human capital became an important component of reconversion planning. Millions of Americans would likely re-migrate and require rehabilitation, education, and retraining. The government had to liquidate surplus plants and machinery and extend unemployment benefits to workers previously excluded from unemployment legislation. More importantly, success required not only national planning, but also national leadership. The nation, said Haber, “must accept the responsibility for bold planning and must understand the rôle of government in the maintenance of a national minimum standard of living.” Mass unemployment, he believed, would be far worse than the government “maintaining compensatory fiscal policies.” Most importantly, he concluded, “to achieve full employment required the closest collaboration

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30 Mordecai Ezekiel, “Is Reconversion Enough?,” Speech to the North Central Indiana Teachers Association, South Bend, Indiana (26 October 1944), Ezekiel Papers, Box 37, Speech and Article File, FDR Library.

between government, industry, and labor.” The themes for postwar reconversion included planning and cooperation at all levels of the public and private sectors.32

**Education and Full Employment**

The spate of government research, economic analyses, and recommendations from industry, labor, and policy makers, continued through 1944 and 1945. Politicians, of course, desired legislation to plan and fund any kind of coordinated reconversion program. The House of Representatives appointed a committee in 1944 to conduct hearings and propose various policies to aid the reconversion to peace. In a series of reports issued over the latter half of 1944, one stood out that proposed retraining and at the same time delaying a rapid rise in unemployment after the war. This report noted the importance of helping discharged veterans to find jobs or continue their education in a “GI Bill” already working its way through congressional committees. Congress wanted the private sector to create jobs for those leaving military service and wartime industries while sustaining a decent standard of living and “consumer purchasing power.” In the section on “Transitional Unemployment and Reemployment,” the House report measured the increased size of the workforce since the outbreak of war. Excluding those expected to retire or withdraw from the workforce, projections still estimated the need for six or seven million more civilian jobs than existed in 1940. Unemployment for more than 5 million Americans appeared inevitable. In addition, the decline in purchasing power because of fewer hours worked, lower wages when transferring out of war work, and voluntary withdrawals from the workforce posed problems for postwar consumption patterns. However, pent-up demand from savings during the war, unemployment compensation, and mustering out pay for veterans would help compensate for reduced employment. To assist discharged veterans, the committee agreed with the goals of the Servicemen’s Readjustment Act to make training and education available for ex-servicemen and women. For 18 million workers directly involved in the production of munitions and war matériel, the committee rejected any suggestion of continuing the production of unneeded war products as merely a form of “made work” to keep people employed. The services of the USES could aid the unemployed with job searches and

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placement, by transporting those willing to migrate to areas of high labor demand, or by offering job-counseling, unemployment compensation, training, and education.33

Training and education in particular appealed to the leaders of adult education. In January 1944, Morse Cartwright, former head of the American Association for Adult Education and now affiliated with the Institute of Adult Education at Teachers College, Columbia University, suggested “adequate training facilities” for those returning from war and wartime production, about 32 million Americans altogether. He referred to the “Report of the Commission on Post-War Training and Adjustment” held in May and June of 1942, that comprised 45 members affiliated with various organizations from the military, academia, industry, labor, public education, social work, and rural life. Congress eventually considered the report in hearings on the legislation culminating in the GI bill. Officials expected 8 million veterans to use free education full-time, although the head of the VA believed perhaps one million would do so. Postwar reconversion, Cartwright observed, required the cooperation of business, labor, and the federal government in addition to local community organizations—the YMCA, the Chamber of Commerce, the American Legion, and the Veterans of Foreign Wars, for example. No doubt many veterans and wartime workers required counseling, rehabilitation, re-education, and re-training.34 Cartwright also recommended “Social Reorientation” by federal, state, and local agencies, and public and private cooperation that included organized labor, civic organizations, trade associations, social, fraternal, and religious groups, and professionals. Cartwright cautioned planners to


