A PROGRAM OF INDUSTRIAL-VOCATIONAL EDUCATION
FOR
LORAIN COUNTY

A Thesis Presented for the
Degree of Master of Arts
by
KARL I. DRYER, B.S.

THE OHIO STATE UNIVERSITY
1946

Approved by:

Robert E. Scott
ACKNOWLEDGMENT

The writer wishes to acknowledge the helpful criticism and suggestions of his adviser, Dr. Robert E. Smith. An expression of appreciation is due Mr. Ward Riley and the members of his staff in the United States Employment Service for their assistance in securing statistics of employment and industrial development.
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</table>
CHAPTER I

NATURE AND CONDITIONS OF THE STUDY

The de-centralization of industry has brought about some perplexing problems to communities that have won and lost new and old industrial organizations. Lorain County is faced with the problems which result from the winning of new and old industrial firms. Many of these problems can be solved easily if people realize the advantages of planned industrialization in a community.

The problem involved in this study is that of providing adequate educational facilities to meet the needs of the changing community. One of the ever-growing needs is that of industrial education. Smith (21,p.45)* states:

There are two complementary phases or kinds of industrial education—the general or industrial-arts phase and the strictly vocational or training phase. These should be thought of, not as mutually exclusive and different offerings, but as closely allied and interdependent parts of a complete service.

The second phase will comprise the major part of this study, but as they are "closely allied" the industrial-

*This form of citation is used throughout the thesis. The first number in the parenthesis refers to the position of the reference in the bibliography and the second to the page.
arts phase must be so designed and taught as to contrib-
ute to the whole plan.

The community as referred to in the study is the
area which furnishes the employees of the industrial
firms in Lorain County. These employees and prospective
employees are the object toward which the results or pro-
posals of this study are directed. The Miami Workshop
Committee (14,p.26) has concluded that.....

....plans should be initiated
at once to enact legislation
for the establishment of "Area
Schools" as an element in an
adequate state-wide program of
vocational education.

Enactment should be brought about by interested groups
in large numbers. These groups are the civic and in-
dustrial organizations in the communities which will
constitute these prospective "Areas".

Scope and Purpose of the Study. The gap in the
social system between high-school graduation and job place-
ment for those students who do not go to college and are
interested in vocations of the technical, skilled or semi-
skilled type should cause educators much concern because
of the lapse of time which frequently exists between school
leaving and securing employment and the consequent bad
effect on morale and behavior. This gives occasion for
some serious thought. Shall no further attempt be made to
provide educational facilities for the youths who have
dropped out of school before graduation? Is it not the
duty of society to care for the educational needs of young people who must work part time at least for partial support? Should not the education of apprentice and on-the-job trainees be under public control? Should society as a whole be satisfied because the goal of "full-employment" may soon be reached in the United States? How many of those employed need no further education and guidance toward re-employment and upgrading in their jobs? The problems indicated in these questions have convinced the writer that it is time that an attack be made on these problems.

The establishment of a vocational school is the "core" of the Industrial-Vocational Program in this study. The community described in the study might well constitute one of the "Areas" in a State-wide plan. The "core" of this program will be proposals suggested through study of industrial-vocational education programs throughout the country. The proposals selected will be those which seem best to meet the needs of Lorain County.

The program is presented for the purpose of providing material which will be a help in building a foundation for a broad vocational program acceptable to the community. This should include industrial, technical, agricultural, home-making, business and public service vocational education. Once interest is aroused, many contributions can be made by interested individuals and groups desirous of further education and for development of an expanded program.
Techniques Employed. Statistics used in this study were obtained from the United States Employment Service, the County Board of Education office records, city schools' records and persons familiar with the information needed in the study. Statistics thus obtained are used to show the need of a program and to show how parts of the proposed program might function. Suggestions as to the nature and purposes of the program were acquired by reading books, articles in magazines and reports, also through discussions with individuals interested in vocational education.

Limitations. The study is limited primarily to the industrial education phase of a broad vocational program needed to satisfy the over-all needs of the community. No attempt was made to set up a specific program in detail as that is the job for a committee of experts in industry, vocational education, business, agriculture, home-making, and administration. Following this statement of the problem, next will be discussed some of the characteristics of the community.
CHAPTER II

LORAIN COUNTY, PRESENT AND FUTURE

A study made for the purpose of developing a program of education or service must of necessity show a need for the service. It should also show that present facilities are inadequate and that the proposed service can contribute to the general welfare of the community and society as a whole. The contribution must be great enough to warrant the expenditure of public funds necessary to carry on the program.

The Veterans' Training Program which includes business or other establishments providing apprentice or other training on-the-job has created a partial vocational program in Lorain County. As of July, 1946 there were more than 400 Lorain-County Veterans training on-the-job for occupations that vary from the semi-skilled to the professional. The most difficult problem, in connection with this program, is that of providing instruction in related subjects. As of the above date, no provisions have been made for this phase of the program. A program of this type should be under the direct supervision of a local director of vocational education. This matter and the program will be discussed more in detail later in the study.

-5-
The Industrial Arts Program of the cities of Lorain and Elyria and several of the larger schools of the County consists of courses which contribute primarily to the general educational program of the respective communities. These are not primarily vocational in nature. The Industrial Arts Programs, generally, present this picture according to Magill (13,p.6) who writes:

"...the vocational values of shop courses in the general education programs have been greatly overemphasized. The term "Industrial Arts" has been applied to this work, implying that the shop activities are drawn from industry. Modern production methods are so elaborate, equipment so complex and expensive, and available school time so short, that the work can not in any appreciable degree represent industrial processes and conditions.

The number of courses offered in the County schools is small probably averaging, at the present time, about two for each school. With the number of teachers in the field again becoming available this should increase to a pre-war average of about three per school. The largest school in the County system taught a class in Vocational Auto-shop before the war. This class was abandoned when the instructor entered the armed forces and a substitute could not be found.

The Defense Training Program had training centers in Lorain, Elyria, Avon Lake, Clearview, and Grafton. Much of the equipment in this program, which belongs to the
government has been redistributed to schools undertaking farm shop programs. The vocational training which was done during the war emergency served its purpose especially in the larger centers. The program, in the smaller centers, showed a lack of proper organization, housing, supervision, and instruction, as well as being expensive to operate. A follow-up study would show that a very small number of trainees still work in the fields in which they took training. This would seem to imply that educators should not adopt a similar program as permanent vocational training.

Population and Industrial Growth. The population figures of Lorain County according to the Sixteenth Decennial Census has shown a large increase in the last thirty years—90,612 in 1929 to 112,390 in 1940. Over half of the population is located in cities of Elyria (25,120) and Lorain (44,125) which are in the northern half of the county. Three of the larger incorporated villages, Oberlin (4,305), Amherst (2,896), and Wellington (2,529) are located in the western half of the county. The bulk of the remaining population is located in areas immediately surrounding Lorain, Elyria, and in the northeast section of the county.

The center of population is also the industrial center of the county. The larger manufacturing companies are located in Lorain and Elyria with the exception of one in Amherst, one in Wellington, and a new one at Avon Lake which will be the second largest industry in the county.
Tables I and II show the larger organizations and the number of employees as of May, 1946.

**TABLE I**

Present Employment of Larger Manufacturing Concerns *

<table>
<thead>
<tr>
<th>Company</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>11,082</td>
</tr>
<tr>
<td>B</td>
<td>1,797</td>
</tr>
<tr>
<td>C</td>
<td>1,370</td>
</tr>
<tr>
<td>D</td>
<td>1,366</td>
</tr>
<tr>
<td>E</td>
<td>1,239</td>
</tr>
<tr>
<td>F</td>
<td>800</td>
</tr>
<tr>
<td>G</td>
<td>660</td>
</tr>
<tr>
<td>H</td>
<td>602</td>
</tr>
<tr>
<td>I</td>
<td>456</td>
</tr>
<tr>
<td>J</td>
<td>450</td>
</tr>
<tr>
<td>K</td>
<td>298</td>
</tr>
<tr>
<td>L</td>
<td>169</td>
</tr>
</tbody>
</table>

**TABLE II**

Present Employment of Other Larger Companies *

<table>
<thead>
<tr>
<th>Type Employment</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A B C D E</td>
</tr>
<tr>
<td>Utility (Electric)</td>
<td>240 148</td>
</tr>
<tr>
<td>Construction</td>
<td>620 540 120</td>
</tr>
<tr>
<td>Retail</td>
<td>60 50 47 46 45</td>
</tr>
<tr>
<td>Service</td>
<td>60 51 47 38</td>
</tr>
<tr>
<td>Transportation</td>
<td>72</td>
</tr>
</tbody>
</table>

*Data obtained from reports on file at United States Employment Office in Lorain. Companies designated by letter because of confidential nature of reports.

