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Williams, Kurt E., Ph.D.
The Ohio State University, 1988
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UMI
FUNCTIONAL COMPETENCIES OF
MALE INMATES IN OHIO
AT THE TIME OF
RELEASE FROM PRISON

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in the College
of Education of the Ohio State University

By
Kurt E. Williams, B.S., M.A.

The Ohio State University
1988

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Finally, a tribute to my parents and a loving grandmother who inspired the motivation to seek knowledge and continue the quest throughout the years. Their love and support has always been present and will always be cherished.
VITA

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CHAPTER I

INTRODUCTION

Crime is a major problem in America. It touches 30 percent of all United States households according to the Report to the Nation on Crime and Justice (1983). The public has reacted by demanding that criminals be removed from society for longer periods of time. This has created a problem in America's prisons with overpopulation. At the end of 1986, the number of prisoners under the jurisdiction of Federal and State correctional authorities revealed a record 546,659. The increase brings total growth in the prison population since 1980 to nearly 217,000 - an increase of about 66 percent in the six year period (U.S. Department of Justice, 1987). In the first six months of 1987, the population grew by almost 5 percent to 570,519.

The public has requested legislative changes to penal codes. Mandatory prison terms, the abolition of parole boards, and stiffer sentencing practices for gun crimes in general reflect a public sentiment that favors more prisons. Criminologist Elliott Currie in 1982 postulated the possibility of a twenty percent reduction in serious crime by tripling the State and Federal prison population. By the cost estimates of President Reagan's Task Force on Crime, such a program would cost $40 billion for new prison construction and an additional $8 billion annually in State and Federal operating costs - still leaving the U.S. with 80% of the crime it now has (Cannon, 1982).
The U.S. prison population has steadily increased from the year 1925 to the present all-time high population figure. From 1925 to 1985 2.8 percent reflected the annual growth rate for the prison population while the residential population growth rate was 1.2 percent. The more rapid growth of the prison population is also reflected in the incarceration rate (the number of sentenced prisoners for each 100,000 residents in the U.S.), which rose from 79 per 100,000 to 201 per 100,000 during the 60 year period (U.S. Department of Justice, 1986).

Incapacitation became a program philosophy in several states during the 1980's. The idea is to keep offenders incarcerated and away from free-world citizens. Habitual criminals for whom chances of rehabilitation seem slight may be sentenced to additional sentences merely to keep them incarcerated and out of society. The incapacitation theory is based on studies that indicate only 7 percent of the criminals commit 37 percent of the crimes (McGlone, 1984). Today determinate sentences incarcerate offenders for specific time periods that have, in fact, extended the time offenders are incapacitated.

Prison overcrowding became a national issue when federal courts intervened to place standards on the operation of state prisons. During 1981 the number of states under court order to reduce prison overcrowding rose from 28 to 31. In 1982 Ohio's Senate Bill 199
lengthened the sentences of criminals. Ohio's prison population has grown to a record high of 23,000 as a result of the public support for longer prison sentences. In an attempt to provide for increased population expansion, the Ohio legislature in 1982 also appropriated $630 million to build fourteen new prisons and renovate older facilities.

In this milieu, the need for changes in the correctional system became apparent to national and state leaders. Since 95 percent of incarcerated offenders return to the free-world, emphasis has been generated in the 1980's for correctional education training and education.

Warren E. Burger, Chief Justice of the U.S. Supreme Court in the 1981 annual address to the American Bar Association stated:

Make all vocational and educational programs mandatory with credit against the sentence for educational progress - literally a program to 'learn their way out of prison', so that no prisoner leaves without at least being able to read, write and do basic arithmetic.

The Secretary of Education, Terrell H. Bell, in 1981 wrote:

Education is neither a frill nor a privilege reserved for the few or truly deserving... Education must not stop at the prison gates; for some that may be where it can begin... Our society can't afford not to provide education and training to inmates in our prisons. We must make sure that incarceration is a sentence to temporary loss of freedom; not a sentence to lifelong ignorance, unemployment, poverty, and crime. Correctional education can be the way out; we must give it our support (p. 4).
The transition from prison to the free-world is difficult for the correctional population. Prisoners face many obstacles as they attempt to deal with reintegration. They have been separated from resources that may aid them in adjusting to work, family, or social relationships. Self doubt usually permeates their thoughts concerning being accepted. Life-coping skills may be low. The status of the offender population received support when prominent national leaders and organizations initiated action.

National assistance for correctional education and training was provided when: (1) former Secretary T. H. Bell signed a policy statement on correctional education and institutionalized a Correctional Education Program in the U.S. Department of Education; (2) Chief Justice Burger helped establish a task force on prison industry and education, and a Center for Innovation in Corrections at George Washington University in Washington, D.C.; (3) Senator Arlen Specter helped provide the National Institute of Corrections (NIC) with $4 million earmarked for correctional education and another $11 million to the District of Columbia Department of Corrections to develop a national correctional education demonstration program at the Lorton Prison Complex; (4) the American Correctional Association passed a National Policy for Correctional Education; and (5) most significantly, the Carl D. Perkins Vocational Education Act was passed by Congress with a 1 percent (about $8 million) set-aside for the
incarcerated as part of Title II to upgrade old programs and develop new and more timely ones (Coffey, 1983). At the state level, the Ohio Department of Education correspondingly provided educational funding for correctional vocational programs in the Ohio Department of Rehabilitation and Correction (DRC). This was an unprecedented funding decision between two state agencies for regular allocation of vocational training funds.

Chief Justice Burger's task force on prison industry and education provided national leadership. Training, Industry, and Education (TIE) should be linked together, according to the task force, to maximize the limited resources and the impact of correctional programming for the incarcerated population. Ohio adopted the concept and the TIE program for Ohio was named the Ohio Plan for Productive Prisons (Ohio Plan) in 1986.

The Ohio Plan concept has its roots in the first National Prison Conference held at Cincinnati, Ohio in 1870. Prison reform for the twentieth century was outlined in the Declaration of Principles drafted at the Prison Congress. This began a progressive era of change and program development; a reform era.

Correctional history has witnessed various periods of changes. Bartollas and Miller (1978) describe six models in correctional history: family, punishment and penitence, reform, rehabilitation, reintegration, and punishment. None are pure types, and elements of
each are frequently found in the others. But they all removed offenders from the community as punishment, and they all continued to punish offenders after they were confined. Day and McCane (1982) identified four developmental stages for corrections in the United States: punishment and retribution, reform and restraint, rehabilitation, and reintegration. Correctional programming was, for the most part, initiated during the reform era, to 1900, and it was expanded, to a considerable degree, during the rehabilitation and reintegration eras (1920's to 1970's). The reintegration model seems to be yielding to punishment - one of the oldest concepts in the control of crime (Bartollas and Miller, 1978).

Presently, there is no apparent dominant philosophy of correctional policy forthcoming for the national scene. Richard Seiter, Director of the Ohio Department of Rehabilitation and Correction, (1986) wrote, "During the times when rehabilitation and reintegration were being discussed and researched, corrections had a clear national policy direction. Today that does not appear to be the case." Therefore, national correctional officials have urged states to develop their own operational missions.

The Ohio Department of Rehabilitation and Correction developed the following mission statement in 1983:

The Ohio Department of Rehabilitation and Correction is responsible for containing and supervising adult offenders until their legal release from the Department’s custody in
order to perpetuate social order and public safety. The Department therefore must provide safe, decent and humane living conditions for those incarcerated, and offer service opportunities for adjudicated offenders which will enhance their community integration and economic self-sufficiency.

The state agency formalized its philosophy, mission and operational policy direction in the Ohio Plan. The Ohio Plan for Productive Prisons provides a productive work oriented environment for inmates in the expanding number of Ohio prisons. The Ohio Plan encompasses the Training, Industries, and Education (TIE) Program. The goals are two-fold. First, emphasis is placed on work linked to training and education. Thus, by developing work assignments based upon the TIE concept, inmates will be more active, idleness will be reduced, and directed personal career programming will be better channeled. Active work programs contribute to a safer, more controlled, positive prison environment and improve the efficiency of institutional operations. Second, inmates will increase employability skills and, therefore, be better prepared to enter the competitive world of work (Seiter, 1986).

The Ohio Plan (or TIE program) is a comprehensive plan for inmate programs. It begins at reception of the inmate and continues through prerelease to assist in community reintegration. At the end of incarceration, mandatory prerelease programming is provided for releasees. This study will assess, during the prerelease phase,
the functioning competency levels of releasees as they prepare to reenter the world of work. The assessment will utilize the Adult Performance Level instrument. It is a competency-based instrument developed to provide functioning competency levels of adults.

The Adult Performance Level Project is one of the largest research programs ever funded by the United States Office of Education (USOE) Division of Adult Education. In 1970 the Division of Adult Education had adopted the following definition of adult literacy:

The challenge is to foster through every means the ability to read, write and compute with the functional competence needed for meeting the requirements of adult living (Delker, 1970).

The purpose of the APL project was to identify competencies which adults must have in order to be successful in society. The APL project staff developed an assessment survey that provides distinct levels of functioning competencies as APL 1, APL 2, and APL 3. The summary of the project defines each of the three levels as follows:

**APL 1** - Adults who function with difficulty. APL 1's are those adults whose mastery of competency objectives is associated with:
1. Inadequate income of poverty level or less.
2. Inadequate education of eight years of school or fewer.
3. Unemployment or occupations of low job status.

**APL 2** - Functional adults. APL 2's are those adults whose mastery of competency objectives is associated with:
1. Income of more than poverty level but no discretionary income.
2. Education of nine to eleven years of school.
3. Occupations falling in the medial job status range.

**APL 3 - Proficient adults.** APL 3's are those adults whose mastery of competency objectives is associated with:
1. High levels of income or varying amounts of discretionary income.
2. High levels of education, high school completion or more.
3. High levels of job status.

Each of the three APL levels is a conjoint definition based on predicted income, education and job status. Test data are used to "predict" an adult's competencies. Those persons classified as APL 1 are, by and large, "functionally incompetent" or adults who function with difficulty. APL 2's are competent, as adults functioning on a minimal level and APL 3's are proficient in that their mastery of competency objectives is associated with the highest levels of income, job status and education (Adult Functional Competency: A Summary, March, 1975, p.5).

These competencies were used to form the curriculum of the federally funded Adult Basic Education (ABE) programs. The federal Adult Education Act had been passed in 1966 to serve undereducated adults, and this writer was the first project director to obtain funding in the Ohio Department of Rehabilitation and Correction in 1972 to establish an ABE program for incarcerated felons. In 1976 the staff implemented the APL curriculum in ABE as a pilot project. This project was successful and the Department of Rehabilitation and Correction adopted the APL concept in its chartered schools as a curriculum component of the ABE academic programs in 1977. The
APL assessment survey was then selected for the pre-release program. It was an approved assessment used by the Ohio Central School System in DRC and its adoption in 1984 was to meet two objectives:

1. Serve as a diagnostic instrument to direct curriculum development.

2. Obtain exit data for Ohio's pre-release inmates leaving the prison system and returning to the free-world.

Initial assessments were shocking. Inmates were leaving the system at very low functional levels. Would this not impede both their transition into the community and obtaining employment? To meet the individual needs of inmates, three computerized learning laboratories were established in the program for learning deficient inmates, in addition to more traditionally oriented instruction, for the short term six-weeks program. (In 1988 the program was changed to five weeks). Valuable lessons were learned by program staff concerning programming from the computerized learning laboratories:

a. Screening of inmates into programs is important.
b. Computers are essential for managing information.
c. Computer-assisted instruction is not for everyone.
d. Computer-assisted instruction is of significant benefit to some.
e. Instructors are important (Rose and Williams, 1987).
Objective one was achieved when the staff developed curricula that was client-centered. The curriculum was based upon the APL assessment for APL 1, APL 2, and APL 3 inmates and a personal interview held with each inmate. Objective two needs to be accomplished through a definitive research project to obtain exit data for Ohio's inmates leaving the prison system and returning to the free-world.

STATEMENT OF THE PROBLEM

The Ohio Department of Rehabilitation and Correction (DRC) releases over 5,000 adult male inmates into the free-world annually from its centralized pre-release program. It is one of the largest pre-release programs in the United States with mandatory participation of male inmates approved for release by the State of Ohio. The question is: what are the functioning levels of Ohio's male prison inmates at the time of release into the free-world?

Pre-release programs are centralized at the Pickaway Correctional Institution (formally named the Correctional Pre-release Center) with satellite centers at other institutions throughout Ohio. Inmates are transferred to the central Ohio site from their parent institutions for job readiness training approximately five weeks prior to their release.

The high number of participants and short term program provides many challenges. Inmates range in age from 18 to 80
years, and their security designations range from minimum to maximum levels. Reading levels span complete illiteracy to physicians, dentists, attorneys, chemists, and professionals. They have varying release statuses from high state supervision as parolees to no state supervision as determinate sentence releasees. Some have strong family ties and support while others do not. Skill levels vary from those who never held a paying job to those who worked in the medical and legal professions and minorities are represented disproportionately to the free-world population. Some are incarcerated for the first time and others have served multiple incarcerations. There may be a history of alcohol, drug abuse or mental illness. Thus, meaningful programs must assess the functioning competency levels of those soon to be released to provide realistic and beneficial activities prior to their release from prison.

The criminal justice literature portrays the male incarcerated male in a stereotypic fashion. He is considered a school drop-out, underskilled, underemployed, of low self-concept as reflected in lack of self-satisfaction and sound maturity, exhibits poor reading and communication skills, and has an inability to relate to authority figures. (Weber and Silvan - Lacy 1983). This description, however, is not conducive for providing correctional programming in today's changing and complex world. A refined assessment system is needed to provide data for program planners in meeting the diverse skill
levels of inmates in Ohio's prison system. Additional information on functioning levels is required by correctional planners to assist inmates in preparing for reentry into the competitive free-world.

**THE PURPOSE OF THE STUDY**

The purpose of this study is to determine the functioning levels of Ohio's male inmates at the time of release from prison. It will provide a data base of Ohio's male pre-release population as they leave the prison system and enter the free-world by comparing the functioning competency levels, assessed by the APL survey, with relevant demographic variables of the client group. Data of the client group will be provided to assist program planners in designing and implementing training, education and industries programs. The study will describe skill and knowledge competency levels among the three functioning level groups identified by the Adult Performance Level (APL) assessment as APL 1, APL 2 or APL 3. These variables will then be compared with twelve sociodemographic variables.

To provide an inmate data file at the end of incarceration, selected variables will be analyzed with APL levels to define specific profiles of the inmate population. The twelve variables were:

1. Ethnicity
2. Age at release
3. Education level at release
6. Security designation
7. Number of adult incarcerations
8. History of drug abuse
9. History of alcohol abuse
10. History of mental illness
11. Months since last incarceration
12. Offense level

The implications of this study for practice are considerable. In the past, a high quantity of data on inmates has been generated in Ohio, but it has not been in a format that is retrievable without prohibitive labor and time involvement. The format of the study will provide data for inmate assessment that may be utilized in the field.

This study will add to the knowledge of the field and practice in corrections. The merit of the research will be in the data base that will be provided and the analysis of data generated will have implications for additional research. The study will contribute to the knowledge in the field by generating information about the client groups that has not been developed in Ohio. The challenge in corrections is to provide programs and services that are accountable - they do what they are supposed to do - and can be measured. This study should assist in that endeavor.
THE RESEARCH QUESTION

What are the functioning levels of Ohio's male prison inmates at the time of release into the free-world?

SUBSIDIARY QUESTIONS

1. How competent are Ohio's male pre-release inmates in functional competency skills when released from prison as measured by the Adult Performance Level (APL) survey?

2. What are the profiles of inmates at the time of release as measured by the APL survey?

3. What comparisons exist in functional (reading, writing, computation, problem solving, and identification of facts and terms) skills and knowledge (consumer economics, community resources, government and law, health, and occupational knowledge) competency levels according to selected demographic variables of inmates at the time of release?

NEED FOR THE STUDY

As in the past, but even more in the future, expenditures of taxpayers dollars must be accountable to the public. Research is needed to provide data on the large client groups that the Ohio Department of Rehabilitation and Correction serves. Huge sums have been allocated,
as stated earlier, for building new prisons in Ohio. These new additions to the existing facilities should have meaningful and relevant programs that will meet the challenge of rigorous evaluation. This study will provide a format for research evaluation of inmates.

Research in DRC has been focused in the community and at the beginning of incarceration as opposed to the end of the incarceration period. This study will provide a profile of Ohio's adult male inmate population at the time they leave prison and enter the complex, changing free-world. Tax-payers have seen the cost of incarceration increase and it is to their benefit that those released from prison have a successful reintegration to society.

The debate on recidivism continues. However, as former Chief Justice Burger wrote concerning training inmates for jobs and educating them, "if only 10% of those who would otherwise return to prison do not, it would be worth the effort". (Burger, 1983). DRC has adopted the Ohio Plan to meet the challenge of the former Chief Justice. It is a progressive approach to change the management of training, industry and education (TIE) from separate divisions to a single division to train and educate inmates in skills that will be marketable in the free-world.

A new Correctional Reception Center opened in 1987 to provide intake assessment of Ohio's male inmates at the beginning of
incarceration. It is a step in the Ohio master plan to establish a comprehensive correctional system throughout the State. Additional assessment will also be provided at parent institutions as inmates progress through the system. This system should help corrections professionals and community leaders in planning pre-release and transition activities. It will provide data in a format that has never been presented to date for inmates leaving the Ohio correctional system.

In the tradition of behavioral and social science research, the study will provide new information. The client groups will be analyzed in a manner unrecorded in the literature.

ASSUMPTIONS

The following fundamental assumptions are apparent in this study.

First, it is assumed the APL assessment identifies functional competency skills.

Second, inmates will cooperate and provide factual data without misrepresentation.

Third, the population sample will be appropriate to generalize to the correctional pre-release population of Ohio.

Fourth, data collection for demographic variables involving records will be valid since they are official written records for the state agency.
LIMITATIONS

This study is limited to the prerelease population at the Pickaway Correctional Institution. The population sampled was those male inmates classified pre-release status and received at the state facility from February 1 through March 9, 1988. A total of 472 were received and a total of 445 (94.3 percent) was included in the study.

The population of adult male pre-release inmates includes those inmates who are sent to the pre-release center for pre-release training. It does not include all Ohio releasees due to space limitations or security classification restrictions at the center. Female inmates are not included in the population.

Generalizations from this study are limited to the population surveyed. They must be made in the context of the assessment instrument and any limitations it may have.

Summary

This chapter has outlined a correctional dilemma in America. Prisons are overcrowded as a result of social and economic dichotomies. The public has requested criminals be incarcerated for longer periods of time when convicted and sentenced to prison; resources to build facilities to house those incarcerated, however, have not been provided. Former Chief Justice Warren Burger and other national leaders have initiated funding and technical support in dealing with the dilemma. Ohio's Department of Rehabilitation and
Correction has adopted the Ohio Plan for Productive Prisons, or TIE program, to enhance inmate's functioning skills in reading, writing, computation, work, problem solving, and interpersonal relationships. It is a progressive management philosophy to maximize the resources in the state agency.

To maximize resources and produce an impact on the number who return to prison, relevant data are needed concerning the inmate population. The purpose of this study is to provide functioning level data on Ohio's male inmate population. It is a descriptive study of inmate functioning levels surveyed by the Adult Performance Level instrument. The data generated will permit program planners to stratify the population for targeting resources. Resources may then be more accountable in their application and it is postulated the delivery of services and program evaluations may be enhanced throughout the state agency.
CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of this study is to determine the functioning levels of Ohio's male prison inmates at the time of release into the free-world. How competent are they in survival skills? Do they possess requisite skills for self-maintenance in the community?

Because of the paucity of relevant research in this area, such questions are difficult to answer. The review of the literature is divided into six sections to relate how these competency-based questions have been addressed. The correctional challenge in America is defined in the first section of this chapter. The second section outlines the economic consequences of a low literacy rate on the economy, the education system, and the correctional system. Section three reviews the background of the Adult Performance Level program. The fourth section describes the history of correctional programming. Section five outlines offender programs described in the literature. The last section analyzes the effectiveness of correctional programs with a focus on recidivism.

The Correctional Challenge

The direction of corrections in the 1980's is at a crossroads. The choice is this: Will America continue building warehouses of convicted criminals, with few facilities for education, training, production and recreation? Or will America build prisons that are factories with
fences around them - where inmates, after training, engage in useful production? Do we want prisoners to return to society as predators or producers? (Burger, 1983)

This challenge to the correctional community, offered by the Chief Justice of the U.S. Supreme Court, was heard and action was initiated. Since a crisis in corrections was prevalent in the correctional literature, national and local efforts were directed to the prison problem by (1) attempting to decrease overcrowding and improve conditions by building new and renovating old facilities, (2) making confinement more humane and effective by enhancing the caliber and training of prison personnel from the lowest echelons to the highest, and (3) offering programs that provide education, vocational training and opportunities for work experience that can be developed to give inmates marketable skills to use on their release.

Federal and state funding was increased to build and renovate facilities. A national training academy was established at Boulder, Colorado for correctional personnel. National conferences were convened to develop a linkage among training, industry, and education in America's prisons.

Chief Justice Warren Burger wrote an ideal program would "make certain that every inmate who cannot read, write, spell or do simple arithmetic would be given training..." "The program," states Burger, "would require a large expansion of vocational
training in the skilled and semi-skilled crafts. The objectives would be that a prisoner would not leave the institution without some qualifications for employment in the construction, manufacturing, or service industries... We should help them learn their way out of prison". (p.6)

Correctional education is a generic term describing a wide range of educational activities that take place in institutional and community correctional settings (Imel, 1986). The Federal Bureau of Prisons (BOP) offers this categorization of programs (Minnis, 1980):

**Occupational Programs**
- Exploratory Training
- Apprentice Training
- Vocational Training
- On-the-Job Training
- Industrial Programs

**Educational Programs**
- Post-Secondary Education
- Social Education
- Adult Basic Education
- Adult Secondary Education

**Recreational Programs**

**Counseling and Psychological Programs**
- Individual Psychotherapy
- Group Psychotherapy
- Individual Counseling
- Group Counseling
- Correctional Counseling
- Voluntary Groups

**Release Activities**
- Work Release
- Study Release
- Community Treatment Center
Other Programs
- Health Services
- General Maintenance
- Other

One of America's most respected educators, John Dewey, based his philosophy of education on the principle of the discovery and inquiry method of creating the environment for the individual to physically and mentally experience learning. Dewey (1961) wrote:

A vocation means nothing but such a direction of life's activities as renders them perceptibly significant to a person, because of the consequences they accomplish, and also useful to his associates. The opposite of a career is neither leisure nor culture, but aimlessness, capriciousness, the absence of cumulative achievement in experience, on the personal side, and idle display, parasite dependence upon others, on the social side. Occupation is a concrete term for continuity. It includes the development of artistic capacity of any kind, of special scientific ability, of effective citizenship, as well as professional and business occupations, to say nothing of mechanical labor or engagement in gainful pursuits.

Dewey alluded to the fact that attainment of a vocation also assists the individual with the sometimes difficult task of finding and retaining an identity in society. As one begins to recognize the need for one's occupational services, the individual places an increasing value on his identity with a specific trade or occupation. Many other associated possibilities of improved self-concept, ego development and self-actualization may be the result of successful achievement in an occupational training program.
Finding an identity for offenders in today's America is a challenge with many obstacles. A Ford Foundation study, *Education, Equity and Economic Success: The Critical Role of Second Chance Basic Skills and Job Training Programs* (1985) describes the plight of economically and educationally disadvantaged young people in America. It states, in part, the "baby bust" will reduce the absolute number and proportion of young market entrants by more than 25 percent. But a significantly higher proportion of the total will be comprised of economically and educationally disadvantaged young people. With fewer young entry workers and a slowing of female entrants into the labor force, many baby-boom members who failed to obtain adequate educational skills and work experience as youth, will be looking for entry level jobs as they enter their prime age working years. Unless immediate steps are taken to address the basic skills needs of this bottom quarter of the workforce, employers, the military, colleges and government will become dependent upon an inadequately prepared workforce. This workforce is affected by economic world trends.