34 Morse A. Cartwright, Marching Home: Educational and Social Adjustment After the War (New York: Teachers College, Columbia University, 1944): 1, 9, 14-19, and 32. Cartwright briefly sketched the organizational plan to be carried out at Columbia Teachers College, which included individual counseling, a Veterans Center, rehabilitation and educational programs, and special adjustment training in cooperation with the AAAE, which applied its experience with aiding the unemployed in New York during the Depression. For brief descriptions of the bills before Congress, see pp. 30-31.
heed the problems of demobilization following World War I that demonstrated how not to readjust the nation to peacetime.35

While emphasizing the importance of training, Cartwright warned of charlatans—untrained counselors, “get-rich quick” educators, and unscrupulous correspondence schools. Nearly as bad were the untrained or partially trained counselors and teachers from underpaid and understaffed agencies, both public and private. Professional oversight, he cautioned, would ensure proper training in those fields. Other professional and semi-professional educators, vocational and educational guidance counselors, social workers and psychologists, including volunteers, required rapid but intensive training to tend to the needs of GIs about to be discharged into civilian life. Cartwright urged communities to use existing local assets reinforced by national organizations and adult education councils. In the end, Cartwright emphasized the cooperative nature of retraining, cooperation between federal agencies and public and private organizations, schools, and services. In fact, the Teachers College of Columbia University already provided a model of administrative and information services. The College added a Veterans Service Center and a Rehabilitation Services Center in addition to three others that served young adults, the community, and international students. The Adult Education Department already offered counseling and vocational guidance for unemployed veterans and war workers. Educators like Cartwright began to consider not only education and training, but also the psychological adjustments veterans would face returning home. Ideas about reconversion proliferated during the war among educators, leaders of labor and industry, and at all levels of government.36

**Reconversion**

Arguably, no one in the nation had more experience with planning for mobilization and demobilization at that time than Bernard Baruch. Head of the War Industries Board during the Great War, Baruch helped engineer the “M-Day” plans. He submitted in February 1944 to James F. Byrnes, Director of the Office of War Mobilization, an outline of preparations for “X Day,” the time to begin reconversion. He suggested X-Day commence with the defeat of Germany by “Taking the government out of business,” paying debts quickly to provide the private sector with operating and investment capital, and converting industries

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36 Ibid.
to civilian production. Baruch’s recommendation worked. The United States continued to battle Japan successfully while simultaneously cutting back on war production. Nevertheless, Baruch counseled that wartime agencies should anticipate canceling contracts, utilizing public works to supplement unemployment, providing credit for small businesses, and preparing to reduce taxes to stimulate employment and economic growth.37

Baruch also advocated the resumption of education and training for those whose education had been disrupted by war, and he especially promoted “vocational training for all workers.” But like his preparation for “M-Day,” Baruch paid little attention to the assessment, development, redirection, or the funding of training. He failed to mention how the federal government, or any agency for that matter, would carry out retraining efforts. Aside from coordinating demobilization with civilian labor needs, the plan made no other mention of education and training for veterans or wartime workers.38

Perhaps Baruch had others in mind whose expertise could be called upon to initiate workforce training. During the war, educators and policy makers tendered additional proposals for postwar training. By mid-June 1944 a committee on vocational and technical training, organized in the spring of 1943, reported to the Commissioner of Education on recent trends in technical training and prospects for the future. While excluding colleges and universities, the study encompassed all other forms of training, including high school and supplemental trade and technical training for 117 industrial firms in 22 states. The demand for technicians, concluded the report, would continue beyond the war. Surveys demonstrated, for example, that air transportation required 35 technical occupations and aircraft manufacturing now utilized 58 vocational-technical specialties. The automobile and auto parts industry required 39 technical occupations. Largely because of wartime experience, firms in the United States now fitted employees with skills in a variety of preemployment, supplementary, and on-the-job training programs. The war had stimulated thought and action


toward furnishing future technicians with proper training in technical high schools, trade schools, technical institutes, and junior colleges.\textsuperscript{39}