New manufacturing facilities are under construction by four companies which will provide employment for seventy-five per cent more than are employed in manufacturing at the present time. Table III shows the number of employees and approximate date when, as estimated by management, employment will reach its peak.
**TABLE III**

Future Employment in Larger Manufacturing Concerns

<table>
<thead>
<tr>
<th>Company</th>
<th>Number</th>
<th>Approximate Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>A*</td>
<td>8,000</td>
<td>Gradual increase to peak Dec. 1947</td>
</tr>
<tr>
<td>B</td>
<td>2,800 to 3,500</td>
<td>1st figure 1st year 2nd figure 2 years 1947</td>
</tr>
<tr>
<td>C</td>
<td>2,800</td>
<td>Nov. 1946 to Feb. 1947</td>
</tr>
<tr>
<td>D*</td>
<td>800</td>
<td>1946</td>
</tr>
</tbody>
</table>

*Expansion of present companies.

**Employment Trends.** An increase in employment in manufacturing will increase the employment in all the fields related to manufacturing. Employment in the wholesale and retail trade, service, transportation, and other classifications will likewise be affected. Total placements from the Lorain and Elyria offices of the United States Employment Service during the five months ending June 1946 were as follows:

<table>
<thead>
<tr>
<th></th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elyria</td>
<td>125</td>
<td>205</td>
<td>286</td>
<td>215</td>
<td>218</td>
</tr>
<tr>
<td>Lorain</td>
<td>253</td>
<td>409</td>
<td>606*</td>
<td>583</td>
<td>940</td>
</tr>
</tbody>
</table>

*In addition to the 606 there were 762 immigrant workers brought in from other offices.

One-half or more of the placements were returning World War II Veterans. This particular group has taken jobs, which, to a great extent, are unsatisfactory to them.
Many took unskilled jobs in a large basic steel industry with the idea of seeking employment in one of the new industries at a later date. Table IV shows the present trend in employment. It can be seen that large numbers have been employed in unskilled jobs. Many of these are servicemen who had some technical training in the armed forces but are unable to find employment related to their training. Employment trends for future needs are predicted by each manufacturer in the monthly report to the office of the United States Employment Service. The trend for May 1946 is given below.

<table>
<thead>
<tr>
<th>Employment Trend</th>
<th>Lorain-Elyria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>March</td>
</tr>
<tr>
<td></td>
<td>21,734</td>
</tr>
</tbody>
</table>

The United States Employment Office is anticipating a large turnover in the next two years with a shortage of over 2,000 workers by the end of 1946.

A considerable number of the labor force in the county is employed in the city of Cleveland. This is especially true of the eastern section. The commuting distance is from ten to twenty miles. This group of workers should provide a great number of employees for the new industries.

Trends in Industrial-Vocational Education. Enrollment figures in public vocational schools shown by Wright
(30, p. 6) indicate a consistent increase from a few hundred thousand in 1918 to over 2,000,000 in 1944. In 1937 there was a rapid rise due to the enactment of the George-Deen bill while the war years resulted in slight decline. Generally, however, the vocational movement has been spurred to new levels by an increase of Federal grants. The purpose of Federal grants was to stimulate vocational education. Evidence that this is occurring is seen in a steady increase in local funds for vocational education. In the six-year period (1938-44) state funds have been consistent. In 1944, of a total of $64,299,132 spent for vocational education, local school systems provided $29,324,538 and states $15,016,050. State and local expenditures are much greater than the amount required by Federal Acts.

In the early years of vocational education the concept of its purposes was narrow. Today there is evidence of marked changes. These are reflected by L. A. Dennis, executive secretary of the American Vocational Association, (7, p. 13) who writes:

During the early years of the period, and in fact until very recently, attention has been centered almost entirely upon the vocational-training aspects of the problem of occupational adjustment. A new conception of the whole scope of occupational adjustment has crystalized quite recently. The occupational-training or occupational-adjustment program is now coming to comprehend or include the entire program of genuine vocational guidance, occupational or vocational training, job placement, follow-up and retraining services.
### TABLE IV

#### B. NONAGRICULTURAL PLACEMENTS
(Monthly average Feb. to June 1946)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Major Occupational Groups</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Professional and Mgr. 14</td>
</tr>
<tr>
<td>Total</td>
<td>Clerical and sales 39</td>
</tr>
<tr>
<td></td>
<td>Service 60</td>
</tr>
<tr>
<td></td>
<td>Skilled 63</td>
</tr>
<tr>
<td></td>
<td>Semi-skilled 124</td>
</tr>
<tr>
<td></td>
<td>Unskilled and others 463</td>
</tr>
<tr>
<td>Contract Construction</td>
<td></td>
</tr>
<tr>
<td>Total Manufacturing</td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td></td>
</tr>
<tr>
<td>Iron and Steel and their prod.</td>
<td></td>
</tr>
<tr>
<td>Ship and Boat building and repair</td>
<td></td>
</tr>
<tr>
<td>Other transportation equipment</td>
<td></td>
</tr>
<tr>
<td>Other mach. (except metal working mach.)</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous mfg.</td>
<td></td>
</tr>
<tr>
<td>Interstate Railroads</td>
<td></td>
</tr>
<tr>
<td>Other public utilities</td>
<td></td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td></td>
</tr>
<tr>
<td>Service except private household</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classifications</th>
<th>Professional and Mgr. 14</th>
<th>Clerical and sales 39</th>
<th>Service 60</th>
<th>Skilled 63</th>
<th>Semi-skilled 124</th>
<th>Unskilled and others 463</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Construction</td>
<td></td>
<td>3</td>
<td>17</td>
<td>2</td>
<td>128</td>
<td></td>
</tr>
<tr>
<td>Total Manufacturing</td>
<td>1</td>
<td>14</td>
<td>37</td>
<td>101</td>
<td>272</td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td></td>
<td>1</td>
<td>7</td>
<td></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Iron and Steel and their prod.</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>22</td>
<td>224</td>
<td></td>
</tr>
<tr>
<td>Ship and Boat building and repair</td>
<td></td>
<td>2</td>
<td>1</td>
<td></td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Other transportation equipment</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other mach. (except metal working mach.)</td>
<td>1</td>
<td>19</td>
<td>7</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous mfg.</td>
<td>4</td>
<td>53</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interstate Railroads</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other public utilities</td>
<td></td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>3</td>
<td>9</td>
<td>11</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Service except private household</td>
<td>7</td>
<td>5</td>
<td>13</td>
<td>4</td>
<td>6</td>
<td>33</td>
</tr>
</tbody>
</table>
A trend which is following this change is the realization that the occupational-adjustment program is not a task to be performed by education alone, but is a cooperative enterprise demanding the services of education, public agencies, social organizations and industrial commercial organizations.

Educators are developing an attitude which seems favorable to closer integration of vocational education and general education in the secondary school. The Miami Workshop Committee (14,p.19) substantiates the foregoing statement by reporting that:

There is no conflict between general education and vocational education or specialization in a field of learning except as concentration upon a narrow aspect or process is undertaken to the exclusion of wider perspectives and relationships.

This applies particularly to the training of students in the 10th, 11th, and 12th grades full-time pre-employment training. These pupils are of an age at which they can be taught the complicated processes involved in living together with their fellow beings. They have begun to notice and become involved in social problems.

A change has taken place in the concept of narrow skill, in the vocational schools, to the broad educational concept. This change is perhaps a result of the demand of educators that there be less segregation and a policy favoring direction toward general education. Evidence of broadening of concept of function is given by Fryklund (9,p.48)
who says:

Common modern educational expressions heard among faculty members of a trade school refer to skill, readiness, cooperation, knowledge of materials, safety education, methodical procedure, how to think, persistence, contributions of science, and guidance. A decade ago this would not have been true.

Instructors who have the know-how in industry are still in prime demand but leaders are also discovering a need for more than personal mechanical skill to accomplish what an effective program of vocational education should achieve.

Need for a Program. Many factors are involved that show a need for a vocational program. Surveys, such as the Toledo (3) and Canton(4) surveys of workers, give significant information. These surveys were made in communities where vocational schools were in existence. As a result of the survey findings, additional facilities for vocational education were provided. The industrial nature of both communities is similar to that of Lorain County and a logical deduction seemingly would be that there is a need for a strong program of vocational education in the county.

