THE NATURE AND PREVALENCE OF LEARNING DEFICIENCIES AMONG ADULT INMATES

AN EXECUTIVE SUMMARY OF THE TECHNICAL REPORT

School of Education
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THE NATURE AND PREVALENCE OF LEARNING DEFICIENCIES AMONG ADULT INMATES: EXECUTIVE SUMMARY OF THE TECHNICAL REPORT

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CHAPTER I

INTRODUCTION

For more than a decade, there has been an increasing awareness that the educational levels among adult offenders incarcerated in the nation's correctional institutions are significantly lower than those of the general population. Successive studies have noted that functional illiteracy in this population is substantially higher than national norms (Bell, Conard, Laffey, Lutz, Miller, Simon, Stakelon, & Wilson, 1979; Dell'Apa, 1973; Education Commission of the States (ECS), 1976; Feldman, 1974; General Accounting Office (GAO), 1980; Kilty, 1977; Nagel, 1976; Reagen, Stoughton, Smith, & Davies, 1973; Roberts, 1971).

In spite of this fact, the majority of the incarcerated population does not participate in prison education programs. A United States Department of Justice survey (1979) indicated that nearly 30% of those inmates who were enrolled in correctional education programs failed to complete a single grade of schooling during their incarceration. Bell et al. (1979) found that only 30% of those inmates who could potentially benefit from educational programs in the institutions were enrolled in such programs, despite the obvious and particular need for basic academic and vocational education.

As a result of such evidence, researchers have begun to turn their attentions toward the educational programs in prisons. To date, although inmate education has been investigated from fiscal, organizational, and administrative perspectives (Ayers, 1975; Bell et al., 1979; ECS, 1976; GAO, 1980; Thompson, 1979), little research exists regarding the background and demographic characteristics of inmates and their possible relationships to the nature and prevalence of specific types of learning deficiencies and educational attainment.

Although no research has been done in these areas with incarcerated adults, some research has been done to investigate these issues among juvenile delinquents. The results of these studies indicate, for example, that the ratio of perceptual disorders among delinquents is disproportionately high (Murray, 1976), that school failure among delinquents is closely associated with low socioeconomic status (SES) (Gold, 1978), that a majority of adjudicated delinquents are from lower SES homes (Berry, 1971; Chilton, Simpson, 1972; Wax, 1972), and that speech disorders are found in delinquents twelve times more frequently than in normal populations (Gagne, 1977). Such findings, coupled with the fact that many incarcerated adults are products of the juvenile justice system, suggest that similar problems may exist among the adult inmate population.

In April 1981, Lehigh University was awarded a contract by the National Institute of Justice, United States Department of Justice, to address certain issues relating to the area of learning deficiencies among adult inmates. The stipulations of the contract required Lehigh to address the following four issues:

1. The nature and prevalence of learning deficiencies among adult inmates in state prisons.

2. The relationship between educational attainment and such deficiencies.

3. The background, demographic, and criminal justice data on the learning deficient inmates.

4. The comparability of these characteristics for the learning deficient inmates with both the non-learning deficient inmates and the general population.

In the process of addressing the issues, and the concomitant research questions, data were gathered over a 2 year period from a sample of inmates in nine state prisons located in three states: Louisiana, Pennsylvania, and Washington. These states were chosen because of their regional representativeness and three institutions were selected in each state: one male maximum security, one male minimum security, and one female institution.

The term "learning deficient" was operationalized for the purpose of this study as quantified functional illiteracy. An individual was identified as functionally illiterate when he or she scored at or below the fifth grade level on at least one of the subtests on the Tests of Adult Basic Education (TABE). In order to address the issues relating to learning deficiencies in the adult prison population, data were collected on the following categories of variables:

1. Demographic variables
2. Criminal justice variables
3. Educational background variables
4. Family background variables
5. Academic achievement variables
6. Ability variables
7. Disability variables

A detailed description of the research design and methodology utilized is contained in Chapter II of this report.

The choice of the research design and the selection and administration of the data collection instruments for this study presented several problems worthy of mention.

The problems of defining and identifying such inmate-related factors as specific learning disabilities, mental retardation, emotional disturbance, physical handicaps and other influential variables; of determining their prevalence; of examining possible relationships between these factors and various

background characteristics of inmates could have been addressed in at least three broad ways. The most "attractive" in a research sense would have been to concentrate on a narrow area of deficiency (e.g., visual perception, minimal brain damage, auditory discrimination), to select or design a sophisticated instrument to measure it, and to seek to establish some relationship. The difficulty with this approach is that the development or purchase of a sophisticated battery and its administration to a sufficiently large sample would be limited by available funds ($200,000) and allocated time (2 years). It would also limit the possibility of addressing the broader issues of policy, program, and treatment by the criminal justice system.

A second approach would have been to select a sample from a single institution and approach the problem as an "in-depth case study," to address many more areas of deficiency and to examine their relationship to other background factors. This approach, however, would not result in any degree of representativeness and would not take into account regional, sex, "system," or institutional differences.

The approach used in this study, which is explained in detail in Chapter II, addresses this problem from a somewhat broader perspective. We are of the opinion that before a narrow, deficiency-specific approach can be utilized, much more needs to be known about the prevalence of broadly-defined learning deficiencies and their relationship, if any, to educational attainment and background characteristics including criminal justice variables. Past experience, both in the fields of correctional and special education and with the National Correctional Education Evaluation (Bell et al., 1979; Bell, Conard, Laffey, Volz, & Wilson, 1977), led us then to the approach utilized in this project. The nature of the problem and the fact that it has yet to be researched in any serious fashion have had an impact on this approach. The issues addressed and the research questions asked are, of necessity, both broad in scope and yet attempt to deal with those specific areas of interest that our research, and that of others, have indicated as being most fertile.

The selection of instruments for the study presented some problems. While the TABE, utilized to measure academic achievement, and the newly revised Wechsler Adult Intelligence Scale selected to measure the ability levels of the sample are, by consensus, considered to be the best available, they do have some weaknesses when utilized in an adult population that was incarcerated for some time and who, for the large part, has not completed a formal and normal educational program. The Mann-Suiter Learning Disabilities Screening Tests, administered to those subjects who scored at or below a fifth grade level on the TABE, were used to attempt to determine the specific nature of the disabilities. This instrument was chosen for its adaptability and ease of use and because of the necessity to garner as much information as possible on such areas as auditory and visual discrimination, memory, and closure.

The difficulties of conducting research in the prison setting deserve some comment in this introduction. Most social science research, whether it is conducted in the community or in educational and mental health facilities, is essentially carried on in a hospitable environment with relatively cooperative subjects. This is not the case in correctional facilities. By and large, any data collector or test administrator is understandably viewed as a possible

security threat by the security staff. The testing of prisoners, either in groups or as individuals, requires the disruption of the normal movement and work routine of the prison population; and most administrators, work supervisors, and correctional officers can control their enthusiasm for such movement and break in routine caused by the researcher's attempt to collect data and complete the testing. The generous cooperation and support of the administration and staff of the nine institutions and of the Chief Correctional Officers in the three state capitals used in this study have been acknowledged in this document and our appreciation is noted once more. Security and work restrictions which hampered access to subjects, however, required considerable flexibility on the part of the test administrators as indicated by their willingness to return to the institutions to complete testing and by their ability to respond to the political needs of the institutional bureaucracy. Such barriers are time consuming and draining but are a reality of prison research.

Another major difficulty in conducting research in the correctional setting is the suspicion and insecurity of the inmate who has, by and large, failed in the educational enterprise on the outside and is being asked to willingly give his or her time to take a series of academic and intelligence tests. This is coupled with the natural resentment of being asked to give up income from work assignments or to give up recreational opportunities. It was feared that such problems would seriously limit the number of inmates willing to participate, and possibly skew the sample in favor of the more able inmates. The methods used to combat this are described in Chapter II, but suffice it to say that we are reasonably confident that the sample, as drawn, is representative of the institutions used in the study. The barriers raised by the insecurity of the inmates, the lack of incentives to participate, the threatening circumstances of any testing situation, and the typical unplanned movement of prison population (e.g., transfer, release, escape and death) did result in the "bleeding" of subjects from the original sample. This, we suggest, was unavoidable and does not in any way detract from the validity of the research findings reported in Chapter III or the recommendations stated in Chapter IV.

The results of the data analyses, reported in Chapter III, are divided into five major sections:

1. Comparative information on participants and non-participants.

2. Descriptive information on the nature of the sample by race, sex and state. This information is also presented separately for the learning deficient and the non-learning deficient inmates.

3. Achievement, intelligence, and disability test results for the sample.

4. The relationships between academic achievement, intelligence and learning deficiencies and background and demographic characteristics of the sample.

5. A discussion of the analyses as they relate to the research questions posed earlier and the implications of the findings.

The final chapter of this document is a summary and discussion of the study's findings as they relate to future policy decisions, program design, and research needs.

It should be noted that, given the large body of information collected in the course of the study, not all possible analyses have been done nor have all potential research questions been addressed. Given the thrust of the study and the constraints of time and resources, only those issues outlined above and described in detail in Chapter II have been addressed. It is to be hoped, however, that the questions raised in the final pages of this report will lead us and other researchers to continue to analyze the currently available data and to expand upon this pioneering effort.

CHAPTER II

RESEARCH DESIGN AND METHODOLOGY

The preceding chapter presented the reader with an overview of this research project. In this chapter, the design of the project is discussed along with a brief description of the analytical techniques, which were utilized in an attempt to determine the prevalence and the nature of learning deficiencies among the population of incarcerated adults in the state prison systems in the United States.

The chapter is divided into seven sections. The first of these describes the site selection procedures which were utilized and presents descriptive information on the nine participating institutions. In the second section, sampling procedures are discussed and the question of possible sampling bias is raised. The third section of this chapter presents a discussion of the variables on which information was gathered. Logical groupings of these variables are introduced. In the fourth section, the instruments used in data collection are discussed and procedural information on the data collection process is presented. The fifth section outlines the research questions under investigation. The sixth section presents a brief discussion of the analysis procedures, and the final section addresses some of the limitations of the study.

Site Selection

The site selection process which was used in this study was designed in an effort to maximize the generality of the findings. Three states were identified, on the basis of regional representativeness, for participation in the research. The states which were selected were Louisiana, Pennsylvania, and Washington. In each of these states, two male institutions and one female institution were identified as representative in terms of size, security status, and type of institution. Contacts were made with both state and institutional officials to determine willingness to participate and the data collection process was then initiated in these states. Information on the nine institutions which participated in the study is summarized in TABLE I. All nine institutions were located in rural areas.

Sampling Procedure

Once the state departments of corrections and the institutions had been contacted and had agreed to participate in the study, a random sample of inmates was drawn from each of the nine institutions. Since participation was voluntary, the initial samples were considerably larger than the number of subjects desired. It was recognized that the volunteer nature of the study could introduce some bias. Therefore, limited information was collected from the prison records on a sample of those inmates who were originally identified but who chose not to participate. This is discussed in detail in the next chapter.

Site visits were scheduled to each of the nine institutions for the purposes of both identifying volunteers and orienting inmates and institutional staff to the design and goals of the study. During these visits, meetings were

TABLE I
INFORMATION ON INSTITUTIONS IN SAMPLE STATES

	POPULATION	Type	SECURITY STATUS
LOUISIANA			
Angola	4100	Male	Maximum
Hunt	1050	Male	Maximum
L.C.I.W.	310	Female	Combination
PENNSYLVANIA			
Graterford	2400	Male	Maximum
Camp Hill	1400	Male	Medium
Muncy	320	Female	Combination
WASHINGTON			
Walla Walla	1200	Male	Maximum
Shelton	1200	Male	Medium
Purdy	190	Female	Combination

held with the potential subjects. The research project was explained, with particular emphasis on what participation would mean in terms of time and effort, and questions were entertained. Although no financial incentive was given for participation, there were two somewhat concrete pay-offs which were offered. The first of these was the fact that inmates would be provided with copies of their test results on request. The second, was that a letter of appreciation would be placed in an inmate's file, again on request. Parole and commutation boards frequently consider voluntary participation in something such as this when reviewing cases for consideration.

Those inmates who agreed to participate in the research project were given signed letters briefly explaining the study and providing a guarantee of the confidentiality of all test results. It was explained to them that, although aggregate information would be provided both to the institutions and to the states, each subject would be assigned a code number so that no one could be identified with his or her scores. Additionally, during the orientation meetings, volunteers were required to sign human subject release forms granting Lehigh University the right to administer tests and to use all results and information gathered for research purposes. These release forms were designed in conjunction with the state officials in each of the three participating states to ensure their appropriateness and thoroughness from a legal perspective.

Definition of the Variables

The term learning deficiency refers to anything which has acted to hinder academic achievement. Operationally, any subject who was found to be functioning at or below the fifth grade level was considered learning deficient. The basic purpose of the study was to determine how many of the individuals in the sample were academically deficient and what specific information could explain these deficiencies. One might hypothesize that deficiencies could be related to a number of factors, including access to formal education, incidence of physical or sensory disabilities, and ability levels. Since, however, this topic area was previously characterized by such a dearth of information, it was considered important to collect data on as many potentially related variables as was possible and practical given the limitations of time and available resources. Data were collected, therefore, on the following seven groups of variables:

1. Demographic Variables. Demographic information collected included the age, race, sex, employment history, and physical condition of subjects.

2. Criminal Justice Variables. This category included the number and types of offenses committed, sentencing information, prior institutional commitments, and juvenile adjudication information.

3. Educational Background Variables. Information was gathered on the number of years of formal education, academic and vocational program participation, previous educational diagnoses and placements, and prior achievement and intelligence test results.

4. Family Background Variables. Data collected in this category included living situation during childhood, death of one or both parents during childhood, the number of siblings, and any childhood problems reported (such as child abuse or drug dependency).

5. Academic Achievement Variables. The Tests of Adult Basic Education were administered to subjects to collect information on academic achievement levels.

