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The Link Between Learning Disabilities and Juvenile Delinquency:

Some Issues and Answers

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Abstract

Early results of a large-scale field experiment investigating the link between learning disabilities and juvenile delinquency are discussed. Learning-disabled adolescents were found to be proportionately overrepresented in a sample of 397, male, 12 to 15-year-old, adjudicated juvenile delinquents, when compared to an officially nondelinquent sample of 984, 12 to 15-year-old boys. The percentages of learning-disabled youths in these samples were 32 and 16, respectively. Some of the problems in defining learning disabilities and juvenile delinquency are discussed. An alternative to the "school failure" and "susceptibility" hypotheses concerning the relationship between learning disabilities and juvenile delinquency is proposed to accommodate the finding that learning-disabled adolescents do not seem to engage in different types of delinquent acts from their peers without learning disabilities.

The Link Between Learning Disabilities and Juvenile Delinquency: Some Issues and Answers¹

During the last few years, the connection between learning disabilities (LD) and juvenile delinquency (JD) has caught the interest of an increasing number of parents, juvenile justice personnel, educators and researchers in several disciplines. In particular, the phenomenon of learning disabilities has attracted the attention of many in the field of juvenile justice who have witnessed the disordered learning behavior of many of the youths who become involved in the juvenile justice system. Parents and educators in the field of learning disabilities in many cases have viewed juvenile delinquency as a particularly disturbing probable consequence of learning disability. While most observers agree that many youths in trouble have learning problems, the issue of the existence and nature of a link between LD and JD has not been resolved.

In response to the increased interest in this area, the Office of Juvenile Justice and Delinquency Prevention of the U.S. Department of Justice initiated an ambitious effort to shed some light on the issue of the LD/JD link. In 1975 they commissioned the American Institutes for Research (AIR) to: summarize the current theory and knowledge about the relationship between LD and delinquency; draw preliminary

conclusions; and make policy recommendations based on these conclusions. The AIR study concluded that the existing literature neither firmly established nor completely disproved a relationship between learning disabilities and juvenile delinquency, but that the pattern of learning problems among delinquents warranted further study (Murray, 1976). The AIR study cited various problems with previously reported investigations of the LD/JD link; among them: (1) the absence of comparative studies of the prevalence of LD in adjudicated delinquent and officially nondelinquent populations; (2) definitional, diagnostic, procedural, analytic and presentational difficulties with the investigations, precluding reliable estimates of the prevalence of learning disabilities; and (3) the absence of studies comparing the development of learning-disabled and nonlearning-disabled children. The report recommended a research initiative to determine the prevalence of LD among populations of juvenile offenders and nondelinquents in several parts of the country. As a second step, the report also recommended establishing a project to test the value of treatment programs for remediating learning disabilities as an aid to rehabilitation of juvenile delinquents.²

This article describes the research and development effort funded by the Office of Juvenile Justice and Delinquency Prevention as a result of the AIR recommendations. This effort, begun in October, 1976 and slated for completion in August,

1980, has produced preliminary LD prevalence estimates, involved attempts at resolving definitional issues in learning disabilities and delinquency, and finally has led to preliminary observations about the link between LD and JD.³ The purpose of this article is to summarize these early findings. Following a general overview, the topics of definition, prevalence and the LD/JD relationship will be discussed.

Overview

The LD/JD project is a large-scale, complex, field-research effort, involving the development of an LD classification procedure, a study of the prevalence of LD, a remediation program focused on the learning-disabled delinquent, and an evaluation of that program. It is being conducted jointly by two grantees: the Association for Children with Learning Disabilities (ACLD) and the National Center for State Courts. The program is being conducted in the metropolitan areas of Baltimore, Maryland; Indianapolis, Indiana; and Phoenix, Arizona.

The ultimate goal of the program is to provide information that will assist in the development of informed policy regarding learning disabilities and delinquency prevention. The research and development program has several major objectives:

- (1) The determination of the prevalence of LD in groups of adjudicated delinquent and officially nondelinquent 12 to 15-year-old boys;
- (2) an exploration of some of the definitional issues concerning learning disabilities;

- (3) the conduct of an instructional (remediation) program for selected groups of 12 to 17-year-old boys and girls who have been adjudicated delinquent and classified as learning disabled;
- (4) an evaluation of the effectiveness of the remediation program, with respect to resulting changes in the participants' academic achievement and delinquent behavior; and
- (5) the follow-up of youths in the officially nondelinquent public school sample, to determine what changes in delinquent behavior have occurred, and the relationship of these changes to LD.