Factors relative to Lorain County, such as statistics on population, labor and industry, employment trends, school enrollments and educational facilities used in the present chapter indicate the need for a program. Some of these factors will also be used in the following chapter
as additional proof of this need for a strong program of vocational education.
CHAPTER III

CHARACTER OF THE ENROLLMENT

A vocational program must meet the needs of diversified groups which, at the present time, consist largely of returned veterans, displaced war production workers and youths now in school. This chapter is an attempt to show size and importance of the groups, the type of training which they need, and to contribute additional evidence of the need for a strong vocational program.

The enrollment in the high schools of Lorain County as of September 1945 was slightly over six thousand students. (Table V)

<table>
<thead>
<tr>
<th>Schools</th>
<th>Enrollment</th>
<th>Schools</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorain</td>
<td>2,184</td>
<td>Wellington</td>
<td>250</td>
</tr>
<tr>
<td>Elyria</td>
<td>1,442</td>
<td>County System</td>
<td>1,400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(16 schools)</td>
<td></td>
</tr>
<tr>
<td>Oberlin</td>
<td>293</td>
<td>St. Mary's</td>
<td>185</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(parochial)</td>
<td></td>
</tr>
<tr>
<td>Amherst</td>
<td>263</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>6,017</strong></td>
</tr>
</tbody>
</table>

Approximately five thousand of the total are enrolled in schools which meet the standards of the North Central Asso-
cation. Many of the courses in the general program of education in these schools can be suitable modified to meet part of the employment needs discovered in a county-wide survey.

Special public school training courses can not be regarded as the solution to the problem of training all industrial workers. This fact is indicated by Magill (13,p.27) who writes:

...the school can profitably afford to set up pre-employment training for only a small fraction of industrial workers. Recent surveys indicate that the proportion of individual employees that could justifiably be trained in school is probably not more than five to ten per cent.

The five to ten per cent represents the industrial employee for whom training is to be provided in the industrial education section of the vocational school proposed by the writer in this chapter. The remaining workers secure the small amount of training needed for the job after they are employed. This training is provided on the job. The public schools can contribute much to these workers along the lines of employer-employee relationships, means of upgrading one's self, and other problems involved in occupational life. An adjustment of the objectives of the schools of Lorain County and a program to reach the objectives is suggested by the writer as a phase of the vocational program which could be provided with existing facilities.
High School Graduates. A large section of the enrollment in the vocational school would be comprised of high school graduates interested in advanced training. The goal of this group would be initial employment in 2,006 to 4,012 industrial jobs for which training is justified in Lorain County. These figures arrived at by the application of Magill's five and ten per cent do not take into consideration the increase in employment discussed in Chapter II.

The graduate in many cases would enroll in the full-time pre-employment training program because of its convenience, economy, and short duration. The pre-employment form of training will not turn out a completely trained worker. His training must be supplemented by a more or less extended period of experiences under actual employment conditions. The function of the school should be to aid the pupil in achieving such training as will make him initially employable, and to provide him a broad opportunity to obtain training so that he can advance at a rate in keeping with his ability.

Out-of-School Youth. The next group to be considered is not a large one, but it is important. The youths who have quit school before graduation are victims of defects in the social structure, particularly in the home and the school. A place of employment must be found for these youths, especially the boys, or they will create many social problems. Many of these boys may make adjust-
ments but, through lack of educational opportunity, may be unable to take full advantage of opportunities which present themselves. Those having the greatest chance of making adjustment, in the opinion of the writer, are the boys who have completed the work of the eighth grade. Table VI, which is somewhat inaccurate due to the source of information, will serve to give a general view of the importance of this group.

**TABLE VI**

Permanent Work Permits (Boys)
Represent Withdrawals from School
1945-46

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lorain</th>
<th>Elyria*</th>
<th>County Schools</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>12</td>
<td>54</td>
<td>7</td>
<td>73</td>
</tr>
<tr>
<td>10</td>
<td>22</td>
<td>28</td>
<td>8</td>
<td>58</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>11</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>12</td>
<td>3</td>
<td>18</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>111</td>
<td>21</td>
<td>171</td>
</tr>
</tbody>
</table>

*The figures for Elyria were an estimate made by Elyria school officials due to a loss of records.

The out-of-school youth, upon presenting satisfactory evidence of his ability, should be admitted to the full-time pre-employment training program along with the regular group of high school graduates. Training should be made available to this group in the full-time pre-employment program to enable them to prepare for initial employment in jobs of the semi-skilled class. The training of this group should provide opportunities to present
some of the courses in general education which were not completed and would contribute to his overall development.

The form of vocational education particularly desirable for the training of these groups discussed so far is that of co-operative part-time training. Under this plan the student is trained to the point where he is of initial value to the employer. At this stage they are divided into groups which alternate in school and employment. This results in the provision of real work experience in which the employer furnishes the equipment and supplies for training. It increases the number of pupils which can be taught by a given number of instructors. This training makes possible work situations which are expensive and often impossible to set up in a school. The students are often retained by the employer and if not they make a more desirable employee to others since they have had actual work experience.

There are problems involved in putting into operation a plan of co-operative part-time training, such as educating the employer to the advantage of the plan to both parties, securing employers who will not take advantage of the plan by keeping a student on a routine job beyond the time when it has educational values. Another problem is that involved in setting up the plan in periods of unemployment.

This type of training should be developed to its fullest extent by the director of vocational education and his staff. Concerns willing and equipped to co-operate should be discovered in the initial survey.
Apprentices. A prominent group at present, in many industrial communities, is the apprenticed veterans group. The apprentice group has in the past been a rather small part of the vocational student body. The impetus given this form of vocational education by the Apprentice-Training Service of the War Manpower Commission will carry over, the period required to train the veterans now entering the program, probably about nine years. The type of training now in operation is on-the-job training in which the employer furnishes the bulk of the training facilities.

The Apprenticeship Standards for Automobile and Body Rebuilders have training periods of 8,000 and 6,000 hours respectively. The trainee is required to attend classes in related and supplemental instruction for a minimum of 144 hours each year of the term of the apprenticeship. Subjects recommended for study are:

**Auto Mechanics**
1. Automotive Theory
2. Shop Practice
3. Related Machine Tools
4. Shop Mathematics
5. Welding
6. Safety Practices

**Metal Body Builders**
1. Drafting
2. Welding-Gas
3. Print Reading
4. Metallurgy
5. Safety Practices

The problem of providing the many school classes necessary to supplement the veterans apprenticeship on-the-job training program can be satisfactorily met by establishing a vocational school staffed with competent instructors and
co-ordinators, and under the direction of a local director.

Upgrading for Employed Workers. Figures used previously in this study dealing with numbers of workers, probable number of skilled and technical workers and large number in occupations for which public school pre-employment training would not be warranted, indicate the existence of a sizeable group which could be interested in evening or part-time extension classes. The function of these classes is expressed by Struck (23,p.6) who writes:

The basic purpose is to provide instruction in occupational skills, knowledge, understanding, and appreciations that will increase the efficiency of workers lawfully employed in trade and industrial occupations or those who have been so employed and are temporarily unemployed. The instruction must supplement the workers' trade expression.

The reason for this restriction lies in the insufficient time which evening classes afford for instruction designed to prepare for employment. Great difficulty is experienced in holding students in such classes. The classes often start with high enthusiasm on the part of the students, but fatigue after the day's work, social engagements, inclement weather and disappointment in the importance of the subject in relation to the immediate vocational needs often combine to produce a great number of absentees and drop-outs. Class attendance can be maintained, to a degree, by organizing the work in short independent, intensive units. The contents of each unit should be described fully in advance notices so that the worker may enroll in the ones in which
he is interested and drop out immediately upon their termination. The instruction should be closely connected with the employment needs and should be taught by instructors familiar with production processes. Questions asked by the students should result in practical answers by the instructor.

Evening and part-time extension classes, because of their flexibility and adaptability to employment conditions, are the easiest of the various types of vocational classes to organize on a justifiable basis.

Re-employment. There are two types of individuals interested in re-employment, each requiring a distinct type of training program. The first is the employed worker who desires instruction for trade or industrial occupations other than the one in which he is employed. For example, an auto mechanic may want to become an aircraft sheet metal mechanic. If such a person receives instruction that helps him for a trade or occupation not related to his daily work, he is getting trade preparatory training. It is also pre-employment training for a job that he hopes to obtain. This training is often helpful to employed persons who have not yet secured jobs of the kind they desire. Smith (14,p.45) supports the cause of this group with following:

Perhaps the greatest need of industrial education is presented by the normally employed adults—the millions of middle-aged men and women who toil in perplexity and uncertainty and who may be served through evening and extra courses. ....Constant employment
on the part of an individual or firm, is largely a matter of adjustment.

