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The Educational Deficiencies of Florida's Juvenile Justice Students

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THE EDUCATIONAL DEFICIENCIES OF FLORIDA’S JUVENILE JUSTICE STUDENTS

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ABSTRACT

The prior literature addressing delinquency and education while diverse consistently documents the relationship between poor school performance and delinquent behavior. However, the specific causes for the poor school performance of delinquent youth remain ambiguous at best. Stated differently, we do not know precisely why delinquent youth perform poorly in school. This paper addresses this question by examining the differences in educational deficiencies between delinquent youth and a matched sample of nondelinquent youth. The findings document that delinquent youth are more likely to have lower GPAs, poorer attendance records, more likely to be retained in the same grade, and receive more disciplinary actions while in school. Moreover, delinquent youth are found to be disproportionally diagnosed as ESE, namely 44% of the delinquent sample compared to only 12% of the nondelinquent comparison group. The paper closes with discussion of the policy implication of these findings particularly in relation to remedying these identified educational deficiencies in the attempt to alter the life course of delinquent youth.
THE EDUCATIONAL DEFICIENCIES OF FLORIDA’S JUVENILE JUSTICE STUDENTS

INTRODUCTION

The school is a fundamentally important institution through which intellectual, learning, and social development occur (Farnworth et al., 1985). It performs an essential role in determining students’ life trajectories. A number of investigators have found a positive relationship between delinquency and poor school performance (Silberberg and Silberberg, 1971). As a result, in our efforts to reduce delinquency, it should prove helpful to identify the educational deficiencies that contribute to low school performance and delinquency.

The goal of the present study is to determine the educational deficiencies related to delinquency. It includes four sections. Section I provides a review of the literature addressing the educational deficiencies and school performance of juvenile justice students. Section II describes methodology of the current study on the educational deficiencies of Florida’s juvenile justice students. Section III provides a comparison between the educational deficiencies of juvenile justice youth with nondelinquent youth. Section IV summarizes and discusses the paper’s findings and policy implications.

I. LITERATURE REVIEW

An extensive body of literature examines the relationship between school problems and juvenile delinquency (e.g., Cloward and Ohlin, 1960; Cohen, 1955; Elliott, 1966; Empey, 1982; Hargreaves, 1967; Hirschi, 1969; Kelly and Balch, 1971; Kelly, 1974; Kronick, 1993; Polk et al., 1974; Rhodes and Reiss, 1969; Siegel and Senna, 1988; Stinchcombe, 1964; Toby, 1957). Research reported that juvenile delinquency was highly correlated with school failure (Pollard, Pollard and Meers, 1995; Tarnopol, 1970; Zabel and Nigro, 1999). Meltzer, et al (1984) found a significantly higher prevalence of school problems among delinquents as
early as kindergarten. Furthermore, investigators identified school status as more strongly related to delinquency than social class when controlling for both simultaneously (Kelly and Balch, 1971; Kelly, 1974; Phillips, 1974; Polk and Halferty, 1966).

As indicated by prior research, school problems can manifest themselves in many different forms, and their relationship to delinquency has been subject to different interpretations. However, there is considerable agreement that juvenile delinquents have far more educational deficiencies than nondelinquent students.

**Types of Educational Deficiencies**

**Academic underachievement.** Research on academic underachievement documents that juvenile delinquents are more likely to perform behind in academic achievement and function below the level of normal intelligence (Ahlstrom and Havighurst, 1971; Finn, Stoh and Zarnichny, 1988; Gluecks 1950; Lynam, Moffitt and Southamer-Loeber, 1993; Markley, 1974; Pallas, 1987; Rager, 1970; Raymaker, 1974; Reilly, 1978; Ungerleider, 1985). Liska and Reed (1985:548) noted, “Delinquent youth are less likely to complete assigned work at home or in school, to get good grades, to enjoy school, to aspire to higher education.” Previous research has shown that juvenile offenders have significant academic deficiencies (Davis, Sanger and Morris-Friehe, 1991; Katsiyannis and Archwamety, 1999; Pollard et al., 1995; Silberberg and Silberberg, 1971), and delinquency is related to poor academic performance (Polk, Frease and Richmond, 1974). Delinquents fall behind their peers in achievement if they have not dropped out of school (Broder, Keilitz and Zaremba, 1979; Reilly and Bullock, 1979), and they generally score lower on standardized tests of academic achievement than their nondelinquent peers (Rutter and Madge, 1976; Hirschi and Hinderlang, 1977; Ouston, 1984).

Delinquent youth’s academic underachievement results in repeating grades, which is a common characteristic of this population (Kvaraceus, 1960). Mazerolle (1998) found that grades in school were inversely related to delinquency for both female and male students. Researchers have further noted that juvenile female offenders tended to have failed one or more grades in school (Fejes-Mendoza, Miller and Eppler, 1995). Moreover, Leschied et al. (1984) reported that 63.4% of 41 juvenile justice students had failed a grade once, and two out of three students were at least one full grade behind in achievement as measured on standardized achievement tests. Similarly, Zabel and Nigro (1999) discovered that more than 40% of youths in a juvenile justice facility repeated at least one grade and more than 70%
failed classes. Other studies reported that juvenile offenders functioned from 2 to 4 or more years below expected levels of academic performance (Compton, 1974; Hill, Parker, Corbett, and Miano, 1980; Mauser, 1974). Likewise, in 2001, Zabel and Nigro revealed that juvenile offenders scored 2 to 3 years below their current grade level on each academic measure as a group. Rincker, Reilly and Braaten (1990) found, in an investigation of 104 delinquents case files of a county juvenile detention facility in a Midwest metropolitan area of the United States, that their academic underachievement level was approximately four years. In summary, investigators consistently documented that delinquents repeated more grade levels and received lower grades as a group (Laird, 1980).

**Reading retardation.** Research results concerning the reading retardation of delinquents are inconclusive and inconsistent because of variation in samples as well as definitions of delinquency and reading retardation. However, it is possible that delinquency is related to reading retardation. In fact, Yule and Rutter (1968) established a strong association between poor reading achievement and antisocial disorders. Roman (1957) identified reading retardation as a step in the development of an individual’s delinquent life course.

If children’s reading skills are much lower than would be predicted from their intelligence and age, they are considered as reading retarded (Ousten, 1984). Reading retardation constitutes the most severe form of academic underachievement for juvenile delinquents and has become a central focus in the research concerning the association between school failure and juvenile delinquency (Meltzer, et al, 1984). Many findings indicate that academic achievement, particularly in the area of reading, has been associated with delinquency (Reiter, 1982). Zinkus and Gottlieb (1978) considered reading to be one of the most important indicators of academic achievement and an area where delinquents particularly have difficulties.