The ACLD is responsible for conducting the instructional program, while the National Center for State Courts is responsible for the program's evaluation, as well as for the other research components of the project. Educational Testing Service (ETS), of Princeton, New Jersey, contracted with the National Center to perform the diagnostic evaluations of the adolescents in the study for the purpose of classification into learning-disabled and nonlearning-disabled subsamples. The study design is shown schematically in Figure 1.

In the spring and summer of 1977, after parental consent had been obtained, the educational records of 1,778 boys and girls between the ages 12 and 17, including 1,381 12 to 15-year-old boys (984 officially nondelinquent public school students and 397 adjudicated delinquents) were reviewed for indicators of LD. Individual assessments were made of those youths whose records did not preclude a classification of learning disabled. The assessments consisted of individual testing that measured several key aspects of ability and

academic achievement (see "Definitional Issues," below). In addition, other data were gathered during an interview with each youth whose records were reviewed; included were questions about personal characteristics and family background, attitudes toward school, and self-reported delinquent activity. The principal LD prevalence estimates in this study are being based on data obtained only from the boys between the ages of 12 and 15, inclusive; however, the remediation program includes both boys and girls between the ages of 12 and 17.⁴

From a sample of approximately 260 adjudicated delinquent youths who were classified LD, half were selected randomly for inclusion in the remediation program, and the remainder were assigned to a comparison group. (Additional records reviews and diagnostic assessments of 12 to 17-year-old delinquent youths were conducted in the summer and fall of 1978, in order to increase the sizes of the remediation and comparison groups of the demonstration program. As a result, approximately 160 additional learning-disabled delinquent children have been placed in the treatment and comparison groups of the program.) When the demonstration program ends, in summer, 1979, the youths in both groups will be retested, and the changes in academic achievement and delinquent behavior of the youths in the remediation group will be compared to those of the youths in the comparison group, in order to evaluate the effectiveness of the remediation program.⁵

Preliminary results concerning the first two objectives of the project--the exploration of definitional issues of LD and juvenile delinquency, and the determination of the prevalence of LD--are discussed in the following sections, and are followed by some preliminary observations concerning the link between LD and JD. The report concludes with a brief discussion of the work remaining to be accomplished.

Definitional Issues

Neither the concept of "learning disabilities" nor the concept of "juvenile delinquency" have operational definitions of widespread acceptability. Our work depended greatly on the formulation of acceptable operational definitions of both concepts. This section describes our attempts to address these definitional issues.

Learning disabilities. Learning disabilities is a concept that is talked about in many different ways. The field is rife with ambiguities and contradictions (see, for example, Coles, 1978). This study has focused on basic discrepancies between ability and achievement, as suggested in the definition of LD formulated in 1968 by the National Advisory Committee on Handicapped Children. Learning disabilities has been conceptualized in this study as being characterized by pronounced intrapersonal differences in ability to perform a variety of verbal, quantitative, and manipulative tasks, presumably because there is some nonobvious interference with

the process of receiving information, utilizing it in cognitive processes, or communicating the results of cognition. Only those subjects whose learning performance displayed such discrepancies and whose performance was not adequately explained by such factors as physical handicaps, mental retardation or severe emotional disturbance were classified learning disabled (Barrows, Campbell, Slaughter, and Trainor, Note 1).

There were two procedural steps employed by ETS in the LD classification process. The first step was to review educational records in order to exclude the children whose educational performance was within the range of normal expectation, or who could be categorized as mentally retarded, physically handicapped (e.g., hard of hearing, deaf, visually impaired), or severely emotionally disturbed. If available achievement scores differed by the equivalent of at least two years (a T-score difference of 10 points) from available ability scores on one or more tests, or from one another, the child was referred for further assessment. Educational records also were reviewed for the presence of a recorded clinical diagnosis of learning disabled, evidence of hyperactivity, unusually illegible handwriting, perceptual test performance indicating possible malfunction, and, if grades were available, for uneven grade profiles, including abrupt changes in profile character. These characteristics were grounds for referring the youth for diagnostic assessment.