The large number of veterans mentioned previously who took jobs in a basic steel industry are in need of the vocational adjustment process.

The training of employed workers for jobs other than the one in which they are employed must be done at the expense of local school districts, as federal and state aid is not offered for this type of training. Communities in which industrial growth is developing should give local workers opportunity for adjustment when the necessary preparation can be so easily attained. There is very little possibility of an over-supply of skilled or technical workers in Lorain County unless they are imported. Housing conditions preclude this possibility in the near future.

The second type of individual interested in re-employment is the unemployed. The progressive mechanization of production ordinarily results in a continuous replacement of men by machines. Changes in industrial processes and shifts in demand from old to new products are continually throwing workers out of employment. A modernization program is in progress at the present time in the largest industrial concern in the community. This will mean a certain amount of technological unemployment, but since most of the employees are semi-skilled and unskilled, they will probably be transferred to new departments.
The training of the unemployed has not been generally considered a part of the public school service, but the school seems to be in the best position of any social agency for meeting this need. Negative justification for using school tax money for the purpose lies in the fact that it is cheaper to train unemployed than to carry them on relief. On the positive side, the increase in community income from the wages of the re-employed far exceeds the cost of the program to the community. Furthermore, a large proportion of the cost of an efficient program is usually obtainable from state and federal funds.

Courses of training for the unemployed should be organized only for assured opportunities for employment. The instruction should be highly intensive and specific and should be carried on for as long a period daily as practicable. The instruction should be carried to the point where the trainee is initially employable. Beyond this point, the trainee should enroll in evening extension courses for further training. This program must be characterized by flexibility, adaptability, and must be continually subject to change to meet the needs of the local employment situations.
CHAPTER IV

GUIDANCE AS A MEANS OF SELECTION

The social importance of guidance and its relationship to individual welfare, family well-being and national strength and progress is evident in the extensive literature in the field of educational and vocational guidance. An increasing number of schools are including in their curriculum systematic instruction in occupational opportunities. They are also employing more trained and certified counselors and co-ordinators so that guidance service will improve in quality as well as in the number of persons served.

Vocational guidance is an essential and challenging service due to factors of social change such as: over-supply of workers in times of depression, unforeseen technological changes, modification in consumer demands, changing foreign relations, and shortages of manpower. It is a service which, according to the definition formulated by the United States Office of Education (24,p.587) should encompass:

\[
\ldots\text{the process of acquainting the individual with various ways in which he may discover, and use, his natural endowment, in addition to special training available from any source, so that he may live, and make a living, to the best advantages to himself and to society.}
\]

A vocational guidance program founded on the principles
implied by the above definition must supplement the vocational education program for Lorain County in order that it may succeed in reaching its objectives. The two programs are not only inter-dependent but they are mutually causal. Guidance, preparation, placement, follow-up, and continuous adjustment can be functional services only when well integrated.

The proposed Technical and Vocational school must have a student body which has been well selected in order that its students and graduates will be desired by industry. The relatively high selectivity of the above group can be brought about by the development of vocational guidance in the secondary schools of the county, the technical and vocational school, the public agencies, as the United States Employment Service and the personnel departments of the industries using the educational service.

**Secondary School Guidance.** The functions of a vocational guidance program have been ably expressed by Wright (31, p. 34) as:

1. Supplying an individual with an inventory of his abilities, aptitudes, and interests as they relate to his occupational availability.

2. Supplying an individual with comprehensive and accurate information about occupations and the qualifications they call for, with the specific object of revealing those in which the qualifications are within the power of the individual at that time or after retraining.

3. Counseling so that the individual may intelligently match the facts
in Paragraphs 1 and 2 and make reasonable decisions as to further training of placement.

4. Supplying supplementary services—such as assistance in entering upon his training, in placing himself in a job, in following his progress or objectives—as may be necessary to bring about his vocational adjustment to the greatest practicable extent.

It will be necessary for the administrators of the secondary school to put into action all four of the above procedures in the proposed program for vocational education. Some of the larger schools have made a beginning along these lines in connection with graduates of commercial departments. The specific provisions, which should be made in order that a functional program may be developed are:

1. Personnel trained in guidance methods.

2. Time and space for work to be carried on during school hours.

3. Means for obtaining and presenting occupational information, especially specific information about local work opportunities.

4. Placement either directly or through co-operating agencies.

5. Survey of graduates on-the-job as a check on the efficiency of the program.

The problem of meeting the above provisions is no more difficult than that of furnishing other extra educational service. The larger school systems which have begun a program can enlarge on what they already have, while the small schools must improvise as they do in most of their educational services.
In Ohio, personnel trained in guidance methods would be teachers whose certificates indicated a major or minor in guidance, and in many cases additional graduate work in guidance. It is the duty of these people to put into action the four procedures described above. The number of persons devoting one-half or more of their time to counseling in the secondary schools according to a study made by the United States Office of Education in 1939 (15,p.10) was 2,286 in only approximately 1,300 of the 23,000 secondary schools in the study. In many of the schools the counselor is in all probability a teacher who devotes one or two periods a day to the task of counseling as is particularly true in some of the local schools.

The problem of supplying an individual with an inventory of his abilities, aptitudes, and interests necessitates the development of a testing program in which these points may be discovered. A testing program should result in a rather complete set of test scores on a cumulative record card for reference by counselors at any time they may be needed to supplement other pertinent data. Records of educational attainments, medical history, and personal history should help complete the file on the individual. The use of the interview by expert counselors assists in the discovery of new interests.

A course in "Occupations in Lorain County" should be worked out using the job descriptions of the occupational dictionary which was issued by the War Manpower
Commission. The dictionary contains brief descriptions of over 17,450 separate jobs and is being supplemented so that new jobs, as they appear, are being described. A course of this type would be sufficiently broad to cover the seven main group headings, twelve subheads, and many of the 550 smaller subdivisions. This course should be given to groups in the ninth or tenth grades after each individual has had some experience with guidance processes.

The vocational guidance program should assist in job placement by establishing a placement service for all pupils who need the service upon leaving the secondary school. The school is not tempted to exploit the pupil; it covers the entire nation with institutions, and it has had long and intimate contact with the youth. This guidance service would be under the direction of the director of vocational education so that the placement service would be county-wide in scope.

The Technical and Vocational School Guidance. The guidance counselor of the technical and vocational school should be the leader of the program of vocational guidance in the county. This is necessary because the students of this school will come from all other schools as well as from those directed to it from the United States Employment Service. Much of the occupational information needed in the guidance programs in the schools must come from the United States Employment Office and can be distributed easily by a central agency. There are many other reasons
for a centralized organization such as: uniformity in records and methods, leadership and minimizing duplication of service.

The vocational guidance organization of the technical and vocational school would function in much the same way as the guidance program in the secondary schools does except where a change must be made because of the age groups served. The initial counseling given by the United States Employment Service, which is discussed later, is to be supplemented by further counseling by the school guidance program if the person so desires.

The guidance and placement service of the technical vocational school should be a central placement in the entire county-wide program. The purpose is to make the entire program of vocational education and guidance an integrated service.

**Guidance Services for Experienced or Mature Individuals.**

The task of discovering an agency through which adult vocational guidance service can be had is quite difficult in most communities. A few attempts at guidance by business organizations and employment offices can occasionally be found. Philanthropic organizations, such as the Y.M.C.A., have functioning guidance service in some of the larger cities, but the local service is about on a par with the public library in that it is an information center. Many, if not all, of the offices of the United States Employment Service in Ohio have on the staff a person trained in and
assigned to do the work of vocational guidance. This is the only widely distributed source of guidance assistance in the state, for the majority of adults.

Since 1939 when the United States Employment Service was transferred to the newly established Federal Security Agency, which also acquired the U. S. Office of Education, the U. S. Public Health Service, the National Youth Administration, the Social Security Board, and the Civilian Conservation Corps, it has had the advantage of being associated in the same department with several other agencies. These agencies had major interests in personnel services among which duplications on the adult level were most likely to occur. Already alert educational and occupational counselors are turning to the Employment Service Division for reliable occupational information. Educational systems are virtually eliminated by Reed (19,p.351) who writes:

It is safe to assume that the employment services have a better equipped staff for both the educational and occupational guidance of adults than do educational systems.

The writer is of the opinion that the United States Employment Service should become the initial counseling agency in the adult guidance phase of the vocational guidance program. The fundamental social service which the employment office undertakes to provide is the creation of a labor market, but this does not preclude the use of democratic methods in reaching that goal. The facilities of Lorain
County, as of the present time, are limited to one trained guidance worker, but indications are that the service will be enlarged as the need arises.

