



The High School Dropout Dilemma and Special Education Students

California Dropout Research Project Report #18
September 2011

By

Martha L. Thurlow and David R. Johnson
University of Minnesota

The High School Dropout Dilemma and Special Education Students

Martha L. Thurlow and David R. Johnson
University of Minnesota

Introduction

Raising the graduation rates of all students in the United States is a national priority. Researchers at the National Center for Education Statistics (Stillwell, Sable, & Plotts, 2011) have placed the national graduation rate at around 75 percent for the overall student population. Graduation rates for special education students, similar to other historically underserved groups are much lower, at about 50 percent (U.S. Department of Education, 2010c, p.42). Dropping out for special education students and non-special education students is a significant problem nationally. Of increasing concern is that dropping out may be more detrimental for special education students than for non-special education students. For the past two decades, special education's focus on dropouts has been addressed primarily through the transition requirements of the Individuals with Disabilities Education Act (IDEA). For special education students viewed as being at risk of dropping out, specific dropout prevention or intervention strategies are to be determined by the student's individualized education program (IEP) team and included in the IEP.

Federal legislation such as the *No Child Left Behind Act* (NCLB), the Elementary and Secondary Education Act, Titles I and VII, IDEA, and others have emphasized high expectations, academic achievement, comprehensive approaches to schoolwide reform and improvement, and attention to dropout rates (Achieve, 2008; Center for Comprehensive School Reform and Improvement, 2006; Kannapel & Clements, 2005; National Commission on Adult Literacy, 2008; Sailor & Roger, 2005; Steinberg &

Alameda, 2008; Wiener & Hall, 2004). NCLB also has played an important role in focusing additional attention on the dropout problem in special education. Under NCLB, the definition of a graduate has been standardized (Richmond, 2009; U.S. Department of Education, 2008a) and states now are required to report graduation rates disaggregated by disability status (i.e., receiving special education services) as well as by race/ethnicity, income status, English learner status, gender, and migrant status. NCLB holds schools accountable for graduation rates through its requirements for schools to show adequate yearly progress (AYP); graduation with a regular diploma within four years of ninth grade is one indicator for achieving AYP at the high school level.

Thus, it is incumbent on schools, districts, and states to address the special education high school dropout. The costs associated with dropping out in general have been well documented. On average, youth who drop out are more likely than others to experience negative adult-life outcomes. High school dropouts are 72 percent more likely to be unemployed as compared to high-school graduates (U.S. Department of Labor, 2003). The average annual income of an employed high school dropout in 2006 was \$19,200, compared to \$28,600 for a high school graduate, a difference of \$9,400 (Amos, 2008; U.S. Census Bureau, 2006). Students who drop out are also more likely than students who graduate to experience poor levels of health (Hayes, Nelson, Tabin, Pearson, & Worthy, 2002). Further, dropouts comprise 82 percent of the prison population and 85 percent of juvenile justice cases (Stanard, 2003). Additional social and economic costs include dependence on social welfare and benefit programs, economic dependence on families, and limited voting and civic participation (see Belfield & Levin, 2007b).

Several characteristics of special education students make the dropout problem significant and difficult to address. Special education students aged 6-17 years represent approximately 11 percent of the nation's K-12 school-aged population (U.S. Department of Education, 2010c, p. 232). There are more than 6.5 million students who receive special education services under IDEA. These students display a broad range of conditions and characteristics, from those that are mild to those that are severe. In 2008, the largest disability category was specific learning disabilities, accounting for 43 percent of all students with disabilities nationally. Following this category in prevalence nationally were students with speech/language impairments (19 percent), other health impairments (11 percent), mental retardation (8 percent), and emotional disturbance (7 percent). Nationally, 7.6 percent of special education students are English learners (i.e., limited English proficient).

This national characterization of students with disabilities is not reflected in all of the states, including California. Compared to the 11 percent of all students across the U.S. being special education students, the percentage in California is 9 percent. Further, nearly half (48 percent) of special education students in California have specific learning disabilities (compared to 43 percent nationally). California seems to have a lower incidence than the nation of students with emotional/behavioral disabilities (4 percent versus 7 percent) and students with other health impairments (8 percent versus 11 percent), the category that frequently includes students with attention-deficit-hyperactivity-disorder (ADHD). Of the special education students in California, 28.4 percent are considered to be English language learners (i.e., limited English proficiency).