6. Ability Variables. The Wechsler Adult Intelligence Test-Revised was administered to subjects in order to collect information on ability levels. An adaptive behavior checklist was also used to address the issue of adaptive behavior as a component of mental retardation.

7. Disability Variables. Selected subtests of the Mann-Suiter Learning Disabilities Screening Tests were administered to subjects who were identified as learning deficient to ascertain whether there was any indication of a specific learning disability.

The issue of adaptive behavior and the instrument selected to address this issue warrant some comment. It is generally agreed that there is a necessity to incorporate a measure of adaptive behavior in the diagnosis of mental retardation. Unfortunately, attempts to measure adaptive behavior are often frustrated by ambiguities in the definition and by a lack of reliable instruments. The two critical factors considered in all definitions appear to be the level of personal independence and the degree of social responsibility expected. The nature of the population under examination in this study, to some extent, confounds any easy examination of these two factors. A prison inmate's personal independence has been limited, Ipso facto, by his or her incarceration and the fact that he or she has been found guilty of a crime which warrants removal from society indicates that his or her sense of social responsibility is suspect, at least. Adaptation to the institutional setting then becomes a doubly confounding factor. The AAMD Adaptive Behavior Scale--Institutional Version was initially selected for this study because it was the only scale available which was designed for an institutional population. It was quickly found, however, not only that many of the questions were irrelevant for this study, but also that the nature of many of the items predetermined that everyone in the sample would have been found to have deficits in adaptive behavior had this scale been used in its published form. Given the fact that the adaptive behavior measure was included in the study as a means of corroborating indications of mental retardation based on the results of the WAIS-R, it was felt that this purpose would be defeated if the scale were used in its entirety. Therefore, the Adaptive Behavior Checklist (a modification of the AAMD Adaptive Behavior Scale) was developed by the project staff to assess those skills which were felt to be relevant in addressing the issue of adaptive behavior as a component of mental retardation.

Data Collection Instruments and Procedures

Data were collected during site visits to the nine institutions. The following instruments were used in the process:

The Tests of Adult Basic Education (TABE)

These tests were used to obtain a measure of academic achievement and to identify the learning deficient inmates. They were administered to all available subjects. The TABE (Level M, 1976 edition) are achievement tests in reading, mathematics and language and are adapted from the 1970 edition of the California Achievement Test. Internal consistency reliabilities on Level M, Form 4 were assessed using the Kuder-Richardson Formula 20 and the resulting coefficients for the total battery are .97 and .98 depending on the grade level. A special machine readable answer sheet was designed by the project staff with permission of CTB/McGraw-Hill, publishers of the test.

The Wechsler Adult Intelligence Scale-Revised (WAIS-R)

This test was used to measure the ability levels of all available subjects as well as to identify those subjects who may be mentally retarded. The WAIS-R (revised in 1981) is an individually administered battery composed of six verbal and five non-verbal subtests which yield a Verbal, Performance, and Full Scale IQ. The reliabilities for all three IQ's have average coefficients of .97, .93, and .97 respectively.

The Mann-Suiter Learning Disabilities Screening Tests

Selected subtests were used to identify possible learning disabilities in all subjects who scored at or below the fifth grade level on any one or more of the subtests of the TABE. Those subtests that were designed to identify individuals who have possible visual or auditory disabilities were the following: Visual Motor, Visual Discrimination, Visual Closure, Visual Memory, Auditory Discrimination, Auditory Closure, and Auditory Memory.

The Adaptive Behavior Checklist

This checklist was derived from the American Association on Mental Deficiencies (AAMD) Adaptive Behavior Scale--Institutional Version. The AAMD Adaptive Behavior Scale was modified to be more appropriate in this setting.

The Learning Deficiencies Project Data Collection Form

This seven-page data collection form was used to record background information which was gathered from institutional files on subjects (completed on all available subjects).

The Learning Deficiencies Project Interview Form

This one page interview form was completed by project staff during the administering of the WAIS-R. Areas covered included educational background information and information on the individual's record.

Due to the constraints imposed by limited time, money and personnel, it would not have been feasible for the Lehigh University staff to personally administer all of the tests in each of the three states. Travel expenses alone would have been prohibitive. For this reason, much of the testing was subcontracted with Louisiana State University, the University of Washington, and Washington State University which were near the institutions where the data were being collected. Doctoral students in the psychology departments of these universities, all of whom had received previous training in psychological testing including WAIS-R administrating and scoring procedures, administered all WAIS-R's and TABE'S in both Louisiana and Washington. In Pennsylvania, the project staff administered all TABE's and local psychologists were hired to administer the WAIS-R's. All doctoral students who were involved were trained by the project staff in administration procedures for the TABE and were supervised by their respective university faculty in the WAIS-R administration and scoring. In addition, selected students from the Louisiana State University in Baton Rouge assisted in the administration of the Mann-Sulters and the Adaptive Behavior Checklists. Training and supervision were provided by the Lehigh University staff for these instruments. All other information was gathered directly by the Lehigh staff.

Research Questions

In order to address the issues which were discussed in the first chapter, the research team posed the following research questions:

1. Is there any indication of systematic bias introduced as a result of the voluntary nature of this research?

2. What is the nature of the sample in terms of background and demographic characteristics?

3. What percent of the sample is learning deficient and how does this compare to the general population?

4. What is the distribution of intelligence among the target population and to what extent does it compare to that of the norming sample for the WAIS-R?

5. What is the distribution of specific types of learning deficiencies in the adult offender population and how does this compare to the distribution in the general population?

6. What is the nature of the relationship between certain background and demographic variables and academic achievement levels among incarcerated adults?

7. What is the nature of the relationship between certain background and demographic characteristics and intelligence levels among incarcerated adults?

8. What is the nature of the relationship between background and demographic variables and the incidence of learning deficiencies among the adult offender population?

Analysis Procedures

There are two basic types of research questions which were of interest in this study. The first of these (questions 1-5) are descriptive in nature. The second type (questions 6-8) are questions of relationship. Statistical procedures for addressing the descriptive questions are relatively straightforward. The questions of relationship, however, are somewhat more complex. The first problem is that, due to the exploratory nature of this research, the number of independent variables which need to be investigated is prohibitively large to be considered simultaneously. It was decided, therefore, that subsets of potential predictors should be analyzed separately and that the best predictors from each subset should then be combined for the overall analyses. Multiple regression procedures were chosen for these analyses. The initial regression analyses were conducted using the following categories of variables:

1. Background and Demographic Variables
   a. Age
   b. Sex
   c. Ethnic Background
   d. Primary Source of Income (Prior to Incarceration)
   e. Incidence of Physical Problems Reported
   f. Family Background
   g. Childhood Problems
   h. Highest Grade Completed
2. Criminal Justice Variables
   a. Total Number of Offenses
   b. Type of Offenses
   c. Maximum Sentence
   d. Prior Institutionalization Reported

Four regression analyses were conducted for each of these two categories of independent variables. The first of these used academic achievement level for the entire sample as the dependent variable. The second analysis was designed to determine the nature of the relationships between the independent variables and Full Scale IQ, again for the total sample, and the third group of analyses

was done separately for the learning deficient and the non-learning deficient inmates in the sample, using the total TABE score as the dependent variable. Step-wise regression techniques were used for all of these analyses.

The second major problem was related to the nature of the independent variables. As can be seen from the list above, the independent variable set is made up of a combination of discrete and continuous variables. It was, therefore, necessary to create dummy variables to represent all of the discrete variables in a given analysis. The analytical techniques used are discussed in greater detail in the following chapter.

Limitations of the Study

Many of the problems encountered during the course of this research were related to a lack of researcher control over a number of factors inherent in the correctional system. One problem was directly related to the lack of incentive for participation. Some of the inmates who agreed to take part in the study did not show up for scheduled testing sessions because, in certain institutions, they lost their institutional pay for time spent taking the tests. Additional problems were caused by the fact that any inmates who were in administrative lock-up were not allowed out of their cellblocks for testing. Also, even though the list from which the original sample was drawn was supposed to include only those inmates who were expected to remain in the institutions for the duration of the data collection process, unexpected transfers, releases, deaths, and escapes reduced the sample size considerably.

Another problem was that it was necessary to work around institutional schedules in setting up the group and individual testing sessions. Often an individual had to be scheduled several times before he or she reported for testing. This caused problems in that the entire data collection process was exceedingly lengthy and difficult.

Data collection was also hampered by the fact that much of the information of interest was simply not available in the institutional records. Inconsistencies in reporting procedures among the individual institutions and states contributed to this difficulty as well. Even when information was available, it was often reported in different forms in the different institutions, leading to definition and interpretation problems. Each of the limitations cited above is discussed in greater detail in the final chapter of this report, as it relates to the recommendations for future research.

CHAPTER III

ANALYSIS OF THE DATA

In the preceding chapter, the research questions which were addressed in this study were presented and the analysis procedures utilized were briefly discussed. In this chapter, the results of these analyses are presented, in detail, together with some of the conclusions which can be drawn from the findings. The discussion is divided into five sections. In the first of these, comparative information is presented on the participants and the non-participants. This is done in order to address the question of possible sampling bias related to the fact that participation in the study was voluntary. The second section is basically descriptive and addresses the general questions regarding the nature of the sample. Sample means and frequency distributions are presented on the background and demographic variables which were investigated. All descriptive information is presented separately for the learning deficient and the non-learning deficient inmates in the sample . Additionally, when there were notable differences found by race, sex, and state, these are discussed.

The third major section of this chapter summarizes the results of the tests and other instruments which were used to identify learning deficiencies among the subjects. Data are discussed regarding the questions of the incidence and the nature of the deficiencies examined. Again, all information is presented separately for the learning deficient and the non-learning deficient inmates and ethnic, sex, and state differences are noted.

The fourth section of the chapter addresses the research questions regarding the relationships between the background and demographic characteristics of the sample and academic achievement and ability measures. The nature of these relationships is investigated separately for the learning deficient and the non-learning deficient inmates in the sample.

The fifth and final section of this chapter presents a discussion of the results of the analyses as they relate to the research questions posed earlier. Some conclusions and implications of these findings are presented briefly in this context. A more in depth discussion of the findings as they relate to future research, policy, and program design needs is presented in the last chapter of this report.

Comparative Information - Participants and Non-participants

One of the potential problems which exists in any research which depends on the voluntary participation of the subjects is the introduction of sampling bias. Even when the original sample has been drawn at random, there is a distinct possibility that the self-selection process will introduce some type of systematic bias into the characteristics of the final group of subjects.

This potential problem was of special concern in this project because of the nature of the research. If an inmate chose to participate, he or she was asked to take at least two standardized test batteries, the Tests of Adult Basic Education and the Wechsler Adult Intelligence Scale--Revised. In addition, it

was explained to all potential subjects, some individuals would be called for one or two other sessions to complete the Mann-Suiter Learning Disabilities Screening Tests and/or the Adaptive Behavior Scale. Given the fact that many of these individuals have had relatively little experience or success with formal education, this request could conceivably have posed a threat to the very people that the research was designed to assess. In other words, if any bias were introduced, it was expected that the higher achievers would, in general, be more willing to participate than would the lower achievers. Therefore, the number of inmates identified as learning deficient would not be representative of the true incidence in the population of interest.

In an attempt to ascertain whether such sampling bias was, in fact, introduced, certain information was gathered on a randomly selected group of those inmates who were in the original sample but who either did not attend the orientation sessions or who attended but chose not to participate. The information collected on these individuals consisted of ethnic background, achievement test scores, and intelligence test scores. All data on the non-participants were gathered from the institutional records. In order to increase the comparability of the information, comparisons were made, not with test scores from the TABE and the WAIS-R, but with the recorded information on the participants which was summarized on the project data collection form.

TABLE II on the following page presents a comparison of this information for the participants and the non-participants. It should be noted that the racial breakdowns for the two groups are not noticeably different, with Caucasians making up 43% of the participant group and 44% of the group of non-participants. This is encouraging because it indicates that the process of self-selection was not related to ethnic background.

A careful inspection of TABLE II shows that, for the total sample, there is some evidence that a bias was introduced by the self-selection process. The average full scale intelligence quotient for the non-participants ($\bar{X}$ = 88.33) is almost three points lower than that of the participants ($\bar{X}$ = 91.18). Unfortunately, as was anticipated, the difference indicates that there was a tendency for the more "intelligent" inmates to volunteer. It should be noted, however, that the magnitude of the point spread is not very large. The Revised Beta, which is the intelligence test from which these scores were taken, has a standard deviation of 15 (Kellogg & Morton, 1957). This difference of 2.85 points, therefore, represents only about one fifth of a standard deviation, which does not seem to be cause for great concern. It should be kept in mind, however, that the estimates of the numbers of mentally retarded inmates which are presented later in this chapter may be slightly lower than the true incidence in the population of interest due to this sampling bias.

A comparison of reading achievement test scores for the participants and the non-participants is presented in TABLE II. There is clearly no evidence, based on this comparison, that there was any systematic bias introduced into the sample in the area of reading achievement. In the area of math achievement, there is an indication that some bias, in the direction which had been anticipated, was introduced into the sample by the self-selection process. Although this bias appears to be slight, it was found to be statistically significant and, therefore, in light of the evidence, it is again emphasized

TABLE II

COMPARISON BETWEEN PARTICIPANTS AND NON-PARTICIPANTS

		Participants	Non-Participants
RACE	Caucasian	N = 318 43%	N = 183 44%
	Minority	N = 422 57%	N = 237 56%
IQ		$\bar{X}$ = 98.18 N = 740	$\bar{X}$ = 88.33 N = 476
ACHIEVEMENT	Reading	Grade Level = 7.7 N = 786	Grade Level = 7.6 N = 455
	Math	Grade Level = 5.9 N = 746	Grade Level = 5.6 N = 444

that the results in this study may represent an underestimate of the true numbers of learning deficient inmates in the population of interest.