The second step involved diagnostic assessment. After record reviews were completed, youths whose records did not preclude a classification of learning disabled were given a series of diagnostic tests. These tests used to make the classification decision included the Wechsler Intelligence Scale for Children (Revised), the Key Math Diagnostic Arithmetic Test, the Woodcock Reading Mastery Test and the Bender Visual-Motor Gestalt (Koppitz scoring). In addition to the conventional scoring of the WISC-R, the Witkin factors were also used. These consist of Analytic Functioning, Verbal Comprehension and Attention Concentration.⁶ The approach employed in the diagnostic assessments basically was one which focused on discrepancies within and between ability and achievement profiles, supplemented by perception measures and test-situation observations, as indicators of LD.

Although the rules for making the LD classification decision based on the test results were stated explicitly, some latitude for judgment by the diagnostic assessors was intended. There was considerable variability evidenced in cross-site protocol checks, however, which argued for more precise explication of the rules' use. Accordingly, the role of clinical judgment was limited to the initial categorization of observations applying to behavior during the WISC-R administration and to the general behavior of the youth in the testing situation. Specific requirements for the LD

classification decision were stated sequentially, as a series of discrete yes or no questions, considering each as an element of data in a decision algorithm.

These rules have been described in detail by Campbell (Note 2). Data for each adolescent were entered into a computer and, after a sequential examination of each step in the decision process, an LD classification was made. The decision process involved assigning points based on significant differences among the achievement and ability scores considered in each step. That is, the process moved through a series of steps, systematically considering the differences between the math and reading scores, and between the reading or math scores and the Witkin factors. Behavioral observations made during the administration of the assessment battery also were considered in the point assignments.

The definition utilized in our study then, is one of positive classification of LD by assessing discrepancies between measures of abilities and achievement, and by excluding children with other particular handicapping conditions. However, it was not based upon particular assumptions concerning the causes of LD.

Juvenile delinquency. Historically, defining juvenile delinquency has been problematic. Disagreements concerning the conceptualization and measurement of delinquent behavior have made estimates of its incidence, as well as comparisons among

estimates, difficult. Many of the problems stem from variations among statutes and in the treatment of juvenile offenders from jurisdiction to jurisdiction, and from the fact that many referrals to the juvenile justice system are handled informally. Just as it was necessary to develop an operational definition of LD, it was necessary also to develop a research definition which was applicable across project sites, whereby each youth could be classified as delinquent or nondelinquent for purposes of assignment to samples within the study.

A two-step analysis was undertaken (Greguras, Broder, and Zimmerman, Note 3). The initial step in the analysis involved examining alternative approaches to defining delinquency and led to the conclusion that legal criteria were more workable than behavioral criteria as the primary basis for classifying participants. (However, a self-reported delinquency scale was also used in the study and is discussed below.) The second step was the identification and analysis of various points of penetration into the juvenile justice system (e.g., police contact, arrest, etc.) to determine the degree of involvement considered to be the most feasible for this study.

Each identifiable point of penetration into the juvenile justice system was analyzed according to four criteria. First, the point had to be common to, and clearly identifiable in, the court system records of all three project sites. Second, the point could not be so far into the system that it sharply

limited the potential sample size. Third, the point of penetration had to be far enough into the system that the reluctance on the part of the court to the release of youths' names (directory information) for purposes of obtaining informed consent could be allayed. Finally, the point of penetration had to be such that it was clear that the youths had manifested delinquent behaviors on at least one occasion.

After considering the various factors, the primary criterion chosen for the operational definition was adjudication by a juvenile court. The juveniles could have been adjudicated for a delinquent act (an act which if committed by an adult would be a crime) or a status offense (an act which if committed by an adult would not be a crime, i.e., habitual truancy). Adjudication is an identifiable point of penetration into the juvenile justice system which is common to all three sites. It satisfies the need for a sample large enough to ensure the reliability and validity of research findings.