Most researchers agree that delinquents are poor readers. Studies established that delinquent youth suffered from serious reading problems (Eilenberg, 1961; Mulligan, 1969; West, 1969) and had lower reading achievement scores (Kauffman, 1985; Rincker, Reilly and Braaten, 1990). Delinquents are plagued with severe language disabilities (Bernstein, 1958; Graubard, 1967), which could contribute to reading retardation (Gagne, 1977). Critchley (1968) found delays in reading skills ranging from two to five years in delinquents, and other researchers also ascertained lags in reading attainment for delinquents (Margolin, et al., 1955; Silberberg and Silberberg, 1971; Tarnopol, 1970; Weinschenk, 1967; Wolfgang, Figlio and Sellin, 1972). In a sample of 104 juvenile offenders, Finn et al. (1988) found that 43% were
reading two or more years behind grade level. Furthermore, the comparison of prevalence of reading retardation between delinquents and general population of students further dramatizes the finding above. Fabian (1955) discovered only 10% of students suffered from reading retardation in a school sample, but 83% in a sample of predelinquent and delinquent children. Additionally, some researchers, namely, Chalfant and Scheffelin (1969), and Clements and Scheffelin (1966) established an association between minimal brain dysfunction and reading impairment, while Tarnopol (1970) found a higher than average incidence of minimal brain damage among delinquents. Researchers also determined that speech and hearing disorders were correlated with reading problems (Gentile, 1969; Weaver, Furbee, and Everhart, 1960), and the incidence of speech disorders and hearing disorders were much greater for delinquents compared to nondelinquents (Cozad and Rousey, 1968; Rousey and Averill, 1963). These findings document the high prevalence of reading retardation in delinquents.

**Poor attendance and dropout.** Problems in school attendance are prevalent among delinquents and associated with school failure (Leschied, Coolman, and Williams, 1984). Liska and Reed (1985) reported that delinquents were less likely to be in school than their conventional peers and missed more days than most students in public high schools (Finn et al., 1988). Studies have found that a large percentage of delinquents are truant (Silberberg and Silberberg, 1971). For instance, one-third of a delinquent group had been truant before being referred to a counselor or principal for some misdemeanor (Laird, 1980). Bagot and McClintock (1952) found up to 55% truancy or unsatisfactory attendance in delinquents (Cited in Eilenberg, 1961). Therefore, truancy occurred more frequently among delinquent youth (Meltzer et al., 1984), and it was a significant trait of delinquents (Kauffman, 1985; Kvaraceus, 1960).

Dropping out characterizes delinquents as well. Delinquents dropped out at higher rates than their nondelinquents peers (Pallas, 1987). Laird (1980) reported delinquents dropped out of school about one year earlier than nondelinquents. Brier (1995) found delinquents are more likely to drop out of school before graduating. He also discovered that dropouts were more likely to be arrested and incarcerated. This finding is consistent with a study by U.S. Department of Education (1997). School dropouts have higher rates of criminal involvement than any other educational group (Bachman and O’Malley, 1978; Thornberry, Moore, and Christenson, 1985), which supports the existence of a high prevalence of dropout in delinquents. The same conclusion can also be drawn from the following specific studies. Bell (1976) reported that over 90% of the inmates at Draper Prison in Alabama were school
dropouts. Bullock and Reilly (1979) stated that more than 27% of a sample of 142 juvenile offenders between the ages of 15 and 18 were school dropouts at the time of adjudication. Sawicki and Schaeffer (1979) noted that in 1977, 54% of the youths admitted to the detention facility of St. Louis County were not enrolled in a school program. Similarly, after interviewing 266 juvenile offenders, Zabel and Nigro (1999) found that a high proportion of participants were not currently enrolled in school.

Disabilities. Prior research established that the prevalence of delinquents with disabilities was high (Crawford, 1982). The most common disabilities found in juvenile delinquents are learning disabilities or emotional disturbance (Burrell and Warboys, 2000; Doren, 1996; Fink, 1990; Murphy, 1986; Quinn et al, 2001; Reilly et al, 1985; Richey and Willis, 1982; Robinson and Rapport, 1999; Smykla and Willis, 1981; Zabel and Nigro, 1999). Three theoretical models have been developed to explain the link between disabilities and delinquency. In the first model, delinquent behavior is viewed as resulting from the academic underachievement that disabled students experience (Keilitz and Dunivant, 1986; Leschied et al., 1986; Murray, 1976; Post, 1981). In the second model, disabled children have such characteristics as lack of impulse control, poor attention, and inability to anticipate the future consequences of actions and to learn from experience. These characteristics may contribute to their delinquency (Keilitz and Dunivant, 1986; Leschied et al., 1986; Murray, 1976; Post, 1981). In the third model, disabled children are considered to be at a greater risk to be arrested, charged, convicted, and adjudicated (Broder et al., 1981; Keilitz and Dunivant, 1986). In other words, the system treats disabled students more punitively.

Emotional disturbances. The Individuals with Disabilities Education Act (IDEA) was enacted in 1975, and revised in 1990 and 1997. According to IDEA, seriously emotionally disturbed is defined as:

a condition exhibited by one or more of the following characteristics over a long period of time and to a marked degree that adversely affects the child’s educational performance:

a. an inability to learn that is not attributable to intellectual, sensory or health factors;

b. an inability to build or maintain satisfactory interpersonal relationships with peers and teachers;

c. inappropriate types of behavior or feelings under normal circumstances;
d. pervasive, chronic unhappiness or depression;
ed. tendency to develop physical symptoms or fears associated with personal or school problems.

Seriously emotionally disturbed includes schizophrenia, but does not include simply social maladjustment [section 1401 (26)(B)].

According to previous research, delinquents with emotional disturbances encompass an alarmingly high percentage of total delinquents (Bullock and McArthur, 1994; Snyder and Sickmund, 1995). Because investigators used different definitions of emotional disturbances, studies found differences in prevalence rates of emotional disturbances. However, the rate of emotional disturbances is heavily overrepresented among delinquent youth (Bullock and McArthur, 1994; McIntyre, 1993; Murphy, 1986). Chesapeake Institute (1994) discovered that 20% of students with emotional disturbances, compared with 6% of all students, were arrested at least once before they left school. Youth with emotional disturbances are more likely to have problems in school, which contribute to delinquency (Kauffman, 1997; Taliento and Pearson, 1994, cited in Robinson and Rapport, 1999).

**Learning disabilities.** Specific learning disabilities are defined as:

a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. It may include conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia but not a learning problem that is primarily the result of environmental, cultural, or economic disadvantage [section 1401 (26)(B)].