The report also monitored the recent trends in vocational education. Schools that recruited for war production training expressed interest in maintaining programs after the war. In particular, they recommended preparing workers in “families of occupations” rather than for specific skills or trades. Furthermore, vocational school programs no longer remained the domain of teens. Changing technologies, the committee observed, required adult vocational-technical training so that older workers could learn new skills in order to keep pace with new production methods. This could be accomplished through evening programs, correspondence study, or self-study courses. With the GI bill about to become law, the committee anticipated a vast retraining program for veterans and war workers alike. Millions employed in aircraft production, shipbuilding, and ordnance would likely require retraining, although aircraft workers readily transferred their skills into automobile and consumer durable manufacturing. (The aircraft industry, however, soon expanded beyond expectations.) The report failed to mention how to finance new training beyond “state educational departments and others concerned with the administration of programs.” Still, American leaders worked to avoid the chaos that followed World War I and ensure a smoother transition to peacetime employment.\textsuperscript{40}

\textbf{A Note on the Servicemen’s Education and Training Act}

Few in the Wilson administration considered the importance of investing in human capital after the First World War. The Wilson administration promised a bonus to veterans, payable in 1945. By contrast, policy planners, educators, and economists recommended training and education for servicemen and war workers immediately after the Second World War. The American Legion, recalling the pensions, programs, and bonuses given veterans after previous wars, insisted that veterans of World War II deserved similar benefits, including rehabilitation. To avoid postwar unemployment, the Legion, which had supported the Veterans Administration (VA) and in fact whose members held thousands of VA appointments, lobbied Congress for various postwar benefits. Senator Robert LaFollette and


\textsuperscript{40} \textit{Vocational-Technical Training for Industrial Occupations}, pp. 13-15.
Representative Tom Barden proposed a GI Bill under control of the Federal Security Agency. The Legion, the VA administrator General Frank Hines, and states’ rights advocates opposed any bill that placed a veterans’ program under centralized control. Veterans groups preferred that the VA administer the program just as it had the rehabilitation program after the Great War. In a different bill, FDR asked Floyd Reeves and Leonard Outhwaite, both members of the NRPB, to draw up a bill that included civilians. Reeves, whose demobilization plan had been derisively dubbed “the American Beveridge” report, placed the GI Bill under direction of the Federal Security Agency. Considerable political maneuvering by educational groups and veterans organizations between the Spring of 1943 and the Spring of 1944 eventually led to the adoption of the final Servicemen’s Readjustment Act of 1944 in June, but only for the rehabilitation and training of veterans. A bill for veterans only, proponents argued, had a better chance of passage. Perhaps the specter of a ten-million man bonus army gave lawmakers pause. Ultimately Congress passed a postwar bill for veterans but it excluded any training benefits for civilians.  

The story of the GI bill and its impact on the development of American democracy and human capital is more complex than any of its supporters or critics have explained, and I will not attempt to do so here. Importantly, it extended entitlements to non-disabled veterans for World War II veterans and for later generations of vets. In addition to education and training, the GI bill offered subsistence to recipients and their dependents, employment


assistance, unemployment insurance for up to a year, and guaranteed loans for homes, farms, and businesses. While General Frank T. Hines of the VA predicted that only a million veterans would use the GI bill, eventually over 6.5 million of the 15 million World War II veterans, including 30,000 women veterans, did so by the end of 1949. Although only about 2.2 million veterans attended colleges or universities (of which only 400,000 actually completed degrees by the end of 1949), many would have done so without the GI bill. The bill helped more than college bound veterans, however. Nearly 6.5 million GIs enrolled in trade, vocational, or business schools, or attended technical institutes or farm-training programs. Some veterans opted for on-the-job training, while others enrolled in correspondence schools. The latter, by the way, managed a 10.7 percent completion rate. Some veterans completed elementary and secondary school, while many misused their allotments by taking recreational courses, enrolled in school to avoid productive employment, or conspired with thousands of “get rich quick” schools that cropped up to make a profit once passage of the bill seemed imminent.