Prevalence of Learning Disabilities

Many estimates of the prevalence of learning disabilities have been made using various types of testing batteries and criteria. The prevalence of LD in the general population has been estimated at between 7 and 10 percent (Myklebust and Boshes, Note 4; Graydon, 1978; Murray, 1976). Prevalence estimates of LD among juvenile delinquents, on the other hand,

generally have been higher and have varied more widely; e.g., 26 percent (Comptroller General of the United States, 1977), 32 percent (Duling, Eddy and Risko, Note 5), 49 percent (Podboy & Mallory, Note 6), 50 percent (Poremba, 1967), and 73 percent (Swanstrom, Randle, Livingston, Macrafic, Caulfield and Arnold, Note 7).

As stated before, approximately 1,300 12 to 15-year-old boys in the metropolitan areas of Baltimore, Indianapolis, and Phoenix were included in the full classification procedures of the prevalence study. Every youth was classified as either learning disabled or not according to the computer algorithm. Using that means of classification, 16 percent of the officially nondelinquent, public school youth and 32 percent of the adjudicated delinquent youth of the same age and sex were determined to have learning disabilities (see Table 1).

Insert Table 1 about here

While the classification of proportionately more delinquent adolescents than public school youths as learning disabled is not sufficient evidence to establish LD as a causal factor in delinquency, the difference between the prevalence estimates indicates that some type relationship does exist and justifies an investigation into the precise nature of the relationship. Also, the finding that 16 percent of the officially nondelinquent children are learning disabled is not

without educational policy significance. This figure considerably exceeds previous estimates. If this estimate withstands further scientific scrutiny, it may have important implications for school officials and legislators.

The Link Between Learning Disabilities and Juvenile Delinquency

Three conditions of cause and effect generally are required to establish a causal relationship (Cook and Campbell, 1976). The first, temporal antecedence, is the requirement that the cause must precede the effect; in this case LD must precede juvenile delinquency. The second, covariance of cause and effect, is the requirement that the effect must vary as the cause varies in magnitude and direction. The third is the absence of a competing viable hypothesis. These conditions have not been met in previous research; the postulated causal relationship between LD and JD remains without rigorous support. Yet, for many, the relationship between learning disabilities and juvenile delinquency seems obvious and compelling.

The two most prominent explanations for the link between learning disabilities and juvenile delinquency have been called the "school failure rationale" and the "susceptibility rationale" (Murray, 1976). The first proposes that the child's difficulties in learning lead to classroom failure which, in turn, lead to a greater probability of delinquency. The second proposes that learning-disabled children have "a variety of

socially troublesome personality characteristics" which make them "susceptible" to delinquent acts. Both hypotheses assume intermediate effects, such as the development of a negative self image, association with peers prone to delinquency, and general impulsiveness, which lead to delinquent activities and, subsequently, to entry into the juvenile justice system. The following is the way in which the LD/JD link has commonly been described in the literature:

Two things come into play in explaining how learning disabilities contribute to delinquent behavior. Frustration in school often leads to aggressive behavior. The child becomes more and more frustrated as his needs go unmet and the aggression spreads to all facets of his life. He calls attention to his unmet needs by delinquent behavior. Secondly, because many learning disabled children are impulsive and lack good judgment, they are unable to anticipate the consequences of their acts. They often cannot control their behavior and they do not learn from experience. (Unger, 1978, p. 27).

Of all the hypotheses suggested in the literature to explain the chain of events leading from learning disabilities to juvenile delinquency, the school failure hypothesis is cited most frequently. The strong, consistent finding that juvenile delinquents have records of lower than average school achievement makes this explanation appealing (see Bernstein, 1978; Comptroller General of the United States, 1977; Elliott and Voss, 1974; Graydon, 1978; and Mauser, 1974).

If indeed there is a relationship between LD and JD, there should be a higher prevalence of specific learning disabilities among juvenile delinquent youth than among

nondelinquent youth. But, at the time of Murray's (1976) review, this seemingly simple hypothesis remained untested; no attempt had been made to test comparable delinquent and nondelinquent samples at the same time, with the same instruments, and in a manner sufficiently objective to preclude diagnostic biases. Moreover, there had been no clearly specified operational definition of learning disabilities that could have been used among these different populations.