Education of the public about the possibilities of the service at its disposal will advance as the development of training for re-employment progresses. Individuals interested in upgrading in their field of employment should discover whether such training is profitable for them. The employment office would be aware of the trends in the occupation in which they are employed and could advise them which course to take. A similar situation exists for a person who is interested in re-employment. The changing to a new job for the sake of better living quite often requires the advice of a person who is familiar with employment conditions.

There are at the present time two groups in the ranks of the unemployed which are in need of guidance services offered by the United States Employment Service. The first, and more or less permanent group, is that of the over-age workers, especially prominent at the present time because the services rendered by it during the war are no longer required. These individuals should be shown that re-employment in a different type of work is the only answer. They should seek employment in a field which requires abilities which they possess, and in which the "old age" of employment is more advanced than in their present occupation. The second group which is also in
need of advice toward re-employment is the one of unemployed women which has grown to sizeable proportions since the end of the war. In a great many cases this group should be shown that homemaking is an important task in the American way of life.
CHAPTER V

PROPOSED CURRICULUM CONTENT

The determination of the course content of the program will be decided on the basis of needs as shown by survey results and occupation analyses. Elements selected will then be organized into units of instruction. Programs now in operation, and courses now offered in vocational and technical schools in the United States will be examined for suggestions. Industrial conditions prevailing in the community will be given due consideration. Some suggestions may be eliminated and others adopted or modified to suit the occasion.

Because of the similarity of conditions in Lorain County to those prevailing in Canton, Ohio and Toledo, Ohio, it seems reasonable to assume that a program somewhat similar to the ones in effect in these communities would be suggestive of a pattern for Lorain County. Examination of the programs of Canton and Toledo and of the 167 courses in the Directory of Federally Aided, All-Day Trade, and Industrial Education Programs (25) resulted in the tentative selection of the following for Lorain County:

Auto Mechanics  Machine Shop
Aeronautics      Printing
Machine Drafting Sheet Metal
Electricity      Welding

-35-
The above list does not contain some which were included in many schools throughout the directory as carpentry, plumbing, and bricklaying, because these trades will probably be oversupplied with veteran apprentices. The related training for these trades, however, may be included in the extension classes.

The curriculum will also include courses on the post-secondary school level. Training in these courses will open up job opportunities which were previously trained for through experience, which frequently were undirected, or were filled with improperly trained workers. Some of these courses which are now being offered in technical trade schools to advanced students are listed below:

- Electronics
- Electroplating
- Heat treatment of steel (Laboratory workers)
- Hydraulic circuits
- Industrial Chemistry
- Industrial Motor Control
- Materials testing and inspection
- Power generation-Steam and Diesel
- Power Plant maintenance
- Production planning and control
- Refrigeration and Air Conditioning
- Tool engineering

These or similar courses have a definite place in the curriculum of the proposed school, because of a demand for workers in these occupations. The courses proposed will be short, practical, and terminal, and will train for jobs which fall between skilled trades and scientific professions. The courses will be taught by trained instructors. The United States Office of Education (26,p.164) reports the
following:

Four separate surveys of industry in New Jersey and California indicate the need for technical institute men as compared with engineering college graduates in the ratio of approximately 2.7 to 1.

This is, of course, the average for various types of industry. Basic steel industry, non-ferrous metals industries and plastics industries average as much as 8 to 1.

**Occupational Analyses as a Guide.** The co-operation of industry is necessary in determining what should be taught. The techniques of job analysis has been used for years in determining course content in the skilled trades and has done much for vocational education according to Wright (29, p.8) who contributes the following:

> In my opinion vocational education in all of the several fields has been improved more by analyzing the jobs for which training was to be provided than it could have been by any conceivable amount of speculative thinking.

Similar programs should be employed in determining the content for the vocational-technical program.

In general, the approach is similar to that employed in the analysis of skilled trades. In the making of an analysis of technician jobs, however, the categories into which the content is classified may be somewhat different. In both cases it is necessary to discover what the worker does and what he needs to know. The manipulative and machine-operating skills form the nucleus about which the other content is assembled in the skilled trades.
The technical aspects take precedence in technician occupations, while the manipulative skills are relatively secondary.

Occupational analyses for the determination of curriculum content must be made in close cooperation with representatives from industry who are thoroughly familiar with all the aspects of the occupations for which programs are being prepared. This usually requires seeking the opinions of several persons in order to obtain unbiased results. Occupational analysis requires time and concentrated attention in order to secure the desired results.

**Changing Curriculum Content.** The modernization of the curriculum should be a continuous process in vocational education. New courses should be introduced as the old ones serve their purpose. It is the duty of the staff to detect signs of a need for a change and to assist in effecting it. There are many ways in which changes can be initiated and brought about such as: a census of employment, record of job openings, technological change, industry initiated programs, and co-ordinator discoveries.

Periodic surveys may be made to determine changes in employment figures for certain of the more unstable occupations. The school records should contain an up-to-date picture of the over-all labor conditions in the community in order to facilitate proper guidance and organizational planning. The results of the surveys would affect the offerings of the school. In many cases a program of
training is not discontinued in a vocational school until the enrollment has fallen off to an alarming degree. This leads one to believe that the curriculum is based on pupil demands rather than on their needs.

Job openings are used as a guide for both curriculum planning and guidance. Such information is available, on a national scale, through the Science Research Associates, and the Occupational Information and Guidance Service of the United States Office of Education. The United States Employment Service is probably the best source for indicating trends in occupations because of the local nature of the information. Predictions on job openings could be secured through an arrangement similar to the one used at the present time in which the employer predicts his employment quota three months in advance. With this information at hand, the curriculum could be adjusted to provide the training needed for the anticipated openings.

New technological developments and other changes in industry require new skills and abilities on the part of the employed workers. Some of these new skills and understandings will be acquired by the workers while on their jobs, especially if the new content is not extensive and the time-spread of the change is sufficiently long. But a considerable part of new technologies may be of such extent and difficulty of mastery as to require organized training programs, offered during the evening and at such other times as may be convenient for employed workers.
The content of these programs should be organized by the school staff with the assistance of men from industry who are fully acquainted with the technological change.

The need of a labor supply, along with the other advantageous facilities, prompts industry to move into a community. In order that this labor supply continues to be sufficient, industry should co-operate in creating an adequate labor supply by initiating programs which will help their employees in upgrading on their job and toward re-employment within the plant. Industry should aid in curriculum planning as a part of an over-all program to develop satisfied workers in the community.

Probably, the one outstanding person related to the changing curriculum is the co-ordinator. It is he who brings the school and industry into harmonious relationship. The problem of evaluating the curriculum in its success or failure to meet the objectives set is an important one, if the school is to retain the good will and support of industry. The presence of an observer, who understands the objectives of and methods used in training programs, is necessary when the final judgment is made on its success. The co-ordinator should be able to predict the probable success or failure of introducing into the curriculum of the school a program designed to develop a particular body of information which the worker must acquire.

In addition to the curriculum content discussed thus far, there will be the related subjects as mathematics,
science, drawing and social studies needed to complete the all-day program. In the selection of related subjects, care must be observed that those selected are of a nature that the trainee can recognize as pertinent in his training. These related subjects should be decided upon by the school staff in consultation with employers and the workers to be served.
CHAPTER VI

PHYSICAL ASPECTS OF THE PROGRAM

A criterion of major importance in the location of a building where unused space is available is that of accessibility to groups served. In the present instance, the general location, with the transportation problem taken into consideration, would be on the bus line between Elyria and Lorain. The center of population at present is between these two cities, and the trend in building does not seem to affect its location to any appreciable extent. The exact location should be determined by the results of a comprehensive survey. The problems of building in the suggested general location will be easier to solve than those which would have been met if the building were located in either Elyria or Lorain. Space for the development, operation, and expansion of a program can be found in this suggested zone.

Building for Vocational Education. Differences of opinion exist as to the type of building required for school shops. The writer is inclined to agree with Smith's (22,p.235) conclusion that:

School shops and workrooms should be more like laboratories than like production places, because a school is not a factory. This concept is
not in conflict with the ideals of practicality and high performance in this field.

School architecture can be an effective application of functionalism and can embody efficiency and economy without resorting entirely to industrial construction style.

Building plans depend upon the local program of instruction as formulated from the evidence of local needs, hence it is out of order at this stage of development to prescribe for building space and arrangement. In executing the plans, the architecture should provide a maximum of flexibility through movable partitions and adaptable facilities to provide for future changes in the program.