John Noffsinger reported 200 private correspondence schools in 1948, having 800,000 students; most offered “trade, vocational, and technical courses” or “job improvement” courses. He noted that many courses often supplemented training from public schools to meet the needs of employers. Unfortunately, abuses and reports of fraudulent training schools arose. Investigators for the Veterans Administration and the General Accounting Office documented thousands of abuses. The lax oversight by state Veterans’ Administrations, the unintended consequence of large, federally-funded training programs, the compromises made while writing the bill, and the loopholes in legislation and enforcement made the GI bill and later federal manpower programs vulnerable to abuses and fraud.

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impact may have become more important for later generations, the fact that the GI bill invested in human capital as a reward for national service rather than the offer a mere cash payment as the World War I bonus promised, attests to the commitment by Congress, FDR and the administration to the importance of investing in human capital.  

**Office of War Mobilization and Reconversion**

While Congress prepared to assist veterans in 1944, the nation prepared its reconversion to peacetime production. The Office of War Mobilization became the Office of War Mobilization and Reconversion (OWMR) in October 1944, about ten months before the Japanese surrender. The OWMR soon began cutbacks to “cushion the ‘shock of reconversion’” with an “orderly shift of workers from war to peace tasks” and directed aid to businesses and individuals. Government agencies would help redistribute labor from areas of oversupply to areas having a demand for certain kinds of skills. Officials urged workers to register with the U.S. Employment Service and told employers still in need of manpower to contact the agency. Meanwhile, many manufacturers canceled material for war production and converted to the fabrication of consumer goods. The wartime mobilization that began as a battle against fascism in 1945 now became a “battle for full employment.”

The OWMR in July 1945 anticipated the loss of 6.6 million jobs during reconversion, including about 1.6 million in aviation, 1.3 million in shipbuilding, 1.8 million in ordnance and signal equipment, and about 1.6 million in various federal agencies. Of course, to “finish the job” with Japan remained the nation’s priority. The Director of War Mobilization and Reconversion recommended emphatically to Congress the need for financial support and speedy reconversion. A controlled reconversion for business included clearing plants, distributing cut-backs evenly, disposing of surpluses, readjusting taxes, and retooling. Plans formed to assist individuals with unemployment compensation. Postwar assistance to Europe for food and the repair of infrastructure would likely employ businesses and workers into the postwar period. Planners refused to return to the pre-WWII economy. Rather they prepared for “expanding business, expanding markets, expanding employment, and opportunity,” the vision of full employment. The new director of the OWMR, Fred Vinson, noted that,

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“Thoughtful persons realize that the Government must shoulder major responsibility in adopting constructive policies to help us reach and hold high levels of production.”

The Secretary of Labor reiterated the sentiment held by full employment advocates during the war in “preventing large mass unemployment afterward.” A plan to prepare for conversion included the use of unemployment compensation, public works programs, liberal social welfare laws, and free public employment—many of the programs initiated by the New Deal state. “The assurance of high levels of postwar employment,” Frances Perkins declared, “is a major goal of this Government. . .” To achieve “long range” full employment after the war, the secretary added, “It is important that full employment policy should emphasize increased consumption.” Yet full employment also required a trained workforce.

**Postwar Job Training, Vocational Education, and Adult Education**

Postwar planning included investing in human capital. The education gospel in the postwar period took the lessons of the war to reinforce training in the high schools. Like educators in the 1920s and 1930s, Clarence Rakestraw promoted cooperative part-time training between vocational schools and employers who could offer real world experience. Women who had trained during the war desired to remain at work while others returned to homemaking. Those who wished to remain at work faced impending layoffs; either they lost jobs to veterans or they retrained for less desirable jobs performing “women’s work.”

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Philip Murray, president of the Congress of Industrial Organizations, expressed uncertainty about women in the postwar economy, but he recognized that the war had dismantled barriers that previously excluded women. Official CIO policy in 1942 barred discrimination against women, called for their admission to training courses, and promoted “equal pay for equal work.” Murray reiterated organized labor’s contributions to improving the working conditions of women workers and in helping to provide child care, health services, and housing. At war’s end, he said, women still possessed “few skills” and “little seniority” in occupations recently opened to them. The CIO stood ready to cooperate with federalized employment services to ensure “adequate unemployment benefits.”