The position of the United States has changed in the world trade market. The U. S. basic industry has lost its global market share with a 2 billion dollar trade deficit. Competition is forcing businesses to continue to flatten their structures and become leaner. In May, 1986, the U. S. began, for the first time, to import more agricultural
goods than it exported. Technological changes require a restructuring of 5-15 million manufacturing jobs by the year 2000. The service industry will be the growth area employing 80-85% of the total workforce by 1995. By the year 2000, 80% of new entrants in the workforce will be women, minorities, or immigrants (Ruth, 1987). These projected realities will impact correctional programming as correctional professionals plan future directions based upon past trends.

In the last three decades, the U.S. economy has shifted from a manufacturing to an information and service base. Since World War II, employment in the service sector - broadly defined as transportation, communications, public utilities, insurance, real estate, finance, trade, other services and government - has risen from 57 percent of all jobs to almost 70 percent (Stanbeck, 1983). The percentage of white collar jobs has increased, while blue collar work has declined (Ginzberg, 1982 and Stanbeck, 1983). Education is increasingly important in obtaining and holding many of these jobs.

The service industry is extremely diverse - it includes busboys and typists in addition to newspaper writers and bank executives. In fact, the growth of services has created a major expansion of low-paying jobs, many of which are characterized by minimal skill requirements, unstable hours, and few prospects for advancement (Stanbeck, 1983). This trend is expected to continue; it is projected
that between 1982 and 1995, 75 percent of all new jobs will be in service producing industries (Personic, 1983). Paradoxically, the occupation with the largest projected growth is building custodian, followed by cashiers and secretaries (Silvestri, 1983). The correctional planners must consider these trends for inmate programming.

Basic skills will be essential for those who want to escape from the low wages and intermittent employment characteristics of the bottom groups of service industry jobs. Continued technological changes can either reduce the number of repetitive and routine tasks workers must perform, or instead, it can be used to make jobs more challenging and productive, thus requiring more sophisticated skills. If the U.S. is to follow the latter path, entry into the movement within the labor market will become more dependent upon an individual's educational attainment. Those who lack basic skills as the offender population does, may increasingly be denied employment. In addition, while some observers cite these labor force projections to argue against the need for increased educational attainment, employers argue otherwise. For example, New York City bankers and brokers say they need messengers and clerks with high school degrees and good oral and written skills. Laundry workers employed by the federal government must be able to follow written and verbal instructions and keep accurate records (National Academy of Science, 1984). The Army's cook manual requires a seventh grade
reading level, while most Navy technical manuals require an
eleventh grade reading level (Sticht, 1979). Word processors are
changing the nature and increasing the complexity of the skills
required to do secretarial work. According to the report of the
National Academies of Science and Engineering and the Institute of
Medicine, a high quality secondary education represents the
minimum preparation a young person needs to participate
successfully in our economic system (National Academy of Science,
1984). Everyone, including released offenders, will have to master the
core competencies.

Several factors attest to a growing concern about the occupational
literacy levels of workers. These factors include the deficient
academic levels of those entering the workforce, the changing nature
of work in our society, and economic problems resulting from
workers' inability to meet the basic skill requirements of the job
(Thiel, 1984). Statistics indicate that over the past 40 years, the
national percentage of high school graduates attending college has
risen from 15 percent to 56 percent and that those presently not
electing to go to college are less academically qualified than those of
earlier decades (Lisack, 1984). Whereas more competent candidates
were previously available for entry-level jobs in industry, today,
many of these individuals are attending college while those who do
enter the workforce tend to have lower academic skills.
Because of the changing nature of work in our society, a higher level of basic skills in reading, writing, and computation is required in the growing occupational areas of high-technology and service industries than that required of workers in the declining areas of farm labor and home child care. Offenders in prison are now required to attend education programs when their reading levels are low. Even those jobs not related to high-technology are requiring a higher level of basic skills. Industry reports indicate that there are increased economic problems due to low literacy skills of workers (Hymowitz, 1981). In a survey conducted by the Center for Public Resources (Henry and Raymond, 1982), employers indicated that 30 percent of the secretaries had difficulty reading at the levels required by their jobs, 50 percent of the managers and supervisors were unable to write paragraphs free of mechanical error, and 50 percent of skilled and unskilled employees were unable to solve math problems using decimals and fractions.

Campbell and Sechler (1984) report that employers expect workers in entry-level positions to be more than functionally skilled in the areas of reading, computation, and writing. In the area of computation, employees need to be able to work with decimals, metric measurements, numeric relations, simple linear equations, and problem solving. Necessary literacy skills include reading to infer meaning, to generalize, and to detect fallacy and persuasive
intent, and reading for facts, information, and ideas. In the area of
writing, employees are expected to have knowledge of the rudiments
of grammar, to be able to complete reports, forms, and applications,
and to possess the basic skills of grammar, sentence structure, and
paragraphing. Although research about the relationship between job
performance and basic skills is not definitive, several trends do
emerge. Sticht (1975) reports that within the military a good deal
more than reading ability as measured by a reading test is necessary
to explain job performance. Mikulecky and Winchester (1983) note
that, whereas among nurses a low correlation between measured
ability and job performance had previously been observed, a higher
correlation is now apparent between job performance and the ability
to apply and use reading, writing, and computation skills. In essence,
it is more important for workers to be able to apply basic skills in a
job performance situation than to indicate skills on a standardized
test. They must demonstrate competency and offenders, as a group,
have an additional handicap: the trademark of felon to overcome
before they may be permitted to demonstrate basic skills.

**Illiteracy in America**

Illiteracy is a problem in America. U.S. Census date show an
illiteracy rate of about one-half of one percent. That figure,
however, represents only those people with less than six years of
schooling who say that they can't read or write. The Census Bureau
is quick to state that it doesn't view this as an accurate measure of adult literacy (Mieklos, 1985). What, then, is adult literacy?

In the Ninth Edition of Webster's New Collegiate Dictionary "literate" is defined as the "ability to read and write", and "literacy" is defined as "the state of being literate". But "literacy" means more than that in the United States. Today, literacy is defined in relation to the demand of the society in which a particular individual must function. Literacy: Profiles of America's Young Adults, the National Assessment of Educational Programs (NAEP) study, used the following definition of literacy:

Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.

Literacy is defined in several ways, but regardless of the definition used, the inability to function effectively in society because of low literacy skills is a major problem (U.S. Department of Education Fact Sheet, Undated).

What is the number of Americans who are not literate? How many are illiterate? The number of illiterate Americans depends on the definition of literacy used, the population surveyed, and on the way that population is assessed. In 1975 the Adult Performance Level Study (APL) conducted by the University of Texas estimated that a total of 63 million Americans were not proficient in meeting the educational requirements of everyday adult life. The English Language Proficiency Study (ELPS), commissioned by the U.S.
Department of Education and conducted by the U.S. Census Bureau during the fall of 1982, gave a conservative estimate of 17 to 21 million illiterate adults, or 13% of the population (U.S. Department of Education Fact Sheet, Undated).

The above report also cites a national literacy expert, Thomas Sticht, who claims "...at least 10 million Americans lack the language and literacy skills of competent fourth grade students."

Jonathan Kozol reports in *Illiterate America* (1985) that 25 million American adults cannot read the poison warning on a can of pesticide or a letter from their child's teacher. An additional 35 million read at a level below the full survival needs of our society. Together these 60 million people represent more than one-third of the entire adult population of this country. Of the 159 member states of the United Nations, the U.S. ranks 49th in its level of literacy. In terms of books produced per capita, the U.S. ranks 24th. Moreover, the incidence of illiteracy in the U.S. is rising, with an estimated 2.3 million adults annually joining the ranks of the functionally illiterate (Larrick, 1987).

Adult functional illiteracy is a major "hidden" problem in the United States. Yet, the economic and social costs of illiteracy are obvious: forty percent of adults with yearly incomes under $5,000 are functionally illiterate. Yearly costs in welfare programs and unemployment compensation are estimated at $6 billion. Also,
functional illiterates constitute about 60 percent of the prison population and 85 percent of the youngsters who appear in juvenile court are disabled readers (Lerche, 1985).

Kozol says that illiteracy reduces the nation's Gross National Product by more than $100 billion per year, and cites estimates claiming that it would cost at least $5 billion per year to make a real dent in the problem (Micklos, 1985).

While most official statistics equate illiteracy with years of school completed, actual performance on grade normed tests suggest that achievement levels fall below grade completion levels. The Department of Education estimates that approximately 150,000 students per year are "pushed out" with diplomas, but without even a minimum sixth grade literacy proficiency. Verifying attendance rates in schools confirms that enrollment does not signify achievement or attainment. A 1971 Harris survey found that 15 percent -- or nearly 20 million Americans -- were not able to read; they could not complete such questionnaire items as, "what is the color of your eyes?" and "how long have you lived at your present address?" (Hunter and Harmon, 1979). The Texas Adult Performance Level Study (1975), which used sophisticated measures to judge the ability of adults nationwide to perform a variety of tasks deemed essential for everyday living, such as balancing a checkbook, addressing an envelope, and checking "help wanted" ads, found that
almost 20 percent of the adult population could not perform these tasks with minimal competency. The figures for minorities were even higher -- an estimated 40 percent of blacks and Hispanics were judged to be below minimal competency (Ruel, 1977). The offender population, it is projected, falls within this range or lower. A 1980 Armed Services Vocational Aptitude Battery Test, administered to a nationally representative sample of youth aged 18 to 23, found that the median reading level for that cohort was 9.6. For blacks, the median reading level was 6.8; for Hispanics it was 7.5 (Office of the Assistant Secretary of Defense, 1982). Over 4.5 million youths had reading scores below seventh grade level. Similarly, the National Assessment of Educational Progress estimates that 13 percent of all 17 year olds, 44 percent of black youths and 56 percent of Hispanic youths are functionally illiterate (National Assessment of Educational Progress Newsletter, 1984). Aside from the economic consequences, those who lack basic skills suffer incalculable losses from their failure to master their environments and as the requirements for everyday living continue to rise they fall farther and farther behind.

The General Accounting Office (GAO) reports that, in 1985, 4.3 million young people between the ages of 16 and 24 dropped out of school - 13 percent of the age group. Of these 3.5 million were white, 700,000 were black and 100,000 were from other groups.
Students' conceptions of themselves as students are highly correlated with their academic achievement. Early school failure is probably a causal factor in students subsequent negative feelings about self and school. Those who think of themselves as poor students are likely to do badly in school (Brookover, 1979). The importance of early academic success in determining later accomplishments is underscored by studies of high school dropouts. Students with a history of failure in school are more likely to drop out than those who succeed academically.

Dropping out is usually a symptom of underlying problems rather than an independent cause of future problems. Numerous studies have shown that dropouts frequently have poor grades, often in reading and math (Turnage, 1982). When a student is held back a grade, his or her likelihood of dropping out is 40-50 percent; those who fail two grades have a 90 percent likelihood of becoming dropouts (Olsen, 1982). One longitudinal study found that over fifty percent of dropouts had failed a grade. The study concluded that a student's likelihood of dropping out could be predicted from his/her early experience in school (Baehman, 1971). Not surprisingly, dropouts have been found to have low self-esteem.

Longitudinal studies of the causes of high school dropout indicate that the school variables have an independent as well as an intervening influence on future school achievement. An individual's
probability of dropping out of school is strongly associated with his/her family's socioeconomic level (educational attainment of parents, amount of reading in the home, growing up in a single parent family, being a male, minority status, below poverty income levels), measures of individual ability (scores on reading and vocabulary achievement tests and IQ tests), youths' attitudes, expectations and school behavior (school dislike, occupational and educational aspiration, delinquent behavior, behind in grade level for age, poor grades, enrolled in a college preparatory course, responsibility for an adolescent pregnancy for both women and men), and the attraction of jobs. Whether a child's parents graduated from high school, failing a grade, delinquent behavior, not aspiring to college, and fathering or mothering a child appear to be the most important variables (Rumberger, 1981).

Many of these variables are related to each other. In fact the family background variables work through a set of intervening variables, such as, ability, behavior and school performance. Failing a grade may reinforce delinquent behavior at the same time that it may reflect a lower ability level. Still a variety of studies demonstrate that being behind a grade, along with other school related variables has an effect of its own, independent of family background, on whether an individual is likely to drop out of school (Turnage, 1982).
According to a survey by the Urban League, black males leave school because of economic, academic, or disciplinary problems, and about one-half of females leave for similar reasons. The other half often drop out because of pregnancy. Recent studies estimate that one-third to one-half of all school-age mothers had dropped out of school at least one year before having their first child (Moore, 1984).

While black youth drop out at a rate equal to or lower than white youth in the lower grades, by ages 18 and 19, black dropout rates are significantly higher than those for whites (U.S. Department of Commerce, 1980). Dropouts themselves generally cite poor school performance as their reason for leaving. Most acknowledge the importance of education and often talk of going back -- but schools are generally not amenable to dropping back in (Olsen, 1982). The U.S. General Accounting Office (GAO) uses the all inclusive definition for dropouts adopted by the Current Population Survey, (CPS) which polls a national sample of households representative of the working-age civilian population. The CPS defines dropouts as "persons neither enrolled in schools nor high school graduates". It does not exclude such categories as "pregnant teenagers" or "needed at home".

Andrew Hahn in 1987 stated, however, dropout rates for the country as a whole are not growing worse. In the 1960's the proportion of dropouts in the 16-to 24-year old age group stood at about 20 percent. Since then, the rate has declined and remained
steady somewhere between 13 percent and 14 percent. Among black youths, the rate fell from 21 percent in 1974 to 15 percent in October, 1985. Dropout rates range from 40 percent to 60 percent in major cities and urban areas. On every reasonable indicator of hardship — from low income to limited educational background — the disadvantaged respondents (17 percent) were three times more likely to drop out than the advantaged (5 percent). School-leaving rates increase with the proportion of those classed as poor. City schools in which less than 20 percent of the student body were poor had a dropout rate of 13 percent. In schools in which more than 50 percent of the students lived in poverty, the dropout rate was 30 percent. Other studies have concluded that dropout rates are highest in schools where the minority population of a generally low-income student body is large (Hahn, 1987).

Young adults are confronted with various developmental issues as they move from adolescence into adulthood. Merriam (1984) discusses three issues involving psychological development: independence, identity, and intimacy. Young adults who leave school prior to obtaining a high school diploma experience an additional set of anxieties. Besides coping with psychological and sociological issues associated with maturity, they face stigmas attached to the fact that they are school dropouts (Thiel, 1986).
Research reveals that dropouts exhibit similar cognitive and affective characteristics. Weber and Silvani-Lacey (1983) report that dropouts scored lower on intelligence tests (mean IQ of 90), had repeated at least one grade, had limited academic success accompanied by poor academic performance, and had demonstrated poor reading and communications skills. Affectively, dropouts were loners who felt alienated from their school environment, peers, and teachers; were not accepted or respected by their teachers; generally lacked interest in school and school work; had a low self-concept as reflected in lack of self-satisfaction and social maturity; and exhibited actions that were either hostile and unruly or passive and apathetic. Other trends among the dropouts included low family income, excessive absenteeism, and lack of parental encouragement.

Buckingham (1984), noting that undereducated young adults are both a burden and a cost to society, drew a correlation between the characteristics of these young adults and their inability to gain employment. He emphasized that these young adults are disadvantaged by their poor social adjustment, inability to relate to authority figures, lack of future orientation, and inability to tolerate structured activities. They have battered self-images, fear taking risks, and are deficient in skills needed for survival in today's technological society. All of these factors lead to developmental stresses that are further exacerbated by the negative status attached
to being a dropout.

Furthermore in a society in which the school completion rate is nearly 80 percent, those who do not achieve a high school diploma are at a distinct disadvantage. Undereducated young adults find it difficult to avail themselves to further education, take part in training programs, or secure entry-level jobs without a high school diploma.

The concept of lifelong learning has become popular in the United States. Adults are enrolling in educational programs and seeking academic credentials in ever increasing numbers. Annually, approximately 800,000 people take the General Education Development (GED) test, an 80 percent increase from 1977 (American Council on Education, 1982). In 1980, over two million adults were enrolled in adult basic education, adult secondary education, and English as a Second Language classes. This represents a 400% increase over 1977. Laubach Literacy International and Literacy Volunteers of America, two of the largest voluntary literacy programs in the United States, claim tens of thousands of "active" students annually. According to Hunter and Harman's study of Adult Illiteracy in the United States, two to four million adults are now enrolled in various basic education programs. They are motivated by the belief that education will make a difference in their lives. In one study of those who took
the GED test, 75 percent said they expected an equivalency degree to help them get a new job and 73 percent hoped it would help them gain admittance to higher education (Cervero and Peterson, 1982).

However, in spite of these large participation rates, it is estimated that only two to four percent of those in need of remedial training actually enroll in programs and the majority who do are considered the "cream" of the population. For example, Adult Basic Education, the largest federally funded adult education program, generally serves highly motivated adults, preparing to take the GED test. The largest literacy programs, which are commonly staffed by middle class volunteers, fail to reach the most disadvantaged populations. Hunter and Harman (1979) found that many adult illiterates are embarrassed to admit their problem, lack access to existing programs, and require individual attention in remediation. Offenders fall in this description.

The typical inmate is poor, unskilled, undereducated, and unemployed or underemployed. Only 40 percent (as compared to 85 percent of the U.S. population) have completed high school. Most function on the fifth grade level in reading and spelling and somewhat lower in math (Coffey, 1986).

In an attempt to meet individual learning needs of inmates, Adult Basic Education (ABE) curriculum was modified in the 1970's. Competency-based education became the goal for curriculum
development. The idea was to identify functional competency levels of learners. It is a performance-based process leading to demonstrated mastery of basic and life skills necessary for the individual to function proficiently in society (U.S. Office of Education, 1978). The ABE project had been criticized at the national level for not meeting the needs of adult learners. Hence, requests for proposals were offered nationally for curriculum proposals. The largest, most comprehensive proposal, came from the Texas Education Department which later subcontracted the project to the University of Texas at Austin when it was funded. It was called the Adult Performance Level study.

**The Adult Performance Level Program**

No project in the fifteen year history of the Adult Basic Education Program has had more widespread and rapid impact than the Adult Performance Level study. APL began in 1971 with the support from the Adult Education Division of the U.S. Office of Education (USOE). By the time the final report from this study was issued in 1977, two-thirds of the states had already decided to implement some form of competency-based adult education, almost all of them based on the APL findings. Within the next three years, seven major state- or national-level studies had refined, expanded, modified, and left relatively intact the APL's identification of the range of competencies for adult life. The APL project included a series of activities. The
first was the identification of competencies required to function in society. The second was an assessment of the levels of competence among the American adult population. The third was the development of curriculum materials and guides for adult competency-based education programs (National Institute of Education, 1980).

The central objectives of the APL project were to specify the competencies fundamental to economic and educational success in America and to develop devices for assessing the competencies of the adult population of the United States. To identify the basic requirements for functional daily adult living, extensive research and interviewing were undertaken and a taxonomy of adult needs or "general knowledge areas" was developed. The areas which form the content of adult literacy are: occupational knowledge, consumer economics, government and law, health and community resources. To gain competence in these areas, adults must be able to use five general skills: reading, writing, speaking and listening, computation, and problem solving. Table 1 illustrates the APL matrix.

By matching the taxonomy of general knowledge areas with the general skills, the University of Texas APL Survey team arrived at sixty-five objectives that can determine a person's ability to deal with everyday living. Objectives in the occupational knowledge area include learning how to fill out a job application and handle a job interview. One objective in consumer economics is learning how to
<table>
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<td>Determining where to go for help with a problem</td>
<td>Deciding what to say to a bothersome co-worker</td>
<td>Deciding which of two decisions is better in economic terms</td>
<td>Deciding which meal is best, given a set of preconditions</td>
<td>Determining whether a given situation or action is legal</td>
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relate price to quality in selecting food, clothing, appliances, and other items. A sample health objective is learning how to identify potential hazards in home or office.

Guided by the APL theory of functional competency, and using the sixty-five objectives, the Texas study team assessed the competencies of the adult population of the United States. The findings of the APL study showed that one out of five American adults (approximately twenty-one million) lack the skills and knowledge needed to function effectively, and another thirty-nine million are only marginally competent. According to the study, less than half of all American adults are functioning with any degree of real competence.

Functional competency according to the above research is based upon three criteria: (1) level of education, (2) level of income, and (3) status of occupation. Based upon these criteria, three levels or categories were established: (1) APL 1 - adults who function with difficulty, (2) APL 2 - functional adults who are not proficient, and (3) APL 3 - proficient adults. According to these guidelines, 34 million adults are placed in APL 1 and 39 million more are placed in APL 2. Thus, approximately one-third of the population is, in some sense or another, incompetent.

Furthermore, according to the APL findings, 16% of whites are estimated to be in APL 1 - function with difficulty. On the other hand, 50% of whites are in APL 3, but only 17% of blacks and 18% of
persons with Spanish surnames are in APL 3 - proficient adults.

The national dissemination and widespread acceptance by educators of the APL definition of functional competency make it undoubtedly the most important approach to adult literacy and adult literacy education in the United States today (Cranney, 1983; National Diffusion Network Division, 1981; Watkins, 1982). Hunter and Harman (1979), among the most careful and objective scholars in adult literacy, refer to the APL findings even though they disagree with some of the major assumptions underlying APL and with the methodology used to arrive at the 65 objectives used to determine functional competency. Jonathan Kozol, a critic, accepts the APL findings (Kozol, 1985).

There are others who do not accept a definition of adult competency-based education, on income and occupation. Cervero (1980) argues that the APL test does not measure functional competency because the APL indices of success are inappropriate or, at best, indirect evidence of the success of the individuals upon which the test is based. Moreover, he continues, it is not logically possible to define a universe of behaviors that determines various competencies without respect to a value position, which is what the APL authors attempt to do. Cervero concludes that the APL test does measure verbal ability, writing, and computation - the "3 Rs". Ultimately, it does not deal with skills that are not currently taught
in regular ABE programs. Likewise, in a related study Cervero (1981) compared the APL test and the GED (high school equivalency) exam. He found that both tests are primarily measures of reading ability and they give very little information on the student's abilities, other than reading, in the APL knowledge and skills areas.

Griffith and Cervero (1977) similarly argue there is no evidence the APL criteria for competency are related to effective functioning and success in adult life. Moreover, they contend the APL project is not value-neutral as it claims to be; it does in fact accept and propagate the status quo. Acland (1976) likewise maintains the APL study is faulty on two grounds: (1) all people do not face the same real world problems; therefore, establishing a set of objectives which presumably all "successful" people must meet is inappropriate; (2) there are a variety of ways of solving problems and coping in life; the APL objectives attempt to legitimize one way. Ultimately, Acland argues, surveys like APL do not take into account the actual uses of written materials in everyday life. Kazemek (1983) and Radway (1984) argue that different literacy levels may exist in different interpretive communities and we need to know how book or print-related behaviors vary according to locations over a period of time.

The APL program was developed during America's search for improved educational programming. Criticism of public education had led the call for "Back to Basics" and more accountability across the
education board. In 1900 the high school graduation rate was 12 percent. By 1974 it had increased to 78 percent. More people were graduating from high school; but what basic skills do they have upon graduation? The question of competency, or literacy, was often another matter. Historically, literacy has been defined as the ability to read and write a simple message or to function at the fifth grade level. More recently, the definition of literacy has been broadened to include the completion of a secondary education or its equivalent. This definition focuses on obtaining the functional competencies required to perform adequately in adult life. The emphasis during the 1970's became competency-based education.

Competency-based education (CBE) is one of the most significant educational movements that has surfaced within the last fifty years. (Consortium for the Development of Professional Materials for Vocational Education, 1973). In this milieu, with Congressional criticism of the U.S. Office of Education failing to meet the large illiteracy need of the population through the Adult Basic Education programs, the Adult Performance Level proposal was accepted and developed by the University of Texas at Austin. The study was then named the Adult Performance Level program.