Building specifications should be formulated by the director of vocational education and presented to the architect. He should be assisted in the planning by all interested groups including the State Department of Education, which has the facilities of the Bureau of Educational Research at its disposal. The director has the final responsibility for an adequately-housed program.

**Equipment for Courses of Instruction.** The equipment for new courses of instruction should not be selected until a complete formulation of the course has been made. The basic equipment list should include the minimum number of essentials. Additional equipment should be purchased as the need for it develops. While adequate equipment is, of course, important, excessive equipment involves unnecessary expense and places an added responsibility upon the instructor.
Each piece of equipment is an investment in education and should produce educational dividends worthy of the investment.

The selection of equipment and supplies, along with the organization of the course, is the responsibility of the instructor. The supervision of the co-ordinator and the co-operation and advice of other instructors, as well as representatives of employers and workers, are needed in this undertaking.

**Personnel of the Functioning Program.** The staff for conducting the program of vocational education suggested in previous chapters might will consist of a superintendent, director, a principal, and a suitable number of co-ordinators, shop instructors, related-subject instructors and clerks. In addition, there should be a Director of Guidance and one or more counselors. The superintendent should have duties corresponding to the administrative duties in any large public school, and should have had experience in vocational education. The director should rank as an assistant superintendent and should report directly to the superintendent. The guidance director should be the central guidance figure in the county. He should develop a guidance "core" around which all guidance activity in the city, exempted village, and county schools is centered.

The number of co-ordinators and counselors needed will depend on the characteristics the program assumes as it develops and needs are discovered. They should be assigned
to divisions of the instruction based on related occupations, such as metal working, construction, electrical, retail store, business office occupations, rather than have them act as general assistants to the director. They should be selected for their special qualifications in the field of assignment. The importance of providing adequate time for the exercise of the co-ordinator's supervisory and co-ordinating functions should not be under-rated. The number of shop instructors needed will depend on the types of training given, class size, and the number of students enrolled in the school. The size of classes, for maximum efficiency and economy, varies widely with the different types of work. Some types, such as machine work, because of the need of students for supervision and individual instruction, necessitate a smaller number of pupils per instructor than others, (e.g. machine drawing). In such areas as drawing, an able instructor, well equipped with the tools of teaching, can efficiently conduct a large class, but this generally is not the case in most shop courses. The salaries of the staff in any school program are the largest item of expense, hence they offer the largest opportunity for economy. The ideal class enrollment, in general, as evidenced by vocational school programs, should not exceed twenty students, or at the most, twenty-five. There are exceptional cases, such as the Brooklyn Technical High School with a standard class size of forty-five, conducted even in foundry work and machine work. This unusual example is a combination of superior equipment
instructors, and selected students.

Adequate clerical assistance for instructors, as well as the top members of the staff, can contribute much to the economy of a school system. An inexcusable form of extravagance is that of keeping too many records and the use of high-salaried individuals for the keeping of essential statistics. The actual use of records should be balanced against the time and expense necessary to maintain them. Sufficient clerical assistance should be provided to do all the work worth doing of which clerks are capable. The time of professional staff members may then be devoted entirely to professional duties.

The director, acting as an assistant superintendent, must be a person of special abilities, training, and experience. The problems connected with the development and maintenance of an effective program of vocational education are so varied and different from the problems of general education that they necessitate the combined efforts of administrative heads working co-operatively. The director should be chosen with the utmost care because the effectiveness of the entire program depends upon the efficiency with which he performs his functions.

The director should be employed to initiate and to develop the original surveys of employment, interview of employers, labor leaders, taxpayers' representatives, and other interested individuals and groups. His function of recommending his staff of co-ordinators and instructors
should begin early enough to secure the assistance of at least part of this group in the initial stages of the survey and planning. The director must present the resultant program to the superintendent and to the board of education for consideration, and upon approval, develop with the assistance of his staff and with representatives of employers and workers, courses of instruction and lists of equipment and supplies. The next logical step is the development with the assistance of his staff, and an architect, plans for building facilities to house the program and to present these to the superintendent and board of education for approval. Among the preliminary functions of organization is that of establishing a placement and follow-up service for all pupils who need the service.

Once the program is in operation, the director assumes his duty of supervising, with the assistance of the co-ordinator, the work of instruction to insure that it serves its objectives. Professional growth of the entire staff should be stimulated by the director through individual conferences and professional meetings of members of the staff. That part of the vocational education provided by the present school systems should operate under the director acting in an advisory capacity. The director in consultation with his staff makes needed changes in the program and maintains a continuous program of evaluation in order to justify or promote change. Another responsibility of the director and his staff is the presentation of the program and its activities
to the public by encouraging visitation, holding open house
from time to time, making contributions to newspapers, ad-
dressing meetings and participating actively in community
life and activities.

Preceding paragraphs have emphasized the functions of
the director and his staff. So far the duties of the director
have been shown as they dealt with the staff and the public.
To provide for close contact with the student body, the di-
rector should teach a class dealing with social and ethical
problems of employment. This would enable him to gain a
closer contact with the student body and at the same time
present to them the whole picture of employer-employee re-
lationships.

The co-ordinator is the link between the job and the
educational program. He supervises the trainees or appren-
tices on the job and correlates the related training with
on-the-job training. The importance of this staff member
is emphasized in a statement of basic assumptions by Smith
(22,p.236) which reads as follows:

An efficient industrial co-ordinator,
with time and power to act, is the
real key to a growing and defensible
training program. For locating needy
groups and making the training effec-
tive, the contacts of such an official
are more valuable than formal surveys
and analyses.

He must follow closely progress of the pupils in his divi-
sion and provide for transfer of those unsuited for further
training. The co-ordinator should enlist and maintain the
interest and co-operation of employers and labor leaders in
the work of the school. He acts as a field agent of the school placement service in the placing of graduates and in assisting employers to find suitable employees for vacancies. An efficient co-ordinator should anticipate, through observation of industrial changes, the need for retraining of displaced workers. He can determine the need of evening extension classes for the improvement of the employed. The assistance of a co-ordinator is necessary in the establishment and supervision of co-operative part-time programs, as well as of apprenticeship programs. He should see that both parties to the arrangement are satisfied, and that each is receiving what it should as a result of the enterprise. This function is particularly important in view of the large number of training agencies of questionable educational worth in Lorain County. The co-ordinator should engage in some instruction to provide for personal acquaintance with the pupils in his division and to utilize some of the special experiences and talents which he may possess. A supervisor should be a good teacher in order to maintain the respect of those with whom he works.

The shop instructor must have the standing of a good mechanic in his field. In addition, he must have superior intelligence, a pleasing personality, an emotional temperament free from serious unbalances or repressions in order that he may survive the severe emotional strain of school life. He should possess qualifications necessary to meet the entrance requirements of teacher education institutions
and ability to pursue the professional courses offered by them. Having these qualifications, it would be possible for him to make continued professional development. Experience in the selection of teachers for vocational schools that these qualifications, rather exacting though they may be, can be met without too much difficulty.

A check on the vocational ability of a candidate can be made through letters of recommendation from former employers, a verified occupational biography written by the candidate, and, if necessary, a practical test of vocational competency by persons in the school system or industry selected for the purpose. The intelligence of a candidate can be determined through a transcript of his educational record, his employment record and his score on a reliable intelligence test. Personality traits can be discovered through personal interview and from others acquainted with the candidate.

The shop instructor should be hired for a probationary period of at least two years. The true test of a teacher's ability is discovered in the results of his teaching. A probationary period provides opportunity for a instructor to improve and establish himself and protects the school against being saddled permanently with an incapable and incompetent teacher. An instructor should keep himself informed of production changes by periodic visits to plants in his community. Periodically he should enter employment during summer vacations to refresh his knowledge of working practices and conditions. For such attempt he should be
given professional recognition, either in the form of credit
toward a major in a recognized teacher training institution
or by an increase in compensation, or both. Shop teachers
should be encouraged, perhaps required, to develop themselves
professionally by attending teacher education institutions,
participating in the work of professional organizations, by
reading professional periodicals and books and by visiting
other schools. Whenever possible, the teacher education
courses should lead towards a degree of B. S. in Education.

The related subject instructor's duty is to aid the
pupil toward those educational attainments which contribute
to the development of a broadly trained worker, and supple-
ment shop practice. The field of related subjects comprises:
(a) the science and technology which form the basis of voca-
tional practice, (b) the techniques, methods, and procedures--
such as those of mathematics and mechanical drawing--which
find application in the vocation, and (c) the realizations
and understandings to be derived from a study of industrial
history, industrial economics, and industrial relations.
All of these make for a better understanding of modern pro-
duction and allied social problems.