Many investigations confirmed the link between learning disabilities and delinquency. Numerous researchers documented a high percentage of learning disabilities among juvenile delinquents (Anderson, 1972; Berman, 1974; Broder, Peters and Zimmerman, 1978; Compton, 1974; Holte, 1972; Keilitz, Zaremba and Broder, 1979; Mauser, 1974; Mulligan, 1972; Poremba, 1975; Rizzo, 1975; Tarnopol, 1970, 1975; Unger, 1978). Because of differences in sample sizes and definition of learning disabilities, the prevalence rate of learning disabilities among juvenile delinquents has varied. For example, approximately only 10% of the total juvenile population had learning disabilities based on a survey of state facilities for juveniles (Bullock and McArthur, 1994, cited in Robinson and Rapport, 1999), 10.59% of all juvenile delinquents in state juvenile correctional facilities (Morgan, 1979), 25.4% in a sample of 106 delinquent youths in Connecticut and Virginia (Comptroller
General, 1977), 30% of a delinquent population in Santa Clara and California (Cronk, 1977), 32% among 220 juvenile offenders committed to the Arizona Department of Corrections (Kardash and Rutherford, 1983), 32% of a delinquent population in West Virginia (Duling, Eddy, and Risko, 1970), 37.1% of 232 juveniles in detention at the St. Louis County, Missouri, Juvenile Court (Sawicki and Schaeffer, 1979), 52.6% of 171 boys in detention in Sonoma County, California (Podboy and Mallory, 1978, cited in Broder et al., 1981), 55.5% of 105 12- to 17-year-old adjudicated boys in Rochester, Minnesota (Swanstrom et al., 1979, cited in Broder et al., 1981), and 77% out of 125 delinquents studied were learning disabled (Sawicki and Schaeffer, 1979). Smykla (1981) criticized most studies because they failed to exclude learning disabilities from emotional disturbances or mental handicapped conditions. Pasternack and Lyon (1982) also criticized studies on the link of learning disabilities and juvenile delinquency because they used different methodologies for determining the incidence rates. However, there seems to be very little dispute that the prevalence of learning disabilities for juvenile delinquents is much higher than nondelinquents (Leone et al., 1991; Morgan, 1979; Robinson and Rapport, 1999; Rutherford, Nelson, and Wolford, 1985; Snyder and Sickmund, 1995). For example, the U.S. GAO estimated the percentages of learning disabled nondelinquent children range from 1% to 3% (Comptroller General of the U.S., 1981), compared with percentages of 16% to 19% for delinquents conducted by the National Center for State Courts (Broder et al., 1981; Campbell, 1978; cited in Zimmerman et al., 1981). Keilitz and Broder (1979) also noted that the incidence of learning disabilities among 12- to 15-year old adjudicated youth was double that of public school students (cited in Richey and Willis, 1982). Overall, the empirical evidence documents considerable overrepresentation of learning disabled students among delinquent populations as compared to nondelinquents (Zimmerman et al., 1981).

**Disciplinary problems.** Prior research has shown a moderate-to-strong relationship between frequent disciplinary problems in schools and juvenile delinquency in the community (Loeber & Farrington, 1998, cited in Sprague et al., 2001). Early disciplinary problems in school have been identified as a strong predictor of later delinquency (Tobin, Sugai, and Colvin, 2000; Walker, Colvin, and Ramsey, 1995). Walker et al. (1995) noted that a student with 10 or more documented disciplinary referrals to the principal’s office within a given school year was seriously at risk for delinquency. Likewise, Sprague et al. (2001) identified students’ disciplinary problems as a basis for screening and identifying middle school students at risk of delinquency.
Studies frequently reported findings of the prevalence of school discipline problems and delinquency referrals. More than 50% of all serious delinquent behaviors involved those who had disciplinary problems in elementary and middle schools (Skiba, Peterson, and Williams, 1997; Sugai, Sprague, Horner, and Walker, 2000, cited in Sprague et al., 2001). Zabel and Nigro (1999) noted that 88.6% of 266 juvenile offenders confined to a juvenile detention facility had been suspended, which may have increased the likelihood of delinquency by removing students from adult supervision (Walker et al., 1995). Finn et al. (1988) found that 54% of the sample who appeared in juvenile court had been formally suspended from school at least once, one third had been suspended 2 or more times, and some of those students had been suspended as many as 8, 10, 15, and even 20 times.

**Comparisons of Educational Deficiencies between Delinquents and Nondelinquents**

A number of studies have examined the differences in educational achievement between delinquent and nondelinquent populations. For example, the Gluecks (1950) matched 500 delinquent and 500 nondelinquent boys with respect to race, age, intelligence level, and residence in underprivileged areas in relation to educational achievement. They found that the school achievement of delinquents was far below that of the nondelinquents (Cited in Silberberg and Silberberg, 1971). Jerse and Fakouri (1978) matched 108 delinquent students adjudicated by the juvenile court in Indiana with 108 nondelinquent students by sex, grade level, and school. They discovered that the nondelinquents showed significantly higher grades in reading and arithmetic than did the delinquents. More specifically, Hill (1981) investigated the academic achievement in reading, arithmetic, and spelling of 42 disabled and nondisabled juvenile delinquents (12 to 17 years old). He revealed that the disabled delinquents scored approximately 5 to 8 years below grade placement while the non-disabled delinquents functioned 3 to 6 years below. Similarly, Meltzer et al. (1984) compared 53 delinquents and 51 junior high school students on their current educational performance. They discovered significant differences for reading, spelling, mathematics, and writing. The delinquents, as a group, experienced more difficulties than the comparison group in terms of reading accuracy, reading comprehension, and reading rates. They also found a significantly higher prevalence of school problems among the delinquents in early school years: “by second grade, 45% of the delinquents were already delayed in reading and 36% in handwriting, in contrast to only 14% of the comparison group.” Further, Ouston (1984) reported that the average attendance of nondelinquents was significantly higher than that of
the delinquents when the students were 13-14 years old. For boys, the average attendance rates were 89.2% for nondelinquents, and 83.0% for delinquents; for girls, 88.3% for nondelinquents, and 83.6% for delinquents. The delinquents had lower scores on reading than the nondelinquents aged 10 and 14. He also found that the delinquents left school earlier than the nondelinquents. Significantly more delinquents left school before taking their examinations at the age of 16. The delinquents scored lower than the nondelinquents even after excluding the early school departures. Consequently, the delinquents, as a group, had a lower attendance rate, were more likely to leave school early, and achieved far fewer graded examination passes than the nondelinquents.

**Interrelationships among Delinquents’ Educational Deficiencies**

It has been suggested that some of the apparent relationships between delinquency and educational deficiencies are merely artifacts, which can be explained by other variables causally related to delinquency, or academic achievement, or both. For example, an apparent relationship between delinquency and academic achievement might occur as a consequence of the relationship between disabilities and academic achievement. In fact, research has shown that there are significant relationships between the following variables: academic underachievement, reading retardation, poor attendance and dropout, disabilities, and disciplinary problems.