The preliminary results of the prevalence study summarized above, as well as previous studies, strongly suggest that proportionately more adjudicated delinquent youths have learning disabilities than nonadjudicated youths. Proponents of a causal LD/JD link generally share a common notion, namely that the learning-disabled child is more likely to engage in delinquent behavior and, therefore, is more likely to be adjudicated delinquent, than his or her nonlearning-disabled peer. It is our investigation of precisely this notion which has led us to question the school failure and susceptibility rationales and to propose an alternative hypothesis concerning the relationship between LD and JD (Zimmerman, Rich, Keilitz and Broder, Note 8).

It was hypothesized that learning-disabled children would report greater frequencies or different varieties of delinquent activities than nonlearning-disabled children. Our sample of officially nondelinquent public school and adjudicated delinquent youth, classified as to the presence of LD, were

asked to report the delinquent behaviors in which they engaged.⁷ Somewhat surprisingly, the data suggest that learning-disabled and nonlearning-disabled children engage in the same types and amounts of delinquent activities. Table 2 shows the percentage of children in both the nondelinquent, public school and delinquent samples who reported having ever engaged in behavior falling into seven offense categories. The reported delinquent behaviors of learning-disabled and nonlearning-disabled children are highly similar in all categories. A review of the official records of the officially

Insert Table 2 about here

delinquent sample revealed the same pattern. Table 3 shows the percentage of children who were adjudicated for offenses in each of the seven categories. Those children who are

Insert Table 3 about here

adjudicated delinquents tend to be convicted of the same types of offenses, regardless of whether they are learning disabled or not.

The school failure hypothesis and the susceptibility hypothesis both purport to explain why learning-disabled children are more likely than nonlearning-disabled children to engage in delinquent activities. Our data do not support these hypotheses about the LD/JD link. If it is accepted that learning-disabled and nonlearning-disabled children engage in

the same delinquent behaviors, then neither the school failure hypothesis, the susceptibility hypothesis, nor any other hypotheses that propose differences in learning-disabled children's delinquent behaviors are supported by the data.

If there is a greater prevalence of learning disabilities among adjudicated juvenile delinquents than among public school children, and if it is accepted that learning-disabled and nonlearning-disabled children behave comparably, then a "different treatment" rationale may be proposed as a general hypothesis that is consistent with the above data to explain the link between learning disabilities and juvenile delinquency. That is, it may be argued that learning-disabled and nonlearning-disabled children engage in essentially the same behaviors but that, somewhere in the juvenile justice system, learning-disabled children are treated differently from nonlearning-disabled children. It is possible that the differential treatment and the consequent greater likelihood of adjudication result from evidence of the child's failure in school, from a reaction to something about the child himself, or both. This is in line with the thinking that suggested the school failure and susceptibility rationales. However, the different treatment hypothesis asserts that the LD child is treated differently, for whatever reason, for the same delinquent behavior.

Looking Ahead

The objectives of this effort, combining research and program evaluation, have been only partially met at this writing. Additional analyses in the areas discussed above will be conducted with data already acquired, as well as with newly acquired data. The question of whether the apparent relationship between LD and official delinquency can be substantiated or is spurious (i.e., that both are related to some other extraneous variable) will be explored as fully as the data will permit. Analysis of two-year longitudinal data will focus on changes in the delinquent behavior of the officially nondelinquent public school sample as a function of whether or not they originally were classified learning-disabled. Follow-up comparisons of self-reported delinquency, self-reported police contacts and court records will be conducted with data collected at two points in time. The changes in delinquent behavior of the adjudicated delinquents who are learning disabled also will be examined over time as a function of whether or not they are enrolled in the project's program of LD remediation.

A construct validation of the definition of learning disabilities used in our research will be conducted in 1979. This procedure will employ the data collected in the diagnostic assessments, and will demonstrate the extent to which the

operational definition of LD used in this study has produced results that are consistent with the assumptions used in constructing the test battery and assessment procedures.