The most appropriate source of instructors for related
science, mathematics, and mechanical drawing lies in college
graduates with majors in industrial arts or engineering and
who have had one or more years of industrial experience.
Instructors of related social studies can be found among
university graduates who have majors in these areas or in
business administration, and who have had appropriate work experience. These have both the training and the experience to enable them to combine the theoretical with the practical in their instruction. Related subject instruction in current practice is usually much less efficient than shop instruction. This is due in part to a lack of clear understanding of the functions which the related subjects should play in the several vocations, in part from improper time allotment, and in part from a lack of co-ordinated efforts by instructors.

The course of instruction for each of the related subjects should be worked out for each vocation through conferences attended by the co-ordinator, the shop instructor, and the related subjects instructor. The organization of subject matter should provide not only for the vocational needs of the pupils, but also for their family, citizenship, and leisure time needs.

As previously proposed, the guidance director in charge of the vocational school's guidance program will also be the co-ordinating agent for the entire guidance program in the county. The system of records, testing results, interview techniques, and other data secured from the secondary schools and from the United States Employment Service should supplement those secured in the vocational school. The counseling service should be available to both youth and adults in the community. The success of a program of guidance will be determined by the extent to which its work and
achievements represent the unified collective efforts of the entire staff in aiding young people toward all-round development and in ability to meet and solve their personal, social, and economic problems. Since guidance is concerned with the individual, those who know him best, who are trained in guidance, and who have his interests in view, should provide this service.

At the vocational school the guidance director will be responsible to the director of vocational education, in addition to the above duties, but will have the responsibility of organizing and supervising a program of guidance in the vocational school. He should be at the service of any students or prospective students of the vocational school. He will be in charge of the entrance tests and will interview applicants. He will be in charge of the placement service of the school. This placement service should be accompanied by a program of follow-up extending over the first few years after graduation. This is a particularly important phase in a program of guidance, because of the difficulty some students have in adjusting to vocational life. Inability to adjust often leads or develops into more serious form of social maladjustment which are extremely burdensome to society, saying nothing of the effects on the individual in terms of personal satisfaction. One method of contacting a former student is to send him a return greeting card on his birthday. Questions pertinent to his record and which he is requested to answer
may be printed on the return section of the card.

The guidance director should have the assistance of one or more counselors to assist with the work in the vocational school program. The counselor should be an expert in the art of interviewing. The fact that the person seeking assistance is probably a total stranger to the guidance program, if an adult, will mean that a maximum of information about the individual must be obtained by the interview technique. The director, counselors, and teachers should be assisted by sufficient clerks to give them an opportunity to spend all of their time in the more technical phases of guidance.
CHAPTER VII
FINANCE AND CONTROL

Education was not mentioned in the Constitution of the United States as one of the functions delegated to the Federal government, and by inference it was reserved for states. Legal theory and practice have followed this interpretation. Court decisions make it clear that education is a state responsibility in which the federal government and the local school district have vital interest, and in which they must share.

Federal aid to schools has been advocated by many educators for reasons similar to those listed by Struck (23, p. 85):

1. Importance to national welfare
2. Meeting emergency needs
3. Help equalizing opportunities by providing for differences in:
   (a) length of school terms
   (b) quality of service
   (c) literacy
   (d) housing
   (e) number of migratory persons
   (f) number of children per family
   (g) community training resources
4. Stimulating of state and local programs
5. Fostering higher standards

The extent of federal aid to secondary schools has been limited largely to the financing of vocational education through the Smith-Hughes Act, George-Deen Act, and the Vocational Education Act of 1946. The federal government, through
acts of Congress mentioned above, has made available approximately $47,700,000 (Table VIII) annually for the payment of teachers, supervisors, or directors of vocational subjects.

TABLE VIII

Federal Aid for Vocational Education
(Figures in thousands)

<table>
<thead>
<tr>
<th>Acts</th>
<th>Agriculture</th>
<th>Home Economics</th>
<th>Trades and Industries</th>
<th>Distributive Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith-Hughes</td>
<td>3,000</td>
<td>600*</td>
<td>2,400*</td>
<td>none</td>
</tr>
<tr>
<td>George-Deen</td>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
<td>1,200</td>
</tr>
<tr>
<td>Vocational Education (1946)</td>
<td>10,000</td>
<td>8,000</td>
<td>8,000</td>
<td>2,500</td>
</tr>
</tbody>
</table>

*Home Economics and Trades and Industries were together given $3,000,000. The above figures are maximum amounts.

In addition to this, funds have been made available for the federal and state administration of vocational education.

A feature of the Smith-Hughes Act, which proved objectionable to many educators, was the placing of broad discretionary powers in the hands of a federal board. The federal board was empowered to approve or disapprove plans for various states, even those for individual communities. The preamble to the Act (21) reads:

An Act. To provide for the promotion of vocational education; to provide for co-operation with the States in the promotion of such education in agriculture and the trades and industries; to provide for co-operation with the States in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure.

The key words, promotion and co-operation have been rigidly
applied by the original Federal Board for Vocational Education and the present agency, the Vocational Division of the United States Office of Education. The conclusions reached by Mort (15,p.52) with respect to support and control was:

A review of our experience for more than a century disproves the conclusion that control necessarily accompanies or follows support.

The continued support of the federal government should be encouraged. If checking on the expenditure of federal funds is control, perhaps more of it would be advisable.

**State and Local Finance and Control.** A sliding scale is provided for matching federal funds under both the George-Deen and the Vocational Act of 1946. The first extends over a period of ten years and the latter five years. In both cases the states were to begin by matching 50 per cent of the federal funds. The burden of cooperating with the federal government toward an expanded program is lessened by the use of this method of financing.

Many states and local governments find it difficult to finance adequate educational programs. This should not be the case with Ohio which ranks fifth among the states in tax-paying ability according to a formula developed at Columbia University under the direction of Mort (17,p.193).

The state and local governments in Ohio are not contributing as much toward vocational education as the average for other state and local governments as shown by the following statistics obtained from the 66th Statistical
Abstract of the United States for 1944-45:

<table>
<thead>
<tr>
<th></th>
<th>Total Spent</th>
<th>Federal</th>
<th>State</th>
<th>Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>64,321</td>
<td>19,961</td>
<td>15,015</td>
<td>29,344</td>
</tr>
<tr>
<td>Totals*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State of Ohio</td>
<td>2,357</td>
<td>861</td>
<td>353</td>
<td>1,143</td>
</tr>
<tr>
<td>Totals*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figures are given in thousands.

It would be necessary for the state to double its contribution, and for the local governments to increase theirs by one-third in order to equal the national ratio. This contribution to the program of vocational education is not in keeping with other achievements of a state which ranks fourth in manufacturing, and which is one of the leading farming states.

The financial support for a system of Area schools through the state or nation would be furnished through taxation, by the industrial centers, and more thickly populated areas. The possibility of federal support for the establishment of area schools is rather remote in view of the fact that the area school section of the Vocational Act of 1946 was eliminated. For the same reason, state support is also remote unless local movements for the establishment of area schools are numerous and strongly in favor of such support. The present vocational schools in the larger cities are essentially area schools. Pupils from several sections of the city attend these schools. The financing of separate schools for vocational education is not possible except in the larger city school districts.
The Lorain city school district had a tax valuation of $82,059,000 in 1945 according to the annual report of that district. The bonded debt of the school system is one of the lowest, if not the lowest, in the state, indicating that it would be possible for the city to build and support a vocational school. It so happens that Lorain is essentially a "one" industry city and that industry is basic steel. As a result, there is little need for a school for the training of skilled and technical workers.

The tax valuation of the Elyria city school district in 1945 was $51,066,000 and the bonded debt was $360,000. The need for additional buildings in the school system at the present time places the school officials in a position where they do not believe it would be advisable to finance a vocational school. Many educators do not believe that a city with a population under 50,000 can support adequately a separate vocational school. Several of the larger industries of Elyria employ a relatively large number of semi-skilled, skilled, and technical workers. The number of these workers who live in the Elyria city school district probably would be too small to justify a vocational school.

The school districts in the remainder of the county have a tax valuation of $76,740,000 and supply many of the workers in industries in the community. There is no doubt, in the writer's opinion, that the community as a whole could afford to build and support a vocational school. The total tax valuation of the community would be $209,865,000,
which is more than that of the Canton city school district which is $181,395,000.

The people of the community should put forth every effort to provide for the efficient education of both youth and adults. This education should not be prevented by a few problems created by the technicalities of the school laws.