**Relationship between disabilities and academic underachievement**

A federally sponsored study of 129 incarcerated juveniles in Connecticut and Virginia (Comptroller General of the U.S., 1977) found that all of the juveniles exhibited significant learning problems. Murphy (1986) revealed that the juvenile delinquents’ learning problems could be attributed to learning disabilities. Other research demonstrated that emotionally disturbed and mentally handicapped students exhibited learning problems similar to those of learning disabled students (Hallahan and Kauffman, 1977; Kauffman, Cullinan and Epstein, 1987). Such learning problems often lead to academic underachievement and reading retardation (Pasternack and Lyon, 1982; Sawicki and Schaeffer, 1979). Studies showed that disabled delinquents scored much lower on academic achievement tests than nondisabled delinquents (Gregory, 1986; Pasternak and Lyon, 1982; Ysseldyke, Thurlow, and Christenson, 1988, cited in Fink, 1990). Furthermore, disabled students were a minimum of 2 grade levels behind in academic achievement, and a maximum of 4 to 6 years behind (Hill, 1981; Sawicki and Schaeffer, 1979). Several studies discovered
emotionally disturbed adolescents to be the least successful students in public schools (Hill, 1981; Meisel et al., 1998).

**Relationship between disabilities and poor attendance and dropout.** According to prior research, disabled students were more often absent from school (Fink, 1990; Sawicki and Schaeffer, 1979). They also appeared to have significantly higher dropout rates (Blackorby and Wagner, 1996, cited in Zabel and Nigro, 1999, Edgar, 1987, Rylance, 1997). Bernstein and Rulo (1976), Smykla and Willis (1981) found that the likelihood of absenteeism and dropping out of school was high for disabled students.

**Relationship between disabilities and disciplinary problems.** Past studies also indicated that disabled students were more likely to have disciplinary problems; on in-school referrals for troublesome behavior, there was significant difference between disabled and nondisabled students (Fink, 1990). Likewise, disabled children are more likely to be suspended and expelled. For example, a statewide study of suspension and expulsion reported that 22% of suspensions involved students with behavioral disorders and learning disabilities, four times their representation in the state’s schools (Cooley, 1995, cited in Zabel and Nigro, 1999).

**Relationship between poor attendance, dropout, and academic underachievement/reading retardation.** According to Rhodes and Reiss (1969), the truancy rate for failing students was much higher than other nonfailing students. Among a group of juvenile offenders, moreover, truants had the poorest grades and higher grade retention (Finn, 1988). Pallas (1987), in fact, demonstrated that poor academic performance was the best predictor of dropping out of school.

In summary, disabled youth have disproportionately high rates of poor academic records, poor attendance and dropout, and disciplinary problems while in school. Likewise, students with poor academic records are more likely to play truancy or drop out of school. Truants and dropouts receive poor grades. Besides, students who receive more disciplinary actions are more likely to have poor attendance records and drop out. All these factors, namely disabilities, academic underachievement/reading retardation, poor attendance and dropout, and disciplinary problems, are antecedent to delinquency. Thus, the cycle of disabilities, academic underachievement/reading retardation, poor attendance and dropout, disciplinary problems and delinquency is illustrated in Chart 1.
II. EDUCATIONAL DEFICIENCIES OF JUVENILE JUSTICE STUDENTS: FLORIDA CASE STUDY

Purpose of the Study

This study compares juvenile justice students with public school students in order to determine the specific educational deficiencies of delinquent youth. The basic hypothesis tested is that the prevalence of educational deficiencies among delinquents is disproportionately higher than among public school students.

The Advantages of the Current Study over Previous Research

First, the state-level student database was used, which includes juvenile justice students and public school students. This sample is more representative of Florida students. The large sample size makes it possible to generate the research findings to all students in the state of Florida. In contrast, most previous research confined their studies to individual juvenile justice facilities or schools, and none of the prior studies has dealt with statewide data, representative of delinquents and public school students.

Second, students who attended DJJ programs were identified as juvenile delinquents. As a result, instead of only concerning adjudicated youths or juveniles confined to detention...
facilities, all the juvenile delinquents who were committed to any juvenile justice facility in Florida were included in this study with exception of detention centers, day treatment programs and prevention programs. This is a more complete list of juvenile justice students; therefore, the external validity of this study of the characteristics of juvenile justice students is increased.

Third, the educational deficiencies that the delinquent students presented in public schools in the previous school year, before they were enrolled in DJJ schools in the school year of 2000-2001, were examined. In comparison, most previous research concerning the relationship between educational deficiencies and self-reported delinquency or official delinquency did not address time order, or focused on delinquents’ school performance after they were labeled as delinquents. However, delinquent students and nondelinquent students are not comparable with respect to school performance, because the status of delinquency might have an effect on educational deficiencies levels. Even though a caveat is in order that prior delinquency before public schools being examined in the school year of 1999-2000 was not controlled, delinquent students and nondelinquent students are more comparable in their school performance related to delinquency in 2000-2001.

Fourth, a broader range of measures of academic achievement were employed, including grade promotion status, grade level, and GPA (only grades 9, 10, 11, 12). In doing so, a higher level of reliability of juvenile justice students’ academic achievement is provided as compared to a single variable of average score of standardized tests.

Lastly, in the attempt to describe the level of disabilities in Florida juvenile justice students, the present study applied Florida Statute’s definition in accord with IDEA, which provides the widely used and approved official definition of disabilities. Although a number of studies have supported the hypothesis that a highly disproportionate number of juvenile delinquents are disabled, researchers obtained different determinations of disabled delinquents due to the use of different definitions and referrals of disabilities. However, the application of the Florida Statute’s definition in accord with IDEA should provide a more widely approved and agreed upon prevalence of disabilities in delinquents.

Data

The data used for this study are official data and drawn from the Florida Department of Education (DOE). They include students enrolled in all schools in the state of Florida, including public schools and the Florida Department of Juvenile Justice’s (DJJ) schools. The
data analyzed reflected five of the formats maintained by DOE, namely, student demographic information, student end of year status, student disciplinary action, student attendance, and exceptional student for the school years of 1999-2000 and 2000-2001.

Sample

DJJ school numbers were used to identify juvenile justice students from 2000-2001, excluding detention centers, day treatment programs and prevention programs. DJJ students were identified in 2000-2001 and matched with the DOE demographic format in the school year of 1999-2000 by student identification number (SID). Those students who were not matched by SID were matched by another student identification which was created by adding the first three letters of the student’s last name and first name plus the last two digits of the year and the month the student was born. Those students not living in Florida, or not enrolled in school the previous year could not be matched with the DOE data in 1999-2000. Ultimately, 11,361 juvenile justice students were located in the demographic information format in the school year of 1999-2000.