General Frank T. Hines, who administered the Retraining and Reemployment Program in the OWM, displayed more confidence than Murray in maintaining employment for women. While he believed that postwar problems ranked second only to winning the war, the postwar economy had to include recently trained women. Hines declared that, “From now on women must be included in all plans for postwar employment.” Investment in skills and education for women during wartime should not be wasted. Furthermore, full employment and an expanding economy would benefit all. Rather than cutting the labor force or discouraging women from work, the government could “stimulate” the economy. To meet the problem of developing human capital and a full employment economy, the general concluded, required more than government. Demobilization, he said, included “training and rehabilitation and reemployment” for veterans and civilian war workers alike.

Nevertheless, the postwar demand for women in industry seemed bleak. The personnel manager of the Radio Corporation of America (RCA), where 17,000 women worked, commented that only college educated women would likely retain their jobs. A Lockheed vice-president in 1944, noting 50,000 women worked in Lockheed plants, believed many would be unable to retain jobs in the aviation industry because so few had any previous industrial training. Veterans returning to their civilian jobs would replace recently-hired


women. One firm’s survey found that over 70 percent of veterans wished to return to their old jobs, although many women desired to stay as well. The postwar market for aircraft would likely stagnate without continuing military production and the demand for commercial aircraft. Although women returned to homemaking or to lower paying jobs, eventually many returned to the workforce in large numbers a decade a two later.\(^{55}\)

Like women and other minorities, officials expected rising unemployment for black Americans. After the war many blacks remained on the coasts to where they migrated for wartime jobs, prompted by a favorable climate and few jobs in rural areas and in the South. While many successfully trained for skilled and semi-skilled jobs in wartime industries, black Americans remained vulnerable to economic instability and lack of seniority. Placements of women and black Americans in the labor force, especially in manufacturing jobs, declined rapidly after July 1945. They began to lose the “occupational advancement” made during the war to unemployment and discrimination. The Swedish economist Gunnar Myrdal, informed by his massive study of African Americans during the war, remained pessimistic about postwar recovery. The social scientist Robert Weaver, however, predicted that government expenditures rather than controls helped achieve maximum production and full employment by 1944. Weaver recognized that economic growth and “effective demand” sustained a full employment economy. A full employment economy, like that experienced during the war, ultimately benefited African Americans and minorities in the U.S.\(^{56}\) Many black Americans, however, remained underrepresented in apprenticeships for auto mechanics, the building trades, machinists, printing, and other trades. In some locales, black veterans either declined

\(^{55}\) Forrest H. Kirkpatrick, Personnel Administration Manager, Radio Corporation of America, “Will Women Retain Their Jobs in Industry?,” ibid., pp. 99-101; and R. Randall Irwin, Assistant to the Vice President of Lockheed Air Craft Corporation, “Will Women Retain Their Jobs in Aviation?,” ibid., pp. 113-118. Others commented on women in retailing, the chemical industry, teaching, and the professions.

to take advantage of the GI bill or became discouraged from using the GI bill because they remained excluded from skilled trades.  

By the end of the war, discrimination crept back into the workplace when executive orders, federal regulations, and guidelines—wartime measures that aided blacks during the war—largely disappeared with the termination of federal contracts. The Fair Employment Practices Commission reported a rising number of complaints and increasing unemployment among black Americans.  

One of the most significant changes for African American workers during the war stemmed from “the shift from farm to factory,” and the continued out-migration from the rural South.  

Even though black Americans had filled an unprecedented number of manufacturing jobs in defense industries, prospects for postwar employment remained bleak. Most industries had located in large urban areas where cutbacks would likely be severe once the war ended. And because blacks were generally hired last, their lack of seniority in many industries would likely lead to early layoffs. The fate of black workers thus depended upon the strength of the postwar economy and their ability to acquire education and training. The civil rights struggles that began at the turn of the century and accelerated during the Second World War would revitalize again in the 1950s and 1960s.