Background of Correctional Programming

Correctional reform has been a recurrent theme throughout the history of corrections. Silberman has noted that except for one brief
period around the turn of the nineteenth century, there has never been a time when the correctional system did not appear to be in need of rapid and substantial change (Silberman, 1978). Philosophical determination of the goals of corrections has been replete with controversy and the controversy continues today. Goals appear to change based upon the public mood. Unfortunately, determining the direction desired by popular demand is tentative, at least. Writers have identified models or eras to explain correctional history. Bartollas and Miller (1978) describe six models in correctional history: family, punishment and penitence, reform, rehabilitation, reintegration, and punishment. None are pure types, and elements of each are frequently found in the others. But they all removed offenders from the community as punishment, and they all continued to punish offenders after they were confined.

A brief review of the correctional eras, defined by Day and McCane, is offered to provide the context for correctional programming. The development and evaluation of correctional programming is impacted by the milieu in which it operates.

Day and McCane (1982) identified four developmental stages for corrections in the United States: punishment and retribution, reform and restraint, rehabilitation, and reintegration. Their focus defined the development of vocational education. Although vocational education has been a component of correctional education since the
reform era, only during the last two stages has it been the object of considerable study and reevaluation. By the early 1970's "rehabilitation was seen as the primary purpose of vocational education. As a result of correlations between poverty, unemployment, and crime, correctional vocational education programs were encouraged (Waidley, 1986).

The era of punishment and retribution was the dominant force in the construction and operation of jails and prisons before the end of the eighteenth century. In Europe, prior to and during the seventeenth century, correctional institutions were used to teach the poor useful skills and to punish beggers, tramps and prostitutes. Criminals and the poor citizens were confined together to minimize revolt. Those who were found guilty received corporal punishment. Thieves were either transferred to the colonies or executed (Franks, 1979). In America pain was inflicted with the deprivation of freedom. Prisoners were required to walk treadmills, turn cranks, carry a cannonball for prescribed periods and to perform other painful tasks (Cressey, 1965). Religious services were seldom offered since the criminal was to suffer during the plight. Punishment was to deter others from committing crimes. The goals of corrections began to change, however, with increased emphasis on constitutional law.

The era of restraint and reform is the second era of the American correctional system. "Hard labor" replaced stockades and
the whip when private industry and governmental agencies contracted for work. Prisoners were often treated like slaves but the costs of incarceration were reduced (Nagel, 1973).

Reform began during the era of restraint when academic and vocational training were introduced. The Quakers provided the leadership to form the Philadelphia Society for Alleviating the Miseries of Public Prisons and started the first prison school in America at the Walnut Street Jail in Philadelphia (Barnes and Teeters, 1959). In addition to basic academic training, inmates could learn skills including shoemaking, weaving, and tailoring (McKelvey, 1972).

Academic instruction was added to religious training in 1825 by the Boston Prison Discipline Society. Formally sanctioned and state-supported academic and training programs were introduced in the 1830's (Tappan, 1960). By 1870, the Detroit House of Corrections had implemented one of the first comprehensive educational programs in corrections. Nearly two-thirds of the 335 inmates were involved in academic and/or vocational training classes. Martin (1976) noted, however, "this was undoubtedly an exception to a national pattern in 1870 in which only 8,000 of some 20,000 illiterate prisoners were receiving some form of instruction." The existence of these programs represented a substantial change in the treatment of offenders although little is known about the quality and effectiveness
of them. They initially included youthful prisoners but they were later extended to include adult offenders as well.

Zebulon Brockway was the noted prison reformer who led the way in the implementation of this new philosophy. Brockway, who had administered the Detroit program during the 1860's, became superintendent of Elmira Reformatory where he successfully put the philosophy of the Cincinnati Congress into practice. Using the resources of Elmira College he established a comprehensive educational program. Academic courses were offered in basic literacy, science, math, geology, psychology and other subjects. Vocational skill development classes included those in tailoring, printing and plumbing (Roberts, 1971). Unfortunately, the comprehensive educational program at the Elmira facility proved to be the exception rather than the rule in prison operations.

Six decades later, Austin H. MacCormick assessed the quality and scope of educational programs in American prisons. After visits to sixty of the nation's sixty-four federal and state institutions, MacCormick (1931) concluded that while a few reformatories had established well-balanced and effective vocational training programs, no prison in the country had a program of vocational education worthy of the name. Further, MacCormick observed that no prison had been successful in organizing industrial or maintenance programs to provide viable vocational training.
Among the major barriers to effective delivery of vocational education MacCormick noted were the following:

- Vocational training failed to take into account individual analysis and guidance of the inmates.
- Skilled trades were emphasized to the exclusion of other occupations.
- Vocational training was often provided in obsolete or vanishing trades.
- Equipment was meager and outdated.
- Trade instructors were frequently incompetent.
- Emphasis was placed on routine drills rather than on participation in practical work experiences.
- Prison industries were substandard.
- There was little match between theoretical instruction and practical application.
- Programs for women emphasized homemaking only.

There are many similarities regarding vocational education from his report during the 1920’s and 1930’s that are apparently true today.

The era of rehabilitation developed during the early part of the twentieth century. This era was marked by advances in the social and behavioral sciences. Psychologists advocated individual diagnosis and treatment of offenders, while sociologists maintained that the
causes of crime resided in the interaction between individual personalities and the social environment (Walker, 1980).

Assembled by Executive Order of the President in 1929, the Wickersham Commission issued a series of fourteen reports, in 1931, concerning criminal justice in the United States. The reports drew heavily upon social research justifying the expanded use of diagnosis and treatment of inmates.

Since the time of the Wickersham Commission several reforms have taken place in the prison system. Major developments have included the following (Day and McCane, 1982):

- The establishment in 1930 of the Federal Bureau of Prisons, which has served as a model service delivery system for many states.

- Increased aid from the U.S. Department of Education to improve vocational training programs and support services under such legislation as the Adult Education Act (P.L. 91-230), Title II of the Elementary and Secondary Education Act (P.L. 94-483), and the Library Services and Construction Act (P.L. 91-600).

- Increased federal aid in the form of monies and technical assistance from the U.S. Department of Labor, the U.S. Department of Justice, and the U.S. Department of Health and Human Services.

- The organization and development of the International Correctional Education Association, an affiliate of the American Correctional Association.

- The development of minimum standards for correctional education by several groups, including the American Correctional Association (Commission on Accreditation, 1977) and the National Center for Research in Vocational Education (Abram and Schroeder, 1977).
Increased court intervention in the correctional system (Rudousky, Bronstein, and Koran, 1977).

Some writers question whether punishment and rehabilitation can be simultaneously accomplished (Cressey, 1965; Feldman, 1974). Evaluators of various treatment programs including vocational education (Bailey, 1970; Lipton, Martison and Wilks, 1975), have challenged prison administrators to prove that rehabilitation programs deter recidivism (repeated conviction or parole revocation).

Reintegration, as a concept, developed in the 1960's. Reintegration is based on the belief that there is a need for a gradual release of prisoners from extended periods of incarceration through such means as transition centers, halfway houses, work furlough programs and educational release projects. These alternative strategies received the endorsement of the President's Commission on Law Enforcement and Administration of Justice in 1967. The Commission's final report said in part:

The general underlying premise for the new directions in corrections is that crime and delinquency are symptoms of failures and disorganization of the community as well as individual offenders...The task of corrections, therefore, includes rebuilding solid ties between the offender and the community, integrating or reintegrating the offender into community life--restoring family ties, obtaining employment and education, securing in the larger sense a place for the offender in the routine functioning of society.

The era of reintegration emphasizes efforts to equip offenders with the academic, vocational, and social skills necessary to allow them to secure employment and become self-supporting. The
philosophy advocates skill development programs in offenders' home communities, thereby facilitating community participation in the planning and implementation of correctional programs.

The eras of correctional programming are summarized with the following insightful conclusion:

Rothman (1973) has observed that in spite of the rhetoric of reform, little real change has occurred in the correctional system. Each generation of reformers seems to echo its predecessor. A comparison of the proceedings of the Cincinnati Congress, held in 1870, the Wickersham Commission, convened in 1931, and the President's Commission on Law Enforcement and Administration of Justice, assembled in 1967, reveals quite similar rhetoric. The proceedings have in common an appeal for a more humane prison environment with opportunities for self-improvement for inmates; expanded cooperation among prisons, inmates and communities; and increased alternatives to incarceration. (Day and McCane, 1982).

**Offender Programs**

The literature review of correctional programs indicates that offender programs are institutionally based or community based programming. Since correctional education members comprise the largest noncustodial employee group in corrections (Horvath, 1982), the correctional literature is heavily weighted towards programming in that area.

According to a recent Bureau of the Census tally of state prisons, less than half of all adult state prisons have any vocational programs for inmates, with only 9 percent of the total male prison population
and 14.6 percent of the female population enrolled in vocational programs. A 1984 national survey found states serving from 3 percent of their population to a high of 63 percent (or an average of 30 percent) with any form of academic or vocational programs. Only 1 percent of the handicapped population was found to have access to special education programming (Coffey, 1986). The statistics seem to suggest a positive relationship between low educational attainment and higher probability of life style leading toward incarceration. Similarly, it has been found that as inmates evidenced higher educational levels, they were identified in lesser frequency among the inmate population. Forty percent of the inmates were also unemployed at the time of arrest. Of the 60 percent who were employed, 12 percent were working on a part-time basis. The average adult inmate was economically at the poverty level before being incarcerated (Carter, 1986).

A national correctional education spokesperson, Osa Coffey, wrote (1986), "The goal of correctional education is to bring inmates up to, beyond, or as close to their potential as possible - up to a level we may call 'functional competency'. By that, I mean the ability of people of perform socially, economically, and personally in their culture and location at a reasonable level of effectiveness."

Austin MacCormick in 1931 outlined a comprehensive educational program in The Education of Adult Prisoners: A Survey and Program.
The plea was for a well-rounded adult education program rather than the "feeding of juvenile instruction to grown-ups". A well-rounded adult program should incorporate academic, vocational, social and cultural education. (Davis, 1978). Correctional education objectives were submitted by MacCormick in 1936 to the governor of the state of New York. They were:

1. Vocational education activities which will enable the individual to become a self-maintaining member of society.

2. Activities teaching to clearer understanding of modern social and economic problems in order to bring about revision of undesirable attitudes toward social institutions.

3. Activities to develop acceptable proficiency in essential academic skills.

4. Activities leading to the stimulation and development of interests and skills in worthwhile leisure-time activities.

5. Activities leading to the ability to get along with people and live cooperatively as members of approved social groups (Wallach, 1939).

Roberts (1971) states the primary purpose of correctional education is "to resocialize the offender into activity accepting the legally prescribed conduct norms of our society". Ryan, et. al. (1972) offered three categories to provide for resocialization:

1. Academic education. This area must provide a functional literacy and mental efficiency. This cannot be done along the old pedagogical lines, but must embrace different techniques. It must start at the level the offender is capable of
functioning and move toward optimum skill levels determined by the learner's potential.

2. Career education. From the first hour in class, the student should begin the process of building toward a career. This is not synonymous with vocational training, although vocational training constitutes a large proportion of it. Career education goals should be to make the student aware of opportunities in careers. Vocational education should be as relevant to that choice as possible. Career education should be as current as possible.

3. Social education. This area should be a study of the basic operation of society, its organizations and institutions, preparing the learner to cope with such social situations as proper interactions, leisure time, and equipping him with basic social knowledge. (p. 124).

The American Correctional Association has adopted a policy on offender education and training in the 1980's. It states:

Education and training are integral parts of the total correctional process. Governmental jurisdictions should develop, expand, and improve delivery systems for academic, occupational, social, and other educational programs for accused and adjudicated juvenile and adult offenders in order to enhance their community integration and economic self-sufficiency. Toward this end, correctional agencies should:

1. Provide for assessment of academic, vocational, and social skills deficiencies of those under their jurisdictions;

2. Make available opportunities to participate in relevant, comprehensive educational, vocational, and social skills training programs and job placement activities that are fully coordinated and integrated with other components of the correctional process and the community as a whole;

3. Ensure programs provided are taught by certified instructors in accordance with professional standards and relevant techniques;
4. Provide incentives for participation and achievement in education and training programs;
5. Maximize use of public and private sector resources in development, implementation, coordination, and evaluation of education and training programs and job placement activities; and
6. Evaluate the efficiency and effectiveness of program performance based on measurable goals and objectives.

The need for expanded educational programming is evident in the literature. Forty percent of the inmates were reported unemployed at the time of arrest; an additional 12 percent had only part-time employment. The average inmate, in terms of annual income, operated at poverty level before being jailed. Estimates indicate that about 25 percent of the prison population suffers from some form of learning disability or other handicapping condition. One-third has a record of severe alcohol abuse, and one-third has a record of drug abuse (Coffey, 1986). Ninety-five percent of convicted felons eventually return to the free-world. The consequences of failing to provide them with marketable skills are no secret and have been documented by the Education Commission of the States in a report that reads, "it is obvious that to the extent that offenders cannot use knowledge and skills obtained from the normal culture to cope with normal society, they will use knowledge and skills obtained from deviant cultures to cope in whatever way they can" (p. 4). One of the most direct ways to challenge the problem of recidivism is through educational opportunities inside correctional institutions. Many inmates and ex-offenders perceive educational opportunities as
the alternative providing the greatest promise to assist them in overcoming the variety of problems that prevent them from making an acceptable adjustment in the community (Rosemary, 1973). Vocational education has long been considered a positive program for training and providing skills that may be used in the marketplace.

The National Advisory Council on Vocational Education (1981) uses the following definition of vocational education in corrections:

Vocational education in corrections can be broadly defined as instruction offered within correctional systems to enable offenders to be employment ready upon their return to free society. It involves the development of basic skills, specific occupational training, and an array of "job readiness" training, including the development of motivation, good work habits, and survival skills.

Most vocational programs are institutionally based programs. Their effectiveness will be discussed in greater detail later in this review of the literature.

Prison industry is a third type of institutionally based program. Prison industries were created to reduce idleness and the costs of incarceration, offset the high costs of institutionalization, provide training for inmates, and give inmates the opportunity to earn money while incarcerated (Day and McCane, 1982). Cooperative programs between industries and vocational education have not been reported in the literature until former Chief Justice Warren Burger (1985), the Brookings Institute and others called for a cooperative effort. The impact of prison industries on recidivism has not been reported
Industries in modern prisons refers to the major work project(s) of a prison. These projects may range from traditional farming and road repair to the production of computer peripherals. Most modern prisons have at least one work activity that occupies the time of an average of 10 percent of the inmates (Burger, 1985). It keeps them busy. Although industries are clearly a vocational activity they typically provide inmates with only the skills needed for production. The applicability of these skills on the outside is of secondary importance. Training for postrelease skills is left to vocational education (Waidley, 1986). A holistic and integrated approach is necessary in the education and training of the incarcerated. Learning to read and do simple computations will not ensure functional competency nor will an isolated vocational programs, life skills program, or drug program. Together, however, they can and do work in individual cases. The problem is that there are not enough programs, let alone good, integrated programs. Furthermore, the field of correctional education suffers both in terms of quantity and quality from a lack of research - especially follow-up studies - to indicate scientifically the degree to which inmate education programs do, or do not, succeed (Coffey, 1986).

Literacy and basic education programs often stand alone in the prison environment. It is not uncommon to find that correctional
education programs do not work closely, and may even be at odds, with penal institutions, institutional work supervisors, and even vocational education programs. Unless there is direct linkage between adult education and specific employment and training programs, job-related literacy skills may be addressed only randomly (National Center for Research in Vocational Education, 1984). If one of the goals of education in prison is to prepare inmates to reenter society, then direct ties between correctional education and the inmate's work and training programs must be maintained (Wolford, 1986).

Most of the programs described above are institutionally based education programs. A second type of institutionally based program that has emerged during the reintegration era has involved community resources utilized inside the prison. They may be vocational trade schools, local community colleges, and universities.

Programming at the postsecondary level is a relatively new area in correctional education. Partnerships between colleges and universities and correctional institutions have been encouraged by a combination of factors including a rapid increase in the prison population during the last 15 years, decreases in college enrollments, and the availability of federal funding for postsecondary correctional programs through the introduction of the Basic Education Opportunity Grant. The number of postsecondary programs has increased from 1
in 1953 to over 350 as of 1982. It is estimated that about 10 percent of the nation's inmate population participates in postsecondary programs (Littlefield, 1986).

Programs that permit inmates to be released from the institution for a portion of the day are community-based programs. Inmates may be released for on-the-job (or job-related) training or educational training in the community.

During the 1960's, the number of programs offered inside prisons by colleges and universities increased rapidly. The growth of programs which allow inmates to attend classes on campus through study release has been increasing since 1960, but the growth has been slow. Study release provides the inmate contact with other students in the normal academic setting. While no precise figures exist on the number of inmates involved in higher education programs, surveys indicate that the number ranges between 1 and 5 percent. In 1976, the American Association of Community and Junior Colleges conducted a survey on the number of prisons offering postsecondary education programs, on the number of inmates served, etc. Many of the colleges and universities surveyed include study release opportunities as part of their offender programs, but most reported fewer than 10 such students on their campuses. (Thomas, 1981).

The District of Columbia (D.C.) Department of Corrections (1982) evaluated programs that are community-based. Two hundred sixty-
one inmates were studied in the following program areas: Industries (33), Institutional Work Training (46), GED (24), Community Correctional Centers (50), Control Group (108). Industries participants had the highest success performance rate at each of the six month intervals following release to the community with a 72.4% success rate. The second highest success rate was achieved by parolees in the Work-Training program (65.2%), followed by GED graduates (58.3%), Community Correctional Center releasees (51.0%) and the Control Group with 37.3% successful parole performance rate. It appears the training experience combined with several external factors was mainly responsible for the superior performance of the Program groups in relation to the Control group (Oakey, 1982). Work-release programs were developed in the reform movement during the 1970's but public resentment against offenders presence in the community curtailed the program. Inmates on work-release who committed additional offenses or escaped hindered program accountability with the public (Day and McCane, 1982).

The literature indicates offenders programming has been institutionally based or community based. Evaluation of offender programming has been suspect or nonexistent. Research has been focused on institutional based programs in comparison with community based programs. The following section will review the effectiveness of correctional programs where research data is
available.

**Effectiveness of Correctional Programming**

The effectiveness of correctional programs, found in the review of the literature, is described in this section. The focus is on recidivism during the rehabilitation and reintegration eras with an emphasis on correctional education programs.

McGlone (1984) reviewed five comprehensive evaluative projects on education in prisons. All of the studies pointed out that on the whole the general state of education in corrections had improved, and an ex-offender could derive substantial benefit from a quality education while incarcerated. Reasons cited for the present status of correctional education are limited funding, inadequate state and national leadership and direction, an abundance of irrelevant programs, and a shortage of research and evaluation.

In "Vocational Education, Industries, and Career Education in Corrections", John Waidley (1986) provides a succinct description of the status of programs during the rehabilitation and reintegration eras as follows:

...efforts toward improvement may also be seen as a response to Martinson, Lipton, and Wilks (1975), who had called the whole concept of rehabilitation into question. Evidence that rehabilitation was not working accompanied by poor economic conditions forced reassessment of many programs.

...During the period of reintegration, the shift away from rehabilitation in corrections put vocational education in a different light. Recidivism has
become the bottom line criterion against which all programs and conditions are measured (p. 36).

Douglas Lipton, Robert Martinson, and Judith Wilks reviewed 231 studies in *The Effectiveness of Correctional Treatment* (1975). Martinson concluded: "What we do know is that, to date, education and skill development have not reduced recidivism by rehabilitating criminals. (Martinson, 1974). Daniel Glaser, during this era, stated that education did have a positive effect on recidivism when it was extensive (McGlone, 1984). Lipton, et al, found that offenders can improve in basic educational skills, given dynamic and effective instruction (Lipton, 1975, p. 90).

Unfortunately, the field of correctional education has suffered not only from too little research but from bad research. The famous Martinson study of correctional treatment programs that led to the somewhat misquoted conclusions that "nothing works", sifted through a number of research reports in the education-training area. However, only nine could actually be considered as scientifically valid, and the rest were flawed and virtually meaningless (Coffey, 1986).

Frederick Englander (1983) reviewed the 10-year period after 1972 in "Helping Ex-Offenders Enter the Labor Market". His literature review cited the following program areas: education and training, work release, intensive job placement services, community treatment centers, supported work program, and financial assistance. This was
an update of Robert Taggart's 1972 *Monthly Review* article that provided labor market strategies directed at improving the employability and reducing the recidivism of offenders and ex-offenders. Englander cited four studies published during the period 1971 through 1975 that found "no consistent evidence to support the effectiveness of any of these" following programs:

1. Probation
2. A less restrictive prison environment
3. Noninstitutional rehabilitation settings
4. Intensive supervision of parolees
5. Outright discharge in lieu of parole
6. Individual counseling
7. Group counseling
8. Various medical therapies

Englander wrote, in summary, it seems appropriate to ask whether some of the dollars currently spent on facilitating the labor market adjustment of offenders could be better applied to increasing the education and training of those young people with the least access to these services. Such efforts may well produce a greater return in reducing criminal activity and increasing the development and potential of our human resources. Two of four studies cited by Englander were from *The Effectiveness of Correctional Treatment.*
Many significant developments have occurred in the last decade in correctional education. The influx of federal funds for vocational education, adult education, special education, and supplemental reading and mathematics programs has had a significant influence on improved quality and growth since the late sixties (Conrad, 1981). Two other significant developments were the creation of a separate school district for incarcerated individuals, first initiated in Texas in 1969, and the adoption of individualized instruction as the primary educational approach to teaching incarcerated students (McGlone, 1984).

Although accountability based on research results may be inconclusive, community, national, and state leaders continue to look to education as a desirable prison program. Correctional education members claim education programs should not be evaluated by offender return rates (McCollum, 1976, McGlone, 1984, and Coffey, 1986). They contend that factors other than learning impinge on human behavior that causes offenders to be incarcerated.

What Works: A Look at Effective Correctional Education and Training Experiences, by the Education Administrator of the Bureau of Prisons (1976), makes the case against using recidivism as the measure of accountability of prison programs. McCollum (1976) wrote:

It is extremely unrealistic to try to measure the effectiveness of a particular prison program in
terms of recidivism...The total prison experience coupled with a multitude of such other factors as a person's life history and the quality of that life at the time of incarceration are much more relevant. 

...To try to measure the impact of an Adult Basic Education program, a high school diploma or a few college courses is a fool's errand (pp. 4-5).

The results of the literature review are mixed. Some studies claim recidivism is impacted positively by education and training programs. Others state there is little correlation to recidivism. A 1982 study reviewed research studies on the effectiveness of prison education programs. Most evaluations show substantial improvements in learning, but this does not necessarily affect post-release employment and recidivism. The literature suggests that programs must be intensive, establish an alternative community within the prison, and offer post-release services (Linden and Perry, 1982).

Rehabilitation programs can reduce recidivism and justify the time, money, and effort required to sustain them. Educational and vocational programs have been successful for adults and youth programs such as diversion, probation, group counseling, and academic and vocational efforts are documented successes (USA-Today, 1983). In its 1967 report, the President's Commission on Law Enforcement and Administration of Justice correlated a strong connection between unemployed youth and imprisoned offenders. The report seemed to reinforce the findings of Glaser (1984) whose
research indicated that an important factor in the criminality syndrome is that the time spent in criminal pursuits retards the development of noncriminal occupational skills and anticriminal social relationships. Glaser concluded that the most valuable opportunity for rehabilitating an inmate population is offering a suitable vocational learning experience (Feldman and Marinelli, 1975).

A recidivism study in Missouri compared those who had participated in correctional programs. The main objective of the study was to determine whether completion of a correctional vocational program (defined as participation for six months or longer), or receiving one's G.E.D. certificate was inversely related to recidivism. Secondarily, the researcher used three criteria to measure recidivism (rearrest, parole revocation and reconviction) and predicted that only on the reconviction criterion would results show that the vocational or educational program had a positive impact in lowering the recidivism rate among program completers. Based on background variables, there was no significant preincarceration differences among the three program groups: subjects who did not enroll in either program; those who enrolled in one or both program(s) but completed neither; and those who completed one or both programs.

The population for the study consisted of 818 inmates paroled during fiscal year 1978 from seven institutions run by the Missouri
Department of Corrections. There was a two-year follow-up period on subjects. Results indicate that subjects who had enrolled in a vocational program (regardless of the duration) were slightly less likely to recidivate by reconviction than their counterparts who had not enrolled in a vocational program. This pattern did not hold constant when other criteria were used to define recidivism.