Description of the Sample

One of the major purposes of this research was to examine the nature of the sample in terms of certain background and demographic characteristics. Information was collected on the ethnic background, the employment history, the physical condition, the criminal justice history, the educational background, and the family history of the approximately 1000 inmates in the sample. Most of this information was gathered on the project data collection form from the institutional records. In addition, however, certain self-reported information was collected during testing sessions. Much of this information was duplicated in the data collection form. This overlap was intentional and was done to provide a means of checking the reliability of the data. It was discovered, however, that most of the information in the institutional records was also based on self-report. In addition, there were frequently conflicting reports in the records themselves. For this reason, although the research team is confident that every reasonable attempt was made to check on the reliability of the data, it is still likely that some of the information is somewhat less than accurate.

All of the information in this section is presented in terms of means and/or frequencies. Although comparisons are made by race, sex, state, and group, no tests of significance were done. Due to the large sample sizes, almost any small difference between the means of two groups would have been statistically significant. This would not necessarily indicate, however, that these differences are important. For this reason, it was decided that the importance of any differences found among groups in the descriptive data was more appropriate to discuss than the statistical significance of these differences.

Demographic Variables

The ethnic breakdown of the sample is presented in TABLE III. This information is presented by sex and state, in addition to being summarized separately for the learning deficient and the non-learning deficient inmates. As can be seen from this table, more than 97% of the sample are either Afro-American or Caucasian. Because the number of subjects in each of the other ethnic groups was so small, it was decided that the categories should be collapsed to create a dichotomous variable. Since, in the general population (United States Census), Caucasians make up the majority (83%), the categories used were Caucasian and Minority. All non-Caucasian subjects were included in the Minority category. This dichotomous categorization was used in all subsequent analyses.

An inspection of the information in TABLE III indicates that there are notable sex and regional differences in the ethnic breakdown of the sample. While the majority of male subjects (61%) are minority group members, the majority of females (53%) are Caucasian. The Louisiana and Pennsylvania samples are both about 70% minority group members while the Washington sample is about 70% Caucasian. Dramatic differences are also seen between the learning deficient

TABLE III
ETHNIC BACKGROUND OF SUBJECTS

		Afro-American	Caucasian	Hispanic	Mexican	Indian	Asian	Other
SEX	Male	N = 492 58%	N = 335 39%	N = 7 .8%	N = 5 .6%	N = 9 1%	N = 1 .1%	N = 1 .1%
	Female	N = 85 44%	N = 102 53%	N = 1 .5%	N = 0 --	N = 3 1%	N = 2 1%	N = 0 --
STATE	LA	N = 264 69%	N = 120 31%	N = 1 .3%	N = 0 --	N = 0 --	N = 0 --	N = 0 --
	PA	N = 243 68%	N = 111 31%	N = 3 .8%	N = 0 --	N = 0 --	N = 2 .6%	N = 0 --
	WA	N = 70 23%	N = 206 69%	N = 4 1%	N = 5 2%	N = 12 4%	N = 1 .3%	N = 1 .3%
GROUP	LD_{ef}	N = 214 70%	N = 83 27%	N = 3 1%	N = 2 .7%	N = 1 .3%	N = 2 .7%	N = 0 --
	$NON\text{-}LD_{ef}$	N = 185 43%	N = 235 55%	N = 0 --	N = 1 .2%	N = 4 .9%	N = 0 --	N = 1 .2%
TOTAL SAMPLE		N = 577 55%	N = 437 42%	N = 8 .8%	N = 5 .5%	N = 12 1%	N = 3 .3%	N = 1 .1%

and the non-learning deficient groups, with the former being approximately 73% Minority and the latter about 55% Caucasian. It will be seen in later discussions that these differences present some difficulties in interpreting the results of some analyses. It is felt, however, that they represent, at least in the case of regional differences, true differences in the population.

The average age of the inmates in this sample was found to be approximately 30. This is comparable to United States Census figures which indicate that the national median age is 30.0 (28.8 for males; 31.3 for females). It is interesting to note that there were no notable differences in age by race or by state, although the average for women was found to be slightly higher ($\bar{X}$ = 32) than that for men.

Information on the primary language spoken in the subjects' homes during childhood was collected during the testing sessions. It was found that the vast majority (93%) of the sample was raised in homes in which English was the primary language used. In addition, 5% reported that a combination of languages was spoken, of which English was generally one. The percentages in the other two categories (Spanish and Other) were so small that this variable was eliminated from consideration as a possible predictor of ability and achievement measures due to the lack of variability.

The information on the employment history (primary source of income prior to incarceration) of the sample is summarized in TABLE IV. It can be seen that close to 50% of the sample fell into the first two categories, Never Employed and Occasional Jobs. Of the remaining 50%, a high percentage (84%) were classified as either laborers or semi-skilled workers. Again, therefore, the six categories were collapsed into two. The first of these included those subjects either who were never employed or who had held a variety of short term or occasional jobs. The second category included all those subjects for whom a consistent work history of any kind was reported.

TABLE V presents the information which was collected on the incidence of physical problems reported for the inmates in the sample. All of these data were gathered from the institutional records and it should be noted that there was very little consistency in the availability of the information in this area. This may, in part, explain the high percentage of the subjects (80%) who fall into the first category, No Problems. Regardless of this, it is felt that the number of individuals who fall into each of the specific problem categories is so small that it would be inappropriate to maintain the original breakdown for subsequent analyses. For this reason, this variable was dichotomized, the two levels being identified as No Problems and Problems.

Family Background Variables

Another category of background data investigated was that of the family background of the inmates. Information was collected initially on a wide range of family background events, including whether the individual was raised in an intact family, a broken home, by one or the other parent as a single parent, in an institutional environment, a foster home, a group home, or in some other

TABLE IV

PRIMARY SOURCE OF INCOME PRIOR TO INCARCERATION

	Learning Deficient	Non-Learning Deficient	Total Sample
Never Employed	44 15%	57 14%	147 14%
Occasional Jobs	103 34%	147 35%	354 34%
Laborer	75 25%	82 20%	224 22%
Semi-Skilled	58 19%	86 21%	217 21%
Skilled	18 6%	33 8%	72 7%
Professional	1 .3%	14 3%	15 1%

TABLE V

INCIDENCE OF PHYSICAL PROBLEMS REPORTED

	Learning Deficient	Non-Learning Deficient	Total Sample
No Problems	238 79%	320 76%	825 80%
Sensory Problems	29 10%	49 12%	87 8%
Serious Illness	3 1%	5 1%	9 .9%
Serious Accident	2 .7%	1 .2%	5 .5%
Neurological Problems	8 3%	1 .2%	10 1%
Other Problems	4 1%	21 5%	39 4%
Combination of Problems	18 6%	25 6%	61 6%

environment.

During the data collection process, it was quickly seen that the majority of subjects had been raised in some combination of these environments. For this reason, the variable of family situation was coded with only three categories. These were Stable Home, Unstable Home, and Institution. An individual was classified as having been raised in a Stable Home if the only situation which was reported was an intact family. Any combination of situations, such as someone who was born into a stable home, but whose parents later divorced, was classified as Unstable. In the third category, Institution took precedence over both of the first two. In other words, if an individual was raised in either a stable or an unstable home but was institutionalized for a time during childhood, that individual was placed in the third category.

TABLE VI presents the information on family background. For the analyses, these categories were collapsed even further. The 12% for whom no information was reported were eliminated and the 9% who were institutionalized were combined with the 51% for whom an unstable background was indicated. According to this new catagorization, 31.48% of those on whom information was available were raised in stable environments and 68.52% were raised in an unstable environment.

Table VII presents information on the incidence of childhood problems which was reported in the institutional records. It should be noted that the individuals in the final category, Combination of Problems, most often were both drug and alcohol abusers. In general, about 50% of the sample had a history of some childhood problems. For the purposes of the analysis, the categories of this variable were collapsed into two, the first of these including those for whom no problems were reported and the second including those for whom any one or combination of problems was noted in the records.

Educational Variables

Information on the educational and vocational backgrounds of the inmates in the sample was collected both from the institutional records and during testing sessions. As was stated earlier, some of this information was collected twice. In the cases where this was done, both self-report data and data from the records are summarized in one table in order to facilitate comparisons.

The information on the highest grade completed is presented in TABLE VIII. Because of the inconsistency in the availability of this information in the institutional records, this was one of the questions which was asked in the interview. The information from both of these sources is presented. It should be noted that the mean for the total sample is essentially the same in both cases. The slight difference which is seen in TABLE VIII can be attributed to the fact that the number of inmates in each group is different. The scale which was used in reporting these results was based on total years of formal education, not counting repeated grades. Any college experiences were added to the highest grade. In other words, an inmate who had completed two years of college would have a value of 14 on this variable.

According to the 1980 United States Census Report, white males nationally have completed an average of 12.2 years in school. Black males have com-

TABLE VI

FAMILY BACKGROUND

	Learning Deficient	Non-Learning Deficient	Total Sample
None Reported	46 15%	58 14%	129 12%
Stable Home	74 24%	130 31%	288 28%
Unstable Home	161 53%	203 48%	535 51%
Institution	24 8%	35 8%	92 9%

TABLE VII

CHILDHOOD PROBLEMS REPORTED

	Learning Deficient	Non-Learning Deficient	Total Sample
None Reported	167 55%	208 55%	522 50%
Abused	8 2%	17 4%	40 4%
Runaway	5 1%	17 4%	32 3%
Suicidal	4 1%	6 1%	14 1%
Drug Abuse	60 20%	83 20%	202 19%
Alcohol Abuse	12 4%	11 2%	37 4%
Combination	49 16%	84 20%	195 19%

TABLE VIII

HIGHEST GRADE COMPLETED

		Current Sentence	Juvenile
RACE	Caucasian	$\bar{X}$ = 10.2 s = 1.97 N = 422	$\bar{X}$ = 10.6 s = 2.38 N = 288
	Minority	$\bar{X}$ = 9.9 s = 2.03 N = 579	$\bar{X}$ = 10.1 s = 2.32 N = 435
SEX	Male	$\bar{X}$ = 9.9 s = 2.04 N = 808	$\bar{X}$ = 10.2 s = 2.38 N = 563
	Female	$\bar{X}$ = 10.4 s = 1.83 N = 193	$\bar{X}$ = 10.7 s = 2.23 N = 160
STATE	LA	$\bar{X}$ = 9.8 s = 2.19 N = 369	$\bar{X}$ = 9.7 s = 2.27 N = 302
	PA	$\bar{X}$ = 10.0 s = 1.63 N = 337	$\bar{X}$ = 10.4 s = 2.05 N = 241
	WA	$\bar{X}$ = 10.3 s = 2.13 N = 295	$\bar{X}$ = 11.2 s = 2.58 N = 180
GROUP	LD_{ef}	$\bar{X}$ = 9.4 s = 1.83 N = 289	$\bar{X}$ = 9.3 s = 2.19 N = 244
	NON-LD_{ef}	$\bar{X}$ = 10.3 s = 2.13 N = 413	$\bar{X}$ = 11.0 s = 2.18 N = 357
TOTAL SAMPLE		$\bar{X}$ = 10.0 s = 2.01 N = 1001	$\bar{X}$ = 10.3 s = 2.36 N = 723

pleted 10.5 years; white females have completed an average of 11.8 years, and black females have completed 10.6. Although the means from this prison sample may be different from the national averages, it is interesting to note that relative differences by race and by sex are quite consistent with national data.

TABLE IX presents information which was collected during the testing sessions on the highest level of schooling for the inmates in the sample. This information should be examined in conjunction with the information presented in TABLE VIII. There are notable differences among groups in all categories. More than twice as many minority group members as Caucasians were reported to have left school in the elementary grades and only about half as many of the minority group subjects have attended college. Twice as many males were reported to have dropped out of elementary school as females and more females (18%) than males (11%) reported attending post-secondary school. The state differences are not very dramatic at the elementary level; but, if one looks at the information for post-secondary participation, it is clear that a far higher percentage of the subjects in the state of Washington (16%) have attended college than have those in the other two states (between 8% and 9%). Dramatic differences can also be seen in the information for the learning deficient and the non-learning deficient inmates in the sample. In the learning deficient group, 8% attended school only on the elementary level and only 3% were reported to have taken any post-secondary courses. In contrast, only 3% of the non-learning deficient group left school in the elementary grades and 19% of these individuals have attended college. It should be noted that much of the college participation which was noted in the records took place while the inmate was in the institution.

Another category of educational information which was of interest was the individual's class placement during elementary and secondary school. Of primary interest was any indication of placement in special education programs. The information which was collected from the institutional records on this variable is summarized in TABLE X. It should be noted, in examining this information, that there was no indication of school placement in more than 50% of the records. If one views the proportion of individuals who were placed in special classes as a percentage of those for whom the information was available, the indication is that almost 16% of these individuals were placed in special education programs at the elementary level and close to 20% were placed in such programs at the secondary level. In any event, it is encouraging to note that a much higher percentage of the inmates who were identified as learning deficient on the basis of TABE results had been previously identified as having problems at some point during their schooling. Although placement figures are not available on a national basis, research indicates that an average of 3% of school age children are diagnosed as mentally retarded (Mercer, 1973) and 2-3% are diagnosed as learning disabled (Blackhurst & Berdine, 1981).