**Conclusion**

Because the federal government had underwritten the huge investment in human capital during the war, advocates of federal funding for education continued to lobby politicians for federal assistance. In 1948 a Commission on Educational Reconstruction for the American Federation of Teachers, chaired by Floyd Reeves, concluded that federal aid, long advocated by the AFT, would become necessary to reduce educational inequalities among the states and to support quality education. Opponents continued to fear federal domination, the loss of states’ rights, aid to parochial schools, and racial problems. The GI

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60 “Negroes’ Post-War Employment Prospects,” *Monthly Labor Review* 60 (January 1945): 5, and see the distribution of black employment by industry in Table 3, p. 4.
Bill, however, offered an example of how federal funding allowed payments to private schools without a loss of autonomy to the schools or a threat to state control. Having observed millions of dollars expended for war, educators believed that just a fraction of those expenditures would support public education. “An expanded program of adult education,” Reeves and his colleagues noted, “should enroll an additional 8 or 9 million individuals.”

While some historians assert that the New Deal “ petered out” or no longer made efforts to achieve social and economic reform after 1938, FDR’s declaration in 1944 suggested otherwise. He proposed an “Economic Bill of Rights” for all Americans, stating: “We cannot be content, no matter how high that general standard of living may be, if some fraction of our people—whether it be one-third or one-fifth or one-tenth—is ill-fed, ill-clothed, ill-housed, and insecure.” More importantly, the commitment to the kind of full employment experienced during the war promised opportunities for women, black Americans, minorities, and the disabled. Not only would full employment encourage mass consumption, but it also helped eliminate economic insecurity and workplace discrimination. It would reduce the need for spending on public work relief programs, unemployment compensation, and federal support for state and local governments. A commitment to something approaching full employment, however, required federal leadership, planning, and investment in human capital. Numerous economists, educators, policymakers, as well as business and labor leaders, realized the importance of workforce development. The importance of education, training, and retraining foreseen by observers decades before became an important component of full employment planning.


CONCLUSIONS

The investment in human capital as a public policy evolved over the twentieth century in response to economic changes and to public and private efforts. Manpower training programs that had become prevalent by the year 2000 had their origins in the early decades of the twentieth century. I have explored in this study the importance of various interest groups—business, organized labor, educators, public intellectuals, and organizations representing marginalized groups—who promoted federal support for workforce education and training. While focusing on education and training for work, I have also identified a number of trends already treated more fully by other scholars.

A brief review of those trends illustrates the themes embedded in this study. Following the lead of other scholars, this study demonstrates that large organizations over the twentieth century—especially the expansion of business, labor, government, and professional educational organizations, agricultural interests, and the military—have exerted enormous influence over labor markets, economic, life, and public policy decisions. All of these had a hand to some degree in promoting vocational education and training as public policy before 1945. Related to the growth of large organizations is the emergence of the “corporatist,” “associationalist,” or “broker state.” While the federal government responded to many competing interests, the power of the federal government increased as well. This kind of activity generally occurred during times of crisis, especially during wars and economic downturns. As a result, the federal government, for better or worse, has become increasingly involved in the lives of most Americans, even in the areas of job training and vocational education.

The early efforts to create a national vocational education program garnered support from the states, first for agricultural education in 1914, then for industrial education in 1917, and other kinds of vocational education during and after the 1930s. State governments in predominantly industrial regions, responding to declining apprenticeships, urbanization, immigration, poverty, and social conflict, established their own vocational and industrial
schools to prepare citizens and productive workers. Their efforts trained relatively few, however. Because industrialization had created a national problem, the states and the private sector sought support from the national government. The federal government initially responded to the social effects of industrialization with investigations, commissions, and reports in attempts to understand the problems generated by industrialization. Various interest groups promoted education, especially industrial education, as a way to ameliorate social problems, build citizenship, and enhance the ability of American industries to compete in world markets. Some educators described the employment of education to solve economic and social problems as the “Education Gospel.” While state programs offered models of vocational training, and large industries created corporation schools to train their own workers, advocates of vocational education often looked to Europe for inspiration. The coalition of special interests—businessmen, labor leaders, educators, government officials, public intellectuals, and politicians—lobbied Congress through national organizations to gain federal support. Their efforts succeeded only on the eve of America’s entry into World War I.