Results also show that there was a lower conviction rate among G.E.D. diploma recipients than their counterparts who either did not enroll in the program or did not receive the diploma. Additionally, results showed that recidivism was highest among subjects who had enrolled but did not receive the diploma—regardless of the recidivism criteria.

Conclusions about the impact (on the recidivism rate) of completing both a G.E.D. and vocational program proved highly tentative due to the small number of dual program completers. Of the 21 subjects who completed both programs, however, four recidivated, none of whom did so based on a conviction criterion (Rahming, 1981).

Researchers in Ohio evaluated post-secondary training for offenders success rates on parole and getting and keeping a job. Wilmington College (Ohio) conducted a study to determine if receiving college training during incarceration enhances offenders' post-release behavior. Three hundred residents of Lebanon Correctional
Institution in Ohio, a medium-security prison for adults under 30, were studied. Of the group, 95 received associate degrees while in prison. These persons were compared with two groups: 116 offenders at Lebanon who received high school degrees, and 106 who were high school dropouts. The hypothesis of the study, that those offenders who earned associate degrees would be more successful in their reintegration than their non-degreed counterparts, was measured by means of records at the Ohio Adult Parole Authority. "Successful reintegration: was defined as not returning to prison during the first year of parole. Additional indicators of success included remaining arrest-free for this period and being employed on a full-time basis during the first year of release. The researchers found that by the end of the first year on parole, more than two-thirds of the college graduates were employed, compared to approximately 60 percent of the high school graduates and 40 percent of the high school dropouts. Thus, the employment data suggest that a linear relationship exists between the level of education an inmate acquires while in prison and the likelihood of obtaining and retaining employment on parole. This linear relationship is echoed in the arrest and recidivism (return to prison either because of conviction or parole violation) variables reported. Although the groups were small, the study showed that college education during incarceration contributes to inmates' post-release success (Holloway and Moke, 1986).
Ohio parolees had a recidivism rate of 20.5 percent in 1982. A one-year follow-up study was conducted by the Bureau of Planning and Research in the Ohio Department of Rehabilitation and Correction for parolees released from institutions in 1982. A sample of 302 of 6,635 offenders was selected to examine the performance for the one year minimum parole period. The 20.5 percent rate of recidivism was determined by: 59 persons (19.5 percent) had paroles revoked and were returned due to new felony convictions and three (1.0 percent) returned for technical violations. Because this was a sample, researchers state the estimates are accurate within plus or minus four percent (Rasmom, 1986).

Paroled inmates in Utah were reviewed in a 1974 study. Using demographic, parole, and follow-up information, the role of training and education efforts in the parole success of 111 matched pairs of parolees from the Utah State Prison was evaluated. Two sets of 111 paroled inmates were divided into treatment and control groups. The treatment group consisted of inmates who had completed manpower and development training act programs and the control group was made up of prisoners who had not received such training or who had not successfully completed one of the five vocational education/training programs. The two groups were matched according to the following variables: age, type of crime, educational level, achievement test scores, and parental occupation. Both groups
were compared using the following eight variables of parole behavior: (1) recidivism, (2) number of crimes committed, (3) number of felonies committed, (4) number of misdemeanors committed, (5) employment records, (6) range of salary, (7) incarceration status, and (8) alive or dead. The sample population had been on parole for at least one year prior to the beginning of the study. Comparisons were made on the basis of Z scores computed using the McNemar formula for the significance of the difference between two correlated proportions. Statistical significance between group differences was found for the recidivism rate, the number of crimes committed, the number of felonies committed, and employment rates. In all of these instances, the results were in favor of the treatment group. No significant differences were found for the variables of more than one crime committed, number of misdemeanors committed, salary range, incarceration rate, and alive or dead. It was concluded that for specific parole variables, there was a greater success for those who received training than for those who did not (Christensen, 1974).

A New York state follow-up study was conducted in 1984. Of a sample of 276 offenders who earned college degrees while in New York State prisons, 14 percent were reincarcerated. This recidivism rate is lower than the 20 percent overall rate. The lower rate is attributed both to the offenders' capabilities and motivation and to the impact of the college program (Thorpe, et al, 1984).
The GED diploma was the focus of a study in Georgia. This research was designed to answer two questions. Question one concerned the impact a GED diploma has on the probability of returning to prison. Question two concerned the identification of inmate characteristics that were significantly related to GED success and recidivism.

The sample populations used in this study were all male inmates released from the Georgia correctional system between 1972 and 1978. (Two groups were compared.) One group (n = 2047) consisted of inmates involved in GED programs. The second group (n = 2318) consisted of inmates who did not participate in GED programs. A total of 19 different characteristics were analyzed in regard to their relationship with GED success and the recidivism of GED participants. A two year return to prison time limit was used as the measure of recidivism.

Results showed that success in obtaining a GED diploma significantly reduces the prospect of recidivating when compared to the entire inmate population. In terms of those inmates who succeed in obtaining GED diplomas most are: white, single, above average IQ, have less children, have more substance abuse problems, are of a higher income level, younger, and less occupationally skilled than the rest of the prison population. Characteristics found most significantly related to GED participants (successes and non-successes) who
recidivate were found to be: substance abuse problems, being black, coming from an urban background, being convicted of property crimes, having children, and coming from a home where the father was absent (Stevens, 1981).

Functional competencies of first-offender inmates incarcerated in correctional institutions in Arkansas were examined using the Adult Performance Level Survey (APL). Subjects were 134 first-offender inmates in three adult correctional institutions. The study identified the characteristics of first-offenders relative to age, racial and ethnic origin, level of schooling, program participation, past work experience, past weekly income, and past family weekly income. Inmates' functional competency level in community resources, occupational knowledge, consumer economics, health, and government and law were tested, as well as their competency levels in skill areas. The chi-square test for independence was used to determine significant relationships in the demographic data, and a one-way analysis of variance was used to test for mean score differences. Racial composition of the sample was 54.4 percent white, 38.3 percent black. Results revealed that first-offender inmates were young (85.5 percent were 29 years or younger) and often unemployed (39.4 percent). If employed, they earned less than $96 per week (80.6 percent). These results suggest that economics play a major role in determining involvement in crime. The individual scores on the APL
survey suggested that many first offenders were school dropouts (66.4 percent were high school dropouts) due to the lack of interest and the possible failure of the school curriculum to instill motivation. The review of literature and the study results indicate that the desire or choice of persons who become involved with crime rests on several events, conditions, and circumstances which predispose these persons to crime early in life. The results point to the failure of the family, early education, and the church to impart motivation and a positive self-concept, thereby leading the individual to crime (Maxwell, 1979).

Stevens (1986) compared recidivism in prisoners who were General Educational Development (GED) graduates (N=723) and those (N=3,642) who did not have GED or high school diplomas. Results suggest that inmates with GED diplomas have a significantly better chance of staying out of prison than do nongraduates. GED diploma attainment seemed to be affected by race, intelligence quotient, age, and economic status. In an earlier study in Missouri, recidivism for vocational training programs was analyzed. Subjects were 350 men who were released from a training center in Missouri either on parole or on completion of sentences and who had received vocational training there. A total of 1,704 inmates who had not had formal training comprised the comparison group. Collected data included records of assignments while institutionalized, form of education and
training received, and frequency of recidivism. Analysis of the data showed that there was a significant difference between the recidivism rate of those inmates who completed a formal vocational training program at the center and the total recidivism rate of the male inmate population of the state. Those who completed a formal vocational program had a smaller recidivism rate and were less likely to return to prison. Results also indicated that those who enroll in a vocational program but do not finish are as likely to return to prison as those who never enrolled. The rate of recidivism of those who left on parole was less than of those who left by completion of sentence (Urner, 1976).

Research on the recidivism rate of post-secondary level programming in Canada indicated a low return rate. A follow-up study was conducted to evaluate long-term effects of the University of Victoria Program in Canada, which offers university level courses to prisoners. The program offers mainly humanities and the social science courses to prisoners at the Matsqui and Kent Institutions. This liberal arts approach is used to promote cognitive and moral development rather than simply providing a general education or job skills. The evaluation is based on data on the former participants' background and present life situation, their statements concerning the program and its effectiveness, and statistical inferences drawn from both these sources. The evidence for actual social change
displayed by the men in the study is also examined, with the emphasis on their employment records and further education, their living situation and their degree of success at avoiding reincarceration or further contact with the law. The report concludes that participants experienced considerable cognitive growth and increasing sophistication of thought attributable to the education program. Only 14 percent were found to have recidivated.

During the last decade, vocational education in corrections has focused upon rehabilitation and reintegration. Efforts have been devoted to developing standards for vocational programs in correctional institutions and vocational educators have attempted to demonstrate program effectiveness in reducing recidivism. Results from research related to the impact of vocational education on recidivism during this period are also mixed (Imel, 1986).

Follow-up studies in Ohio provided a positive correlation between vocational training and reduced recidivism. Schaeffer and Shannon (1983) analyzed the 589 paroled vocational graduates from the adult correctional institutions for the fiscal year July 1, 1978 to June 30, 1979. Thirteen percent were returned to prison and three percent had charges pending. Seventy-three percent were employed during the parole period. Jent (1981) reviewed 250 parolees from the two male reformatories in Ohio released July 1, 1979 to June 30, 1980. He, too, found positive correlation between employability and recidivism.
The second indepth evaluation of vocational training offered inmates of the Texas Department of Corrections had positive results. This follow-up was conducted in 1974. Although the sample was small, the recidivism rate for those who had attended the Windham high school equivalency and vocational program was 13.3 percent. Recidivism for the postsecondary education program was 12 percent and the work furlough program was 12 percent. The return rate for the controls was 24 percent (Monroe, Smith, and Robinson, 1975).

Records from the Oregon State Penitentiary and Oregon Corrections Institute and interviews with 64 men released between July and December, 1974 were used to evaluate prison training and education programs. A 20 percent sample of the 548 felons released from the two institutions during the study period was drawn. Only 64 of the men were available for questioning. Although the sample was small, multiple regression analysis was used to identify those variables associated with both post-release employment and lack of recidivism. It showed that the respondent's age, attainment of a General Education Diploma (GED), and release on parole were all associated with post-release employment. Other variables in the model, including participation in vocational training, were not related. However, age in combination with vocational training (an interaction effect) was associated with staying out of prison. Time served was associated negatively with both release success and
number of months employed, as well as monthly pay. Attainment of a GED certificate and age were associated positively with higher monthly pay. The GED certificate was the only factor associated with number of months employed. The interviews showed that the ex-offenders did not find the prisons' vocational education programs to be relevant to the types of employment available upon release. It is recommended that better procedures for follow-up of inmates be instituted, that this follow-up examine the relevance of vocational programs to post-release life, and that vocational education be more employment oriented. The GED program should be strengthened because it significantly improves an offender's chances of employment (Evan and Seidler, 1977).

Waidley (1986), cited six studies on vocational education and its impact on recidivism. Three of the studies concluded vocational training reduced recidivism and three studies did not indicate a reduction in recidivism. This type of research involving recidivism and vocational training is seldom found in the literature according to the author.

C. Ronald Huff (1978) evaluated a vocational training program at General Motors for auto mechanics. Twenty-three offenders were selected for the Montgomery County, Maryland Bar project. In the follow-up period of two to three years, only 6 of the 23 managed to avoid being rearrested. Of the 18 participants who completed the
program, one-third (6) were able to remain free of subsequent arrest. All five (5) of those who failed to complete the program were rearrested for new crimes. The inadequate screening of participants was the chief criticism of the project. Serious obstacles complicated the placement process. They included (1) the fact that the trainees had criminal records, (2) the limited number of General Motors dealerships in Montgomery County, (3) unfavorable "job market", and (4) the fact the project directors' professional positions did not permit them time to devote as much time to the project as they would have liked. The original research design was an experimental design but it had to be replaced with an exploratory case study design. This, too, had an impact on the research project.

Doherty and Bacon (1982) reviewed correctional retraining in the U.S. Navy. The project evaluated the effectiveness of two pilot Correctional Custody Units (CCUs), at Pearl Harbor, Hawaii, and Coronado, California, and the Behavioral Skills Training Unit (BEST) at Norfolk, Virginia. These units were intended to retrain errant, but potentially productive, first-term enlistees through a program of discipline, motivational and military skills training, and counseling. The research compared overall effectiveness in terms of attrition, performance, and recidivism and identified factors related to outcome measures and success within each program. Programs were evaluated on follow-up measures of attrition, performance, and
disciplinary actions, as well as on interview data collected. Results indicated that individuals improved in their performance following retraining but that the improvement decreased at six months. The frequency of disciplinary actions prior to and following retraining showed a significant decrease, indicating these retraining units were effective in countering disciplinary problems. Attrition data for one-year follow-up of these units showed that all units had a lower attrition than did a comparable control group, with CCU Coronado and BEST having substantially lower rates.

Researchers in a 4-year follow-up of 320 adult male felons discharged from West Virginia Correctional Institutions determined there was a strong negative relationship between recidivism and participation in one of the system's education programs. Parole and intake records were used to follow the sample, consisting of inmates discharged in 1973. At the end of four years, there were 76 recidivists; 55 were from the group that did not participate in educational programs, and 21 had participated in one or more phases of the educational programs. The educational programs contained four phases: phase 1 taught basic reading and writing; phase 2, subjects involved in grades 1 through 8; phase 3, a preparation for the General Educational Development Test (GED); and phase 4, college courses for credit. For the analysis, the subjects were divided into three groups: those who participated in the GED program (57 of the
320 men), those who completed the GED (54 men), and those who participated in the college program (24 men). Findings showed that 10 of the GED participants were recidivists and 47 were not. This difference is not statistically significant, but the number of recidivists is lower than would be expected considering other inmate characteristics. Only seven of those completing the GED and only four of the college-level participants were reincarcerated. This was not statistically significant, but it is interesting to note that 83.33 percent of this group was successful over a four year period (Mace, 1978).

Recidivism of correctional education programs in Mississippi had low return rates. Records and psychological tests from three samples of ex-inmates show there is no relationship between dogmatic attitudes or self-concept and recidivism, but significant relationships between education and recidivism do exist.

A sample of 100 records was chosen from three subpopulations of men released from the Mississippi State Correctional system: (1) those released from the state penitentiary at the expiration of their sentence, (2) those paroled and (3) those released on probation. The target year was 1970 and the follow-up lasted for at least two years. In addition, 20 inmates were interviewed and given a battery of psychological tests. The tests showed no relationship between dogmatism or self-concept and recidivism. The records search,
however, showed that both the General Educational Development (GED) program and vocational training were associated with significantly lower recidivism. Those who passed the GED examination had a 7.14 percent recidivism rate (2 of 28 who passed). Those who took the examination and failed had a 32.1 percent recidivism rate (9 of 28). The recidivism rate for the study population as a whole was 43.52 percent. Recidivism rates for those who completed a vocational education program was 10.41 percent, for those who participated but did not complete a program, 30.18 percent. A major study problem was finding subjects who had completed a vocational education program because such programs are small and do not enroll many inmates. Their expansion was urged (Walton, 1978).

The reasons for recidivism remaining a problem among prisoners, in spite of the fact that many prisoners may have received vocational training, may be based on: (1) the way education programs are implemented in various correctional institutions—without any over-all plan or strategy; and (2) the type of individual being educated. Many inmates are from minority groups or low socioeconomic levels and carry over, into corrections education, years of failure in the school system and a poor attitude. Remedial work is needed for the majority of students in reading and mathematics (Caffrey, 1981).
The National Center for Research in Vocational Education funded a study (Jones, 1977) of problems and issues in correctional vocational education. The report emphasized that vocational education for offenders must be much more than job training and has many purposes beyond that of simple education. Vocational education for offenders must encompass remedial education programs, preparation for high school equivalency examinations, post-secondary training, and some college-level training. This range of needs alone would make the provision of educational services difficult. In addition, vocational education is expected to defuse the psychology of retribution which prevails in the correctional institution.

It was found that 40 percent of federal and state correctional institutions had a coordinator for vocational education and job placement; less than 50 percent had organized follow-up procedures; and most had no community involvement (called essential for effective job placement). It is concluded that vocational education suffers due to conflicts between custodial and treatment aspects of prison life. Goals need to be established. Leadership from the top is needed. Good teachers and equipment are essential. Genuine efforts need to be made to place released offenders in suitable jobs (Jones, 1977).
Assessment of Quality Vocational Programs in State Prisons was a study to determine successful correctional vocational education components in adult state prisons. Ten programs were selected for an in-depth review. They were considered exemplary programs.

Program success was determined by the following data: post-release employment of at least 60 percent; recidivism rates of less than 30 percent for all program participants; and a rate of 70 percent or better for in-program success of participants. Information was studied on a qualitative basis, using information collected through a case study approach concerning successful programs operating in ten institutions. Successful programs were found to be characterized by ten critical components/variables that functioned to overcome problems encountered in many vocational programs in corrections: administration, coordination and cooperation, curriculum and instruction, facilities/equipment, funding, placement and follow-up, planning, policy, staffing, and support services. Four ideas were offered for consideration as elements for a federal policy on correctional education: (1) specification of communication and development of inter-agency agreements between correctional vocational programs and other agencies; (2) funding provisions to provide seed and initial monies to initiate innovative vocational education programs in corrections; (3) encouragement of development of comprehensive educational programs providing an entire range of
necessary services; and (4) provisions for a research component (Rice, 1980).

The National Correctional Education Evaluation Project, completed in 1977, obtained questionnaire responses from a sample representative of U.S. federal and state prisons. Problems associated with providing educational programs for adult offenders have undergone considerable review. Increasing attention has been given to the need to focus on the nature, scope, and effectiveness of educational programs available to inmates. This interest is due, at least in part, to the general recognition that the correctional system is costly in both human and economic terms. An additional factor is the growing awareness that the lack of educational and job skills is unusually high among inmate populations.

There are five conflicting issues which affect the planning and ongoing functioning of educational programs for inmates: funding and administration of programs; the nature of the correctional institution and its impact on the educational process; program design; limited access of many institutions to resources and materials; and program evaluation. Types of educational programs included in the national project were Adult Basic Education, Secondary Education and General Education Diploma, Post-Secondary Education, Vocational Education, and Social Education Programs.
Most institutions were located in rural areas, and geographic location had a strong influence on program staffing patterns and on the accessibility of some resources normally considered necessary in traditional education. The average length of time served in prison was less than three years. The average percentage of total institutional budgets devoted to educational programs was 8.7 percent, with the average total expenditure for education per institution being $905 annually for each student. Security constraints and the nature of institutions affected inmate enrollment in educational programs. The ratio of inmates to educational counselors was about 400 to 1, and the average number of diagnosticians and other educational specialists was less than 1.5 per institution (Conrad, Bell, and Laffey, 1978).

The correctional school district concept eliminates several of the ten barriers to the delivery of vocational education in corrections identified in National Advisory Council on Vocational Education (1981) hearings. Correctional institutions normally experience difficulty in obtaining state and federal funds to upgrade educational programs. Access to these funds is greatly enhanced when correctional institutions, through the school district approach, are designated local education agencies (LEAs). Additional advantages of this approach include: the provision of access to state advisory councils on vocational education, the opportunity to meet the standards of state
and regional accrediting agencies, the licensing of administrators and institutions, and the placing of responsibility for the evaluation of programs with the state education agency. The American Bar Association (Commission on Correctional Facilities, 1973) has affirmed the potential for such benefits. (Day and McCane, 1982).

The independent school district enables educators to develop a centrally coordinated systematic approach to improved funding, training and adoption of innovative and meaningful programs (Carlson, 1981). The longest operating correctional school district is the Windham School District in the Texas Department of Corrections (Windham, 1974). Murray (1975) evaluated the process of this district after five years of operation and found that funding had increased 1,000 percent, space for programs had doubled, and instructional personnel had increased tenfold. The Windham School District also obtained state and regional accreditation during this time (Day and McCane, 1982). An innovative feature of the school district has been the use of the Adult Performance Level (APL) curriculum. It provides increased accountability in the curriculum that is more relevant to learners needs.

A contemporary study of vocational programs in the Ohio Department of Rehabilitation and Correction was conducted in 1987. Recommendations were derived mainly from interviews with approximately 80 correctional system educators and administrators
and observations of approximately 30 vocational education programs in the state’s correctional institutions for adults. The following partial listing of recommendations were offered:

1. Clarify interagency understandings between the Ohio Department of Rehabilitation and Correction and the Division of Vocational and Career Education.

2. Clarify funding strategy of the $900,000 annual funding support. Unit-based funding should be replaced with a proposal-based funding system that focuses on rewarding efforts at program improvement rather than program maintenance.

3. Encourage implementation of competency-based instruction.

4. Require a plan to promote and improve equity (i.e., an appropriate range on nontraditional vocational education programs to be offered to both men and women) and access by incarcerated adults.

5. Require a plan for coordination of the kinds of programs to be offered and require approval by the Division of Vocational Education for funding.

6. Shift resources for post-institutional training and employment assistance purposes. Provide for
community-based assistance through organizations able to offer released inmates help in securing further vocational training or employment (Starr, 1987).

Although this research project was not an experimental design, it indicates the need for third-party evaluations of systems requested in the review of literature.

Research on prerelease programs and their effectiveness indicate the concept embraces temporary release programs, halfway houses and community correctional centers as well as institutional prerelease programs. They all attempt to facilitate an inmate's adjustment to freedom following a period of imprisonment.

A national survey was conducted by the Massachusetts Department of Correction in 1980. Prerelease Systems in the United States (Averill, 1980) was an attempt to determine if any generalizations on the effects of prerelease programs were beginning to emerge in the nation. Since only a few citations on prerelease were found in the correctional literature review, the national study by Averill will be summarized. The definition of prerelease for the national study has the prerelease center located outside the prison where the offender may reside when released. Most inmates have jobs outside the center during the day and return during the evening; others will attend educational or training programs.
The national survey included all fifty states, the District of Columbia, and the Federal Bureau of Prisons. Of the 52 systems, 37 states (75%), the District of Columbia, and the federal system had prerelease centers. Eleven (21%) state correctional systems did not have prerelease, but two additional systems were developing prerelease centers (Nebraska and New Mexico). Fourteen (27%) of the 39 systems had empirical research available for analysis.

The summary of findings cautioned the reader that cost and recidivism figures could not be compared across systems. Various local definitions and varying years of reporting account for the lack of comparison. Also, differing research designs prevent a systems comparison. Each system, then, was an independent test of community-based corrections.

The findings were summarized by two criteria: cost analysis and program outcomes. Eight systems compared prerelease with traditional forms of incarceration. Five systems found prerelease to be considerably less expensive and three systems concluded it was as expensive or more expensive than traditional prisons.

Program outcome data were provided by ten systems comparing outcomes (usually recidivism) with traditional programs. Prerelease never exceeded the recidivism rates of traditional programs. Five systems established careful statistical controls. Three had lower recidivism rates and two concluded there was no difference.
Prerelease and traditional releases were compared in four systems. There was lower recidivism rates of prerelease in two systems but two systems found no differences between prerelease and traditional releases. Inmates' social adjustment, as measured by a variety of scales, were positively affected in one system report. It used a pre-test/post-test experiment. One system indicated prerelease inmates had higher wages and increased employment stability in the first few months of release than other inmates. Prerelease was as effective or more effective in each of the studies in this national survey.

Assessments of institutional prerelease programs have been few in number. They are usually intensive programs conducted inside a prison in the latter portion of an offender's sentence prior to release. It is an effort to combat the effects of being incarcerated. Most of the institutional offenders are ineligible to participate in temporary release programs or go to half-way houses (McCarthy and McCarthy, 1983).

Institutional prerelease programs vary in structure and content according to the resources available and the philosophy of the correctional system in which the program is operated. However, virtually all programs provide two basic services to inmates awaiting release. First, they provide information and direct assistance to inmates to facilitate their prerelease planning. Second, they provide inmates with a supportive context in which to discuss their anxieties
regarding potential problems that may be encountered in the community (Galvin, 1975).