Experimental group. For the 11,361 selected students, information on demographic background, end of year school status, exceptionality status, attendance, and disciplinary/referral action was obtained by merging all five formats, namely, student end of year status, student attendance, student disciplinary/referral action, exceptional student, and demographic formats. As a result, the above information if available was retained for each school those students attended during 1999-2000.

For juvenile justice students in 2000-2001, the study was solely concerned with their school performance in the last public school during the previous school year. Again, DJJ school numbers were used to identify public schools or DJJ schools. Only those public school records were selected. If the student stayed at more than one public school in the school year of 1999-2000, only the last public school was selected according to his or her entry date to the public school. Among the 11,361 students who stayed at DJJ schools in 2000-2001, some also stayed at DJJ schools and did not attend public schools during 1999-2000, and were, therefore, excluded from the study. A total of 6,125 out of 11,361 students were included in the experimental group. Those students who were between the ages of 10 and 22 years old in 1999-2000 were further selected. Ultimately, 6,107 students met this criterion.
**Control group.** The process of selecting the control group involved two steps. First, the nondelinquent student group was selected from students with end of year status records and attendance records. If the student stayed at more than one public school in the school year of 1999-2000, the last public school was used according to his or her entry date to the public school. After selecting those students aged from 10 to 22 years old, 1,463,444 students were identified in the control group pool.

Second, in order to select the control group comparable to the experimental group, precision matching was employed. From the 1,463,444 students, the control group was selected to match the delinquents in the experimental group on six characteristics: age, gender, race, socioeconomic status (measured by lunch status), exceptionality status, and school. The procedure was to find all the nondelinquents in the 1,463,444 students who had the same combination of characteristics as a particular delinquent in the experimental group, and then to select randomly one of the nondelinquents as a match. The cluster of characteristics of the delinquents was sufficiently distinctive so that the number of cases of multiple possibilities for matching was not great, despite the relatively large pool of the public school students. In carrying out the matching, many cases were not possible to match exactly in terms of the combined categories for all characteristics, therefore, a total of 5,187 students, 920 fewer than 6,107 in the experimental group, were included in the control group. Each of the 5,187 cases matched a delinquent case by all of the characteristics, namely, age, gender, race, socioeconomic status, exceptionality status, and school. Youths selected for the control group were public school students who had no juvenile justice records in the school year of 2000-2001 according to the Department of Education.

Prior research has demonstrated the connection between disabilities and academic underachievement/reading retardation, poor attendance and disciplinary problems. Since exceptionality (including disabilities and giftedness) is significantly related to all the other variables of educational deficiencies being examined, namely, academic performance, attendance, and disciplinary problems, it was considered important to match all the cases on exceptionality status in order to compare delinquent youths and nondelinquent youth in terms of academic performance, attendance, and disciplinary problems. Furthermore, age was a criterion used. It was not possible with the number of cases available to match also on grade at the same time. Leaving grade uncontrolled while controlling on age means that grade has been permitted to vary. Within the controls imposed, there is some justification for permitting
grade to vary, since it is an important measurement of academic performance being examined.

There are 6,107 delinquents in the experimental group compared with 5,187 nondelinquents in the control group. Based on the criterion whether a particular delinquent has the same combination of characteristics in the control group, the experimental group was divided to two groups: 5,187 delinquents who had the same combination of characteristics in the control group, and the other comprised of 920 delinquents who did not have the same combination of characteristics in the control group. For the comparison study, only 5,187 students were included in the analysis to determine the extent delinquents differed from nondelinquents in terms of educational deficiencies. Therefore, cases where the same combination of characteristics in the control group cannot be found were excluded. On the other hand, all 6,107 students in the experimental group, without exclusion, were used for the descriptive analysis of the experimental group in terms of disabilities.

**Variables and Measurements**

The comparison analysis focuses on the differences between the experimental and control group in academic achievement, school attendance, and disciplinary problems. In the descriptive analysis, the distribution of exceptionality in the experimental group is examined.

Academic achievement is measured by grade promotion status, grade level and grade point average (GPA) in this study. Grade promotion status is defined as the change in grade assignment at the end of a regular school year or summer session. GPA is defined as one or more calculated grade point averages for all courses completed in grades 9-12 for credit toward graduation. Grade level is defined as the student’s current grade level placement or the grade level for which data are being reported.

Attendance is measured by the number of days students attended school, more specifically, days absent annually, days present annually, and days at school. Days present annually or days absent annually represented the total days the student was present in or absent from a school or district during the 180 day school year, which was a calculated value using daily attendance. The variable days at school was created by subtracting entry date to the school from withdrawal date.

Disciplinary problems are measured by any disciplinary/referral action the student received in the school attended during 1999-2000, namely, in-school suspension and out-of-
school suspension. These are continuous indicators measuring the numbers of in-school suspension and out-of-school suspension the student received.

A student who has an exceptionality is defined as a student that requires special instruction or related services to take full advantage of or respond to educational programs and opportunities, because of a physical, mental, emotional, social, or learning exceptionality. Students who had the primary exceptionalities, namely specific learning disabled, emotionally disturbed, educable mentally handicapped, speech and language impaired, gifted, other health impaired, and other disabled, were diagnosed when DOE collected the data. Specific learning disabled refers to “psychological processing disorders manifested by significant difficulties in the acquisition and use of language, reading, writing, and/or mathematics.” These disorders are “intrinsic to the individual and may occur across the life span.” “Although specific learning disabled may occur concomitantly with other handicapping conditions or with extrinsic influences, the disabilities are not primarily the result of those conditions or influences” (Florida Statute 6A-6.03018). Emotionally disturbed is split into emotionally handicapped and severely emotionally disturbed in Florida. Emotionally handicapped refers to “a condition resulting in persistent and consistent maladaptive behavior, which exists to a marked degree, which interfere with the student’ learning process”. Severely emotionally disturbed is defined as “emotionally handicapped and the severity results in the need for a program for the full school week and extensive support services” (Florida Statute 6A-6.03016). Educable mentally handicapped means impairment “in intellectual and adaptive behavior and the student’s development reflects a reduced rate of learning”, including educable mentally handicapped, trainable mentally handicapped, and profoundly mentally handicapped (Florida Statute 6A-6.03011). Speech and language impaired is defined as “disorders of language, articulation, fluency, or voice which interfere with communication, preacademic or academic learning, vocational training, or social adjustment”(Florida Statute 6A-6.03012). Gifted refers to “superior intellectual development and capability of high performance” (Florida Statute 6A-6.03019). Other health impaired means “having limited strength, vitality or alertness due to chronic or acute health problems such as a heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes that adversely affect a child’s educational performance” [Florida Statute 6A-6.03015, 3(3)]. Other disabled refers to all the other disabilities defined by Florida Statute except the above, including orthopedically impaired, deaf or hard of hearing, hospital/homebound, traumatic brain injury, and others.
Data Analysis

A series of analyses were conducted to compare the prevalence of educational deficiencies between delinquents and nondelinquents. Because grade promotion status, in-school suspension, and out-of-school suspension categorical variables, Chi-square tests were used in this analysis. GPA, days absent annually, days present annually, days at school, and grade level are treated as interval or ratio variables, so T-tests were used to test the levels of statistical significance for these variables. Also, frequency distributions were presented on the primary exceptionality of all the 6,107 juvenile justice students in the experimental group.