TABLE XI presents the information which was gathered from the institutional records on previous educational diagnoses which were reported for the inmates in the sample. Again, it is clear that this information was simply not available in most (89%) of the cases. Of those inmates for whom diagnostic information was available (N = 117), about 4% were previously diagnosed as learning disabled, 14% were diagnosed as socially and/or emotionally disturbed, and 82% had some other educational diagnosis reported. This final category was com-

TABLE IX

HIGHEST ACADEMIC LEVEL REPORTED

		Elementary	Secondary	Post-Secondary
RACE	Caucasian	9 3%	232 79%	54 18%
	Minority	33 7%	369 83%	41 9%
SEX	Male	37 6%	472 82%	66 11%
	Female	5 3%	129 79%	29 18%
STATE	LA	24 8%	255 84%	25 8%
	PA	8 3%	216 88%	21 9%
	WA	10 5%	130 69%	49 26%
GROUP	LDef	21 8%	221 89%	7 9%
	NON-LDef	9 3%	287 78%	70 19%
TOTAL SAMPLE		42 6%	601 81%	95 13%

TABLE X

ELEMENTARY AND SECONDARY SCHOOL PLACEMENT

		Learning Deficient	Non-Learning Deficient	Total Sample
ELEMENTARY	None Reported	171 56%	215 57%	558 53%
	Regular Class	90 30%	201 30%	410 39%
	Special Class	44 14%	10 14%	77 7%
SECONDARY	None Reported	183 60%	242 60%	601 58%
	Regular Class	73 24%	172 40%	348 34%
	Special Class	47 16%	12 3%	86 8%

TABLE XI

PREVIOUS EDUCATIONAL DIAGNOSES

	Learning Deficient	Non-Learning Deficient	Total Sample
None Reported	252 83%	405 95%	929 89%
Learning Disabled	5 2%	0 -	5 1%
Socially Emotionally Disturbed	7 2%	6 1%	16 2%
Other Diagnosis	41 13%	14 4%	96 9%

posed mostly of individuals who had been classified as either mentally retarded or brain damaged. It is interesting to note that a much higher percentage of the learning deficient inmates (17%) were reported to have been previously diagnosed than of the non-learning deficient subjects (5%).

Limited information was collected during the testing sessions on vocational training and certification. It was found that 29% of the sample reported some type of training and 17% indicated that they were certified in one or more vocational area. It should be noted, however, that these figures may reflect the inmates' participation in vocational programs in the institutions and that the certification reported is not necessarily to be construed as reflecting the incidence of formal vocational certification programs. Because of the general lack of availability of most of the educational and vocational information, the only educational variable which was used in subsequent analyses was the highest grade completed.

Criminal Justice Variables

Information was collected on the juvenile and adult criminal justice histories of the inmates in the sample. Data on adjudication as a delinquent were obtained both from the records and in the testing sessions. This information is summarized in TABLE XII on the following page. It is clear from an examination of this table that the information from these two sources is not very consistent. In fact, in all but one of the groups, the percentages are reversed for these figures. According to the institutional records, a higher percentage of the inmates were adjudicated as delinquent in every category. Self-reported information, however, indicates just the opposite. Because of this inconsistency, the information on adjudication was not utilized in any subsequent analyses.

Information was collected from the institutional records on the types of offenses which have been committed by the individuals in the sample. Although the offense information gathered was in the form of specific crimes, it was found that the three states were not consistent in their definitions of certain types of offenses. Additionally, multiple offenses were reported in many cases. It was felt, therefore, that a simpler categorization system was desirable in order to summarize the vast amount of data which were collected. For this reason, two types of crimes were identified, violent and non-violent. Anyone for whom a combination of violent and non-violent offenses was reported was included in the former category. Offense information was collected separately for the current offenses, juvenile offenses, and prior adult offenses. It is interesting to note that the incidence of violent offenses increased steadily over time. In the juvenile offense category, violent offenses were reported in about 47% of the cases. This figure increased to 50% for prior adult offenses and to 68% for the current offenses.

Data were gathered on the number of offenses subjects have been convicted of, including the number of offenses for which the individual is currently serving time, the number of juvenile offenses, and the number of prior adult offenses. Unfortunately, a value of zero (0) was recorded for the number of offenses either if it were reported that the individual had no offenses or if there were no information in the records. For this reason, these figures are

TABLE XII

ADJUDICATION AS DELINQUENT

RECORDS SELF REPORT		Learning Deficient	Non-Learning Deficient	Total Sample
	Adjudicated	119 63%	164 56%	423 60%
	Not Adjudicated	69 27%	131 44%	277 40%
	Adjudicated	117 47%	218 40%	316 43%
	Not Adjudicated	134 53%	218 60%	421 57%

not thought to be very reliable. For the total sample, the subjects are currently serving sentences for an average of 2 offenses.

Information was also collected on the maximum sentences the inmates in the sample are serving for their current offenses. The median sentence for the total sample is 12 years. Since there were 67 inmates in the sample who are serving life sentences. About 60% of the inmates in the sample are serving sentences of 15 years or less and approximately 31% are serving between 15 years and 40 years.

TABLE XIII furnishes information which was gathered from the institutional records on whether the subjects had previously served time in an institution, either as a juvenile or as an adult. It should be noted that the percentages reported in this table reflect the percent of those for whom prior offenses were reported, not percents of the entire sample. It can be seen that, for the total sample, approximately 21% of the inmates for whom juvenile offenses were reported spent time in a juvenile institution. This figure increases to about 43% for adult offenses.

In summary, much of the information collected on the criminal and juvenile justice backgrounds of the individuals in the sample may present a somewhat biased picture of the population of interest. In cases where such a bias exists, however, it leads in every instance to an underestimate rather than an over-estimate of the figures. This is due to the lack of information in the institutional records. In general, the indication is that, of the total sample, at least 23% of the inmates had some record of juvenile offenses and over 48% were reported to have been convicted of one or more prior adult offenses. Of these individuals, 21% were committed to an institution as a juvenile and 43% had previously served time in an adult institution. A majority of inmates in the sample (68%) have been convicted of violent offenses and over 6% are serving life sentences.

Test Results

The ability and disability variables which were discussed in Chapter III were assessed by means of both standardized and informal testing procedures. The instruments which were utilized were the Tests of Adult Basic Education, the Wechsler Adult Intelligence Scale--Revised, the Mann-Suiter Learning Disabilities Screening Tests, and an Adaptive Behavior Checklist. Each of these was discussed in the previous chapter. In this section, the results of these tests are presented and discussed.

The Tests of Adult Basic Education

The TABE (Level M, Form 4) were administered to the subjects in order to determine the academic achievement levels of these individuals. The TABE were also used to identify the learning deficient inmates in the sample. These individuals were then screened further to try to identify the nature of this deficiency. Although repeated attempts were made to test all the inmates in the sample, the institutional limitations discussed earlier made this impossible. A total of 765 inmates was given the TABE. The results of these tests are presented in TABLE XIV by race, sex, state, and group.

TABLE XIII

PRIOR INSTITUTIONALIZATION

JUVENILE AND ADULT

	Learning Deficient	Non-Learning Deficient	Total Sample
Juvenile	56 19%	84 20%	220 21%
Adult	124 42%	163 39%	442 43%

TABLE XIV

TESTS OF ADULT BASIC EDUCATION--TOTALS

		Reading Total	Math Total	Total
RACE	Caucasian	8.1 N = 317	7.4 N = 312	7.3 N = 318
	Minority	6.7 N = 445	6.7 N = 446	6.5 N = 447
SEX	Male	7.1 N = 584	6.7 N = 582	6.5 N = 587
	Female	7.6 N = 178	6.9 N = 176	7.0 N = 178
STATE	LA	6.6 N = 283	6.4 N = 282	6.3 N = 283
	PA	7.3 N = 300	6.4 N = 301	6.3 N = 303
	WA	8.1 N = 179	7.3 N = 175	7.3 N = 179
GROUP	LD_{ef}	5.4 N = 319	5.1 N = 319	4.7 N = 319
	NON-LD_{ef}	9.2 N = 447	7.9 N = 447	8.2 N = 447
TOTAL SAMPLE		7.2 N = 762	6.7 N = 758	6.7 N = 765

As can be seen from an inspection of this table, the average grade levels of the sample on the TABE are 7.2 for reading and 6.7 for math. The overall mean (total test score) represents a grade level equivalent of 6.7. When this information is compared to the information on the highest grade completed, it can be seen that the inmates in the sample, in general, are functioning an average of more than three years below grade level. When one looks at this comparison separately for the learning deficient and the non-learning deficient inmates in the sample, however, it is clear that the former group accounts for most of this difference. The inmates who were identified as learning deficient are functioning an average of almost five years below their highest grade completed in overall academic achievement. In contrast, the non-learning deficient group are only an average of two years below grade level.

In addition to the obvious differences between these two groups, it is also evident that there are differences in academic achievement by ethnic background and by state. Slight sex differences are also found but the magnitude of these does not appear to be very notable. An examination of the TABE results by ethnic background reveals that the Caucasian subjects in the sample are achieving a minimum of about one grade level above the subjects from minority groups. This finding is consistent with national figures which indicate that, on a standardized achievement test, white secondary school students performed about one standard deviation above black students in both reading and math (Dearman & Plisko, 1981).

The regional differences which are evident in TABLE XIV are also consistent with national data. It has been found that the academic achievement levels in the South are generally lower than those in the Northeast and Northwest. It also should be noted that there may be an interaction between region and race.

A total of 319 of the 765 subjects who were give the Tests of Adult Basic Education was found to be functioning at the fifth grade level or below on one or more of the six subtests. This figure indicates that about 42% of the sample are learning deficient, according to the operational definition of learning deficiencies utilized in this study. Further screening was done on these individuals to try to determine the nature of the deficiency. One of the possible explanations for low academic functioning, which was investigated, was overall intellectual functioning.

The Wechsler Adult Intelligence Scale--Revised

The WAIS-R was used to assess the general abilities of the inmates in the sample. It also served the purpose of identifying the possibly mentally retarded inmates. The results of this test are summarized in TABLE XV. Again, institutional and other factors made it impossible to administer this test to all of the inmates in the sample, although all realistic attempts were made to do so. A total of 756 inmates were given the WAIS-R.

An inspection of the information in TABLE XV shows that the average Full Scale intelligence quotient for the sample is approximately 86, with a standard deviation of 12. In general, this means that the sample, as a whole, scored almost one standard deviation below the national average for this test ($\bar{X}$ = 100, s = 16). It is clear that there are substantial differences in the scores on

the WAIS-R by race, state, and group. The data for the two ethnic groups indicate that the Caucasians in the sample scored an average of ten points higher on the total test (Full Scale IQ) than did the subjects from minority groups. This finding is consistent with the findings of the Psychological Corporation, the publishers of the revised WAIS (Herman, 1982). In norming the test nationally, it was found that the Caucasian subjects had an average Full Scale IQ of 101.4 while the black members of the norming group averaged 86.8. The standard deviations for these two groups were 14.7 and 12.9 respectively.

The state differences which were found in this study are also supported by norming data. In general, the South, as a region, scored lower on the WAIS-R than did the Northeast and the Northwest. The average amount of the differences was almost four points in Full Scale IQ scores. As in the case of the results of the Tests of Adult Basic Education, there is most likely an interaction between ethnic background and region which contributes to the magnitude of these differences, both nationally and in this study.

An inspection of the information presented in TABLE XV for the learning deficient and the non-learning deficient inmates in the sample shows that the latter performed about 14 points above the former on the total test. This represents a difference of almost one standard deviation. It is also interesting to note that the standard deviation for the learning deficient inmates (7.0) is substantially lower than that for the non-learning deficient subjects (12.9), indicating that there is considerably less variability in the scores of the learning deficient inmates. Additionally, the overall mean for this group (77.8) is less than three points above the cut-off which was used to identify those subjects who may be mentally retarded (less than 75).

It must be kept in mind in interpreting the results of the WAIS-R that the test does not purport to measure "innate ability" exclusively, although this is one component. A great deal of what the test measures is related to educational and cultural background, and scores are not to be viewed as static. The assumption is that, given the opportunity to increase one's experiential horizons, one can, in fact, improve scores on the WAIS-R. Therefore, the results of this test should be considered in conjunction with the other information gathered in this study, especially the scores on the TABE, which indicate that the inmates in the sample, in general, are academically depressed. The correlations between Full Scale IQ and achievement test scores are high (.64 for reading; .61 for math), which is a further indication that the WAIS-R scores are, to a great extent, a reflection of academic level.

The distributions of scores on the WAIS-R are presented graphically in TABLES XVI AND XVII. In each of these tables, the percentage of the sample who scored in certain score intervals is plotted against the normal expectations for the WAIS-R, based on the national norming sample. This information is presented separately for the learning deficient and the non-learning deficient inmates (TABLE XVI) and for the total sample (TABLE XVII).