In the next two years a major effort will be directed toward meeting a central objective of the research program: the demonstration and evaluation of the remediation program for learning-disabled adjudicated delinquents in the project's three sites. This effort, involving a complex, concerted set of remediation and program evaluation activities will address two central questions:

- What are the effects of specific learning disability remediation on the educational achievement and behavior of learning disabled delinquents?
- What are the characteristics of a successful remediation program?

By August 1980, the final analyses of the prevalence data, the validation of the LD definition used in the study, the specification of the relationship between LD and delinquency, and the field experiment in the remediation of learning disabled delinquent children, hopefully will yield not only a generally acceptable answer to the question of the link between LD and JD, but also suggestions for what to do about the problem.

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Footnotes

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Further information regarding this study may be obtained from the authors at the National Center for State Courts, 300 Newport Avenue, Williamsburg, Virginia 23185. Some of the data for this study was gathered while two of the authors were affiliated with the Institute for Business, Law and Social Research at Creighton University.

²It is noteworthy that the AIR report strongly recommended that the Office of Juvenile Justice and Delinquency Prevention should focus its program initiative in the research and evaluation sector, and not in program application, stating that the justification for broad application is still to be developed.

³The first phase of the project was conducted at Creighton University and ended on August 31, 1978. The two-year continuation of the research and evaluation components of the project is being conducted by the National Center for State Courts.

⁴As originally conceived, both the prevalence study and the remediation program were to focus on 12 to 15-year-old boys. The rationale was to concentrate on a group for whom the prevalence of LD was thought to be relatively high (prevalence estimates for boys generally have been higher than those for girls), and on an age range that allowed reasonable opportunities for both measuring delinquent behavior and conducting an effective program of remedial instruction. However, the difficulty of securing an adequate sample for the remediation program led to the decision to include girls and older youths as well.

⁵Once a youth is classified learning disabled and placed in the remediation group, an instructional plan based on the diagnostic recommendations and additional formal and informal assessments is prepared by a learning disabilities specialist. The individualized program is written for student-preferred learning patterns (i.e., auditory, visual, motor, or a combination thereof), and includes appropriate

teaching techniques. The remediation program is based on an academic treatment model. As such, it focuses directly on school subjects and the improvement of academic skills. The goal of the program is to meet with each youth in an instructional setting for the equivalent of four class periods per week for at least one school year. The instructional program is not designed to duplicate or to replace the educational programs that are being offered to the youths by local schools; rather, it is designed to permit the assessment of the effects of particular treatment variables on measures of LD and delinquency.

⁶The WISC-R was reported in two forms: as conventionally reported in Verbal (V) and Performance (P) subscores; and in terms of the Witkin factor scores - Analytic Functioning (AF), Verbal Comprehension (VC), and Attention Concentration (AC). The AF score is composed of the Block Design, Picture Completion, and Object Assembly subtests. The VC score is composed of the Vocabulary, Information, Comprehension, and Similarities subtests. The AC factor combines the scores from the Digit Span, Arithmetic, and Coding Subtests (Witkin, Dyk, Faterson, Goodenough and Karp 1974). The test battery is described more fully in Barrows, et al. (Note 1).

⁷The self-reported delinquency questionnaire consisted of 28 items concerning behaviors ranging from relatively minor, status-type offenses to delinquent behaviors of a serious nature, as well as questions pertaining to police pick-up. For each behavior, the participants were asked to report the frequency with which they had engaged in it, both overall and during the past year. More information about the self-report scale is contained in papers by Broder and Zimmerman (Note 9) and Zimmerman and Broder (Note 10).

Table 1
Estimates of LD/JD Prevalence

Category	Records ^a Reviewed	Learning Disabled	
		N	%
Public School	984	161	16
Juvenile Delinquent	397	127	32

⁶These were cases with sufficient data to make a LD/non-LD decision.