III. STUDY RESULTS

Disabilities

Frequency distributions were performed on all the 6,107 delinquents. While the Juvenile Justice Educational Enhancement Program (JJEEP) reported that 12% of public school students in Florida were identified as having disabilities and qualified for special education services in 2001 (JJEEP Annual Report, 2001), a much higher percent of disabled delinquents was discovered in the delinquent population. As Table 1 shows, 44.2% of the delinquents had an exceptionality, and 43.7% had disabilities (excluding those gifted from the exceptional students). As expected, as Table 1 reveals, those who were emotionally disturbed accounted for the highest percentage (21.8%) in the group of 6,107 students, and the emotionally disturbed students comprised 49.9% of all the 2,666 disabled students (Table 2). Those who were specific learning disabled also accounted for a high percentage in Table 1 (15.9%) of 6,107 delinquent students, and the specific learning disabled students comprised 36.3% of all the disabled students in terms of different types of disabilities (Table 2).

<table>
<thead>
<tr>
<th>Exceptionality</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not disabled</td>
<td>3410</td>
<td>55.8%</td>
</tr>
<tr>
<td>Emotionally disturbed</td>
<td>1330</td>
<td>21.8%</td>
</tr>
<tr>
<td>Specific learning disabled</td>
<td>968</td>
<td>15.9%</td>
</tr>
</tbody>
</table>

Table 1: Prevalence of Different Types of Exceptionality within the Experimental Group
<table>
<thead>
<tr>
<th>Table 1-continued</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentally handicapped</td>
<td>216</td>
<td>3.5%</td>
</tr>
<tr>
<td>Speech and language impaired</td>
<td>70</td>
<td>1.1%</td>
</tr>
<tr>
<td>Gifted</td>
<td>31</td>
<td>0.5%</td>
</tr>
<tr>
<td>Other health impaired</td>
<td>31</td>
<td>0.5%</td>
</tr>
<tr>
<td>Other disabled</td>
<td>51</td>
<td>0.8%</td>
</tr>
<tr>
<td>Total</td>
<td>6107</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2: Prevalence of Different Types of Disabilities within the Disabled Delinquents</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotionally disturbed</td>
<td>1330</td>
<td>49.9%</td>
</tr>
<tr>
<td>Specific learning disabled</td>
<td>968</td>
<td>36.3%</td>
</tr>
<tr>
<td>Mentally handicapped</td>
<td>216</td>
<td>8.1%</td>
</tr>
<tr>
<td>Speech and language impaired</td>
<td>70</td>
<td>2.6%</td>
</tr>
<tr>
<td>Other health impaired</td>
<td>31</td>
<td>1.2%</td>
</tr>
<tr>
<td>Other disabled</td>
<td>51</td>
<td>1.9%</td>
</tr>
<tr>
<td>Total</td>
<td>6107</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Academic Performance**

Three hundred eleven or 6.0% of the 5,187 delinquents, and 134 or 2.6% of the 5,187 nondelinquents were not applicable to the grade promotion status (not applicable according to the DOE data codebook for PK unless the PK student was promoted to kindergarten; for students in continuous progress schools who have not been promoted; and for students in grade 23). After those students were excluded, a Chi-square test was performed on the remaining students of the experimental group and the control group. Table 3 presents differences between delinquents and nondelinquents in grade promotion status at the end of school year 1999-2000. Compared with 109 or 2.2% of the 5,053 nondelinquents, 187 or 3.8% of 4,876 delinquents were promoted to a higher grade based on limited circumstances for exceptions or good cause but without meeting levels of performance for pupil progression. One thousand, three hundred forty-four delinquents or 27.6% of 4,876 delinquents were not enrolled in a KG-12 program in the district, compared with 553 or 10.9% of the 5,053 nondelinquents. One thousand, two hundred forty or 25.4% of the 4,876 delinquents were retained in the same grade, compared with 735 or 14.5% of the 5,053
nondelinquents. To enumerate how many students failed to be academically promoted to a higher grade, the number of those who were promoted without meeting levels of performance and the number of those who were retained in the same grade was aggregated. The result for delinquents was 29.2%, in contrast to 16.7% for nondelinquents. Although the difference in prevalence of those students who failed to be academically promoted to a higher grade is striking, it is more important to identify the relative percentages of delinquents and nondelinquents who were academically promoted to a higher grade, graduated, or completed. In the experimental group, only 2,105 or 43.2% of 4,876 were academically promoted, graduated or completed, in contrast to 3,656 or 72.4% of 5,053 in the control group. Significant difference was found for grade promotion status between the experimental group and the control group (p<0.001).

Table 3: Comparison of the Experimental Group and the Control Group on Grade Promotion Status

<table>
<thead>
<tr>
<th>Grade Promotion Status</th>
<th>Experimental group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Promoted without meeting levels for exception or good cause</td>
<td>187</td>
<td>3.8%</td>
</tr>
<tr>
<td>Not enrolled in a KG-12 program</td>
<td>1344</td>
<td>27.6%</td>
</tr>
<tr>
<td>Academically promoted, graduated or completed</td>
<td>2105</td>
<td>43.2%</td>
</tr>
<tr>
<td>Retained in the same grade</td>
<td>1240</td>
<td>25.4%</td>
</tr>
<tr>
<td>Total</td>
<td>4876</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

χ² = 894.203 (df=3) (p<0.001)

Table 4 shows differences between the experimental group and the control group on grade level distribution. Recalling the methodology, 5,187 delinquents and 5,187 nondelinquents were matched with age. After matching, based on the assumption that students who were in the same age were also in the same grade, it is inferred that the grade level distribution for delinquents should be similar to that for nondelinquents. However, as Table 4 demonstrates, the higher grade beyond 9th grade (except adult education), the more
nondelinquents and fewer delinquents. This finding supports the previous notion that significantly more delinquents failed to be academically promoted to a higher grade.