The TABE and the WAIS-R were used to identify those inmates in the sample who either had indications of learning deficiencies or of mental retardation. These individuals were then scheduled for further screening with either the Mann-Suiter Learning Disabilities Screening Tests or the Adaptive Behavior

TABLE XV

WECHSLER ADULT INTELLIGENCE SCALE--REVISED

		Verbal IQ	Performance IQ	Full Scale IQ
RACE	Caucasian N = 307	$\bar{X}$ = 90.8 s = 13.8	$\bar{X}$ = 95.7 s = 13.8	$\bar{X}$ = 92.2 s = 13.8
	Minority N = 451	$\bar{X}$ = 82.3 s = 9.5	$\bar{X}$ = 84.6 s = 10.6	$\bar{X}$ = 82.1 s = 9.3
SEX	Male N = 588	$\bar{X}$ = 85.7 s = 12.4	$\bar{X}$ = 89.4 s = 13.2	$\bar{X}$ = 86.3 s = 12.5
	Female N = 170	$\bar{X}$ = 85.9 s = 11.4	$\bar{X}$ = 88.0 s = 13.0	$\bar{X}$ = 85.9 s = 12.0
STATE	LA N = 316	$\bar{X}$ = 85.5 s = 9.9	$\bar{X}$ = 84.9 s = 11.6	$\bar{X}$ = 81.8 s = 9.9
	PA N = 247	$\bar{X}$ = 86.8 s = 12.3	$\bar{X}$ = 89.3 s = 13.4	$\bar{X}$ = 86.9 s = 12.7
	WA N = 195	$\bar{X}$ = 91.4 s = 12.8	$\bar{X}$ = 95.6 s = 12.6	$\bar{X}$ = 92.5 s = 12.4
GROUP	LDef N = 256	$\bar{X}$ = 77.6 s = 6.6	$\bar{X}$ = 81.0 s = 9.6	$\bar{X}$ = 77.8 s = 7.0
	NON-LDef N = 379	$\bar{X}$ = 91.5 s = 12.8	$\bar{X}$ = 94.6 s = 13.3	$\bar{X}$ = 92.1 s = 12.9
TOTAL SAMPLE		$\bar{X}$ = 85.7 s = 12.2	$\bar{X}$ = 89.1 s = 13.2	$\bar{X}$ = 86.2 s = 12.4

TABLE XVI

WAIS-R IQ DISTRIBUTIONS PLOTTED ON NORMAL DISTRIBUTION (BY GROUP)

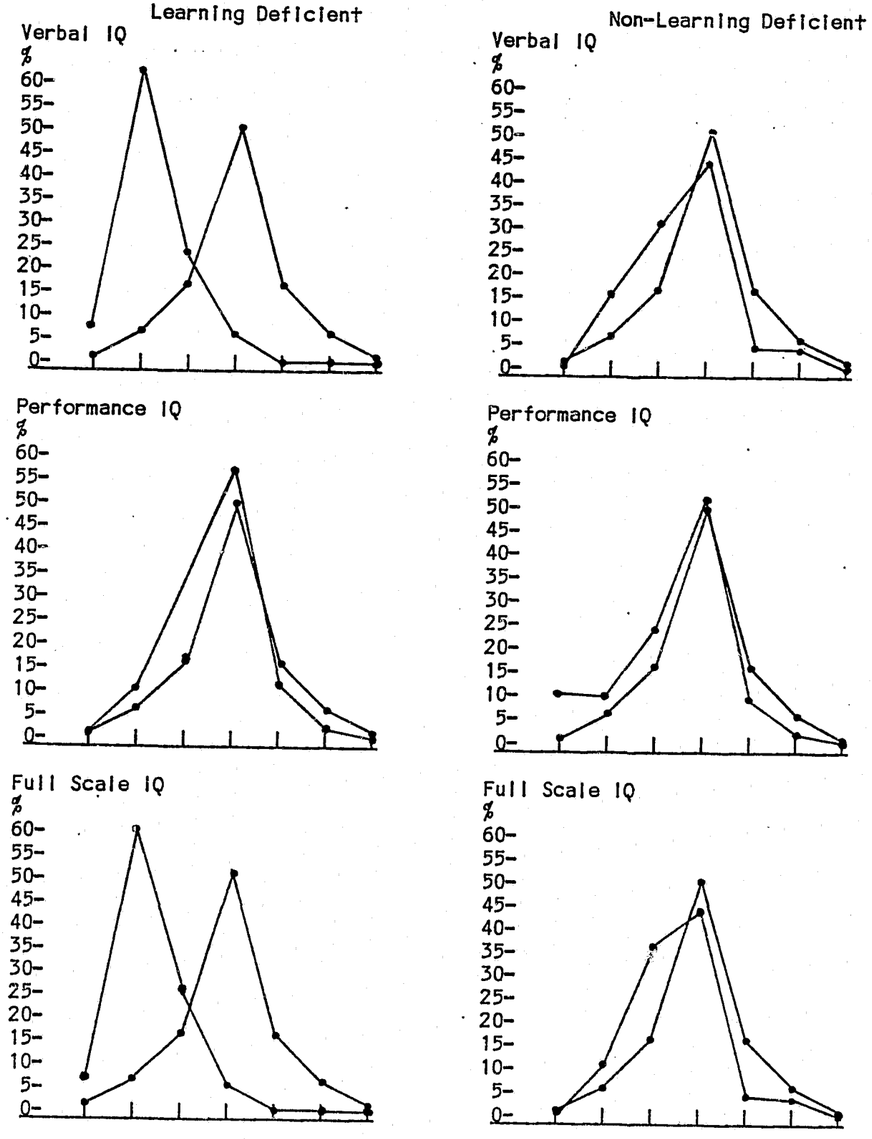
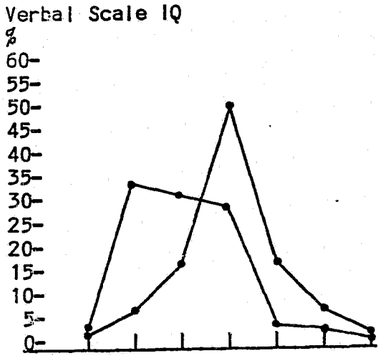
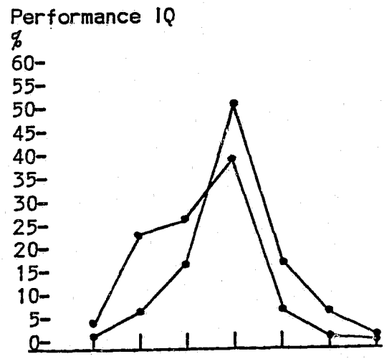
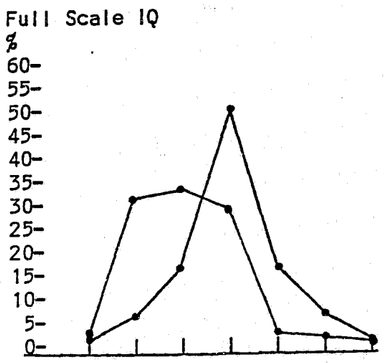


TABLE XVII

WAIS-R DISTRIBUTIONS PLOTTED ON NORMAL DISTRIBUTION (TOTAL SAMPLE)







Checklist. TABLE XVIII summarizes this information. Chi Square tests for significance were performed to determine whether there were statistically significant differences by race, sex, or state. It can be seen from an inspection of the information in this table that there are significant differences in the incidence of learning deficiencies in all three categories and in indications of mental retardation both by race and by state.

The direction of each of these differences is again consistent with national differences by race and by region. Some possible explanations of these differences are discussed in the final chapter of this report. Suffice it to say at this point that the issue of instrument bias needs to be investigated for both the TABE and the WAIS-R before solid conclusions can be drawn about the significance of these differences.

The Mann-Suiter Learning Disabilities Screening Tests

Certain subtests of the Mann-Suiter Learning Disabilities Screening Tests were administered to those inmates in the sample who were identified as learning deficient. Not all eligible inmates were available for testing. A total of 237 of those who scored at or below the fifth grade level on one or more TABE subtests was given the Mann-Suiter. The results of these screening tests are summarized in TABLE XIX.

It is important to note that the scoring criteria which were used in identifying those inmates with potential problems on the subtests of the Mann-Suiter were based on recommendations for children. Even so, it can be seen that 82% of those tested showed evidence of problems in one or more of the subtests. The areas in which the most errors were made were Visual Motor, Visual Closure, Auditory Discrimination, and Auditory Closure. Caution must be taken in interpreting the results of these tests and it must be kept in mind that they were designed for screening rather than diagnostic purposes.

Keeping these cautions in mind, it can be said that there is evidence to indicate that as many as 25% of the inmates had some symptoms of a specific learning disability. TABLE XX and TABLE XXI summarize these results from a slightly different perspective. The first of these presents the numbers and percentages of individuals, by race, sex, and state, who showed indications of either visual or auditory problems. These figures represent those inmates who had problems on one or more of the visual subtests or on one or more of the auditory subtests. The percentages are based on the total number of individuals in a given category who were administered the Mann-Suiter Learning Disabilities Screening Tests. A Chi Square Test of Significance is reported for each classification (by race, sex, and state).

An examination of the tests for significant differences indicates that, in the visual area, there are no race or sex differences, but there are significant state differences. In the area of auditory skills, significant differences are seen both for race and state, with a substantially larger percentage of the minority group subjects and a larger percentage of the inmates from Louisiana showing evidence of auditory problems. In all fairness, it is felt that at least some of these differences are attributable to dialectic variations, since the tests draw heavily on standard English.

TABLE XVIII

INDICATIONS OF LEARNING DEFICIENCIES AND MENTAL RETARDATION

		Learning Deficiencies		Mental Retardation	
		N	%*	N	%**
RACE	Caucasian	83	26	27	9
	Minority	222	54	82	20
Chi Square Test for Race		$\chi^2_1 = 55.37$ (p = .000)		$\chi^2_1 = 15.84$ (p = .000)	
SEX	Male	209	44	85	15
	Female	47	30	26	15
Chi Square Test for Sex		$\chi^2_1 = 8.37$ (p = .004)		$\chi^2_1 = .020$ (p = .888)	
STATE	LA	127	48	75	24
	PA	89	42	29	12
	WA	40	25	7	4
Chi Square Test for State		$\chi^2_2 = 22.56$ (p = .000)		$\chi^2_2 = 41.31$ (p = .000)	

* Percent of those in a given category who took the TABE

** Percent of those in a given category who took the WAIS-R

TABLE XIX

MANN-SUITER LEARNING DISABILITIES SCREENING TESTS

Test	Problems N	Problems %	No Problems N	No Problems %
Visual Motor	101	42.62	136	57.38
Visual Discrimination	2	.84	235	99.15
Visual Closure Part A	8	2.39	228	96.61
Visual Closure Part B Level 1	15	6.40	220	93.63
Visual Closure Part B Level 2	26	11.91	209	88.93
Visual Closure Part B Level 3	44	18.75	191	81.27
Visual Closure Part B Level 4	62	26.39	173	73.62
Visual Memory	35	14.83	201	85.17
Auditory Discrimination Part A	20	8.53	215	91.49
Auditory Discrimination Part B	77	32.63	159	67.38
Auditory Closure	135	57.68	99	42.31
Auditory Memory	38	16.08	198	83.99
Any One or More Tests	192	81.70	43	18.30

TABLE XX

INDICATIONS OF VISUAL AND AUDITORY DEFICITS

		Visual		Auditory	
		N	%	N	%
RACE	Caucasian N = 61	24	40	36	59
	Minority N = 169	69	41	125	75
Chi Square Test for Race		$\chi^2_1 = 0$ (p = 1.00)		$\chi^2_1 = 4.66$ (p = .031)	
SEX	Male N = 168	72	43	123	74
	Female N = 29	12	41	20	69
Chi Square Test for Sex		$\chi^2_1 = 0$ (p = 1.00)		$\chi^2_1 = .089$ (p = .766)	
STATE	LA N = 100	54	54	79	81
	PA N = 71	16	23	44	62
	WA N = 28	14	50	20	71
Chi Square Test for State		$\chi^2_2 = 16.57$ (p = .000)		$\chi^2_2 = 7.92$ (p = .000)	

Note: Not all subjects completed all subtests

TABLE XXI

INDICATIONS OF SPECIFIC SKILL DEFICITS - MANN-SUITER

		Discrimination Skills		Closure Skills		Memory Skills	
		N	%	N	%	N	%
RACE	Caucasian N = 61	23	38	17	28	24	39
	Minority N = 169	63	38	51	30	38	23
Chi Square Test for Race		χ^2_1=0 (p=1.00)		χ^2_1=.011 (p=.92)		χ^2_1=5.64 (p=.02)	
SEX	Male N = 168	62	37	54	32	45	27
	Female N = 29	14	48	7	24	10	35
Chi Square Test for Sex		χ^2_1=.912 (p=.34)		χ^2_1=.414 (p=.52)		χ^2_1=.420 (p=.52)	
STATE	LA N = 100	41	42	39	39	27	27
	PA N = 7	19	27	14	20	15	21
	WA N = 28	16	57	8	29	13	46
Chi Square Test for State		χ^2_2=8.70 (p=.01)		χ^2_2=6.77 (p=.03)		χ^2_2=6.43 (p=.04)	

Note: Not all subjects completed all subtests

The information in TABLE XXI presents the results of the Mann-Suiter Learning Disabilities Screening Tests by specific skill areas. These figures represent combinations of the auditory and visual discrimination tests, the auditory and visual closure tests, and the auditory and visual memory tests. The only significant race differences which were found were in the area of memory skills. It is felt that these differences are largely due to differences in learned language skills. There were no significant sex differences found in any of these three areas but there were clear differences among the states. One possible explanation of these state differences relates to the differential ethnic breakdowns of the sample in the three states. It has already been suggested that there may be some indication of racial bias in the TABE. Since the administration of the Mann-Suiter was based on TABE results, it is likely that the process used to identify the learning deficient inmates was somewhat more accurate for the Caucasian subjects than for the minority subjects. In general, great care should be taken in interpreting these results. The Mann-Suiter Tests are screening rather than diagnostic tests and, at best, one can only say that they provide indications of the need for further and more intensive testing in the area of specific learning disabilities among prison inmates.

The Adaptive Behavior Checklist

The results of the Adaptive Behavior Checklist (a modification of the AAMD Adaptive Behavior Scale--Institutional Version) are presented in TABLE XXII. This checklist was primarily used to address the issue of adaptive behavior as a component of mental retardation. It was given to those inmates in the sample who received a WAIS-R Full Scale IQ below 75. Of the eligible subjects, a total of 77 was interviewed to ascertain their adaptive skills. A structured interview was used in an effort to control for sources of error due to the lack of interrater reliability. In addition, initial ratings were recorded by two separate raters simultaneously. It was found that the impressions of the two raters were either identical or were within one point in either direction.

Relationships among the Variables

The questions of relationships among the variables were addressed by means of multiple regression techniques. Although the original list of possible predictor variables was quite extensive, inconsistent reporting procedures and lack of available information caused this list to be pared considerably. As was noted previously, a number of multiple level variables were collapsed into dichotomous categories.