The demands of modern industrial warfare required the expansion of manufacturing supported by an industrial workforce. With passage of the Smith-Hughes Act in 1917, a rudimentary infrastructure developed to train workers and soldiers in trades and technical occupations useful in the war effort. The law required cooperation between federal and state governments that typified the federal system. States had to match federal contributions that became the dominant characteristic of federal and state cooperation for all kinds of federal-state programs for the remainder of the century. The Smith-Hughes Act helped train American soldiers and civilian workers for critical occupations during the war. The war also offered opportunities for women, minorities, and youth to train for specialized jobs, especially in new industries such as aviation and electronics. The establishment of state controlled production for war contributed to the growth of “big government,” or what some have regarded a “corporatist” state that unified competing interest groups and maintained control over the economy for the duration of the war. Because the labor market had become increasingly national in scope (although regional differences remained) the federal government also utilized the United States Employment Service to match workers with jobs for war industries and it established the U.S. Training Service and the Emergency Fleet Corporation to train supervisors and skilled workers for industries facing manpower shortages. New training techniques sped up training time and developed methods for on-the-job training...
that were applied to training programs later. Demobilization afterward, however, proved chaotic and the wartime state largely diminished in size and power. In addition, the war not only produced people with skills, but also demonstrated the wisdom and efficiency of developing professional managers and trainers, as well as skilled and semi-skilled workers. Meanwhile, the Americanization of immigrants—through a collaboration of local, state, and federal governments combined with industry, educators, and organized labor—prepared the way for the adult education movement after the war.

During the 1920s, training fell under the purview of the private sector, and to a lesser extent from public schools. The private sector—businesses, private trade and business schools, and individuals—performed the bulk of workplace training during the 1920s. During the New Era, immigration restriction, the reduction of child labor, and mandatory school attendance up to age 14 or 16, increased the demand for labor. The lessons adapted from wartime training and the proliferation of many forms of private trade and commercial education—in business schools, vocational education evening schools, correspondence and extension courses, adult education, opportunity schools, and education by radio—suggested a keen demand for investment and “self-investment” in human capital to acquire new skills for promotions or career changes. The investment in human capital may have contributed to the rapid rise in productivity and consumer spending of the 1920s. In addition, public schools and private firms cooperated to train high school vocational students for work in local labor markets, illustrating the increasing interaction between public and private workforce education.

More women entered the workforce after the Great War, especially in “white collar” and “pink collar” occupations, often for low wages. Nevertheless, private commercial or business schools proliferated as women sought skills often unavailable in public schools. In addition to public continuation, evening, and part-time schools, firms practiced “welfare capitalism,” providing training for promotion and as a benefit to create employee loyalty and sustained productivity. The investment in human capital during the 1920s may have contributed to higher productivity and better standard of living for Americans during the economic boom of the New Era.

During the 1930s, the Great Depression ruined some businesses and created economic insecurity. The structure of the economy continued its transition to more technical industries—automobiles, aircraft, electronics, radio broadcasting, film making, and
communications—and thus requiring specialized training. Despite the growth of new industries, “technological unemployment,” many believed, displaced workers who possessed few skills or outdated skills, and contributed to the further erosion of skills or “deskilling.” Educators and public officials recognized that Americans would likely have to be retrained from time to time to keep abreast of changing technologies.

While new technologies increased productivity and created new occupations, for a variety of reasons mass unemployment persisted throughout the 1930s. With the loss of tax revenues, public schools cut teachers and facilities; corporations reduced training programs for smaller work forces. In addition to relief, government also assumed additional functions: for example, the Bureau of Labor Statistics under Isador Lubin and the U.S. Employment Service gathered data on the national and local labor force to assist national, state, and local labor markets evaluate their workforce. Government agencies also recommended policies to improve the quality of the workforce by identifying training needs. Noting the decline of apprenticeships, training, and deskilling, the Department of Labor mediated between industries and organized labor to rejuvenate apprenticeships with passage of the Fitzgerald Act in 1937. The act established joint industry and labor apprentice training in cooperation with federal and state departments of labor.