Table 2
 Percent of Children Reporting Acts in
 Seven Offense Categories

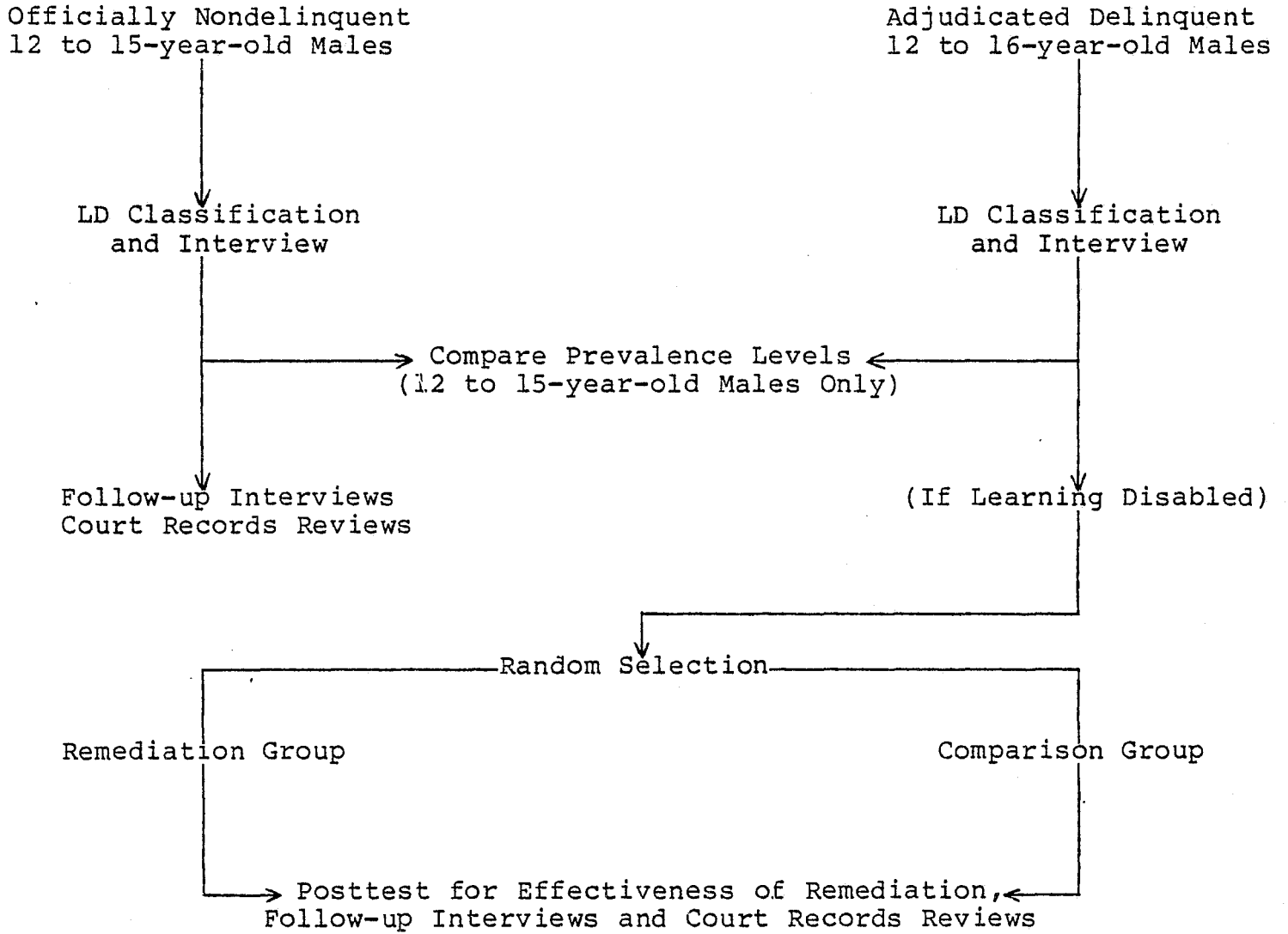
Offenses	Public School		Juvenile Delinquent	
	LD	Not LD	LD	Not LD
Status	83	86	95	96
Miscellaneous	63	72	88	88
Alcohol	64	73	85	87
Drug	20	23	72	69
Automobile	25	25	68	69
Criminal	18	18	80	74
Violent	50	49	77	78
Mean	46	49	81	80

Table 3
Percent of Delinquents
in Each Offense Category

Offense	LD	Not LD
Status	36	35
Miscellaneous	33	30
Alcohol	3	1
Drug	6	4
Automobile	8	6
Criminal	38	46
Violent	15	16

Figure 1

Schematic Representation of Study Design



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