The American Correctional Association has suggested a series of general guidelines for administering prerelease programs. The following elements are considered to be essential requirements for effective prerelease programming (Galvin, 1975):

1. The provision of specialized and professional casework services for inmates preparing for release;
2. The establishment of a reasonable set of written administrative policies provided to inmates, covering such topics as release procedures, conditions of parole, civil disabilities, transportation requirements and availability of social services;
3. The adoption of flexible and individualized methods of providing decent civilian clothing to inmates upon release; and
4. The provision of opportunities to discuss within a supportive group context topics related to release.

The substance of the prerelease preparation is no more important than enhancing the inmate's feelings of readiness (McCarthy and McCarthy, 1983).

The prison environment should be modified for prereleasees according to the American Correctional Association (Galvin, 1975). Criminologists suggest a modification that minimizes distractions and provides an environment conducive to an open discussion of release issues. Institutional rules should be reduced proportionally to permit increased levels of responsibility for prerelease inmates (McCarthy and McCarthy, 1983).
There are few program evaluations in the literature on institutional prerelease programs. One author states little evidence to support the contention indicating institutional prerelease programs assist inmates in community reintegration. Inmates who participate seem to have the most difficulty handling the very problems that are the focus of prerelease programming - employment and finances (Baker, 1966). Program acceptance by inmates may be a critical factor (Sam Houston State University, 1969). Inmate attitudes toward potential problems seem largely unchanged as a result of program participation. In some cases, attitudes have even been seen to deteriorate (Holt and Renteria, 1969). They often prefer to focus on personal problems of reintegration.

The few writers on this subject agree on the status of research on prerelease: it is lacking in quality and quantity. The major reasons are the same as listed earlier concerning research in corrections: a lack of resources and qualified staff to conduct evaluations.

Massachusetts, however, is attempting to refute these allegations. The Massachusetts Department of Correction in The Effect of Community Reintegration on Rates of Recidivism: A Statistical Overview of Data for the Years 1971 Through 1982 (Averill, 1980) analyzed twenty eight studies to provide an overview of inmates released from "decompression" programs. The research includes
12,000 prisoners released during the years 1971-1982. One-year, two-year and five-year recidivism checks showed that the decompression programs begun or expanded by the state during the 1970's have drastically curtailed recidivism. Only nine percent of the inmates given furloughs before their release in 1982 have reoffended, according to the study; the comparable rate for inmates not given a furlough was 30 percent. Analysis of inmates released in earlier years produced similar results; during the period 1973-1982, recidivism rates of furloughed inmates ranged from 8 percent of 16 percent; the comparable figures for inmates not given a furlough were 23-36 percent. (The study defined recidivism as return to a state or federal correctional institution, county house of correction, or to a jail for a period of 30 days or more.)

It might be argued that inmates chosen for furloughs are naturally good risks and thus would be less likely to reoffend even without decompression programming. But Daniel LeClair, Deputy Direction of Research, and other researchers used statistical techniques to screen out the influence of such factors. For example, they compared actual recidivism rates with statistical expectations based on the subjects' criminal histories and backgrounds. The results, LeClair wrote, did not change; furloughs remained closely associated with lower recidivism rates.
Massachusetts' prerelease centers also appeared to be helpful in reorientation of inmates. The centers are like work-release facilities, but also include alcohol- and drug-abuse counseling, provisions allowing inmates to attend school, and other decompression programming. The centers are located in the communities where inmates plan to settle following final release, and inmates usually pay room and board.

Inmates whose point of departure from prison was a prerelease center had recidivism rates ranging from 8 percent to 18 percent; those whose point of departure was a higher-security institution reoffended at rates ranging from 19 percent to 32 percent. Again, when other factors were "controlled" statistically, the beneficial effects remained evident, according to LeClair's study.

Inmates considered too dangerous or otherwise ineligible for prerelease centers still may benefit from gradual movement toward the lowest security institution possible, the study found. Recidivism rates for inmates released directly from maximum-security prisons ranged from 20 percent to 41 percent during the years 1971-1982; from medium-security facilities, 12-36 percent; from minimum-security facilities, 9-26 percent.

Those numbers do not simply reflect the fact that high-security prisons hold more career criminals; statistical screening to ensure fair comparisons showed that gradual movement toward a low-
security institution as an inmate nears the end of his sentence reduces his likelihood of recidivism. LeClair said that the statistics provide backing for the idea of legislation to prohibit the state from releasing inmates directly from maximum-security institutions to the community.

Another benefit of prerelease programs is that they allow parole boards to make more intelligent judgments about the suitability of an inmate for release to the community. Basing the decision on the inmate's behavior within prison is a very different thing; there are none of the temptations and freedoms in prison.

In summary, programs designed to ease prison inmates back into the community gradually are associated with sharply reduced recidivism. Prisoners given short furloughs, work release, education release, or other decompression programs commit far fewer new offenses when finally released than do prisoners released abruptly. In many cases the phased-release programs appeared to cut recidivism by two-thirds or more. The Massachusetts study is the most comprehensive found on prerelease programs.

An exemplar program, cited in the literature, was the Montgomery County Work Release/Prerelease Program in Maryland. The effectiveness of the program was measured over four years. 77.8 percent of project participants who were successfully released were not rearrested during the follow-up period. Individuals who
were revoked from the program provided higher recidivism rates - 46.1 percent were rearrested compared to 22.2 percent of the prerelease center. 49.7 percent of those rearrested were found guilty and 57.9 percent of this group were incarcerated (Montgomery County Work Release/Prerelease Program, 1978).

Program effectiveness is impacted by the type of inmates served. Surprisingly, the composition of state inmate populations changed little from 1979 to 1986. National representative samples were surveyed in 1974, 1979 and 1986 by the Bureau of Justice Statistics in the U.S. Department of Justice.

Criminal history profiles of State prison inmates were developed. For study purposes, recidivism (defined as having previously been sentenced to probation or incarceration as an adult or juvenile) and whether the inmate has a record of violence (the current or past offense) were two criteria used. The Profile of State Prison Inmates, 1986 had these findings:

- Over four-fifths of State prison inmates were recidivists—they had previously been sentenced to probation or incarceration as a juvenile or adult. More than 60% had been either incarcerated or on probation at least twice; 45%, three or more times; and nearly 20%, six or more times.

- Two-thirds of inmates in 1986 were serving a sentence for a violent crime or had previously been convicted of a violent crime.

- The 11% of inmates whose current offense was nonviolent, but who had previously been convicted of a violent crime, had the longest prior records
of all recidivists—72% had three or more prior convictions.

-More than half (53%) of all inmates were recidivists with a record of at least one violent conviction.

-Of the one-third inmates with no records of violence, 84% (29% of the total State inmate population) were recidivists.

-About 13% of the inmate population were first-time offenders in for a violent crime.

-Just over a third (35% of all inmates said they were under the influence of a drug at the time of their offense, and 43% said they were using drugs daily in the month before the offense.

-Most of the victims of State prison inmates incarcerated for a violent crime were male, about two-thirds were white, and over one-fourth were well known to the offender.

-Inmates in 1986 were about as likely as in 1979 to have been employed at the time of their arrest—about 7 in 10 had jobs—though a smaller percentage of them were working full-time. In 1986, 57% of inmates said they were employed full-time. About three-fifths of inmates in 1986 who were free in the community at least a year prior to arrest reported annual incomes of less than $10,000. (Income figures were reported in ranges in the 1979 and 1986 surveys and have not been adjusted to constant dollars.)

-Only 5 percent were nonviolent offenders with no previous convictions.

During the period 1979 to 1986 demographic characteristics and offense level distribution of state held inmates remained relatively constant. Notable changes were a small significant increase in the percentage of Hispanic inmates (9.9% in 1979 compared to 12.6% in 1986), and the inmate population was somewhat older (the median age was
26 in 1979 and 28 in 1986), less educated (the median number of years of education was 11 in 1979 and 10 in 1986), and fewer had been in military service in 1986 than in 1979 (20.2% compared to 23.8%).

A noticeable change is evident between the 1979 and 1986 reports. In 1979 the population was estimated at 274,563 inmates in State correctional facilities. By 1986 the figure had increased to 450,416 inmates. As a corollary, the number of people on probation, parole, and in jail had similar increases. This resulted in a 116 percent increase (not adjusted for inflation) in expenditures by all levels of government to $13 billion in 1985 (Profile of State Prison Inmates, 1986). National surveys do not necessarily provide descriptive data that can be used at the state and local levels. Therefore, the Ohio Department of Rehabilitation and Correction has increased its research bureau to provide relevant Ohio data for program planning.

Mental illness is a characteristic that has been researched in the Ohio Department of Rehabilitation and Correction. The Ohio Department of Mental Health and DRC sponsored a study of Ohio's adult prison population in 1987. In The Prevalence of Mental Illness Among Inmates in the Ohio Prison System (Bean and Pinta, 1987) a stratified, probability sampling design of 509 inmates was selected, from twelve institutions, to assist in planning for the delivery of mental health services in Ohio's state correctional facilities. The results of the study indicate 22.4 percent had psychiatric disorders in
their lifetime and 12.1 percent had psychiatric disorders in the past month.

The study also addressed psychoactive substance dependence and abuse disorders. It was found that 24.1 percent were dependent on alcohol in their lifetime and an additional 4.5 percent had been abusers. Of the inmates surveyed, 6.9 percent abused drugs at some point in their lifetime and 21.8 percent were found to have been dependent. The study reported an overall rate for drug abuse/dependence of 28.7 percent with cannabis and poly drug use reported most frequently. The final overall rate of psychoactive substance abuse/dependence was concluded at 36.2 percent. The authors, however, state, "these drug and alcohol abuse/dependence rates are under-estimates of the true rates in Ohio's prison system". They are to be considered minimum levels for substance abuse disorders (Bean and Pinta, 1987). The characteristics of inmates must be considered when planning programs in the prison setting.

**Summary**

The direction of corrections in the 1980's is at a crossroads. The economy is affected by low-level achievement of a sizeable portion of the workforce. Employers and prison officials have identified literacy problems of those they interact with on a regular basis, and prison overcrowding has reached an alarming status.
Attempts at meeting economic, literacy, and prison overcrowding problems are evident in the historical review of the literature. In today's complex world, the need for change and improvement is of paramount importance. National and state leaders have identified these problems and have initiated action for problem resolution. New initiatives have been started to maximize the resources that are available in the correctional system. They are aimed at increasing the functioning competency levels of the inmates who will return to society.

Functional competencies were identified in the Adult Performance Level (APL) program. The highly endorsed program was developed to measure competency level skills. The Adult Performance Level program became the nationally recognized benchmark for competency based programs in the competency based adult education movement of the 1970's and 1980's. Skills and knowledge areas were cross tabulated to provide three distinct competency levels: APL 1, APL 2, and APL 3. These three levels operationally define success for successfully coping in American society.

Correctional programming has historically had difficulty in receiving public support. The mission of corrections has changed periodically, but correctional practitioners have not always had support to provide resources to implement changes. The pendulum of change has swung between punishment and other models for
centuries. Too often the mission of corrections is clouded by a lack of public consensus. The literature suggests correctional practitioners have attempted to reflect the conventional wisdom but have never fully found an answer beyond confinement for the incarcerated.

Success of the correctional system is often questioned. Although the task of corrections is - by law - to confine, more is expected by the public to return an improved inmate to the free-world. Recidivism is today's yardstick measure of success. The evaluation of program success, as measured by recidivism rates, is inconclusive. There is, however, a trend in the literature that indicates research methodology is improving.

The research completed prior to the development of computers has become suspect. Computers and improved technology have the potential to increase the quantitative and qualitative data available for analysis and decision-making. There has been an increase in correctional systems research in the last fifteen years. Although writers and practitioners bemoan the paucity of research data, improvement in correctional research has had a modest beginning. Evaluation is recommended, by research evaluators, to add a greater sense of objectivity to research in the correctional systems by using more independent, unaffiliated researchers.

Research on inmate competency levels is scarce. Only a few citations were found concerning the functioning competency levels of
inmates in the literature review. Fewer citations were evident on prerelease inmates. It would be normally projected that sizeable efforts in the state's correctional systems would include Adult Performance Level or Competency-based studies. That is not the case, however. An explanation is evident by the national studies of correctional education. The funding levels are extremely low. Local programs cannot afford to purchase new programs and experiment to improve literacy and skills development among the inmate population.

The paucity of research available to assess inmate functional competency levels indicates a need for this study. Bell (1979), in a national correctional education evaluation study, recommended that "criteria such as inmate needs assessment, inmate response to program, post-program follow-up, and recidivism be given priority in research". Another author wrote the objectives of correctional education research should be two-fold: 1) to determine the inmates most amenable to programs and 2) to determine the type of programs that offer the greatest benefit to inmates (McGlone, 1984). The following chapter on methodology will focus on assessment of inmate's functioning competency levels to determine relevant program offerings for the Ohio prison population.
CHAPTER III
RESEARCH METHODOLOGY

Population and Sample

During fiscal year 1987, the Ohio Department of Rehabilitation and Correction (DRC) released over 5,000 male inmates from its centralized prerelease center at the Pickaway Correctional Institution into the free world. The objective of this study was to analyze the functioning competency levels of the male prerelease population. Population intake was determined by a statewide intake schedule that permitted each institution on the schedule to send inmates, each five week period, to the center. The population surveyed were those inmates received from February 1, 1988 through March 9, 1988. The total population intake for this period was 470 male inmates.

The research sample was comprised of 445 participants of the total 470 members of the population studied. This represented 94.7% of the study population. Members of the population who were excluded included those who were not administered the assessment instrument and those whose official records were not available for review. Reasons for participants not being assessed included those in disciplinary isolation and scheduling conflicts. There were 25 in this category. Female inmates were not included in this study. They are sent to a small prerelease center or released directly from the women's prison.
Security designation also excluded other participants who were not sent to the center. Many maximum and close security inmates were not permitted transfer from parent institutions to the prerelease center because of security concerns. A satellite prerelease program serviced minimum security male inmates. Therefore, maximum, close, and minimum security inmates were disproportionately underrepresented in the sample when compared to the general male population of DRC. Also underrepresented in the sample were younger offenders. The Ohio reformatories were sending partial transfer lists of prerelease inmates during this study period as a result of legislation enacted in November, 1987. The legislation permitted the housing of reformatory inmates, first offender (ages 18-30) and penitentiary inmates (older than 30 years or serving a sentence for a more serious offense) at the same facility. The February 1 through March 9 period was selected to include the younger offenders.

Prerelease inmates are determined by criteria established by the Department of Rehabilitation and Correction (DRC). They are automatically assigned prerelease status when they are within five to six weeks of their release date. Transportation is then provided to the centralized prerelease center for mandatory prerelease programming. The sample population of 445 participants were those received during the five week period from the following adult male
institutions:

Allen Correctional Institution
Chillicothe Correctional Institution
Correctional Reception Center
Dayton Correctional Institution
Hocking Correctional Institution
Lebanon Correctional Institution
Lima Correctional Institution
London Correctional Institution
Madison Correctional Institution
Marion Correctional Institution
Orient Correctional Institution
Pickaway Correctional Institution
Ross Correctional Institution
Southeastern Correctional Institution
Southern Ohio Correctional Facility

A statistical power analysis determined the appropriateness of the sample size (N=445) for its representativeness to the general population with t-test and chi square statistics of 0.99 or greater (Cohen, 1969).
Design

Data were collected from the penal dossier of each inmate and other institutional records for the twelve previously selected background variables. The twelve variables served as a source of information about the inmates. They were used as independent variables to provide profiles with the dependent variable. The dependent variable consisted of the Adult Performance Level (APL) scores as APL 1, APL 2, and APL 3. A description of the independent variables is listed in Appendix A. The independent variables selected for study were:

- Ethnicity
- Number of adult incarcerations
- Age at release
- History of drug abuse
- Education level at release
- History of alcohol abuse
- Release status
- History of mental illness
- Offense level
- Security designations
- Months since last incarceration
- County of residence at release

The selection of these variables is based upon research conducted previously. Seiter (1974 and 1975) considered many of the variables with the Relative Adjustment Scale to determine successful parole. McGlone, (1984) in his study on Adult Basic Education participation in prison listed several of the variables for analysis. The Bureau of
Planning and Research in DRC used the variables in 1985 for completing research in the state agency. Appendix E lists the intake results. The variables were used to provide inmate profiles from data collected when they enter the prison system.

**Data Collection**

The APL assessment was administered to the subjects in the first week of orientation to the prerelease program. Assessment was monitored and scored by professional staff who were trained in the correct procedure for test administration and scoring. The assessment provided a score for each subject which indicated they had scored one of these levels: APL 1, APL 2, or APL 3.

Data were collected from the official records of DRC. These data were analyzed in relation to the functioning competency levels by comparing the twelve previously selected background information variables.

Approval of the Human Subjects Committee of the Department of Rehabilitation and Correction was received on this research proposal authorizing the data collection. See Appendix B for a copy of the letter of approval. The prerelease staff at the Pickaway Correctional Institution (PCI) maintained daily records of inmates received for prerelease programming and the institutional record office was charged with verifying official release dates. The prerelease administrator provided the list of participants who were
administered prerelease assessment from February 1, 1988 through March 9, 1988.

The list of participants was used to generate additional data from the official DRC files. The files included master files from the record office, unit files located at the institution, and prerelease program files. A statistical survey form was developed for each subject in the study and the confidential files were maintained by the researcher during the period of investigation. Each participant was administered the APL Assessment. The responses to each item were scored as correct or incorrect and, as an aggregate, yielded a single index of competency. The index was defined as follows:

- APL 1 - Functionally illiterate
- APL 2 - Functionally literate
- APL 3 - Functionally proficient

APL assessment levels were operationally defined as follows: Level 1, 0-50% correct; Level 2, 51-75% correct; Level 3, 76-100% correct. Based on these percentages, total score ranges for the APL Assessment were 0-50 items correct for Level 1; 51-75 items for Level 2; and 76-100 for Level 3.

The APL Assessment is designed to measure proficiency in relation to each of the content areas and skills of the APL matrix (see Table 1). Testing was administered without time limits per administration guidelines. This permits participants sufficient time
to attempt a response to every item. The reading level of the assessment instrument was determined as high sixth or low seventh grade level by the Fry readability analysis. Scoring by computer provided the analysis of each subject's score to determine the overall APL score level.

**Instrumentation**

Data for this study were obtained from a standardized assessment instrument and official state records. The assessment used was the APL Assessment AA-1. It is a one-hundred item pencil and paper instrument. Nationally normed score levels were determined by the American College Testing (ACT) Program. The APL instrument was validated and reliability coefficients determined within acceptable research standards throughout the United States. Content validity is defined as the extent to which an examination adequately represents the domain of skill and knowledge. An examination has content validity for a specified domain of skill and knowledge if the set of items constitutes a representative sample from that domain. ACT developed the APL assessment by using two pretest samples for a total of 5,554 adults who were students in various adult education programs. They were chosen to represent four geographic regions of the United States and five community sizes. Approximately half of the people were either in Adult Basic Education classes or a General Educational Development Program (The Adult
Reliability for the assessment instrument was calculated by using the Kuder-Richardson Formula 20 (KR-20). This formula provides an estimate of the internal consistency of examination scores; that is, it is an average of the correlation between all possible split-halves of an examination, adjusted for length. This estimate is, however, the lower bound to the examination's true reliability. Such estimates generally range from zero (no reliability) to one (perfect reliability). Reliability estimates, based on KR-20 for the various subtests and total test scores yielded by the APL Assessment are presented in Table 2. The reliability of KR-20 ranged from .83 to .93.

The standard error of measurement, a function of test reliability and score variability, is an estimate of the imprecision of a test score. The standard error is useful in estimating the limits within which an individual's true score probably lies. The standard error of measurement associated with each score obtained on the APL Assessment is shown in Table 2.

To interpret the reliability coefficient accurately, the reader should be familiar with: (1) the number of items in the examination, (2) the time permitted in test administration, and (3) the difficulty levels of the items.

The APL Assessment has 100 items in the instrument. Reliability, in general, increases with an increase in the number of items.
<table>
<thead>
<tr>
<th>Content Area</th>
<th>Number of Items</th>
<th>Reliability KR-20</th>
<th>Standard Error of Measurement</th>
<th>Mean Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Resources</td>
<td>20</td>
<td>.93</td>
<td>1.43</td>
<td>74</td>
</tr>
<tr>
<td>Occupational Knowledge</td>
<td>15</td>
<td>.83</td>
<td>1.46</td>
<td>66</td>
</tr>
<tr>
<td>Consumer Economics</td>
<td>25</td>
<td>.89</td>
<td>1.98</td>
<td>67</td>
</tr>
<tr>
<td>Health</td>
<td>20</td>
<td>.86</td>
<td>1.79</td>
<td>66</td>
</tr>
<tr>
<td>Government and Law</td>
<td>20</td>
<td>.85</td>
<td>1.89</td>
<td>54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Number of Items</th>
<th>Reliability KR-20</th>
<th>Standard Error of Measurement</th>
<th>Mean Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of Facts and Terms</td>
<td>20</td>
<td>.85</td>
<td>1.84</td>
<td>56</td>
</tr>
<tr>
<td>Reading</td>
<td>20</td>
<td>.90</td>
<td>1.59</td>
<td>72</td>
</tr>
<tr>
<td>Writing</td>
<td>20</td>
<td>.89</td>
<td>1.66</td>
<td>69</td>
</tr>
<tr>
<td>Computation</td>
<td>20</td>
<td>.88</td>
<td>1.68</td>
<td>64</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>20</td>
<td>.86</td>
<td>1.80</td>
<td>65</td>
</tr>
</tbody>
</table>

| Total Assessment             | 100             | .96               | 4.99                          | 66              |
(Mouly, 1978). The number of items, however, must be balanced against available testing time. To prevent artificially inflated reliability scores, by those who do not respond to each item, the APL Assessment is an untimed test. The participants were able to attempt all items when administered the assessment.

The degree of variability in item difficulty levels also effects reliability. Examination scores will exhibit a floor or ceiling effect if items are very easy or very difficult, and reliability will tend to be relatively low. The APL Assessment has a distribution of item difficulties ranging between 50 and 75 (The Adult Performance Level Program User's Guide, 1978).

Analysis of the data depends on the functioning levels of APL 1, APL 2, and APL 3. Cutoff scores were defined, as stated earlier, Level 1, 0-50 items correct, Level 2, 51-75 items correct, and 76-100 items correct. A complete set of score ranges for all content areas and skills is included in Table 3. ACT indicates these cutoffs fell within the range identified by Adult Education experts as appropriate for defining APL Levels (The Adult Performance Level Program User's Guide, 1978).