Table 4: Comparison of the Experimental Group and the Control Group on Grade Level

<table>
<thead>
<tr>
<th>Grade level</th>
<th>Experimental group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>1st</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>2nd</td>
<td>2</td>
<td>0.0%</td>
</tr>
<tr>
<td>4th</td>
<td>4</td>
<td>0.1%</td>
</tr>
<tr>
<td>5th</td>
<td>86</td>
<td>1.7%</td>
</tr>
<tr>
<td>6th</td>
<td>444</td>
<td>8.6%</td>
</tr>
<tr>
<td>7th</td>
<td>840</td>
<td>16.2%</td>
</tr>
<tr>
<td>8th</td>
<td>1042</td>
<td>20.1%</td>
</tr>
<tr>
<td>9th</td>
<td>1927</td>
<td>37.2%</td>
</tr>
<tr>
<td>10th</td>
<td>629</td>
<td>12.1%</td>
</tr>
<tr>
<td>11th</td>
<td>190</td>
<td>3.7%</td>
</tr>
<tr>
<td>12th</td>
<td>21</td>
<td>0.4%</td>
</tr>
<tr>
<td>Adult Education</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>5187</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Because there was only 1 student in grade 30 (adult education) in both groups, they were excluded from the t-test to compare grade level means between the experimental group and the control group. As expected, the grade level mean of the experimental group was 8.35 compared with 8.58 of the control group (Table 5), and the mean difference was significant at the 0.001 level of significance.

Table 5: Grade Level Means Comparison of the Experimental Group and Control Group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>5186</td>
<td>8.35</td>
<td>1.347</td>
<td>.019</td>
</tr>
<tr>
<td>Control group</td>
<td>5186</td>
<td>8.58</td>
<td>1.510</td>
<td>.021</td>
</tr>
<tr>
<td>t-test</td>
<td></td>
<td>-8.1</td>
<td>(df=10370)</td>
<td>(p&lt;0.001)</td>
</tr>
</tbody>
</table>
Another finding related to the academic underachievement of delinquents is worthy of note. GPA must be reported for all students in grades 9-12. Therefore, 2,767 students in grades 9-12 in the experimental group and 2,785 in the control group were supposed to have valid GPAs. However, as Table 6 shows, a total of 967 students had no valid GPAs in both groups, which could be explained by their failure in school or that they just started the 9th grade. More specifically, 673 in the experimental group, in contrast to 294 in the control group had no valid GPAs, which lends support to the finding that more delinquents were retained in grade or experienced school failure. As Table 7 shows, in the 9th grade, 1,369 students in the experimental group had valid GPAs for a mean of 1.26, in contrast to 1,235 students in the control group for a mean of 1.85. In the 10th grade, 535 students in the experimental group had valid GPAs for a mean of 1.80, in contrast to 766 students in the control group for a mean of 2.29. In the 11th grade, 173 students in the experimental group had valid GPAs for a mean of 1.93, in contrast to 367 students in the control group for a mean of 2.48. In the 12th grade, 17 students in the experimental group had valid GPAs for a mean of 2.14, in contrast to 123 students in the control group for a mean of 2.63. The group differences in terms of GPA means across grade levels were significant at the 0.001 level of significance except the 12th grade.

Table 6: Students Who Had No Valid GPAs in the Experimental Group and Control Group

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Experimental group</th>
<th>Control group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th</td>
<td>558</td>
<td>209</td>
<td>767</td>
</tr>
<tr>
<td>10th</td>
<td>94</td>
<td>52</td>
<td>146</td>
</tr>
<tr>
<td>11th</td>
<td>17</td>
<td>26</td>
<td>43</td>
</tr>
<tr>
<td>12th</td>
<td>4</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>673</td>
<td>294</td>
<td>967</td>
</tr>
</tbody>
</table>

Table 7: GPA Means Comparison of the Experimental Group and Control Group by Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>N</th>
<th>Mean</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental group</td>
<td>1369</td>
<td>1.26</td>
<td></td>
</tr>
<tr>
<td>Control group</td>
<td>1235</td>
<td>1.85</td>
<td>0.59</td>
</tr>
<tr>
<td>t-test</td>
<td>-16.706 (df=2602) (p&lt;0.001)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A T-test was conducted only on those who had valid GPAs for the 9th, 10th, 11th, and 12th grades all together, and the result is presented in Table 8. The GPA mean for the experimental group is 1.46, and the GPA mean for the control group is 2.12. Delinquents had significantly lower GPAs than nondelinquents (p<0.001).

In conclusion, given the measurement of academic achievement: grade promotion status, grade level, and GPA, delinquents substantially underachieved compared with nondelinquents.

**Attendance**

T-tests were performed to compare the group differences between delinquents and nondelinquents on measures of attendance. Table 9 presents the results. Delinquents reported
significantly poorer levels of attendance. For the experimental group, the average days spent in school was 115, significantly fewer than the 176 average days nondelinquents were in school (p<0.001). Similarly, the students in the experimental group were present at school (the mean of the days present annually was 86) less often than the control group (the mean of the days present annually was 128), and the difference of 42 was significant (p<0.001). Likewise, the days absent from school annually for the experimental group (mean=25) were significantly more than that for the control group (mean=15) by 10 days (p<0.001). The results of the analysis consistently demonstrate that delinquents had poorer attendance compared with the nondelinquents.

Table 9: Group Difference for Days at schools, Days Present annually, Days Absent annually of the Experimental Group and Control Group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Days at schools</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental group</td>
<td>5187</td>
<td>115</td>
<td>105.35</td>
<td>1.46</td>
</tr>
<tr>
<td>Control group</td>
<td>5187</td>
<td>176</td>
<td>118.02</td>
<td>1.64</td>
</tr>
<tr>
<td>t-test</td>
<td></td>
<td>-27.637</td>
<td>(df=10372)</td>
<td>(p&lt;0.001)</td>
</tr>
<tr>
<td><strong>Days present annually</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental group</td>
<td>5187</td>
<td>86</td>
<td>55.83</td>
<td>.78</td>
</tr>
<tr>
<td>Control group</td>
<td>5187</td>
<td>128</td>
<td>57.43</td>
<td>.80</td>
</tr>
<tr>
<td>t-test</td>
<td></td>
<td>-37.953</td>
<td>(df=10372)</td>
<td>(p&lt;0.001)</td>
</tr>
<tr>
<td><strong>Days absent annually</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental group</td>
<td>5187</td>
<td>25</td>
<td>25.21</td>
<td>.35</td>
</tr>
<tr>
<td>Control group</td>
<td>5187</td>
<td>15</td>
<td>18.29</td>
<td>.25</td>
</tr>
<tr>
<td>t-test</td>
<td></td>
<td>23.727</td>
<td>(df=10372)</td>
<td>(p&lt;0.001)</td>
</tr>
</tbody>
</table>