**Legislation Needed for Program.** A newly re-organized Ohio school code was adopted by the state legislature in 1943. (24) The re-organization involved the elimination of many of the laws which did not seem necessary, or were ambiguous. Among those eliminated were laws numbered 4830-15 to 4830-20 (24) which had to do with joint vocational districts. They provided that adjoining school districts could unite for establishing a vocational school. The school was to be managed by a committee representative of the combined districts, and the reports were to be taken care of by the county superintendent. The State Director of Education was to apportion operating funds and the school was to participate in state school funds. In addition to the establishment and operation features, provision also was made for the abandonment of the vocational district.

It is generally known that in many instances educational advantages superior to those now in effect may be attained through larger units of administration. In this respect, education is like business, in which the size of the organization has definite relationship to unit cost and
quality of service. The cost of equipment, housing, and instruction for modern units of vocational education is such as to warrant their establishment only where groups of learners of appropriate size are available. The units of administration in vocational education have varied from the state schools of Connecticut to the county trade schools of New Jersey, and Pennsylvania. (23,p.122) There is no tuition for residents of the county, but non-residents may attend by paying non-resident tuition fees.

The county, as a political subdivision in Ohio, seems to be a permanent part of the state organization. It would seem logical, therefore, that a plan for area schools in Ohio could begin with county-wide schools in those counties which could afford to build and support them. A state plan for the future could incorporate the county schools into a state-wide area plan. The formulating of such a plan at the present time would seem advisable in order that any programs initiated in the immediate future could be absorbed into a state plan.

In view of the fact that only the larger school systems have suitable vocational education programs, legislation should be enacted which will permit smaller school systems to unite on a county-wide basis for the purpose of providing similar programs. Provision should be made for a survey of the state to discover in which counties it would be advisable to undertake a complete occupational survey with the purposes of determining the need of estab-
lishing a program of vocational education.

The state plan for vocational education in the trades and industries should be broadened in scope to include more than the larger city school districts. The State Board of Vocational Education should recommend to the state legislature a program for vocational education which would reflect the needs of the people in this industrial state.
CHAPTER VIII

SUMMARY AND CONCLUSIONS

The gradual change in a community from a rural to an urban population creates problems for which planned solutions must be found. The problem of this study is that of providing an adequate program of vocational education for an area which furnishes the workers in the industries of Lorain County. The educational facilities provided should serve all those who are able and desirous of utilizing them.

The "core" of the vocational education program is a vocational school which would provide training in industrial, technical, agricultural, home-making, business, and public service education. This discussion of the problem is concerned primarily with the industrial and technical phase.

To make possible the organization of a suggested program which would meet the needs of the community, it was necessary to make a rather detailed survey of books, periodicals, government bulletins and reports. This was supplemented by personal interviews with educational leaders, and heads of organizations interested in the welfare of the community.

It was necessary in the investigation to show first a need for the program through a description of the community at the present time as well as to present some of the
future possibilities of the community. Aside from the Veterans Training programs involving a large number of youth, practically no effort has been made towards the furnishing of vocational education in the community. The general education program is above average.

The population figures of the community have shown a considerable increase in the last thirty years due to a steady growth of industry. The centers of both industry and population have remained in close proximity between Lorain and Elyria for many years. The employment figures show a large percentage of industrial workers. New industries now under construction will nearly double the present employment figures, and at the same time create a severe shortage of workers in the community at an early date.

Enrollment figures in public vocational schools have been increasing greatly since 1918 through the stimulating efforts of the federal government. These efforts, in the form of federal grants, resulted in the expenditure of $64,299,132 for vocational education in 1944, of which $44,340,580 was furnished by state and local governments. The concept of vocational education has broadened so it is now coming to comprehend or include the entire program of genuine vocational guidance, vocational training, job placement, follow-up and retraining services. Educators are developing an attitude which seems favorable to closer integration of vocational and general education in the secondary schools. Administrators now find that the instructor needs
more than personal mechanical skill in order to become a successful vocational teacher.

The study revealed a marked similarity between Lorain County and other communities where surveys had been made and resulted in the development of a vocational program. This convinced the writer that a program was needed. The study then undertook the problem of presenting the characteristics of a program which could be justified for Lorain County.

In the proposed plan an adjustment in the general program of education would be provided for the vocational training of the non-skilled workers and many of the semi-skilled. The vocational school would provide for the training of the technical, skilled, and some of the semi-skilled workers. The several groups for which training is provided and the type of program for each is as follows: (a) advanced vocational training for high school graduates in a full-time pre-employment program or co-operative part-time program, (b) out-of-school youth in the full-time pre-employment program, or the co-operative part-time program, (c) apprentices in on-the-job training and trade extension program, (d) employed workers interested in changing type of employment in the part-time pre-employment program, and (f) unemployed in the full-time pre-employment program and trade extension program.

A vocational guidance service is necessary as an integral part of the vocational program to insure the correct
training for the student as well as the proper student for the program. The establishment of an efficient program of guidance in the secondary school systems under the direction of a trained worker is an essential part of the whole plan. The problem of guidance service for adults is met by placing the service at a location where it is needed for the first time after leaving school. This in most cases is the point of job adjustment, or the employment service, either or both working co-operatively with the director of guidance. The guidance service of the vocational school is the unifying agency for the entire program.

A comparison of the community with similar communities resulted in the tentative selection of some of the more popular All-Day Trade school courses for skilled trades and technical workers. These courses, along with similar courses discovered through the survey technique, would constitute the day school and part-time pre-employment curriculum for the proposed school. The use of survey and occupational analysis techniques would provide guidance in the choice of course content for part-time and trade extension offerings. The program would be constantly undergoing change as a result of surveys, statistics on job openings and technological changes, and the efforts of the school staff.

The physical plant and equipment are arrived at after the program has been decided upon through surveys, job analysis and the co-operative effort of many individuals. The staff for conducting the proposed program consists of a
superintendent, vocational director, and a suitable number of principals, co-ordinators, shop instructors, related subjects instructors, and clerks. Each of the above staff members has a particular set of responsibilities which should be assumed to the best of his ability.

Fears of federal control as a result of federal aid are unfounded. The result of federal subsidization has been a rather successfully promoted program of vocational education largely supported and controlled by the state and local governments. The state of Ohio and the local communities are in a position to finance a greater share of vocational educational costs. Collectively, the school districts could produce a tax valuation larger than that of some communities now supporting vocational schools. Certain legislation enabling school districts to unite in their efforts to provide a vocational program is necessary. This would follow the lead of other states where the county organization has been adopted.

Conclusions. An analysis of the study has resulted in the following conclusions:

1. The industries of the community will need an increasing number of semi-skilled, skilled, and technical workers.

2. The present educational system of Lorain County is unable to train the needed workers.

3. The United States Employment Service can provide valuable information which would be useful in guidance work.

4. Training should be provided for employment, re-
employment, and up-grading.

5. There is a marked need for guidance in the secondary schools of Lorain County.

6. The placement of high school graduates should be one of the services offered by the school.

7. The need for vocational education is not confined to the larger cities.

8. Area schools, whether they are called city, county, or state vocational schools, are practical.

9. Ohio can and should finance a more complete program of vocational education.

10. Vocational education and guidance is a co-operative activity involving many individuals and groups.

11. A large number of out-of-school youths are in need of further educational opportunities.

12. The need for related subject training for apprenticed veterans is vital and immediate.

13. Many veterans now entering employment will need re-employment assistance.

14. The director, and several key men on the staff should be employed to formulate a program of courses before the selection of building and equipment.

15. New state legislation and support would encourage and enable many local communities to develop and support new and expanded programs of vocational education.

Recommendations. The secondary schools of Lorain County should adopt a more realistic attitude toward voca-
tional education. A program of terminal training for employment in the unskilled and semi-skilled jobs, which can be carried out in the secondary schools, should be developed. Pre-vocational training should be provided for the remainder of the large group of secondary school students who never attend college. A functioning guidance and placement program should be developed in the secondary schools.

The State Board for Vocational Education should provide immediately for the supervision of the related training for apprenticed veterans. In those areas where vocational education has not been provided the state should assist in furnishing the maximum number of related courses possible with available physical facilities. The supervisors in these areas should be provided means for making occupational surveys. The State Board for Vocational Education should plan a state-wide system of area schools using the results of surveys as a basis for planning. The state should assist in the building of the vocational schools in a few of the more important areas each year until a complete system of area schools has been developed. A system of state aid for the financially weaker areas should be developed.

Educators in Lorain County should call attention to the fact that the skilled and technical workers needed to meet demands created by industrial growth can not be trained in the present school systems. This problem should be directed at industrial, civic, and social groups which should be asked to decide whether these workers be imported or furnished by the local labor market.
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