In the final analysis, the following variables were used as independent variables in the multiple regression analyses:

1. Demographic and Background Variables
   a. Age (continuous)
   b. Ethnic background (dichotomous)
   c. Sex (dichotomous)

TABLE XXII

ADAPTIVE BEHAVIOR CHECKLIST RESULTS - TOTAL SAMPLE

Item	No Problems	No to Mild Problems	Mild Problems	Mild to Severe Problems	Severe Problems
Independent Functioning	N = 56 73%	N = 19 13%	N = 9 12%	N = 2 3%	N = 0 0%
Physical Development	N = 69 90%	N = 7 9%	N = 1 1%	N = 0 0%	N = 0 0%
Writing Skills	N = 26 34%	N = 19 25%	N = 14 18%	N = 7 9%	N = 10 13%
Verbal Skills	N = 52 67%	N = 20 26%	N = 5 6%	N = 0 0%	N = 0 0%
Self-Direction	N = 47 61%	N = 18 23%	N = 11 14%	N = 1 1%	N = 0 0%
Responsibility	N = 48 62%	N = 19 25%	N = 9 12%	N = 1 1%	N = 0 0%
Socialization Skills	N = 46 60%	N = 20 26%	N = 9 12%	N = 2 3%	N = 0 0%

d. Primary source of income prior to incarceration (dichotomous)

e. Incidence of physical problems (dichotomous)

f. Family background (dichotomous)

g. Childhood problems (dichotomous)

h. Highest grade completed (continuous)

2. Criminal Justice Variables

a. Number of offenses (continuous)

b. Type of offenses (continuous)

c. Maximum sentence (continuous)

d. Prior institutionalization (dichotomous)

A total of 12 multiple regression analyses was performed. The first four of these were done using the demographic and background variables as predictors of both academic achievement and intelligence. Two analyses were performed for the entire sample and two additional analyses were done separating the learning deficient and the non-learning deficient inmates in the sample. It should be noted that all analyses which were done for the learning deficient and the non-learning deficient inmates utilized the total TABE score as the dependent variable. WAIS-R scores were not used because of the problems which would have arisen due to range restriction. The range of scores for the former group was from a Full Scale IQ of 62 to 106, whereas the range for the latter group was from 67 to 135. Because of this, it was felt that any significance found would have been very difficult to explain.

The same four analyses described above were then performed using the criminal justice variables as the predictors, and the final set of analyses used the best predictors from these two groups of variables in four overall regression analyses. All regression analyses were done through the Statistical Package for the Social Sciences (SPSS) Regression program. SPSS stepwise inclusion procedures were used.

The first multiple regression analysis was used to identify the nature of the relationships between the demographic and background variables listed earlier and academic achievement level, as measured by the TABE. The results of this analysis are summarized in TABLE XXIII. An examination of this table shows that both the highest grade completed and ethnic background were found to be significant predictors of achievement at the .001 level of significance. The variable, highest grade completed, which entered the equation in step 1 of the analysis, accounted for about 12% of the variance in academic achievement level (R^2 = .12357) and the ethnic background of the inmate accounted for an additional 10% (R^2 change = .10228). The combination of these two variables can be used to explain almost 23% of the variance in the total TABE scores. It is also

TABLE XXIII

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Highest Grade Completed	97.986**	.35152	.12357	.12357
2	Ethnic Background	91.687**	.47523	.22584	.10228
3	Physical Problems	3.534	.47934	.22977	.00393
4	Source of Income	1.108	.48063	.23100	.00123
5	Sex	.392	.48108	.23144	.00044
6	Childhood Problems	.166	.48127	.23162	.00018
7	Age	.137	.48143	.23178	.00015

Note: F-level of tolerance level was insufficient for the variable family background to be entered into the regression analysis.

** significant at the .001 level

clear that these two variables are the only significant predictors in the analysis.

The second multiple regression analysis was performed using these same independent variables to predict the WAIS-R Full Scale IQ. The results of this analysis are presented in TABLE XXIV. It can be seen that the best predictors were ethnic background and highest grade completed. These two variables combined accounted for about 25% of the variance in IQ (R^2 = .25449). In this analysis, however, three additional variables were found to be significant, age and family background at the .001 level and sex at the .05 level. Age added 5% to the strength of the prediction equation (R^2 change = .05015). Family background contributed 1.72% and the sex of the individual increased the R^2 by about 1%. The combination of all five of these variables can be used to explain 33% of the variance in full scale intelligence quotient. It is clear that the addition of the other three variables adds little to the strength of the prediction (R^2 change = .00146).

To determine whether the nature of the relationships between background characteristics and academic achievement differed for the learning deficient and the non-learning deficient inmates, separate regression analyses were performed for these two groups. The dependent variable was the total TABE score. Inmates were identified as learning deficient if they scored at or below the fifth grade level on any one or combination of TABE subtests.

The results of these analyses are summarized in TABLE XXV and TABLE XXVI. Although the highest grade completed was again significant in both of these analyses, it is clear that the nature of the relationships is, in general, quite different. The best predictor for the learning deficient inmates was highest grade completed. If one looks at the R^2, however, it can be seen that this variable only explains about 3% of the variance in academic achievement (R^2 = .03305). The addition of the only other statistically significant variable, incidence of physical problems, added less than 2% to the strength of the prediction (R^2 change = .01706) and, in general, it is evident that none of these variables contribute much in an attempt to explain academic achievement level for this group (total R^2 = .06554).

When these results are contrasted with the results of the same analysis for the non-learning deficient inmates, the differences are dramatic. The total R^2 for this equation is .25538, indicating that this combination of variables can explain more than 25% of the variance in achievement. Ethnic background accounted for 15% of this variance and highest grade completed explained an additional 10%. The other six variables, none of which are statistically significant, only increased the R^2 by .00866, less than 1%. The indication is that, although these particular variables are useful in explaining academic achievement for the non-learning deficient inmates in the sample, they do not contribute much to the explanation of achievement among inmates with learning deficiencies.

The second major step in the multiple regression analysis was to run all four of the previous analyses using the criminal justice variables as the predictors. The first of these analyses was designed to examine the nature of the relationship between the criminal justice data for the entire sample and the

TABLE XXIV

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - FULL SCALE IQ

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Ethnic Background	125.066**	.39196	.15363	.15363
2	Highest Grade Completed	93.078**	.50447	.25449	.10086
3	Age	49.547**	.55194	.30464	.05015
4	Family Background	17.426**	.56733	.32187	.01723
5	Sex	9.825*	.57572	.33145	.00959
6	Physical Problems	.705	.57632	.33214	.00069
7	Childhood Problems	.449	.57670	.33258	.00044
8	Source of Income	.335	.57698	.33291	.00033

** significant at the .001 level
* significant at the .05 level

TABLE XXV

SUMMARY TABLE - MULTIPLE REGRESSIONS ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

LEARNING DEFICIENT

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Highest Grade Completed	9.708*	.18180	.03305	.03305
2	Physical Problems	5.082*	.22385	.05011	.01706
3	Ethnic Background	1.173	.23681	.05608	.00597
4	Source of Income	1.877	.24968	.06234	.00626
5	Sex	.515	.25310	.06406	.00172
6	Childhood Problems	.227	.25460	.06482	.00076
7	Age	.181	.25580	.06543	.00061
8	Family Background	.033	.25602	.06554	.00011

* significant at the .05 level

TABLE XXVI

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

NON-LEARNING DEFICIENT

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Ethnic Background	72.209**	.38737	.15006	.15006
2	Highest Grade Completed	52.353**	.49671	.24995	.00323
3	Sex	1.752	.49995	.24995	.00323
4	Family Background	1.041	.50186	.25186	.00192
5	Source of Income	.655	.50306	.25307	.00121
6	Childhood Problems	.629	.50422	.25423	.00116
7	Age	.400	.50495	.25497	.00074
8	Physical Problems	.221	.50535	.25538	.00041

** significant at the .001 level

total scores on the TABE. The results of this analysis are summarized in TABLE XXVII. Two of the predictors, type of offenses and maximum sentence, were found to be significant at the .05 level. It should be noted, however, that the R^2 associated with this analysis is not particularly impressive (total R^2 = .01630). In fact, the combination of these four variables can only be used to explain less than 2% of the variance in academic achievement. The two significant variables only account for about 1.5% of the variance.

The second analysis in this group examined the relationship between Full Scale IQ and the criminal justice variables. Again, an inspection of the results of this analysis in TABLE XXVIII shows that, although the maximum sentence is a statistically significant predictor of IQ at the .001 level, its contribution only accounts for about 4% of the variance (R^2 = .03797) and the combination of all four variables does not increase the R^2 by much (total R^2 = .03903). The statistical significance of these variables is most likely a function of the large sample size.

The criminal justice variables were then examined to determine whether the nature of the relationships was different for the learning deficient and the non-learning deficient inmates. The results of these analyses are summarized in TABLE XXIX and TABLE XXX. Again, the results of these analyses indicate that the relationships differ between the two groups. The analysis for learning deficient individuals indicates that none of the criminal justice variables were found to be significant at the .05 level. The only variable which was found to be significant in predicting academic achievement for the non-learning deficient inmates in the sample was the maximum sentence. It should be noted, however, that this variable only accounted for about 1.5% of the variance in the total TABE scores. None of the criminal justice variables appears to be very useful as a predictor of either WAIS-R or TABE scores. In light of the fact that the maximum sentence was found to be statistically significant in three of the four analyses (even though it did not contribute a great deal to the R^2), it was included in the overall analyses.

The final set of regression analyses was performed using the variables which were found to be statistically significant from the first two sets of analyses. These variables were the following: highest grade completed, ethnic background, incidence of physical problems, maximum sentence, sex, age, and family background. Again, four analyses were done. The first of these investigated the relationship between the variables listed above and the total TABE scores of the individuals in the sample. The results of this analysis are presented in TABLE XXXI. The only variables which are statistically significant are the highest grade completed and the ethnic background of the inmate. These two variables account for a total of 22.5% of the variance in academic achievement. The addition of the other five variables adds less than 1% to the explanatory power of the equation. This finding should not be surprising since, in attempting to predict academic achievement from each of the subsets of independent variables, ethnic background and highest grade completed contributed far more than did the maximum sentence information.

TABLE XXXII summarizes the results of the multiple regression analysis which was performed to try to determine the relationship of these independent variables to the WAIS-R Full Scale IQ. In this analysis, six variables were

TABLE XXVII

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Type of Offenses	5.839*	.08956	.00802	.00802
2	Maximum Sentence	5.125*	.12257	.01502	.00700
3	Number of Offenses	.888	.12743	.01624	.00121
4	Prior Institution	.04624	.12768	.01630	.00006

* significant at the .05 level

TABLE XXVIII

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - FULL SCALE IQ

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Maximum Sentence	28.178**	.19485	.03797	.03797
2	Number of Offenses	.554	.19676	.03871	.00075
3	Type of Offenses	.147	.19726	.03891	.00020
4	Prior Institution	.090	.19757	.03903	.00012

** significant at the .001 level

TABLE XXIX

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

LEARNING DEFICIENT

Step	Independent Variable	F*	Multiple R	R^2	R^2 Change
1	Number of Offenses	.353	.03445	.00119	.00119
2	Type of Offenses	.129	.04025	.00162	.00043
3	Prior Institution	.040	.04191	.00176	.00014
4	Maximum Sentence	.022	.04280	.00183	.00008

* no significance found

TABLE XXX

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

NON-LEARNING DEFICIENT

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Maximum Sentence	6.206*	.12024	.01446	.01446
2	Number of Offenses	2.723	.14415	.02078	.00632
3	Type of Offenses	1.081	.15620	.02329	.00251
4	Prior Institution	.727	.15803	.02497	.00169

* no significance found

TABLE XXXI

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Highest Grade Completed	98.559**	.35376	.12514	.12514
2	Ethnic Background	88.781**	.47448	.22513	.09999
3	Physical Problems	3.814	.47897	.22941	.00428
4	Maximum Sentence	2.233	.48157	.23191	.00250
5	Sex	.792	.48249	.23280	.00089
6	Age	.015	.48251	.23282	.00002

** significant at the .001 level

TABLE XXXII

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - FULL SCALE IQ

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Ethnic Background	123.877**	.39184	.15354	.15354
2	Highest Grade Completed	92.263**	.50438	.25440	.10087
3	Age	48.424**	.55127	.30390	.04950
4	Family Background	16.939**	.56641	.32082	.01692
5	Maximum Sentence	15.010**	.57923	.33551	.01469
6	Sex	8.820*	.58655	.34404	.0853
7	Physical Problems	.796	.58721	.34481	.00077

** significant at the .001 level
* significant at the .05 level

found to be significant, five at the .001 level of significance and one at the .05 level. The only variable which was not found to be significant was the incidence of physical problems. This could have been anticipated since the only equation in which this particular variable was significant was the equation in which the total TABE score was being examined for the learning deficient inmates. The combination of the other six variables is seen to account for 34% of the variance in Full Scale IQ. It should be noted, however, that most of this variance (30%) is again explained by the combination of ethnic background and highest grade completed.

An examination of the information presented in TABLE XXXIII (learning deficient inmates) and TABLE XXXIV (non-learning deficient inmates) indicates that, once again, the relationships among these variables for the two groups differ greatly. Clearly, the best predictor of academic achievement for the learning deficient group is the highest grade completed. In fact, this variable was found to be the only significant predictor. In spite of its statistical signficance, however, this variable accounts for less than 5% of the variance in the total TABE scores for this group, and, overall, the combination of these seven variables can only be used to explain about 8% of this variance.

The information which is summarized in TABLE XXXIV on the other hand, indicates that this combination of variables accounts for over 24% of the variance in total TABE scores for the non-learning deficient inmates in the sample. The two statistically significant variables, ethnic background and highest grade completed, explain 23% of the variance in academic achievement. It is difficult to conjecture why these differences exist so consistently between these two groups. The indication is that this particular set of variables, including all those investigated in prior analyses, have little relationship to academic achievement levels for the learning deficient inmates in the sample.

There are several possible statistical issues which could help to explain these findings. Of those investigated, however, none appears to have had a noticeable effect on these analyses.