The readability of the APL Assessment was assessed by ACT. Using the Fry Readability Analysis, the readability (the grade level for which the sentence structure and vocabulary are appropriate) was determined at the high sixth or low seventh grade level.
<table>
<thead>
<tr>
<th>Content Area</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Resources</td>
<td>0-10</td>
<td>11-15</td>
<td>16-20</td>
</tr>
<tr>
<td>Occupational Knowledge</td>
<td>0-7</td>
<td>8-11</td>
<td>12-15</td>
</tr>
<tr>
<td>Consumer Economics</td>
<td>0-12</td>
<td>13-19</td>
<td>20-25</td>
</tr>
<tr>
<td>Health</td>
<td>0-10</td>
<td>11-15</td>
<td>16-20</td>
</tr>
<tr>
<td>Government and Law</td>
<td>0-10</td>
<td>11-15</td>
<td>16-20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skill</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of Facts and Terms</td>
<td>0-10</td>
<td>11-15</td>
<td>16-20</td>
</tr>
<tr>
<td>Reading</td>
<td>0-10</td>
<td>11-15</td>
<td>16-20</td>
</tr>
<tr>
<td>Writing</td>
<td>0-10</td>
<td>11-15</td>
<td>16-20</td>
</tr>
<tr>
<td>Computation</td>
<td>0-10</td>
<td>11-15</td>
<td>16-20</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>0-10</td>
<td>11-15</td>
<td>16-10</td>
</tr>
</tbody>
</table>

| Total Assessment          | 0-50    | 51-75   | 76-100  |
### Table 4
FRY READABILITY ANALYSIS OF ITEM STEMS

<table>
<thead>
<tr>
<th>Item Sample</th>
<th>Content Area</th>
<th>Number of Sentences Per Hundred Words</th>
<th>Number of Syllables Per Hundred Words</th>
<th>Number of Uncommon Words</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-20</td>
<td>Community Resources</td>
<td>10.5</td>
<td>136</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>21-55</td>
<td>Occupational Knowledge</td>
<td>9.0</td>
<td>131</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>36-60</td>
<td>Consumer Economics</td>
<td>8.9</td>
<td>138</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>61-80</td>
<td>Health</td>
<td>9.7</td>
<td>150</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>81-100</td>
<td>Government and Law</td>
<td>8.7</td>
<td>151</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td><strong>Total Assessment</strong></td>
<td><strong>9.4</strong></td>
<td><strong>141</strong></td>
<td><strong>11.8</strong></td>
<td><strong>6/7</strong></td>
</tr>
</tbody>
</table>

**FRY READABILITY ANALYSIS OF STIMULUS MATERIALS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Content Area</th>
<th>Number of Sentences Per Hundred Words</th>
<th>Number of Syllables Per Hundred Words</th>
<th>Number of Uncommon Words</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 14</td>
<td>Community Resources</td>
<td>7.9</td>
<td>151</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>24, 25, 27</td>
<td>Occupational Knowledge</td>
<td>8.8</td>
<td>170</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>86</td>
<td>Consumer Economics</td>
<td>4.4</td>
<td>163</td>
<td>29</td>
<td>12</td>
</tr>
<tr>
<td>72</td>
<td>Health</td>
<td>6.0</td>
<td>161</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>67, 89, 90</td>
<td>Government and Law</td>
<td>3.4</td>
<td>170</td>
<td>10</td>
<td>College</td>
</tr>
<tr>
<td>99, 100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Assessment</strong></td>
<td></td>
<td><strong>6.1</strong></td>
<td><strong>163</strong></td>
<td><strong>15</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

*Words of high school or greater level of difficulty*
Readability is important because the assessment measures proficiency in content areas and skills necessary to be functionally competent in American society. Table 4 indicates the results of the Fry Readability Analysis.

Official state records were the source of data that provided information regarding the independent variables. A standard computer coding sheet was adopted for the compilation of demographic data from the records. The data was transposed from the official records to the coding sheet before it was entered into the computer program designed for this study.

**Analysis of the Data**

A computer statistical program for data analysis was written using the Statistical Package for the Social Sciences Version X. Comparisons were made among the three functioning level groups APL 1, APL 2, and APL 3. Nonparametric tests were used to analyze the data for the following null hypotheses:

- **Ho 1**: There are no significant differences in the mean ages of the APL 1, APL 2, and APL 3 groups.
- **Ho 2**: There are no significant differences in the ethnicity of the APL 1, APL 2, and APL 3 groups.
- **Ho 3**: There are no significant differences in the education levels of APL 1, APL 2, and APL 3 groups.
- **Ho 4**: There are no significant relationships in the county of
residence at release among the APL 1, APL 2, and APL 3 groups.

Ho 5: There are no significant relationships in the release status among the APL 1, APL 2, and APL 3 groups.

Ho 6: There are no significant differences in the security designations among the APL 1, APL 2, and APL 3 groups.

Ho 7: There are no significant differences in the number of adult incarcerations among the APL 1, APL 2, and APL 3 groups.

Ho 8: There are no significant differences in the history of drug abuse among the APL 1, APL 2, and APL 3 groups.

Ho 9: There are no significant differences in the history of alcohol abuse among the APL 1, APL 2, and APL 3 groups.

Ho 10: There are no significant differences in the history of mental illness among the APL 1, APL 2, and APL 3 groups.

Ho 11: There are no significant relationships in the months since the last incarceration among the APL 1, APL 2, and APL 3 groups.

Ho 12: There are no significant differences in offense levels among the APL 1, APL 2, and APL 3 groups.

The f-test and chi square statistics were used for the statistic inference (Mouly, 1978). Independent variables were crosstabulated with the functioning competency levels APL 1, APL 2, and APL 3 as dependent variables to analyze significant proportions. An alpha
level of .05 was used as the acceptable level of significance for the chi square statistic. The Classification and Regression Trees (CART) analysis was conducted to establish the best set of predictor variables for APL 1, APL 2, and APL 3 groups. CART is a classification and regression program more flexible and accurate than discriminant analysis or logistic regression. Therefore, it was selected to permit a comparison of the APL variables with the twelve variables of the study (California Statistical Software, Inc., 1985).
CHAPTER IV
DATA ANALYSIS AND DISCUSSION

This chapter provides a presentation and analysis of the findings in the study. The purpose of the study is to determine the functioning competency levels of Ohio's male prerelease inmates at the time of release into the free-world.

Description of the Sample

The discussion of Chapter 4 describes the inmates received at the Pickaway Correctional Institution from February 1 through March 9, 1988. A total of 470 inmates were received during the period; 445 were included in the study. The 25 excluded from study were those in disciplinary isolation or those who were not administered the APL instrument because of scheduling conflicts. The research sample of 445 comprised 94.7% of the population studied. Administration of the APL instrument provided the results in Table 5 indicating the number and percentage of the research sample for APL 1, APL 2, and APL 3.

Table 5
APL ASSESSMENT OF THE INMATES RECEIVED AT THE PICKAWAY CORRECTIONAL INSTITUTION FEBRUARY 1, 1988 THROUGH MARCH 9, 1988

<table>
<thead>
<tr>
<th>APL Levels</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>142</td>
<td>31.9</td>
</tr>
<tr>
<td>2</td>
<td>154</td>
<td>34.6</td>
</tr>
<tr>
<td>3</td>
<td>149</td>
<td>33.5</td>
</tr>
<tr>
<td>Total</td>
<td>445</td>
<td>100.0</td>
</tr>
</tbody>
</table>

122
The percentage of inmates functioning at the lowest level (APL 1) was 31.9 percent. This figure represents the percentage of functionally illiterate inmates in the study. Inmates in the second category, APL 2, were the largest percentage group. They had 34.6 percent of the research population and are considered functionally literate. The functionally proficient APL 3 group represented 33.5 percent of the research population.

The category ethnicity was classified as black, white, Hispanic, or other. The number and percentage of the racial composition of the research sample is shown in Table 6.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>177</td>
<td>39.8</td>
</tr>
<tr>
<td>White</td>
<td>258</td>
<td>58.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>8</td>
<td>1.8</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>445</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The largest group in the research population was white with 58 percent representation. Ranking second in the percentage was the black category with 39.8 percent. Hispanics were represented as 1.8 percent of the research population with only .4 percent as other.
The mean age of the population was 31.0. Six categories of age groupings are shown in Table 7.

**Table 7**  
AGE AT RELEASE FOR PRISON INMATES IN RESEARCH SAMPLE

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-21</td>
<td>24</td>
<td>5.4</td>
</tr>
<tr>
<td>22-25</td>
<td>89</td>
<td>20.0</td>
</tr>
<tr>
<td>26-30</td>
<td>117</td>
<td>26.3</td>
</tr>
<tr>
<td>31-35</td>
<td>100</td>
<td>22.5</td>
</tr>
<tr>
<td>36-40</td>
<td>72</td>
<td>16.2</td>
</tr>
<tr>
<td>41+</td>
<td>43</td>
<td>9.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>445</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The variable claimed education level of the research sample indicates a large proportion were of low education attainment levels. Only 43.4 percent claimed high school, GED, or postsecondary education. The sample group reported 56.6 percent had less than high school achievement level. The frequency of this variable is shown in Table 8.

**Table 8**  
CLAIMED EDUCATION LEVEL OF THE INMATE RESEARCH SAMPLE

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school</td>
<td>252</td>
<td>56.6</td>
</tr>
<tr>
<td>High school or GED</td>
<td>122</td>
<td>27.4</td>
</tr>
<tr>
<td>Postsecondary</td>
<td>71</td>
<td>16.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>445</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Inmates in Ohio's prisons tend to be represented from urban centers. The major urban centers and counties of those centers generate a large portion of the inmate population compared to the rural counties. A description of the research sample distribution is shown in Table 9.

| Table 9 |
| RESIDENCE AT RELEASE OF THE INMATE RESEARCH SAMPLE |

<table>
<thead>
<tr>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>143</td>
</tr>
<tr>
<td>Urban</td>
<td>276</td>
</tr>
<tr>
<td>Out of State</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>445</td>
</tr>
</tbody>
</table>

The release status of the research sample was analyzed. Parolees and furloughees represented 40.2 percent of the sample. Expiration of definite sentences and maximum sentences completed the sample with 59.8 percent. The release status of the sample population is shown in Table 10.

| Table 10 |
| RELEASE STATUS OF THE INMATE RESEARCH SAMPLE |

<table>
<thead>
<tr>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parolees and Furloughees</td>
<td>179</td>
</tr>
<tr>
<td>Expiration of Definite Sentences and Maximum Sentences</td>
<td>266</td>
</tr>
<tr>
<td>Total</td>
<td>445</td>
</tr>
</tbody>
</table>
Displayed in Table 11 are the security designations for the inmates in the research sample. There are three security designations represented: minimum, medium, and close security. Medium security was the largest group represented with 52.1 percent.

**Table 11**
**SECURITY DESIGNATIONS OF THE RESEARCH SAMPLE**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>192</td>
<td>43.2</td>
</tr>
<tr>
<td>Medium</td>
<td>232</td>
<td>52.1</td>
</tr>
<tr>
<td>Close</td>
<td>21</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>445</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The number of adult incarcerations is presented in Table 12. These data do not include juvenile incarcerations. Only 33.0 percent did not have a prior incarceration. Two-thirds were recidivists.

**Table 12**
**NUMBER OF ADULT INCARCERATIONS IN THE RESEARCH SAMPLE**

<table>
<thead>
<tr>
<th>Number of Incarcerations</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>147</td>
<td>33.0</td>
</tr>
<tr>
<td>2</td>
<td>123</td>
<td>27.6</td>
</tr>
<tr>
<td>3</td>
<td>89</td>
<td>20.0</td>
</tr>
<tr>
<td>4</td>
<td>48</td>
<td>10.8</td>
</tr>
<tr>
<td>5 or more</td>
<td>38</td>
<td>8.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>445</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Documented history of drug abuse, alcohol abuse, and mental illness is included for review. The data for the three variables and their proportions in the research sample are provided in Table 13.

Table 13
DRUG ABUSE, ALCOHOL ABUSE, AND MENTAL HEALTH HISTORIES OF THE RESEARCH SAMPLE

<table>
<thead>
<tr>
<th>History of drug abuse</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>270</td>
<td>60.7</td>
</tr>
<tr>
<td>No</td>
<td>175</td>
<td>39.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>History of alcohol abuse</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>279</td>
<td>62.7</td>
</tr>
<tr>
<td>No</td>
<td>166</td>
<td>37.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>History of mental illness</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>91</td>
<td>20.4</td>
</tr>
<tr>
<td>No</td>
<td>354</td>
<td>79.6</td>
</tr>
</tbody>
</table>

The elapsed time between incarcerations for those who were previously incarcerated is described in Table 14. It indicates 33.0 percent did not have a prior adult incarceration. The one to six months group comprised 12.6 percent and seven to twelve months consisted of 11.5 percent of the research sample. The remaining groupings of months since the last adult incarceration comprise 42.9 percent of the sample. The range on these groups is 13 to 96 months. The data on this variable is provided in Table 14.
Table 14
TIME SINCE THE LAST INCARCERATION FOR THE INMATE RESEARCH SAMPLE

<table>
<thead>
<tr>
<th>Months</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>147</td>
<td>33.0</td>
</tr>
<tr>
<td>1 to 6</td>
<td>56</td>
<td>12.6</td>
</tr>
<tr>
<td>7 to 12</td>
<td>51</td>
<td>11.5</td>
</tr>
<tr>
<td>13 to 18</td>
<td>38</td>
<td>8.5</td>
</tr>
<tr>
<td>14 to 24</td>
<td>36</td>
<td>8.1</td>
</tr>
<tr>
<td>25 to 30</td>
<td>20</td>
<td>4.5</td>
</tr>
<tr>
<td>31 to 36</td>
<td>20</td>
<td>4.5</td>
</tr>
<tr>
<td>37 to 96</td>
<td>77</td>
<td>17.3</td>
</tr>
<tr>
<td>Total</td>
<td>445</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The degree of felony offense is described in Table 15. Felony 1 are more serious crimes in relation to felony 2, felony 3, and felony 4. Indeterminate sentences are established by parole regulations as compared to determinate sentences that are established by state statute. Death and life sentences are included in the felony 1 classification.

Table 15
LEVEL OF CRIME COMMITTED BY THE INMATE RESEARCH SAMPLE

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felony 1</td>
<td>49</td>
<td>11.0</td>
</tr>
<tr>
<td>Felony 2</td>
<td>56</td>
<td>12.6</td>
</tr>
<tr>
<td>Felony 3 Indeterminate</td>
<td>25</td>
<td>5.6</td>
</tr>
<tr>
<td>Felony 3 Determinate</td>
<td>112</td>
<td>25.1</td>
</tr>
<tr>
<td>Felony 4 Indeterminate</td>
<td>43</td>
<td>9.7</td>
</tr>
<tr>
<td>Felony 4 Determinate</td>
<td>160</td>
<td>36.0</td>
</tr>
<tr>
<td>Total</td>
<td>445</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Determinate sentencing laws were enacted in Ohio during 1983. The number of indeterminate sentences has decreased since then and determinate sentences have continually increased. Determinate sentences comprised 61.1 percent of the research sample while indeterminate (parole/furlough) sentences were 38.9 percent.

**Data Analysis**

A cross tabulation of the APL 1, APL 2, and APL 3 dependent variables was conducted with the twelve independent variables. The f-test, chi square statistic, and Classification and Regression Trees (CART) were used to compare the differences of the APL groups with the independent variables stated in the null form. The discussion of the results of each null hypothesis is included. An alpha level of .05 was used as the accepted level of significance for the f-test and chi square test. CART developed prediction rules from the data set to establish significance among the variables. A restatement of each null hypothesis is offered to avoid referring to the earlier text.

**H₀₁:** There are no significant differences in the mean ages of the APL 1, APL 2, and APL 3 groups.

The f-test was performed to determine if significant differences existed among the mean ages of the APL 1, APL 2, and APL 3 groups. There were no significant differences among the means of the three groups at the .05 level. The f-test yielded a f-value of 1.34, at 36 df, which was not significant (p = 1.34 > .05) at the pre-established level of significance. The null hypothesis was not rejected. Analysis of the
findings indicate a small range of mean ages between APL 1, APL 2, and APL 3 groups of fourteen months. The results are summarized in Table 16.

### Table 16

**F-TEST COMPARING THE MEAN AGES AMONG THE PRERELEASE INMATES**

<table>
<thead>
<tr>
<th>APL</th>
<th>No. of Cases</th>
<th>Means</th>
<th>SD</th>
<th>df</th>
<th>f</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>142</td>
<td>30.9</td>
<td>7.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>154</td>
<td>30.7</td>
<td>6.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>149</td>
<td>31.9</td>
<td>7.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|                | 36  | 1.34 | 0.0936 |

**H₀ 2: There are no significant differences in the ethnicity of the APL 1, APL 2, and APL 3 groups.**

The chi square test was performed to determine if significant differences existed among the three groups according to race. There was a significant difference at the .05 level. A chi square of 0.0165 with 2 df was significant (p = .0165 < .05) at the pre-established level of significance. Therefore, the null hypothesis was rejected. The results are summarized in Table 17.
Table 17
CHI SQUARE TEST OF INDEPENDENCE FOR RELATIONSHIP AMONG PRERELEASE INMATES ACCORDING TO RACE

<table>
<thead>
<tr>
<th>APL</th>
<th>Non-White</th>
<th>Percent</th>
<th>White</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>69</td>
<td>36.9</td>
<td>73</td>
<td>28.4</td>
</tr>
<tr>
<td>2</td>
<td>69</td>
<td>36.9</td>
<td>84</td>
<td>32.7</td>
</tr>
<tr>
<td>3</td>
<td>49</td>
<td>26.2</td>
<td>100</td>
<td>38.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>187</td>
<td>42.1</td>
<td>257</td>
<td>57.9</td>
</tr>
</tbody>
</table>

CHI SQUARE = 8.20761  df = 2  p = 0.0165<.05

Ho 3: There are no significant differences in the education levels of the APL 1, APL 2, and APL 3 groups.

The chi square test was performed to determine if significant differences existed among the three groups according to the claimed education levels. There was a significant difference at the .05 level.

A chi square of 0.0000 with 4 df was significant (p=.000<.05) at the pre-established level of significance. The null hypothesis was rejected and the results are summarized in Table 18.
Table 18
CHI SQUARE TEST OF INDEPENDENCE FOR RELATIONSHIP AMONG PRERELEASE INMATES ACCORDING TO CLAIMED EDUCATION LEVELS

<table>
<thead>
<tr>
<th>APL Less than High School</th>
<th>Percent</th>
<th>High School or GED</th>
<th>Percent Post Sec.</th>
<th>Percent</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 100</td>
<td>39.8</td>
<td>30</td>
<td>24.6</td>
<td>11</td>
<td>15.5</td>
</tr>
<tr>
<td>2 95</td>
<td>37.8</td>
<td>39</td>
<td>32.0</td>
<td>20</td>
<td>28.2</td>
</tr>
<tr>
<td>3 56</td>
<td>22.3</td>
<td>53</td>
<td>43.4</td>
<td>40</td>
<td>56.3</td>
</tr>
<tr>
<td>Total</td>
<td>251</td>
<td>56.5</td>
<td>122</td>
<td>27.5</td>
<td>16.0</td>
</tr>
</tbody>
</table>

CHI SQUARE = 38.89778 df = 4 p = 0.0000<.05

Ho 4: There are no significant relationships in the county of residence at release among the APL 1, APL 2, and APL 3 groups.

The chi square test was performed to determine if significant differences existed among the three groups according to the county of residence at release. The counties of the large urban centers send a majority of the inmates to the Ohio Department of Rehabilitation and Correction and they are overrepresented in the inmate population. Therefore, the counties were classified as urban or rural. Urban releasees comprised 62.0 percent of the population and rural releasees were 32.1 percent. Out of state releasees totalled 26 or 5.8 percent. The chi square test result of 0.1503 with 4 df was not significant at the .05 level (0.1503>.05) Therefore, the null hypothesis was not rejected. The results are summarized in Table 19.
Table 19
CHI SQUARE TEST OF INDEPENDENCE FOR RELATIONSHIP AMONG PRERELEASE INMATES ACCORDING TO THE COUNTY OF RESIDENCE AT RELEASE

<table>
<thead>
<tr>
<th>APL</th>
<th>Rural</th>
<th>Percent</th>
<th>Urban</th>
<th>Percent</th>
<th>State</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40</td>
<td>28.0</td>
<td>50</td>
<td>35.0</td>
<td>4</td>
<td>15.4</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>35.0</td>
<td>94</td>
<td>34.1</td>
<td>10</td>
<td>38.5</td>
</tr>
<tr>
<td>3</td>
<td>53</td>
<td>37.1</td>
<td>84</td>
<td>30.4</td>
<td>12</td>
<td>46.2</td>
</tr>
<tr>
<td>Total</td>
<td>143</td>
<td>32.1</td>
<td>276</td>
<td>62.0</td>
<td>26</td>
<td>5.8</td>
</tr>
</tbody>
</table>

CHI SQUARE = 6.74018    df = 4    p = 0.1503 > .05

Ho 5: There are no significant relationships in the release status among the APL 1, APL 2, and APL 3 groups.

The chi square test was performed to determine if significant relationships existed among the three groups according to the release status of parole/furlough (indeterminate sentence) and expiration of sentence (determinate sentence). The number of furlough inmates was less than five in the APL 1, APL 2, and APL 3 cells. Therefore, the furlough release status was combined for an accurate cross-tabulation with parole since both are controlled by the parole board. Parole/furlough was 40.2 percent of the sample population. Expiration of sentence comprised 59.8 percent of the population. The chi square test result of 0.0018 with 2 df was significant at the .05 level (0.018 < .05). Therefore, the null hypothesis was rejected. The results are summarized in Table 20.
Table 20
CHI SQUARE TEST OF INDEPENDENCE FOR
RELATIONSHIP AMONG PRERELEASE INMATES
ACCORDING TO RELEASE STATUS

<table>
<thead>
<tr>
<th>APL</th>
<th>Parole/Furlough</th>
<th>Percent</th>
<th>Expiration of Sentence</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40</td>
<td>22.3</td>
<td>102</td>
<td>38.3</td>
</tr>
<tr>
<td>2</td>
<td>71</td>
<td>39.7</td>
<td>83</td>
<td>31.2</td>
</tr>
<tr>
<td>3</td>
<td>68</td>
<td>38.0</td>
<td>81</td>
<td>30.5</td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td>40.2</td>
<td>266</td>
<td>59.8</td>
</tr>
</tbody>
</table>

CHI SQUARE = 12.61281 \hspace{1cm} df = 2 \hspace{1cm} p = 0.0018 < .05

Ho 6: There are no significant differences in the security designations among the APL 1, APL 2, and APL 3 groups.

The chi square test was performed to determine if significant relationships existed among the three groups according to security designations. Minimum security comprised 43.2 percent of the sample population and medium security totalled 52 percent. Close and maximum security was 4.7 percent. It is anticipated that few close and maximum security classifications would be in prerelease status leaving the correctional system. The chi square test result of 0.0135 with 4 df was significant at the .05 (0.0135 < .05). Therefore, the null hypothesis was rejected. The results are summarized in Table 21.
CHI SQUARE TEST OF INDEPENDENCE FOR RELATIONSHIP AMONG PRERELEASE INMATES ACCORDING TO SECURITY DESIGNATION

Table 21

<table>
<thead>
<tr>
<th>APL</th>
<th>Minimum</th>
<th>X</th>
<th>Medium</th>
<th>X</th>
<th>Close/Max.</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>57</td>
<td>29.7</td>
<td>82</td>
<td>35.5</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>2</td>
<td>57</td>
<td>29.7</td>
<td>86</td>
<td>37.2</td>
<td>11</td>
<td>2.5</td>
</tr>
<tr>
<td>3</td>
<td>78</td>
<td>40.6</td>
<td>63</td>
<td>27.3</td>
<td>7</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td>43.2</td>
<td>231</td>
<td>52.0</td>
<td>21</td>
<td>4.7</td>
</tr>
</tbody>
</table>

CHI SQUARE = 12.58275   df = 4   p = 0.0135 < .05

Ho 7: There are no significant differences in the number of adult incarcerations among the APL 1, APL 2, and APL 3 groups.

The chi square test was performed to determine if significant relationships existed among the three groups according to the number of adult incarcerations. Data collected indicated a range of one adult incarceration to five or more incarcerations. The number reflected new commitments plus recommitted inmates for rules violations while on parole or furlough. Juvenile incarcerations are not included because records are not available. The chi square test result of 0.2456 with 8 df was not significant at the .05 level. Therefore, the null hypothesis was not rejected. Table 22 provides comparative data according to the number of adult incarcerations.
### Table 22

**Chi Square Test of Independence for Relationship Among Prerelease Inmates According to Number of Adult Incarcerations**

<table>
<thead>
<tr>
<th>APL</th>
<th>Number and Percentages of Adult Incarcerations</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>41</td>
<td>27.9</td>
<td>42</td>
<td>34.1</td>
<td>32</td>
<td>36.0</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>47</td>
<td>32.0</td>
<td>50</td>
<td>40.7</td>
<td>29</td>
<td>32.6</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>59</td>
<td>40.1</td>
<td>31</td>
<td>25.2</td>
<td>28</td>
<td>31.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>147</td>
<td>33.0</td>
<td>123</td>
<td>27.6</td>
<td>89</td>
<td>20.0</td>
</tr>
</tbody>
</table>

CHI SQUARE = 10.28443  df = 8  p = 0.2456 > .05

Ho 8: There are no significant differences in the history of drug abuse among the APL 1, APL 2, and APL 3 groups.

Ho 9: There are no significant differences in the history of alcohol abuse among the APL 1, APL 2, and APL 3 groups.

Ho 10: There are no significant differences in the history of mental illness among the APL 1, APL 2, and APL 3 groups.