The New Deal originally meant to preserve the skills and work habits of the unemployed in work relief agencies—the TVA, CCC, NYA, and WPA. Means tests that screened the truly needy also inhibited migration to areas where labor or certain skills could be employed. Thus the New Deal made little attempt to adapt to changing labor market demands. However, work relief agencies offered limited training and eventually formed the core of training agencies that began to train workers after the Second World War began in 1939. As the nation’s economy revived, unemployment receded, yet industries again required skilled and semi-skilled workers whose training had languished during the Depression.

The aviation industry demonstrated the demand for new kinds of skills as well an unprecedented cooperation between the public and private sectors for research, infrastructure, and training. Training for aviation occupations fell largely upon public school—some of which arranged training in cooperation with private industries—firms, and individuals who financed their own schooling. Meanwhile, federal and state governments indirectly subsidized the industry by providing air mail contracts, infrastructure, regulations to ensure public safety, and eventually publicly funded training for pilots and mechanics during World War II.
Aviation emerged from the war as the second largest industry (to automobiles) for most of the latter decades of the twentieth century.

Once the United States entered the war after the attack on Pearl Harbor in 1941, manpower became critical. Industries required skilled and semi-skilled workers to meet the challenges of wartime production. Demand for labor offered opportunities for women, the unskilled, minorities, and the disabled—groups previously marginalized in the workforce. State and local governments, employment agencies, and draft boards controlled manpower at the local level. Officials had to balance manpower for fighting with manpower for producing war matériel. The Defense Training Act trained millions using the core of new Deal work relief programs such as the WPA and NYA. Innovative programs, such as the Training-Within-Industry program (TWI) that loosely resembled the U.S. Training Service and Emergency Fleet Corporation from the Great War, trained managers and supervisors. The massive investment in human capital provided over 14 million Americans with skills for the workplace.

The reduction in mass unemployment caused by the Depression also confirmed the importance of a full employment economy, one that expanded the demand for trained labor and paid high wages. Full employment reduced the need for government welfare and created opportunities for minorities, older workers, women, black Americans, and the disabled, indeed for anyone willing to work. Moreover, instead of giving a cash bonus to veterans, the administration wisely invested in human capital by promoting the Servicemen’s Readjustment Act, or GI Bill, that paid for education and training after the war.

In the latter half of the twentieth century, the federal government, through public and private partnerships, has continued to promote the investment in human capital. Just as training in the 1920s benefited from the programs established during the First World War, training programs developed during World War II established precedents for the postwar world. Those programs include the Manpower Development and Training Act of 1962 (MDTA), the Comprehensive Health Manpower Training Act of 1971, the Comprehensive Employment and Training Act of 1978 (CETA), the Job Training Partnership Act of 1982 (JTPA), and the Workforce Investment Act of 1998 (WIA). In contrast to those claiming the New Deal died by 1938, this study contends that FDR, flexible and open to experimentation, remained committed in his last administration to building a postwar New Deal state, particularly in his call for full a employment economy and investment in human capital.
Any future investment in human capital would benefit from identifying the best and most successful policies of the past, policies that require cooperation between the public and private sectors to maintain high levels of employment and between various interest groups, especially business, labor, educators, communities, and all levels of government that have the ability to analyze and foresee training needs. A careful analysis of local, regional, and national labor markets will define the type of training required. Actual “hands on” training, educators and trainers concluded during WWI, proved more efficient and effective than correspondence schools and courses that experienced high attrition rates. Because technologies change so rapidly, adaptation to changing economic conditions and occupational structures will likely require constant training and retraining. As educators, labor leaders, and businessmen and –women noted decades ago, a flexible workforce requires ongoing training and retraining. Americans may acquire many times over the course of their working lives. Adapting to the ongoing changing nature of work, they will have to engage in lifelong learning underwritten by a combination of public and private sources.
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