It has already been mentioned that the ethnic breakdown of the learning deficient inmates was notably different from that of the non-learning deficient subjects. In order to ascertain whether the ethnic breakdown was related to the lack of significance for this variable in the regression analyses for the learning deficient inmates, the split for this group was investigated to see to what extent it limited the possible correlation between race and achievement. It was found that, in fact, the effect of this breakdown was insignificant and, therefore, this statistical consideration was also eliminated in attempts to explain the differences in the relationships for these two groups. None of the possible statistical explanations was found to be appropriate in explaining the differing nature of the relationships for the learning deficient and the non-learning deficient inmates in the sample. In the absence of other information it is not possible, within the constraints of this research study, to accurately state what is accounting for these findings.

TABLE XXXIII

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

LEARNING DEFICIENT

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Highest Grade Completed	11.730**	.21893	.04793	.04793
2	Physical Problems	3.763	.25125	.06313	.01520
3	Age	1.622	.26393	.06966	.00653
4	Ethnic Background	.912	.27080	.07333	.00367
5	Sex	.889	.27734	.07692	.00358
6	Family Background	.528	.28116	.07905	.00213
7	Maximum Sentence	.057	.28157	.07928	.00023

** significant at the .001 level

TABLE XXXIV

SUMMARY TABLE - MULTIPLE REGRESSION ANALYSIS

DEPENDENT VARIABLE - TOTAL TABE SCORE

NON-LEARNING DEFICIENT

Step	Independent Variable	F	Multiple R	R^2	R^2 Change
1	Ethnic Background	54.213**	.36851	.13580	.13580
2	Highest Grade Completed	43.099**	.48168	.23202	.09622
3	Maximum Sentence	3.655	.49002	.24011	.00810
4	Physical Problems	1.654	.49373	.24377	.00366
5	Sex	.671	.49524	.24526	.00149
6	Family Background	.557	.49648	.24649	.00123

Note: F-level or tolerance level was insufficient for the variable age to be entered into the regression analysis.

** significant at the .001 level

Summary

The issues raised and the research questions which followed and which were stated in Chapter II are presented again here. The results of the analyses are presented in summary as they relate to these questions.

1. Is there any indication of systematic bias introduced as a result of the voluntary nature of this research?

While there was no substantial difference between the participants and non-participants on the basis of ethnic group, there was a slight bias in both intelligence test scores and math achievement levels. In both of these cases the non-participants scored slightly lower than the participants. The indications are, therefore, that if the results of the analyses are biased in any direction they are producing consistent underestimates of the learning deficient and mentally retarded inmates in the population of interest.

2. What is the nature of the sample in terms of background and demographic characteristics?

In general, it is clear that the individuals in the sample come from culturally and educationally deprived backgrounds. The majority of the individuals have no consistent work history, have not completed high school nor have they had any formal vocational training. The average age of the sample is 30 and is lower than the average age of the general population. Ethnic minority groups make up a majority of the sample and the indications are that these groups are disproportionately represented in the prison population. There was a high incidence of unstable family backgrounds and childhood problems including drug and alcohol abuse. The criminal justice histories of the sample indicate that many of them have been convicted of previous offenses either at the juvenile or at the adult level. The median sentence for the sample is 12 years and it was found that about 60% were serving sentences of 15 years or less.

3. What percent of the sample is learning deficient and how does this compare to the general population?

It was found that 42% of the sample were functioning at or below the fifth grade level on the TABE. Since the fifth grade level is generally considered to be the determiner of functional literacy, it can be said that almost half of the sample does not have the literacy skills required to function effectively in society. While there is no reliable national figure available with which to compare this information, it is believed to be substantially higher than one might expect to find in the general population.

4. What is the distribution of intelligence among the target population and to what extent does it compare to that of the norming sample of the WAIS-R?

The average Full Scale IQ Score for the sample was 86 which is 14 points, or almost one standard deviation, below the national mean. Approximately 15% of the sample scored below a Full Scale IQ of 75 on the WAIS-R. A score of 75 is generally considered to be the cut-off for identifying individuals who may be

mentally retarded. The Adaptive Behavior Checklist, which was administered to corroborate evidence of retardation, was given to 77 subjects. Of these, 21% showed evidence of deficits in adaptive behavior skills. There are dramatic differences in IQ scores between the ethnic groups and among the states. The most notable differences, however, are between the learning deficient group ($\bar{X}$ = 78) and the non-learning deficient group ($\bar{X}$ = 92). This gives further evidence to support the contention that any measure of ability is influenced by a wide variety of cultural and other background factors including academic achievement. These data support national norming figures for the WAIS-R which suggest that minority group members score consistently lower than Caucasians and that individuals from the South consistently score lower than the North-east and North-west.

5. What is the distribution of specific types of learning deficiencies in the adult offender population and how does this compare to the distribution in the general population?

A very small percentage (2%) of the sample can be considered learning deficient due to lack of access to formal education. There is evidence to indicate that as many as 25% of the individuals in the sample have some symptoms of a learning disability. This is substantially higher than the 3% in the general population. In the learning deficient subjects, the incidence of learning disabilities rises to 82%. In general, there were more problems indicated in the auditory than the visual modality. An accurate assessment of mental retardation was not possible due to the lack of an appropriate adaptive behavior instrument. Indications are, however, that there may be a substantially higher percentage of moderately retarded individuals in the prison population than in the general population. While the information available on physical impairments was incomplete at best, there were some indications of a disproportionately high incidence of sensory and neurological problems.

6. What is the nature of the relationship between certain background and demographic variables and academic achievement levels among incarcerated adults?

The two best predictors of academic achievement for the total sample were the highest grade completed and ethnic group. The combination of these two variables accounts for more than 22% of the variance in total TABE scores.

7. What is the nature of the relationship between certain background and demographic variables and intelligence levels among incarcerated adults?

There were five variables at the .001 level and one at the .05 level which were found to be statistically significant predictors of Full Scale IQ Scores for the total sample. Once again ethnic background and the highest grade completed accounted for most of the variance (25%). In addition, the variables of age, family background, maximum sentence and the sex of the individual contributed significantly to this relationship. The combination of these variables can be used to explain a total of 34% of the variance in Full Scale IQ.

8. What is the nature of the relationship between background and demographic variables and the incidence of learning deficiencies among the adult offender population?

When the relationships are examined separately for the learning and non-learning deficient inmates in the sample, it was found that, although the nature of the relationships remained the same for the non-learning deficient, it changed dramatically for the learning deficient. The only variable which was found to be significant for this group was the highest grade completed, however, this variable only accounted for 3% of the variance in the total TABE Scores. The differences in the relationships between the two groups are difficult to explain. It can only be suggested that the apparent cultural bias of the TABE may have explained the fact that ethnic background was found to be a good predictor for the non-learning deficient group but was not found to be helpful in explaining differences in achievement for the learning deficient group.

CHAPTER IV

SUMMARY, CONCLUSIONS, POLICY, AND RESEARCH RECOMMENDATIONS

This final chapter is a summary of the study's findings as they relate to the demographic, background, achievement, and ability variables and their relationships to learning deficiencies. Conclusions, based on these findings, are presented as are policy recommendations with regard to the diagnosis and treatment of learning deficiencies in adult inmate populations. Recommendations for further research are also made.

Summary

Demographic and Background Variables

Age. The age range of the sample was from 15 years to 65 years with the average age being 30 years. This compares to a median age of 30 years in the national population.

Sex. Sex differences in the sample by age, ethnic group and region were comparable to national norms.

Ethnic group. Caucasians made up 42% of the sample and 58% came from minority groups. The largest ethic group in the sample was Afro-American (55%). It should be noted that in the general population Caucasians make up 83%. The sample showed some differences by state with Pennsylvania and Louisiana having 70% from minority groups while only 30% of the Washington sample came from minority groups.

Language. This was not considered to be an important factor as 93% of the sample came from homes where English was the primary language spoken.

Employment. When considering the primary source of income prior to incarceration, records indicated that almost 50% of the sample either never had been employed or had held occasional jobs. Of the balance, 84% were either laborers or semi-skilled. Only a little over 8% were considered to have held skilled or professional jobs.

Physical problems. While the information available in the prior records on specific physical problems is both sketchy and unreliable, it is important to note that, in those areas reported, sensory problems and a combination of problems including these were the highest categories.

Family Background Variables

Family situation. Almost 70% of those inmates for whom information is available, come from unstable childhood home environments.

Incidence of childhood problems. Accurate information on this, as well as on the death of parents or number of siblings was difficult to acquire. Many of the formal records do not address these questions. It is considered important,

however, to note that in 50% of the sample some type of childhood problem was reported. This is probably an underestimate of the true incidence. The most frequent problem reported was drug abuse (19%) or a combination of problems including drug and alcohol abuse.

Educational Background Variables

Highest grade completed. The mean grade level completed by the inmates in the sample was tenth grade. There were no noticeable differences among the states but there was a high level of variability. Six percent of the sample reported that they never went beyond elementary school while 13% reported some kind of post secondary education. This latter figure includes post secondary educational experience while incarcerated.

Prior special school placement. While 50% of the sample had no information in their records regarding placement in special school programs, it is noted that, of those for whom records are available, 16% had been placed in special school programs in elementary school and 20% in secondary school. A relatively high percentage of the sample identified as learning deficient in the study had been previously identified as such. For those previously identified and for whom information was available, 4% had been diagnosed as learning disabled, 14% as socially and emotionally disturbed, and 82% in other categorical areas including mentally retarded and/or brain damaged.

It is important to note that the lack of availability of educational information led to descriptive rather than relational analyses.

Criminal Justice Variables

Prior adjudication as delinquent. Self report of prior adjudication as a delinquent while a juvenile (43%) was notably lower than the incidence reported in the official institutional record (60%). It is suggested that the latter figure is the most reliable.

Types of offenses. The evidence of violent crime is high (68%) among the sample and it would appear that the level of violence tends to increase as the inmate gets older and his or her contact with the criminal justice system continues.

Number of offenses and length of sentence. Inmates are currently serving sentences for an average of 2 offenses (S = 1.3). The information available on prior offenses is unreliable because of the inconsistent reporting and coding of the data. The median sentence being served is 12 years. The maximum sentence for 60% of the sample is less than 15 years, 31% have between 15 and 40 years while 6% are serving life sentences.

Prior institutionalization. For the total sample, 21% of the inmates for whom juvenile offenses were reported spent time in a juvenile institution. This figure increases to about 43% for adult offenses. A higher percent of minority groups and a higher percentage of males had been institutionalized for prior offenses. The difference between males (24%) and females (10%) is especially dramatic at the juvenile level.

Test Results

Academic achievement. The average grade level equivalent for inmates who were administered the TABE, was 6.7. This is more than 3 years below the average highest grade reported for the sample. The difference between the grade equivalent scores for the learning deficient ($\bar{X}$ = 4.7) and the non-learning deficient ($\bar{X}$ = 8.2) is notable. There are also clear indications of ethnic and state differences in the area of academic achievement.

A significant finding was that 42% of this sample scored at or below the fifth grade level on one or more of the subtests on the TABE and were therefore considered to be learning deficient.

Ability levels. The average Full Scale IQ for the sample to whom the WAIS-R was administered was 86 (S = 12). The verbal IQ was 86 (S = 12), slightly lower than the Performance IQ of 89 (S = 13). In general, the sample scored almost one standard deviation below national norms on the WAIS-R. There are clear indications of ethnic and state differences which are consistent with national findings. Dramatic differences (14 points or one standard deviation) exist between the learning deficient and the non-learning deficient inmates in the sample. These differences may reflect the confounding of ability and achievement. There is singularly less variability in the scores of the learning deficient subjects in the sample.

Disability levels. The Mann-Suiter Learning Disabilities Screening Tests administered to the inmates scoring at or below the fifth grade level on one or more subtests of the TABE, indicated that 82% of those tested had problems in one or more of the areas assessed. Most errors were committed on those tests screening for problems in the areas of visual memory, visual closure, auditory closure and auditory discrimination. In general, the evidence indicated more problems in the auditory modality than in the visual modality and more problems in both auditory and visual discrimination than in either closure or memory.

The Adaptive Behavior Checklist, adapted from Part I of the AAMD Adaptive Behavior Scale and given to those inmates scoring below the Full Scale IQ of 75 on the WAIS-R, indicated that 21% scored more than 14, which was judged to indicate problems of adaptive behavior. It should be noted that the Checklist did not address the problem of maladaptive behavior which is covered in Part II of the AAMD--Adaptive Behavior Scale.

Relationships

Separate regression analyses were run for background and demographic and criminal justice variables using, in turn, the total TABE scores, WAIS-R scores and the TABE-learning deficient and TABE-non-learning deficient scores as the dependent variables. The best predictors among the background, demographic, and criminal justice variables were then run again, using total TABE, WAIS-R, TABE learning deficient and TABE-non-learning deficient scores.

When the regression analyses using background and demographic variables with total TABE scores were run, two variables were significant at the .001

level. These were the highest grade completed and ethnic background. Together they accounted for 23% of the variance.

When the WAIS-R Full Scale IQ scores replaced the TABE as the dependent variable in the regression analysis, ethnic background and highest grade completed were significant at the .001 level as were age and family background. Sex was significant at the .05 level. The combination of all five variables accounted for 33% of the variance.

The TABE scores for the learning deficient subjects were run with the background and demographic variables. In this regression analysis, the highest grade completed and incidence of physical problems reported were significant at the .05 level but together they only accounted for 5% of the variance.

The same analysis using the TABE scores for the non-learning deficient subjects indicated that ethnic background and highest grade completed were significant at the .001 level and, when combined, accounted for 25% of the variance.

The same four regression analyses were run using the criminal justice variables. When run using the total TABE scores as the dependent variable, type of offense and maximum sentence were significant at the .05 level but, when combined, only accounted for less than 2% of the variance. When run using the WAIS-R scores as the dependent variable, only maximum sentence was significant at the .001 level and accounted for 4% of the variance. It should be noted here that statistical significance was probably due, in part, to the large sample size and, as seen, has little effect in explaining any variance.