The variables drug abuse, alcohol abuse, and mental illness were found to have no significant differences among the three APL groups. Drug abuse and alcohol abuse comprised 60.7 percent and 62.7 percent of the research sample, respectively. The history of mental illness variable was 20.4 percent. These calculations were based upon documented recordings in the official records. The chi square of drug abuse (0.9435), alcohol abuse (0.9437), and mental illness (0.1699) were greater than .05. Therefore, the null hypotheses were not rejected.
TABLE 23
CHI SQUARE OF INDEPENDENCE FOR RELATIONSHIPS AMONG
PRERELEASE INMATES ACCORDING TO DRUG ABUSE, ALCOHOL
ABUSE, AND MENTAL ILLNESS

<table>
<thead>
<tr>
<th>APL</th>
<th>Drug Abuse</th>
<th>Alcohol Abuse</th>
<th>Mental Illness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>85</td>
<td>31.5</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>93</td>
<td>34.4</td>
<td>98</td>
</tr>
<tr>
<td>3</td>
<td>92</td>
<td>34.1</td>
<td>92</td>
</tr>
<tr>
<td>TOTAL</td>
<td>270</td>
<td>60.7</td>
<td>279</td>
</tr>
<tr>
<td>CHI SQUARE</td>
<td>0.11636</td>
<td>0.11587</td>
<td>3.54456</td>
</tr>
<tr>
<td>df</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Significance</td>
<td>0.9435</td>
<td>0.9437</td>
<td>0.1699</td>
</tr>
</tbody>
</table>

Ho 11: There are no significant relationships in the months since
the last incarceration among the APL 1, APL 2, and APL 3
groups.

The chi square test was performed to determine if significant
relationships existed in the time since the last incarceration among
the APL 1, APL 2, and APL 3 groups. The largest single time variable
was the zero months or those who had not been incarcerated as an
adult (eighteen years of age or older). This category consisted of 32.9
percent of the sample. The research sample had 67.1 percent who
had been previously incarcerated as an adult in a federal, state, or
local facility. The period of one month through thirty-six months
since the last incarceration comprised 49.8 percent, and the remaining
17.3 percent had not been incarcerated from 37 to 96 months. The chi
square test result for the variable was 0.4893 with 14 df was
significant at the .05 level (0.4893>.05). Therefore, the null hypothesis was not rejected for months since the last incarceration. The results are summarized in Table 24.

Ho 12: There are no significant differences in offense levels among the APL 1, APL 2, and APL 3 groups.

The chi square test was performed to determine if any significant differences existed in offense levels among the APL 1, APL 2, and APL 3 groups. The largest number of inmates fell in the felony 4 category for the least serious crimes. As the level of offense increases, the number in the sample decreases in felony 3 and felony 2. The implementation of a new determinate sentence law in 1983 in Ohio has caused a gradual decrease in indeterminate sentences (parole) and an increase in determinate sentences. See Appendix C for examples of felony classifications in Ohio.

Data on the offense level of the research sample is provided in Table 25. The chi square test result of .06564 with 14 df was not significant at the .05 level (.06564>.05). Therefore, the null hypothesis was not rejected.
Table 24

CHI SQUARE TEST OF INDEPENDENCE FOR RELATIONSHIP AMONG PRERELEASE INMATES ACCORDING TO TIME SINCE THE LAST INCARCERATION

<table>
<thead>
<tr>
<th>APL</th>
<th>Months</th>
<th>Zero 1 to 6</th>
<th>7 to 12</th>
<th>13 to 18</th>
<th>19 to 24</th>
<th>25 to 30</th>
<th>31 to 36</th>
<th>37 to 96</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38 (26.6)</td>
<td>20 (36.4)</td>
<td>19 (38.0)</td>
<td>13 (35.1)</td>
<td>16 (44.4)</td>
<td>8 (1.8)</td>
<td>5 (1.2)</td>
<td>20 (4.6)</td>
</tr>
<tr>
<td>2</td>
<td>48 (33.6)</td>
<td>18 (32.7)</td>
<td>16 (32.0)</td>
<td>11 (29.7)</td>
<td>8 (22.2)</td>
<td>6 (1.4)</td>
<td>8 (1.8)</td>
<td>34 (7.8)</td>
</tr>
<tr>
<td>3</td>
<td>57 (39.9)</td>
<td>17 (30.9)</td>
<td>15 (30.0)</td>
<td>13 (35.1)</td>
<td>12 (33.3)</td>
<td>5 (1.2)</td>
<td>6 (1.4)</td>
<td>21 (4.8)</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>143 (32.9)</strong></td>
<td><strong>55 (12.7)</strong></td>
<td><strong>50 (11.5)</strong></td>
<td><strong>37 (8.5)</strong></td>
<td><strong>56 (8.3)</strong></td>
<td><strong>19 (4.4)</strong></td>
<td><strong>19 (4.4)</strong></td>
</tr>
</tbody>
</table>

CHI SQUARE 13.47795  df 14  p = 0.4893

Table 25

CHI SQUARE TEST OF INDEPENDENCE FOR RELATIONSHIP AMONG PRERELEASE INMATES ACCORDING TO THE LEVEL OF CRIME COMMITTED

<table>
<thead>
<tr>
<th>APL</th>
<th>Felony 1 Number (%)</th>
<th>Felony 2 Indeterminate</th>
<th>Felony 3 Determinate</th>
<th>Felony 3 Indeterminate</th>
<th>Felony 4 Determinate</th>
<th>Felony 4 Indeterminate</th>
<th>Felony 4 Determinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8 (1.8)</td>
<td>15 (5.4)</td>
<td>7 (1.6)</td>
<td>38 (8.5)</td>
<td>16 (3.6)</td>
<td>58 (13.0)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>25 (5.2)</td>
<td>21 (4.7)</td>
<td>8 (1.8)</td>
<td>38 (8.5)</td>
<td>11 (2.5)</td>
<td>53 (11.9)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>18 (4.1)</td>
<td>20 (4.5)</td>
<td>10 (2.2)</td>
<td>36 (8.1)</td>
<td>16 (3.6)</td>
<td>49 (11.0)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>49 (11.0)</strong></td>
<td><strong>56 (12.6)</strong></td>
<td><strong>25 (5.6)</strong></td>
<td><strong>112 (25.2)</strong></td>
<td><strong>43 (9.7)</strong></td>
<td><strong>160 (36.0)</strong></td>
</tr>
</tbody>
</table>

CHI SQUARE 11.37466  df 14  p = 0.6564
Analysis Using Classification and Regression Trees (CART)

An analysis of the APL profile was conducted using the Classification and Regression Trees (CART) program. Like discriminant analysis, CART attempts to find measurements which are useful in classifying objects into groups. CART is, however, much more flexible than discriminant analysis because the measurement can be ordinal, or nominal as well as interval and can come from any distribution. If enough data are available, CART can reliably search for predictors of group membership when the measurements have any type of distribution. This feat is accomplished by a computer-intensive algorithm called recursive partitioning. With this method, the sample space is repeatedly partitioned into two pieces, and the partition that segregates the groups best is deemed the best classifier. Each piece of the best partition is further partitioned until the data within each piece is the best segregated. This procedure is recursively applied until there is no gain from continuation (Malec, 1985).

The CART program is a powerful alternative to parametric methods in classification and regression. It arrives at predictions by constructing binary trees. Regression and classification are methods concerned with the use of data to form prediction rules for one variable based on the values of the other variables. In classification, the researcher makes measurements on an object and then uses
some sort of prediction rule to decide what class the object is in. Regression differs from classification in that the researcher wants to predict some numerical value, and not a class. The standard statistical methods used in classification are discriminant analysis or logistic regression. In regression the standard approach is through the use of linear regression in some form. The prediction rules are given in the form of algebraic expressions. CART takes a completely different approach. The prediction rules it constructs are given in the form of binary decision trees. The prediction trees constructed by CART are seldom less accurate, and often much more accurate than the algebraic rules constructed using standard methods (California Statistical Software, Inc., 1985).

CART divided the sample into two separate groups to compare the results of the learning set with a test set sample. The 445 inmate sample group was split using 335 participants for the learning set run and 110 cases for a test set sample. Binary decision trees were formed by separate analysis of each data set. CART then provided a classification procedure by selecting the best split on the best variable at each terminal node illustrated in Tables 26 and 27. The California Statistical Software, Inc. Company claims that CART has an error rate "almost always as low or lower" than discriminant analysis, logistic regression, or linear regression. The CART approach
### Table 26
**Classification and Regression Trees**
**Tree Sequence for APL Population**

<table>
<thead>
<tr>
<th>Tree</th>
<th>Terminal Nodes</th>
<th>Cross-Validated Relative Cost</th>
<th>Resubstitution Relative Cost</th>
<th>Complexity Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>93</td>
<td>0.96 +/- 0.040</td>
<td>0.18</td>
<td>0.000E+00</td>
</tr>
<tr>
<td>2</td>
<td>89</td>
<td>0.96 +/- 0.040</td>
<td>0.19</td>
<td>0.151E-02</td>
</tr>
<tr>
<td>3</td>
<td>86</td>
<td>0.94 +/- 0.041</td>
<td>0.20</td>
<td>0.200E-02</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
<td>0.94 +/- 0.041</td>
<td>0.37</td>
<td>0.300E-02</td>
</tr>
<tr>
<td>5</td>
<td>40</td>
<td>1.00 +/- 0.040</td>
<td>0.42</td>
<td>0.359E-02</td>
</tr>
<tr>
<td>6</td>
<td>37</td>
<td>1.00 +/- 0.040</td>
<td>0.44</td>
<td>0.399E-02</td>
</tr>
<tr>
<td>7</td>
<td>29</td>
<td>1.00 +/- 0.040</td>
<td>0.49</td>
<td>0.444E-02</td>
</tr>
<tr>
<td>8</td>
<td>22</td>
<td>0.97 +/- 0.040</td>
<td>0.55</td>
<td>0.513E-02</td>
</tr>
<tr>
<td>9</td>
<td>16</td>
<td>0.98 +/- 0.040</td>
<td>0.60</td>
<td>0.598E-02</td>
</tr>
<tr>
<td>10</td>
<td>13</td>
<td>0.96 +/- 0.040</td>
<td>0.63</td>
<td>0.698E-02</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>0.95 +/- 0.040</td>
<td>0.66</td>
<td>0.747E-02</td>
</tr>
<tr>
<td>12</td>
<td>7</td>
<td>0.90 +/- 0.041</td>
<td>0.71</td>
<td>0.897E-02</td>
</tr>
<tr>
<td>13*</td>
<td>3</td>
<td>0.86 +/- 0.041</td>
<td>0.79</td>
<td>0.120E-01</td>
</tr>
<tr>
<td>14</td>
<td>2</td>
<td>0.91 +/- 0.041</td>
<td>0.86</td>
<td>0.508E-01</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>1.00 +/- 0.040</td>
<td>1.00</td>
<td>0.896E-01</td>
</tr>
</tbody>
</table>

Initial Misclassification Cost = 0.654
Initial Class Assignment = 3
* = Tree Selected by the Tree Selection Rule
TABLE 27
CLASSIFICATION AND REGRESSION TREES PARTITIONING TREE
FOR THE APL POPULATION

Classification/Regression Tree Diagram (Terminal Nodes)

1
Education
High School/GED
Less Than High School
Postsecondary

2
Release Status
Definite Sentence Release
Indefinite Sentence Release

Node 1 was split on the variable claimed education level completed. A case goes left if the variable education is high school/GED or postsecondary.

Node 2 was split on the variable release status. A case goes left if the release is a definite sentence release. Improvement = 2.72E-02 (C.T. = 8.9E-02).

<table>
<thead>
<tr>
<th>Node</th>
<th>Cases</th>
<th>Class</th>
<th>Cost</th>
<th>Class(APL)</th>
<th>No. of Cases</th>
<th>Within Cases</th>
<th>Node Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Top Left Right</td>
<td>Top Left Right</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>335</td>
<td>3</td>
<td>0.65</td>
<td>1</td>
<td>106 33 73</td>
<td>0.32 0.23 0.39</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>146</td>
<td>3</td>
<td>0.50</td>
<td>2</td>
<td>113 40 73</td>
<td>0.34 0.27 0.39</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>189</td>
<td>1</td>
<td>0.61</td>
<td>3</td>
<td>116 73 43</td>
<td>0.35 0.50 0.23</td>
<td></td>
</tr>
</tbody>
</table>

Surrogate Split

<table>
<thead>
<tr>
<th></th>
<th>Assoc.</th>
<th>Improve.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Age</td>
<td>r</td>
<td>2.65E+01</td>
</tr>
<tr>
<td>2 Security Designation</td>
<td>s</td>
<td>1,3</td>
</tr>
<tr>
<td>3 Months Since Incarcerated</td>
<td>r</td>
<td>1.50E+00</td>
</tr>
<tr>
<td>4 Offense Level</td>
<td>s</td>
<td>1,5</td>
</tr>
<tr>
<td>5 Release Status</td>
<td>s</td>
<td>2</td>
</tr>
</tbody>
</table>

Competitor Split

<table>
<thead>
<tr>
<th></th>
<th>Improve.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Release Status</td>
<td>4</td>
</tr>
<tr>
<td>2 Ethnicity</td>
<td>1,3,4</td>
</tr>
<tr>
<td>3 Security Designation</td>
<td>1,3,4</td>
</tr>
<tr>
<td>4 Age</td>
<td>3.65E+01</td>
</tr>
<tr>
<td>5 County of Residence</td>
<td>1,3</td>
</tr>
</tbody>
</table>
is nonparametric, but it also takes account of the fact that different relationships may hold between variables in different parts of the data. For example, once the data are split in two, then the best split for the data going left generally differs from the best split for the data going right.

Splits were evaluated by the extent to which they produced two descendent nodes, each having small dispersion. More precisely, for any split, the weighted average was computed for the variance of the values in the left node and the variance of the values in the right node. The weights were proportional to the numbers going left and right respectively. The best split is the one that minimizes the weighted average. CART searched through all possible splits on all variables to find the best split at each node.

Binary decision trees were formed for the variable APL. The twelve predictor variables were then matched in the data set in a procedure that developed prediction rules to split by the smallest variability as shown in Table 26. The partitioning tree compared the 335 participants and identified 146 participants by claimed education level as APL 3. Node 1 was split on the variable claimed education completed (as high school/GED or postsecondary) with 146 going left to APL 3. The remaining 189 of the 335 learning set participants, who claimed an education level less than high school/GED, were split to form nodes 2 and 3. Nodes 2 and 3 were split on the variable release
status illustrated in Tables 27, 28, and 29. The 189 participants were split 118 going left to APL 1 with indeterminate release status and 71 going right to APL 2 with determinate release status. Hence, two variables were selected from the learning set achieving the minimum estimated error rate: claimed education level completed and release status.
Table 28
CLASSIFICATION AND REGRESSION TREES PARTITIONING TREE
FOR THE APL POPULATION-NODE 2

Node 2 was split on the variable release status.
A case goes left if the release is a definite sentence release.
 Improvement = 1.0E-02 (C.T. = 5.0E-02).

<table>
<thead>
<tr>
<th>Node</th>
<th>Cases</th>
<th>Class</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>189</td>
<td>1</td>
<td>0.61</td>
</tr>
<tr>
<td>-2</td>
<td>118</td>
<td>1</td>
<td>0.53</td>
</tr>
<tr>
<td>-3</td>
<td>71</td>
<td>2</td>
<td>0.51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>No. of Cases</th>
<th>Within Node Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Top Left Right</td>
<td>Top Left Right</td>
</tr>
<tr>
<td>1</td>
<td>73 55 18</td>
<td>0.39 0.47 0.25</td>
</tr>
<tr>
<td>2</td>
<td>73 38 35</td>
<td>0.39 0.32 0.49</td>
</tr>
<tr>
<td>3</td>
<td>43 25 18</td>
<td>0.23 0.21 0.25</td>
</tr>
</tbody>
</table>

**Surrogate Split**

- **1 Offense Level**
  - Assoc: 6,8
  - Improve: 0.59 2.8E-03
- **2 Security Designation**
  - Assoc: 1,2,4
  - Improve: 0.05 2.8E-03
- **3 Age**
  - Assoc: 2.35E+01
  - Improve: 0.05 1.2E-03
- **4 Months since last incar.**
  - Assoc: 5.05E+01
  - Improve: 0.04 4.7E-03
- **5 County of residence**
  - Assoc: 1,2
  - Improve: 0.02 1.0E-03

**Competitor Split**

- **1 Months since last incar.**
  - Assoc: 5.75E+01
  - Improve: 5.3E-03
- **2 Mental health history**
  - Assoc: 2
  - Improve: 5.1E-03
- **3 Offense Level**
  - Assoc: 6,7,8
  - Improve: 4.9E-03
- **4 Security Designation**
  - Assoc: 3,4
  - Improve: 4.4E-03
- **5 Age**
  - Assoc: 2.35E+01
  - Improve: 3.5E-03
### Table 29
CLASSIFICATION AND REGRESSION TREES
THREE TERMINAL NODES FOR THE APL POPULATION

<table>
<thead>
<tr>
<th>Node</th>
<th>Cases</th>
<th>Prob.</th>
<th>Class</th>
<th>Cost</th>
<th>Class</th>
<th>Cases</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>146</td>
<td>0.4358</td>
<td>3</td>
<td>0.500E+00</td>
<td>1</td>
<td>33</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>40</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>73</td>
<td>0.50</td>
</tr>
<tr>
<td>2</td>
<td>118</td>
<td>0.3522</td>
<td>1</td>
<td>0.534E+00</td>
<td>1</td>
<td>55</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>38</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>25</td>
<td>0.21</td>
</tr>
<tr>
<td>3</td>
<td>71</td>
<td>0.2119</td>
<td>2</td>
<td>0.507E+00</td>
<td>1</td>
<td>18</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>35</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>18</td>
<td>0.25</td>
</tr>
</tbody>
</table>

### MISCLASSIFICATION BY CLASS

<table>
<thead>
<tr>
<th>Cross Validation</th>
<th>Learning Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>No. of Cases</td>
</tr>
<tr>
<td>Class</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>106</td>
</tr>
<tr>
<td>2</td>
<td>113</td>
</tr>
<tr>
<td>3</td>
<td>116</td>
</tr>
</tbody>
</table>

### Cross Validation Classification Probability Matrix

<table>
<thead>
<tr>
<th>True Class</th>
<th>APL</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted</td>
<td>1</td>
<td>0.41</td>
<td>0.38</td>
<td>0.22</td>
</tr>
<tr>
<td>Class</td>
<td>2</td>
<td>0.28</td>
<td>0.27</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.31</td>
<td>0.35</td>
<td>0.63</td>
</tr>
</tbody>
</table>

### Learning Sample Classification Probability Matrix

<table>
<thead>
<tr>
<th>True Class</th>
<th>APL</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted</td>
<td>1</td>
<td>55</td>
<td>38</td>
<td>25</td>
</tr>
<tr>
<td>Class</td>
<td>2</td>
<td>18</td>
<td>35</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>33</td>
<td>40</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>True Class</th>
<th>APL</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted</td>
<td>1</td>
<td>0.52</td>
<td>0.34</td>
<td>0.22</td>
</tr>
<tr>
<td>Class</td>
<td>2</td>
<td>0.17</td>
<td>0.31</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.31</td>
<td>0.35</td>
<td>0.63</td>
</tr>
</tbody>
</table>
These results were compared with a test set sample. The remaining 110 cases were run down each subtree in the sequence, and this generated an estimate of the error rate for each subtree. In classification, the estimate of the error rate is simply the proportion of the test set that the subtree misclassifies. The tree selected by CART is the smallest tree achieving the minimum estimated error rate (within the bounds of variability of the estimate). This test set is a test of the prediction rule to determine if it is consistent with the learning set analysis. The test set confirmed the consistency of the learning set as shown in Table 30. The misclassification costs for APL 3 were 0.37 for the learning set and 0.39 for the test set; APL 1 had a misclassification cost of 0.48 and a 0.42 for the test set; and the APL 2 misclassification cost was 0.69 with a test set of 0.80. Hence, the prediction rule was strongest for classifying cases falling in APL 3.
### Table 30
**Classification and Regression Trees Summary Statistics for a Test Sample of the APL Population**

<table>
<thead>
<tr>
<th>1</th>
<th>Cases</th>
<th>Prob.</th>
<th>Class</th>
<th>Cost</th>
<th>Learning Set</th>
<th>Prob.</th>
<th>Test Set</th>
<th>Cost</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>146</td>
<td>0.4358</td>
<td>3</td>
<td>0.500E+00</td>
<td></td>
<td>0.23</td>
<td>9</td>
<td>0.19</td>
</tr>
<tr>
<td>(48)</td>
<td></td>
<td>0.4364</td>
<td></td>
<td>0.583E+00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>118</td>
<td>0.3522</td>
<td>1</td>
<td>0.534E+00</td>
<td></td>
<td>0.47</td>
<td>21</td>
<td>0.50</td>
</tr>
<tr>
<td>(42)</td>
<td></td>
<td>0.3818</td>
<td></td>
<td>0.500E+00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>71</td>
<td>0.2119</td>
<td>2</td>
<td>0.507E+00</td>
<td></td>
<td>0.25</td>
<td>6</td>
<td>0.30</td>
</tr>
<tr>
<td>(20)</td>
<td></td>
<td>0.1818</td>
<td></td>
<td>0.600E+00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n = 110
Initial Class Assignment = 2
Initial Misclassification Cost = 0.627

Relative cost based on tree = 0.884±/0.696E-01
3 Terminal Nodes
(Test sample summary in parentheses)

### Misclassification by Class

<table>
<thead>
<tr>
<th>Class</th>
<th>Test Sample</th>
<th>Learning Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Cases</td>
<td>No. Misclassified</td>
<td>Cost</td>
</tr>
<tr>
<td>1</td>
<td>56</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>41</td>
<td>33</td>
</tr>
<tr>
<td>3</td>
<td>35</td>
<td>13</td>
</tr>
</tbody>
</table>
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The final chapter of this study is divided into three sections. First, a summary of the null hypotheses tested and the discriminate analysis using Classification and Regression Trees (CART) is provided. Second, conclusions drawn from the research interpretation are discussed. And thirdly, recommendations are listed that come from analysis of the data.

Summary

The objective of this study was to determine the functioning level and analyze sociodemographic variables of Ohio male inmates at the time of release into society. A total of 445 inmates received at the Pickaway Correctional Institution from February 1, 1988 through March 9, 1988 comprised the research sample. The sample was administered the Adult Performance Level (APL) assessment instrument that provided APL 1, APL 2, and APL 3 levels for each participant.

The three APL groups were compared using twelve sociodemographic variables. Hypotheses were stated in the null form to determine significant interactions of the independent variables with the dependent variables APL 1, APL 2, and APL 3. The twelve hypotheses are summarized in the following discussion.
1. The Pickaway Correctional Institution was the designated central prerelease center of the Ohio Department of Rehabilitation and Correction for the male population. The population sample average age was 31.2 years. The f-test indicated that the age of the three groups was not significantly different \( (p = 0.0936 > 0.05) \). Hence, age did not significantly impact the functioning level scores of the research sample.

2. There were significant differences among the APL 1, APL 2, and APL 3 groups according to ethnicity. The white category comprised 67.1 percent of the research sample in the highest functional group APL 3 while the non-white category was 42.1 percent. The chi square of 8.20761 with two degrees of freedom was significant with a \( p \) of 0.0165.

3. Significant differences existed among the three APL groups in reference to the claimed education level completed. The lowest functioning level APL 1 had 39.8 percent of the research sample with less than a high school education. However, 22.3 percent scored APL 3 in the same category. Fifteen and five-tenths percent of the APL 1 group had claimed postsecondary education but the APL 3 group consisted of 56.3 percent with postsecondary completion. The chi square of 38.89778 with 4 degrees of freedom had a \( p \) of 0.0000.
4. The population coming from counties of the major urban centers in Ohio were compared with the rural counties. A cross tabulation of APL scores indicated a larger percentage of urban participants scored lower than rural participants. The APL 1 urban group had 22 percent of the total 445 participants while the APL 1 rural group was 9 percent. A chi square of 6.74018 with 4 degrees of freedom and a p of 0.1503 indicated there were no significant relationships according to the county of residence at release among the APL 1, APL 2, and APL 3 groups.