**Disciplinary Problems**

Chi-square tests were conducted on two types of disciplinary action, namely in-school suspension and out-of-school suspension.
In-school suspension is defined as the temporary removal of a student from the school program for no longer than 10 days. Table 10 presents group differences on in-school suspensions. Thus, 3,055 students or 58.9% in the experimental group had never received in-school suspensions, compared with 3,765 or 72.6% in the control group. Seven hundred one or 13.5% in the experimental group had received one in-school suspension, compared with 537 or 10.4% in the control group. Four hundred students or 7.7% in the experimental group had received two in-school suspensions, compared with 307 or 5.9% in the control group. Two hundred and seventy-nine students or 5.4% in the experimental group had received three in-school suspensions, compared with 171 or 3.3% in the control group. Seven hundred fifty-two or 14.5% in the experimental group had received more than three in-school suspensions, compared with 407 or 7.8% in the control group. Overall, delinquent students were suspended in school significantly more often than nondelinquent students (p<0.001).

<table>
<thead>
<tr>
<th>In-school suspension</th>
<th>Experimental group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Never</td>
<td>3055</td>
<td>58.9%</td>
</tr>
<tr>
<td>One</td>
<td>701</td>
<td>13.5%</td>
</tr>
<tr>
<td>Two</td>
<td>400</td>
<td>7.7%</td>
</tr>
<tr>
<td>Three</td>
<td>279</td>
<td>5.4%</td>
</tr>
<tr>
<td>More than three</td>
<td>752</td>
<td>14.5%</td>
</tr>
<tr>
<td>Total</td>
<td>5187</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

$\chi^2 = 236.490$ (df=4) (p<0.001)

Out-of-school suspension is defined as temporary removal of a student from a school and the school program for a period not exceeding 10 days. This disciplinary action is more severe than in-school suspension in that students who received out-of-school suspension were not allowed to stay at school at all for 10 days, in contrast to a temporary removal from the school program for in-school suspension. Table 11 provides the differences between the
experimental group and the control group. While 2,214 students or 42.7% in the experimental group had never experienced out-of-school suspension, 3,499 students or 67.5% in the control group had never experienced out-of-school suspension either. Likewise, 942 or 18.2% in the experimental group and 712 or 13.7% in the control group had received one out-of-school suspension. Similarly, 634 students or 12.2% in the experimental group had received two out-of-school suspensions, compared with 330 or 6.4% in the control group. Four hundred sixteen students or 8.0% in the experimental group had received three out-of-school suspensions, compared with 208 or 4.0% in the control group. Nine hundred eighty-one or 18.9% in the experimental group had received more than three out-of-school suspensions, compared with 438 or 8.4% in the control group. Consequently, delinquents were punished significantly more often than nondelinquents as far as out-of-school suspension was concerned (p<0.001).

Table 11: Comparisons for Out-of-School Suspension of the Experimental Group and Control Group

<table>
<thead>
<tr>
<th>Out-of-school suspension</th>
<th>Experimental group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Never</td>
<td>2214</td>
<td>42.7%</td>
</tr>
<tr>
<td>One</td>
<td>942</td>
<td>18.2%</td>
</tr>
<tr>
<td>Two</td>
<td>634</td>
<td>12.2%</td>
</tr>
<tr>
<td>Three</td>
<td>416</td>
<td>8.0%</td>
</tr>
<tr>
<td>More than three</td>
<td>981</td>
<td>18.9%</td>
</tr>
<tr>
<td>Total</td>
<td>5187</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 694.000 \text{ (df}=4\text{) (p}<0.001) \]

In sum, delinquents’ reports of disciplinary action were higher than nondelinquents.
IV. SUMMARY AND DISCUSSION

The results of this analysis are supportive of the hypothesis that the prevalence of educational deficiencies among delinquents is disproportionately higher than among public school students. Delinquents are more likely to have lower GPAs, have poorer attendance records, be retained more in the same grade, and receive more disciplinary actions. The differences in academic performance, attendance, and disciplinary problems cannot be explained as a function of differences in a few strategic background variables, namely, age, gender, race, socioeconomic status, exceptionality status, and school, given that these variables were controlled by the research design. Consequently, it can be concluded from this study that delinquents are more likely to suffer from disabilities, with the highest number of delinquents being categorized as emotionally disturbed. To the extent that the preceding analysis was performed while controlling for this exceptionality, it is reasonable to argue that the long-standing records of poor school performance for delinquents were not associated with students’ disabilities. Because these negative behavioral characteristics happened in the school year of 1999-2000 before the students were sent to DJJ programs in the school year of 2000-2001, it is plausible that poor school performance may have contributed to delinquency, even though this study cannot be used to establish a causal relationship between educational deficiencies and delinquency. Nevertheless, it can be concluded that educational deficiencies are more prevalent in juvenile justice students than their nondelinquent counterparts.

Based upon the current research, students with educational deficiencies are a population clearly at risk of delinquency. Of particular importance to school officials and teachers is how to react to the finding. The educational deficiencies can be strong indicators of potential delinquency. It is important for the school system to identify these at-risk students early so that their needs can be better served. Schools should be prepared to deal with these problematic students and to respond appropriately to their behavior. In general, improved instruction and general classroom management may be expected to improve the educational achievement of the students. Further, schools should be careful in their use of disciplinary action to those students for poor school performance, because such disciplinary action may increase the likelihood of delinquency by removing students from adult supervision. On the other hand, because these students already failed in traditional academic schools, special educational programs which address these deficiencies are an urgent need.
With regard to policy implications for juvenile justice education, it is clear that the disproportionate number of educational deficiencies of juvenile justice students poses a number of challenges for effective juvenile justice education. Specifically, just providing equivalent educational services to juvenile justice students as those provided to public school students is not enough. Rather, increasing efforts need to be focused upon tailoring juvenile justice education to the documented deficiencies of the students these programs serve. Furthermore, if poor school performance causally contributes to delinquency as a number of empirical studies have demonstrated, the provision of quality, individualized education within juvenile justice programs could quite possibly intervene or serve as a positive turning point in the life trajectories that these students are following. These educational programs, therefore, have the capacity to not only elevate the academic and social skills of their students but also change the probable negative life course of the youth thus increasing their opportunities for positive social outcomes.
BIBLIOGRAPHY


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BIOGRAPHICAL SKETCH

Xia Wang was born in Changzhi, Shanxi Province, P.R.China on September 22, 1979. Before coming to U.S. to start her study in Criminology, she received a bachelor’s degree from Peking University Law School in P.R.China. During her study at the School of Criminology and Criminal Justice, she is also a research assistant at the Juvenile Justice Educational Enhancement Program (JJEFP).