No significance was found in the regression analyses using criminal justice variables with the TABE scores for the learning deficient. With the non-learning deficient sample, however, maximum sentence was significant at the .05 level but again only accounted for less than 2% of the variance.

When the best predictors from the demographic and background variables and criminal justice variables were run in the regression analysis with the TABE scores for the total sample, the highest grade completed and ethnic background were both significant at the .001 level and had a combined variance of 22%. The same predictors run against WAIS-R scores indicated that ethnic background, highest grade completed, age, family background, and maximum sentence were all significant at the .001 level and sex at the .05 level. The combination of all these significant variables accounted for 34% of the variance in total TABE scores.

The overall regression analyses which were done separately for the learning deficient and the non-learning deficient inmates again indicated differing relationships among the variables for these two groups. The only significant predictor of academic achievement for the learning deficient group was the highest grade completed. For the non-learning deficient group, both ethnic background and the highest grade completed were significant. It was clear that a great deal more of the variance in total TABE score can be explained by this set of variables for the non-learning deficient inmates in the sample.

Conclusions

Based upon the results of this research project the following conclusions are drawn.

1. The average age of inmates in the state prisons utilized in the study is lower than the median age of the general adult population.

2. Language is not considered as a significant problem in the states sampled and there is no difference between the learning deficient and non-learning deficient groups on this variable.

3. Minorities are disproportionately represented in the sample as a whole but particularly in the learning deficient members of the sample (73%) when compared to the non-learning deficient (45%).

4. A substantial number of prisoners have a poor and/or inconsistent employment history. This, when combined with the educational data on inmates, implies that it is difficult not to conclude that a relationship exists between educational background, employment, and crime regardless of whether or not one is learning deficient.

5. While there are problems in collecting accurate and consistent data, there appears to be an unusually high proportion of inmates who report having sensory or neurological problems.

6. More than two-thirds of prisoners in state prisons come from unstable home environments. The learning deficient inmate tends to come from unstable circumstances more often than the non-learning deficient. Difficulties caused by such unstable conditions have been compounded by other childhood problems with one-half of the sample reporting such problems. Drug and combined drug and alcohol abuse, are the most frequently reported problem areas. This high incidence of childhood problems is probably substantially under-reported.

7. While information on inmates' educational histories prior to incarceration was infrequently and inconsistently reported, it was found that the percentage of the individuals the project identified as learning deficient who had been previously identified as such, was noticeably higher than that percentage for those individuals that the project did not identify as learning deficient.

8. A substantial number of inmates--at least 60%--had been adjudicated delinquent as juveniles. The rate of those adjudicated was higher for the learning deficient (63%) than for the non-learning deficient (56%).

9. As contact with the various aspects of the criminal justice systems increases over time so does the violence of the crimes committed. Learning deficient inmates commit slightly more violent crimes than do the non-learning deficient inmates.

10. Males are incarcerated more frequently than are females and minorities more frequently than Caucasians.

11. Inmates in the sample score more than three years below the highest grade attended. Schooling does not result in equivalent grade achievement. This is especially so for the learning deficient inmates who scored, on the average, five years below the highest grade completed despite the fact that only 22 subjects (2.2% of the total sample) left school at or before the end of the fifth grade. Given the fact that the average grade level for the total sample is only 6.7 (based on the TABE score), there is an indication that, even of that group not defined as learning deficient, clear academic deficits exist. This is particularly true when one compares this to their years of exposure to formal education.

12. Almost half of the sample (42%) have some form of functional illiteracy under the commonly accepted definition of the term. That is this learning deficient group had a total average grade equivalent of 4.7 on the TABE.

13. In spite of the fact that there were no differences by ethnic group, sex, or state in the highest grade completed, there were noticeable differences by state and ethnic group in the total TABE scores. While these differences reflect the reported norms by region and ethnic groups on the TABE and on other tests reported in the records, the question remains as to why these differences continue to exist. One can only conjecture that achievement tests in general reflect a cultural bias and/or that there are inequities in the quality of education in the communities from which minorities come. It is also clear that these barriers have not been overcome by the educational opportunities offered within the prison systems.

14. The issue of determining ability in an individual or a group is fraught with controversy and difficulty. The construct of intelligence is both complex and fluid and is influenced, among other things, by education and experience. The results of the WAIS-R testing must be examined, therefore, with great care and any conclusions stated in guarded terms. Given the information collected on demographic, background, educational, and criminal justice variables, it is not surprising to discover that the average Full Scale IQ for the total sample is depressed and is, in fact, almost one standard deviation below the national norms for the WAIS-R. The regional and ethnic group differences reflect, as noted earlier, the confounding factors involved in the determination and measurement of ability variables. The particular influence of the institutional environment has a further depressing effect on these results. Observations by the clinicians during the testing sessions indicated that the WAIS-R results were producing consistent underestimates of overall intellectual functioning.

The dramatic differences in the WAIS-R scores between the learning deficient and the non-learning deficient subjects in the sample give further evidence to support the confounding involved in measuring intellectual functioning. In addition to such factors as unstable home, poor employment history, lack of educational opportunity and vocational training, and an unusually high incidence of possible learning dis-

abilities, the academic achievement levels for the learning deficient group, which place them in the functional illiterate category, impact even more on the WAIS-R scores. The correlations between achievement levels and measures of intelligence are consistently high which further clouds an already murky issue. Nevertheless, we must conclude that intellectual functioning, as defined and measured by the WAIS-R, is substantially lower for this prison sample than it is for the general population.

15. The screening procedures of the Mann Suiter show that 25% of the total sample have some indications of specific learning disabilities in the areas of visual and auditory skills. When one examines the incidence of possible disabilities in the learning deficient sample, this incidence jumps to 82%. Even with the qualifications and cautions regarding the use of this screening instrument expressed earlier, these findings are startling and dramatic. There were more problems indicated in the auditory than in the visual modality. These differences in the area of auditory modality, as well as in memory skills, may in part be a reflection of the specific tasks which require the use of standard English.

When the subtests are grouped according to skill areas (discrimination, closure and memory), significant state differences are found in all areas. Significant differences between ethnic groups are found in memory skills. As was noted earlier, the TABE scores, used to identify learning deficiencies, show an ethnic bias. Therefore, it is difficult to explain the state differences in discrimination, closure and memory skills because of the confounding of the differential ethnic breakdown in the respective states.

Although only a screening measure, the Mann-Suiter proved to be relatively accurate in identifying those subjects in the sample who had previously been diagnosed as having learning problems. Of the individuals identified as learning deficient, 33% had been placed in special education programs at the elementary level and 39% at the secondary level. In contrast, 5% and 7% respectively, of the non-learning deficient subjects had been placed in special programs. The conclusion follows that, in spite of prior identification, little has been done to remediate those problems diagnosed. The implication is that the systems of education, both within the prisons and in the communities, may themselves be deficient in addressing the needs of those individuals.

16. There is no accurate measure of adaptive behavior for an incarcerated population. Even the best available instrument--the AAMD Behavior Adaptive Behavior Scale--is inappropriate because of the heavy emphasis on antisocial behavior which would pre-determine the identification of a prison population as maladaptive. The adaptation of this instrument which was used in the study, the Adaptive Behavior Checklist, does not redress this lack and, consequently, all the findings in this area are tentative in nature.

If the AAMD Adaptive Behavior Scale was used in its entirety, all those subjects scoring below a Full Scale score of 75 on the WAIS-R, almost one-third of the sample, would have to be identified as mentally retarded.

This, it is suggested, would be inaccurate. Since the issue of maladaptive behavior related to personality disorders was not addressed in the derived Checklist, the incidence of mental retardation was quite low (2%). This, too, is inaccurate. It must be concluded that the true incidence of mental retardation in this population is somewhere between these two estimates. It should be noted also, that in addition to those subjects identified in this study as mentally retarded, there exists another group of inmates who, on the basis of prior diagnosis, have been placed in other types of facilities.

17. Of the sample taking the TABE, 25% showed some indication of specific learning disabilities. This is substantially higher than the 6% incidence found in the normal population. This high incidence is, no doubt, related to the combined effects of the demographic, background, criminal justice, educational, ability, and achievement variables discussed previously.

18. The major theories of causality which were discussed in Chapter II were supported by the findings of this study. The fact that minorities are disproportionately represented in the sample as a whole, and even more so in the learning-deficient group, gives support to the causal theory of differential treatment. The school failure theory is also supported by the substantial difference between the level of academic achievement and the highest grade completed while the link between learning disabilities and juvenile delinquency is also reinforced. The conclusion to be drawn from this evidence must be that it may be the interactive effect of socio-economic background, unstable childhood home, and the incidence of specific learning disabilities that may be the single most important determiner of anti-social behavior which results in eventual contact with the criminal justice system.

19. It is clear that the most consistent predictor of both academic achievement and Full Scale IQ is the highest grade completed. This should not be surprising in light of earlier discussions regarding the confounding effects of educational and cultural background in assessing ability variables. It is difficult to explain the differences between the relationships among the variables for the learning deficient and the non-learning deficient groups in the sample. One can only hypothesize that the apparent ethnic bias of the TABE, which was discussed earlier, may have impacted on the fact that the variable of ethnic background was found to be a good predictor for the non-learning deficient group but was not found to be helpful in explaining differences in achievement for the learning deficient inmates.

20. The intent of this study was to describe the nature and prevalence of learning deficiencies among adult inmates and to explore the interrelationship to various demographic, background and criminal justice variables. The conclusions drawn and set out above related to this thrust. It is difficult, however, to avoid seeing the general patterns which exist in the prison population which lead to a broader conclusion regarding the characteristics of incarcerated individuals. As a group, more often than not, they are a deprived population. They come from unstable family environments, have severe educational deficits, have little or no

vocational training, have not had steady employment, and abuse drugs and alcohol. They have been in contact with the criminal justice system since childhood and come from ethnic minorities. The educational and treatment systems which currently exist on the street, in schools and in the prisons have not, it would seem, made any significant inroads in helping them overcome these barriers. Given the problems facing the prison system (over-crowding, under-funding, understaffing and lack of appropriate training), it is hardly likely that the beleaguered teachers and counselors can do much to improve the situation in the foreseeable future.

Policy and Research Recommendations

Based on the findings of this study, the following policy and research recommendations are made for consideration by the National Institute of Justice and the U.S. Justice Department:

1. The specific standards which apply to the treatment and education of prisoners in state and federal prisons should be amended to more fully address the needs for adequate diagnosis and treatment of learning deficiencies.

2. The level of sophistication of the professional training of teachers and counselors who work with incarcerated individuals should be substantially increased and improved. The needs of this unique population are more complex and must be addressed in such a peculiar environment that traditional teacher and counselor training programs do not give the special skills needed to work with a substantially learning deficient population.

3. Educational programs in prison should be redesigned to meet the <u>basic</u> educational needs of the vast majority of inmates. These needs include increased emphasis on functional literacy skills and vocational and social education in the most meaningful and practical sense. It is recognized that these initial recommendations require an increased expenditure for prison education. It is acknowledged, however, that this is in complete contradiction to the <u>real</u> trends in almost all state systems which are for reduced expenditures in the areas of education and treatment. The truth of the matter is that federal, state and local politicians will not appropriate funds for such programs. It is equally true that the process of alienation of delinquents and prisoners is ineluctable unless meaningful changes occur in the <u>number</u> of educational opportunities, the <u>quality</u> of those offerings, and in the <u>training</u> and <u>quality</u> of staff in those programs.

4. Specific screening procedures should be initiated during intake into the prison systems. This educational diagnosis should be sophisticated and attend particularly to sensory and neurological impairments.

5. These screening procedures should be standardized nationwide and a common system of reporting and keeping records be implemented.

6. Specific and sophisticated diagnostic treatment programs should be available throughout the whole network of agencies which deal with the juvenile delinquent.

7. Drug and alcohol abuse prevention and intervention programs should be emphasized at the juvenile level.

8. The public schools have a significant role to play in intervening in the vicious cycle which leads to prison. They should be encouraged to react more quickly to identify and treat the learning deficient student.

9. The effectiveness of the juvenile justice system needs to be addressed. The findings of this study indicate, once more, that the longer an individual is in contact with the criminal justice system, the more violent and hardened the criminal becomes. Institutions do, in fact, appear to be "Schools for Crime." Diagnosis and treatment at all levels lack sophistication and until they improve, rehabilitation will continue to be a myth.

10. It is clear that there are substantial sex and ethnic inequities in the system. These inequities should be examined in much more detail and redressed.

11. The findings of this study underscore the recent recommendations from three major committees for more equitable, more effective, and more rigorous education at all levels across the nation. Such improvements are needed in the nation's prisons as well as in its schools!

12. There is a continued need to examine the tests used in assessing populations such as the one studied in this project. The validity of these tests is in doubt and, therefore, any interpretations are suspect, given the cultural bias of the instrument, the influence of the prison environment, and the procedures used in test administration. There is a particular need for a more appropriate adaptive behavior measure for prison populations.

13. The value and utility of institutional records would be enhanced for all, not least to the researcher, if there were a national, uniform and centralized system in which data were consistently and reliably reported.

14. Future research with this population should address the following issues:

    a. the effect of institutionalization on the intellectual functioning of adult inmates

    b. the interrelationships of auditory and visual skills on the ability and achievement levels of adult inmates

    c. the prevalence and nature of sensory and neurological problems and their influence on the ability and achievement of this population

    d. the background, demographic and education variables should be systematically addressed to determine their relationship to criminal justice variables

    e. a cluster analysis of the data collected should be done as a means of identifying subgroups of the sample with common patterns of characteristics

    f. diagnosis, as opposed to screening for a more accurate identification of specific learning disabilities should be undertaken

    g. the development of appropriate instruments to assess academic achievement, intellectual functioning and adaptive behavior in an adult prison population should be undertaken.

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