5. There were significant differences among the APL 1, APL 2, and APL 3 groups in relation to release status. The definite sentence releasees comprised 59.8 percent of the research population but had 71.8 percent of the lowest APL 1 level. Indeterminate releases scored higher than determinate releases. A chi square of 12.61281 with 2 degrees of freedom provided a p of 0.0018.

6. Significant differences existed among the APL 1, APL 2, and APL 3 groups in reference to security designation. Security designations of minimum, medium, and close/maximum security were compared with each APL group. Minimum security inmates scored higher than medium and
close/maximum groups. A chi square of 12.59275 with 4 degrees of freedom had a p of 0.0135.

7. The number of adult incarcerations was not significant among the APL 1, APL 2, and APL 3 groups. There was no indication that the achievement level was related to the number of times incarcerated. A chi square of 10.28443 with 8 degrees of freedom had a p of 0.2456.

8. There were no significant differences among APL 1, APL 2, and APL 3 groups in relation to drug history. A 60.7 percent majority had a history of drugs but they were evenly distributed across all three levels similar to the groups that did not have a history of drug involvement. A chi square of 0.11636 with 2 degrees of freedom had a p of 0.9435.

9. There were no significant differences among APL 1, APL 2, and APL 3 groups in relation to alcohol history. The number and percentage of the research sample with alcohol abuse history closely approximated those with a history of drug abuse. The data indicated 270 had a history of drug abuse and 279 had a history of alcohol abuse or 60.7 percent and 62.7 percent, respectively. A chi square of 0.11587 with 2 degrees of freedom had a p of 0.9437.
10. There were no significant differences among APL 1, APL 2, and APL 3 groups in relation to a history of mental illness. The data indicated 20.4 percent had a history of mental illness that was documented in the official records. Those with mental illness histories, however, scored higher as APL 3 than those without mental histories. A chi square of 3.54456 with 2 degrees of freedom had a p of 0.1699.

11. There were no significant differences among APL 1, APL 2, and APL 3 groups in relation to the number of months since the last incarceration. The research sample indicated 32.9 percent had no prior adult incarceration record while 67.1 percent had prior incarcerations or are considered recidivists. A chi square of 13.47795 with 14 degrees of freedom had a p of 0.4893.

12. There were no significant differences among the APL 1, APL 2, and APL 3 groups in relation to offense levels. The larger number of the research sample were incarcerated for felony 4 convictions with the number decreasing as the severity of the penalty increased to the death sentence. A chi square of 11.37466 with 14 degrees of freedom provided a p of 0.6564.

The univariate analysis using the Classification and Regression Trees (CART) program was conducted. CART constructs prediction rules to: (1) construct the most accurate prediction rule possible and
(2) construct the decision rule which gives the most insight. It identified the variables that gave significant prediction information from the independent variables. The variables claimed education level and release status were significant in predicting the variables APL 1, APL 2, and APL 3 according to the Classification and Regression Trees analysis.

**Conclusions**

The research sample was divided into three functioning levels, APL 1, APL 2, and APL 3. These three dependent variables were compared with twelve independent variables to determine factors that affect the transition success of Ohio male inmates into the free-world. Results of the inquiry are reviewed by the following discussion of the hypotheses:

1. A majority of inmates are younger than 30 years of age. The age range is broad, however, from 18 years to 60 years. Age was not a factor in how low or high an inmate scored on the APL instrument.

2. Ethnicity was an important factor in the functioning levels of the research sample. White inmates scored significantly higher than non-white inmates in all three APL categories.
3. The claimed education level completed was an important factor in determining the functioning levels of inmates. Inmates who completed high school or GED scored significantly higher than inmates who had an educational level less than high school or GED. Inmates with less than high school or GED scored low on the APL instrument. A strong correlation between education completed and functioning level existed in this study.

4. The residence at release variable indicated urban participants scored lower than rural participants but not at a significant level. This indicator follows the high urban school drop-out rate reported in the literature.

5. Release status as an indeterminate or determinate sentence inmate was important to the functioning level of the research sample. Determinate sentence inmates scored significantly lower than indeterm in ate (parole/furlough) inmates. This indicates that inmates serving sentences initiated by law in 1983 are functioning at a level lower than those on indeterminate sentences where the parole board controls the release date.

6. Security designation was a determining factor in the functioning level of the research sample. Minimum security inmates scored significantly higher than medium or
close/maximum designations. Medium security had the highest proportion of low scores.

7. The number of adult incarcerations per inmate was not significant to the APL functioning level of prerelease inmates. First offenders were 33 percent of the population sampled and they scored higher in proportion to repeat offenders. The repeat offenders comprised 67 percent of the sample and scored lower than the first offender group.

8. Drug abuse is an important variable in the inmate population. However, it is not significant to the APL functioning level of those in the research sample. The documented history of drug abuse comprised 60.7 percent of the population.

9. Alcohol abuse is an important variable in the inmate population. However, it is not significant to the APL functioning level of those in the research sample. The documented history of alcohol abuse comprised 62.7 percent of the population.

10. Mental illness was not significant to the APL functioning levels of the research population. The population with a history of documented mental illness was 20.4 percent of those surveyed. This compares favorably with an Ohio study cited in Chapter II with a 22.4 percent rate.
11. The time since the last incarceration was not significant to the APL functioning levels of the population. The client group does not increase its functioning level between incarcerations. A high drug and alcohol involvement may account for little change while the releasee is in the free-world.

12. The level of offense was not significant to the APL functioning level of the population. Severity of crime was not an index for low or high functioning levels.

The analysis of independent and dependent variables indicated four independent variables were significantly related to the APL functioning levels of inmates. They were ethnicity, claimed education completed, release status, and security designation. Nonwhite inmates did not score as high as white inmates; inmates who finished high school equivalency scored higher than those who did not complete secondary education levels; indeterminate sentence inmates (parole and furlough) scored higher than determinate sentence inmates; and minimum security inmates scored higher than medium or higher level security inmates.

A discriminate analysis by Classification and Regression Trees (CART) indicated two variables were positive classifiers for APL functioning competency levels. They were claimed education level completed and release status.
**Recommendations**

1. Continuous research is needed to identify functional competency skills and sociopsychological characteristics of Ohio's inmates. The research should be continuous since the population is expanding rapidly in the Department of Rehabilitation and Correction. This population expansion has prevented assessment for many requiring assessment who entered the system prior to the TIE program.

2. The Ohio Plan Assessment program should be reviewed and revised. Assessment for inmate psychological functioning levels, aptitude, and attitude should be developed to aid program planners in providing cost effective and relevant inmate programs.

3. State funding should be increased dramatically to provide programming for mental illness, drug and alcohol abuse and low functioning educational level inmates. The data in this study provided documentation for the need for a positive approach in dealing effectively with these maladies.

4. A replication of this study should be conducted at each correctional institution in Ohio to provide comprehensive and relevant data for Training, Industry, and Education (TIE) programming prior to prerelease at the end of the incarceration period. Individual institutions are recommended because the official records would be more accessible as compared to the initial reception center.
5. A comprehensive study should be conducted using the above studies to formulate inmate profile information. The research master plan would pull together existing data to develop the data format for institutional studies. Historical precedent indicates that correctional systems generate information that is not utilized. A comprehensive research plan would maximize the use of data that are on file in addition to new data generated.

6. Research should be conducted in other states to profile inmate need areas. Training, industry, education, drug, alcohol, and mental illness are areas of concern. National data do not necessarily coincide with Ohio data concerning the variables in this study. It is postulated that diverse state inmate populations throughout the United States have similar differences that need to be identified. Quality program planning depends on a realistic source of data that is relevant to the mission of the correctional system in each jurisdiction.

7. A national effort should be made by a national clearinghouse to collect, analyze, and disseminate the data generated in the above studies. The review of related literature in this study indicates a paucity of data on inmate functioning levels. National leaders generate articles with inmate data that is not pertinent to state inmate profiles. Writers need sources of data that are accurate. Rather than list national averages, a listing of states
should be provided that generate the national averages.

8. Research should be conducted to determine causation of the high rate of recidivism. Two-thirds of the population in this study had been previously incarcerated as adults. The reasons for a return to prison need to be defined in specific terms: how important are the variables unemployment, drug history, alcohol history in relation to recidivism? Since prisons have been called the new welfare state by some writers, a positive impact on recidivism rates could be a tremendous cost savings to taxpayers as well as a benefit to society that is not measured in dollars.

9. Specialized programs should be developed in prison based upon inmate needs. The incidence of substance abuse is well documented but the development of substance abuse programs lags far behind the need. Mental illness is documented to affect one-fifth the inmate population but the mental health programming serves fewer than that number. Learning disabilities are highly represented in the prison population but learning disability programs are too few to meet the need of learners. The modest efforts that have been initiated should be increased.

10. Reading should be emphasized in correctional education programs. The review of literature in this study described illiteracy in America and in the prison system. The high illiteracy rate is cause enough to make reading a high priority for correctional
education programs. This means a systematic approach needs to be built into each correctional education system to enhance existing reading programs and to identify relevant approaches in developing new reading programs where they (1) do not exist and (2) do not meet the prescribed need of inadequate readers.

11. The General Education Development (GED) program should be increased in prisons. The GED curriculum includes the other cognitive areas in addition to reading such as computation and writing skills. It is apparent from the review of the literature that too few inmates leave prison with high school equivalency training. This study graphically indicates that over one-half of the Ohio inmates return to the free-world without functional competency levels.

12. Research should be conducted on prison industries programs. The literature review indicated a need for studies in this area to determine the training impact on participants and the level of skill development provided by prison industry training programs. Training, Industry, and Education (TIE) are being linked together in Ohio and in America's prisons in increasing numbers, to maximize resources and increase the functioning level of inmates released from prison. Therefore, evaluation of the industry component is needed for program planning.
13. Training in vocational correctional education should be a high priority for program evaluation. Noting the deficiencies of vocational education in corrections as cited by Austin MacCormack over fifty years ago, and the deficiencies evident today in the literature, research should be conducted to determine the relevancy and viability of vocational offerings.

14. Longitudinal studies should be conducted to determine the long-term effect of programs. These studies should be directed at follow up on several program areas: (1) job placement rates, (2) job retention rates, (3) success of TIE program participants by measuring completion rates of the various programs offered and successful community reintegration, (4) indeterminate and determinate sentence releases, and (5) return to prison rates by program participation rates, and the positive and negative impact of drug, alcohol, and mental illness programs.
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APPENDICES
Appendix A
Selected Background Variables

The data generated from each inmate's institutional file is listed below.

1. Inmate ID number
2. Inmate name
3. APL level (1, 2 or 3)
4. Admission date (month/year)
5. Ethnicity (1 = black, 2 = white, 3 = hispanic, 4 = other)
6. Date of birth (month/year)
7. Age at release
8. Claimed education level at release (1 = less than high school, 3 = high school diploma or GED, 4 = post-secondary)
9. County of residence at release
10. Release status (P = parole, F = furlough, D = expiration of definite sentence, M = expiration of maximum sentence)
11. Security designation (1 = minimum, 2 = medium, 3 = close, 4 = maximum)
12. Number of adult incarcerations
13. History of drug abuse (1 = yes, 2 = no)
14. History of alcohol abuse (1 = yes, 2 = no)
15. History of mental illness (1 = yes, 2 = no)
16. Months since last incarceration
17. Offense level (1 = death, 2 = life, 3 = felony 1, 4 = felony 2, 5 = felony 3 indeterminate, 6 = felony 3 determinate, 7 = felony 4 indeterminate, 8 = felony 4 determinate)
Appendix B

PROJECT APPROVAL LETTER FROM THE

OHIO DEPARTMENT OF REHABILITATION AND CORRECTION
June 8, 1988

Kurt E. Williams
Pickaway Correctional Institution
P.O. Box 209
Orient, Ohio 43146

Dear Mr. Williams:

This will acknowledge receipt of your letter of May 31 regarding your research project. The committee is recommending approval of your project.

If you would send copies of this letter and the signed proposal approval to the Ohio State University Research Committee, this should be adequate for their needs. They can contact us if more information is needed.

Sincerely,

William W. Gilbert, Ph.D.
Chairman, Research Review Committee

/cc: Committee Members
Appendix C

Felony Classification by Ohio Law

The following is a partial listing of felony 1, felony 2, felony 3, and felony 4 crimes:

**Felony 1**
- Murder
- Manslaughter
- Attempted Murder
- Conspiracy to Commit Murder
- Drug Abuse
- Sexual Penetration
- Abortion
- Felonious Assault
- Aggravated Burglary
- Pattern of Corrupt Activity
- Felonious Rape
- Robbery

**Felony 2**
- Arson
- Burglary
- Drug Abuse
- Gross Abuse of Patients
- Child Stealing
- Obscenity (involving a minor)
- Felonious Assault

**Felony 3**
- Illegally Conducting Bingo
- Carrying a Concealed Weapon
- Disrupting Public Services
- Illegal Use of Food Stamps
- Intoxicating Liquor Counterfeiting
- Bribery
- Passing Bad Checks over $5,000
- Drug Abuse
- Intimidation
- Medicaid Fraud
Appendix C (continued)

Corruption of a Minor
Compelling Prostitution
Inciting a Riot
Theft
Unlawful Transactions in Weapons

**Felony 4**

Endangering Aircraft
Aggravated Assault
Illegal Bingo
Breaking and Entering
Cheating $300 or more
Passing Bad Checks $300-$5,000
Child Endangering
Gross Abuse of Corpse
Corrupting Sports
Drug Abuse with Prior Conviction
Escape
Forgery

Pandering Obscenity Involving a Minor

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Falsification of Auto Insurance Claim
Safecracking
Sexual Battery
Vehicular Homocide
Non-support of Dependents
Obsenity
Inducing Panic
Promoting Prostitution
Unlawful Interest in Public Contract
Receiving Stolen Property $300-$5,000
Aggravated Riot
Habitual Sex Offenders
Gross Sexual Imposition
Theft $300-$5,000
Vandalism
Unlawful Possession of a Weapon

Unauthorized use of Motor Vehicle
### Appendix D

#### Table

**Ohio Correctional Institutions Sending Prerelease Inmates to the Pickaway Correctional Institution**  
*February 1, 1988 through March 9, 1988*

<table>
<thead>
<tr>
<th>Institution Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen Correctional Institution</td>
</tr>
<tr>
<td>Chillicothe Correctional Institution</td>
</tr>
<tr>
<td>Correctional Reception Center</td>
</tr>
<tr>
<td>Dayton Correctional Institution</td>
</tr>
<tr>
<td>Hocking Correctional Institution</td>
</tr>
<tr>
<td>Lebanon Correctional Institution</td>
</tr>
<tr>
<td>Lima Correctional Institution</td>
</tr>
<tr>
<td>London Correctional Institution</td>
</tr>
<tr>
<td>Marion Correctional Institution</td>
</tr>
<tr>
<td>Orient Correctional Institution</td>
</tr>
<tr>
<td>Pickaway Correctional Institution</td>
</tr>
<tr>
<td>Ross Correctional Institution</td>
</tr>
<tr>
<td>Southeastern Correctional Institution</td>
</tr>
<tr>
<td>Southern Ohio Correctional Facility</td>
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</table>
### Appendix E

Ohio Department of Rehabilitation and Correction  
1985 Intake Study of Two Consecutive Months  
(September and October)

---

**Male Population**

<table>
<thead>
<tr>
<th>Ethnicity (n = 1,554)</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Black</td>
<td>39.8</td>
</tr>
<tr>
<td>White</td>
<td>58.4</td>
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<tr>
<td>Hispanic</td>
<td>1.7</td>
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</table>

<table>
<thead>
<tr>
<th>Marital Status at Admission</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Single</td>
<td>50.2</td>
</tr>
<tr>
<td>Married</td>
<td>23.7</td>
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<tr>
<td>Divorced</td>
<td>8.2</td>
</tr>
<tr>
<td>Widowed</td>
<td>.3</td>
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<tr>
<td>Separated</td>
<td>3.1</td>
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<tr>
<td>Common Law</td>
<td>14.3</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Employment Status at Arrest</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fulltime Employed</td>
<td>22.7</td>
</tr>
<tr>
<td>Unemployed</td>
<td>30.9</td>
</tr>
<tr>
<td>Parttime Employed</td>
<td>1.9</td>
</tr>
<tr>
<td>Disabled</td>
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<tr>
<td>Student</td>
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<table>
<thead>
<tr>
<th>History of Drug Abuse</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
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<td>Yes</td>
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<tr>
<td>No</td>
<td>60.9</td>
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<table>
<thead>
<tr>
<th>History of Alcohol Abuse</th>
<th>Percent</th>
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</thead>
<tbody>
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<td>Yes</td>
<td>42.4</td>
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<tr>
<td>No</td>
<td>57.4</td>
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<table>
<thead>
<tr>
<th>History of Mental Illness</th>
<th>Percent</th>
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<tbody>
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<td>Yes</td>
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<td>No</td>
<td>86.2</td>
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<tr>
<td>Tested Grade Level</td>
<td>Mean</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Penitentiary</td>
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<tr>
<td>Reformatory</td>
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<th>Age at Admission</th>
<th>Mean</th>
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<tr>
<th>Months Since Last Incarceration</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40.9</td>
<td>23.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security Designation</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>36.8</td>
</tr>
<tr>
<td>Medium</td>
<td>46.6</td>
</tr>
<tr>
<td>Close</td>
<td>16.2</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Sentence</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determinate</td>
<td>46.6</td>
</tr>
<tr>
<td>Indeterminate</td>
<td>53.4</td>
</tr>
</tbody>
</table>

## Sociodemographic Characteristics of State Prison Male Inmates in the United States, 1986

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percent of Prison Inmates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>49.7</td>
</tr>
<tr>
<td>Black</td>
<td>46.9</td>
</tr>
<tr>
<td>Other</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>12.6</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>87.4</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>Less than 18</td>
<td>0.5</td>
</tr>
<tr>
<td>18-24</td>
<td>26.7</td>
</tr>
<tr>
<td>25-34</td>
<td>45.7</td>
</tr>
<tr>
<td>35-44</td>
<td>19.4</td>
</tr>
<tr>
<td>45-54</td>
<td>5.2</td>
</tr>
<tr>
<td>55-64</td>
<td>1.8</td>
</tr>
<tr>
<td>65 or older</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Less than 12 years</td>
<td>61.6</td>
</tr>
<tr>
<td>12 years or more</td>
<td>38.4</td>
</tr>
</tbody>
</table>

## Appendix G

### Prior Sentences of State Prison Inmates in the United States, 1986

<table>
<thead>
<tr>
<th>Prior Sentences</th>
<th>Percent of prison inmates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incarceration</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>38.1</td>
</tr>
<tr>
<td>Juvenile only</td>
<td>6.5</td>
</tr>
<tr>
<td>Adult only</td>
<td>36.9</td>
</tr>
<tr>
<td>Both</td>
<td>18.5</td>
</tr>
<tr>
<td>Number of Times</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>38.1</td>
</tr>
<tr>
<td>1</td>
<td>22.2</td>
</tr>
<tr>
<td>2</td>
<td>13.2</td>
</tr>
<tr>
<td>3-5</td>
<td>16.4</td>
</tr>
<tr>
<td>6-10</td>
<td>6.6</td>
</tr>
<tr>
<td>11 or more</td>
<td>3.6</td>
</tr>
</tbody>
</table>

### Current Offense of State Prison Male Inmates of the United States, 1986

<table>
<thead>
<tr>
<th>Current Offense</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violent Offenses</td>
<td></td>
</tr>
<tr>
<td>Murder</td>
<td>11.2</td>
</tr>
<tr>
<td>Negligent manslaughter</td>
<td>3.0</td>
</tr>
<tr>
<td>Kidnapping</td>
<td>1.7</td>
</tr>
<tr>
<td>Rape</td>
<td>4.4</td>
</tr>
<tr>
<td>Other sexual assault</td>
<td>4.7</td>
</tr>
<tr>
<td>Robbery</td>
<td>21.3</td>
</tr>
<tr>
<td>Assault</td>
<td>0.1</td>
</tr>
<tr>
<td>Other violent</td>
<td>0.8</td>
</tr>
<tr>
<td>Property Offenses</td>
<td></td>
</tr>
<tr>
<td>Burglary</td>
<td>17.0</td>
</tr>
<tr>
<td>Larceny/theft</td>
<td>5.6</td>
</tr>
<tr>
<td>Motor vehicle theft</td>
<td>1.4</td>
</tr>
<tr>
<td>Arson</td>
<td>0.7</td>
</tr>
<tr>
<td>Fraud</td>
<td>3.2</td>
</tr>
<tr>
<td>Stolen property</td>
<td>2.0</td>
</tr>
<tr>
<td>Other property</td>
<td>0.5</td>
</tr>
<tr>
<td>Drug Offenses</td>
<td></td>
</tr>
<tr>
<td>Possession</td>
<td>2.9</td>
</tr>
<tr>
<td>Trafficking</td>
<td>5.3</td>
</tr>
<tr>
<td>Other drug</td>
<td>0.2</td>
</tr>
<tr>
<td>Public-Order Offenses</td>
<td></td>
</tr>
<tr>
<td>Weapons</td>
<td>1.5</td>
</tr>
<tr>
<td>Other public-order</td>
<td>3.7</td>
</tr>
<tr>
<td>Other Offenses</td>
<td>0.7</td>
</tr>
</tbody>
</table>

### Appendix I

History of Pre-Incarceration Use of Illegal Drugs by State Prison Inmates in the United States, 1986

<table>
<thead>
<tr>
<th>Type of Drug Use</th>
<th>Percent of Inmates Using Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under the influence of drugs at time of the current offense</td>
<td>35.3</td>
</tr>
<tr>
<td>Ever used drugs on a regular basis</td>
<td>62.3</td>
</tr>
<tr>
<td>Ever used a major drug on a regular basis</td>
<td>35.0</td>
</tr>
<tr>
<td>Used drugs on a daily basis in the month before the current offense</td>
<td>42.6</td>
</tr>
<tr>
<td>Used a major drug on a daily basis in the month before the current offense</td>
<td>18.5</td>
</tr>
</tbody>
</table>

Appendix J

Definition of Terms

**Adult Performance Level Survey** - the adult assessment instrument developed by the Adult Performance Level Program.

**Aggravated Felony 1 Confinement** - prior conviction or guilty plea to an Aggravated Felony 1, 2, or 3; aggravated murder or murder; or equivalent.

**Aggravated Felony 2 Confinement** - period of incarceration less than Felony 1 but for the same classification of crimes.

**Aggravated Felony 3 Confinement** - period of incarceration less than Felony 1 and Felony 2 but for the same classification of crimes.

**Death Confinement** - the period of incarceration for a conviction of murder.

**Determinate Sentence** - release status without state supervision. Time served is a definite time period set by the court.

**Felony 3 Confinement** - crime committed before July 1, 1983 provided for an indefinite confinement; after July 1, 1983 either indefinite or definite confinement. The confinement period is less than Felony 1 or Felony 2.

**Felony 4** - crime committed before July 1, 1983 provided an indefinite confinement. Crime committed on or after July 1, 1983 provided an indefinite or definite sentence. The confinement period is less than Felony 1, Felony 2, or Felony 3.

**Free World** - the portion of society that is not incarcerated.

**Furlough** - release status to a supervised environment.

**Incarcerated Inmates** - individuals serving a prison commitment as a result of being convicted of a felony.

**Indeterminate Sentence** - release granted by parole authority with state supervision for a specified period (normally one year) of time. Time served may vary based upon parole board decision.

**Life Confinement** - the period of incarceration for a conviction of murder.

**Maximum Sentence** - release status without state supervision.
OHIO PLAN FOR PRODUCTIVE PRISONS - the program officially adopted by the Ohio Department of Rehabilitation and Correction that ties training, industry, and education together.

Parole - release status under state supervision.

Recidivism Rate - the number or percentage of inmates who return to confinement after being released.

Recidivist - a person who has one or more prior incarcerations.

TIE Program - the Training, Industries and Education p'an endorsed by the Ohio Department of Rehabilitation and Correction.