The goal of this paper is to shed light on the problem of special education

dropouts. We do this by discussing four broad topics: (a) the definition and incidence of dropouts among special education students, (b) the economic and social consequences of dropping out for special education students, (c) the causes of dropping out for special education students, and (d) possible solutions to the dropout dilemma for these students. Several recommendations are presented and discussed, focusing on strategies for improving school completion and graduation rates among special education students. To the extent possible, we highlight both the national dropout picture and the situation within California.

Incidence of Dropping Out of School

Addressing the incidence of special education dropouts requires that there first be a discussion of definitions. This is the case because incidence numbers vary depending on the definition used. In this section, we discuss the definitions used in special education and the new Elementary and Secondary Education Act (ESEA) definition of graduation, which also will be applied to special education students. We then highlight incidence numbers over time and for students with different categories of disability.

Definitions

The definition of a “dropout” has varied according to the purpose for having a definition as well as with the nature of the data available. Three primary dropout definitions – status, event, and cohort – have been used by states and districts, with the result being variability in rates and confusion about what a specific rate really means (see National Center for Education Statistics, 2009; Thurlow, Sinclair, & Johnson, 2002).

Historically, special education has defined a dropout in a unique way. As part of data collected annually about students in special education, states provide information on

students with IEPs in the 14 to 21 year age range with exit data to the Office of Special Education Programs in the U.S. Department of Education. The dropout count in these data, up until 2005, included only those special education students who formally withdrew from school during the school year. After 2005, the dropout rate calculation was changed to include students who were considered to have moved and were not known to be continuing in an education program. This change in definition affected both the numerator and denominator when dropout rates were calculated.

The change in the dropout definition used for special education helped to bring greater consistency in data across offices in the U.S. Department of Education. For non-special education students, the incidence of dropping out was calculated using two sets of data, the Common Core of Data provided by public schools and the Current Population Survey. Most recently, the definition of dropout has been an event rate – the percentage of students in school during the previous year who were not enrolled at the beginning of the current year, had not graduated, and did not meet exclusionary conditions (transfer to another school, temporary absence, or death) (Stillwell, Sable, & Potts, 2011). These data were collected for students in grades 9-12.

Because the *No Child Left Behind Act* uses graduation rate as one measure for high school AYP, the need for a common definition was stressed both by researchers (Domina, Ghosh-Dastidar, & Tienda, 2010) and policymakers. Researchers at the Center for Social Organization of Schools at Johns Hopkins University suggested using a measure called “promoting power” as the best indicator of graduation rates (and indirectly, dropout rates). This measure compared the 12th grade enrollment and the 9th grade enrollment four years earlier (Balfanz & Legters, 2005); it provided relatively

rough but consistent estimates across states and schools (see CSOS Technical Notes, nd). The Urban Institute's Education Policy Center suggested the Cumulative Promotion Index (CPI), an index that reflects the "stepwise process composed of three grade-to-grade promotion transitions (9 to 10, 10 to 11, and 11 to 12) in addition to the ultimate high school graduation event (grade 12 to diploma)" (Swanson, 2004, p. 7). The U.S. Department of Education, through regulations released in 2008, required that all states use a single definition to calculate graduation rates for NCLB accountability purposes (Alliance for Excellent Education, 2009; Education Commission of the States, 2010). In part, this was a natural progression from the Data Quality Campaign and the establishment of longitudinal data systems (see www.dataqualitycampaign.org), as well as the push from researchers for a common definition. Specifically, all states were required to calculate a four-year graduation rate by dividing the number of students who earned a regular diploma through the summer four years after a specific year, say 2010, from the adjusted cohort for a graduating class.

The adjusted cohort is defined as first-time ninth graders in a specific year (2006 in this example), plus transfers into the cohort, minus cohort members who transferred out, immigrated, or died. Yet, as noted by the Alliance for Excellent Education (2009), this definition still can result in different rates due to, for example, differential application of exit codes. Coding a student as a "graduate" continues to vary, with some states providing an option that awards a designation of earning a "regular high school diploma" when the student receives a General Education Development (GED) diploma. The designation of a student as a "transfer" also varies, with some schools coding nearly all

students as transfers even when there are indications that the student is no longer attending any school.

Still, the development of a common definition for NCLB accountability purposes was a major advancement. And, the requirement that this calculation is to be made for the special education subgroup, as well as other subgroups, is bound to significantly improve the comparability of data not just across states (which the transition-based special education school completion data accomplished) but also across groups of students. NCLB's 2008 regulations required that starting in 2010-11 all states must report aggregate and disaggregated rates using the four-year cohort graduation rate calculation, and that in 2011-12 these rates must be the ones used for school and district high school accountability.

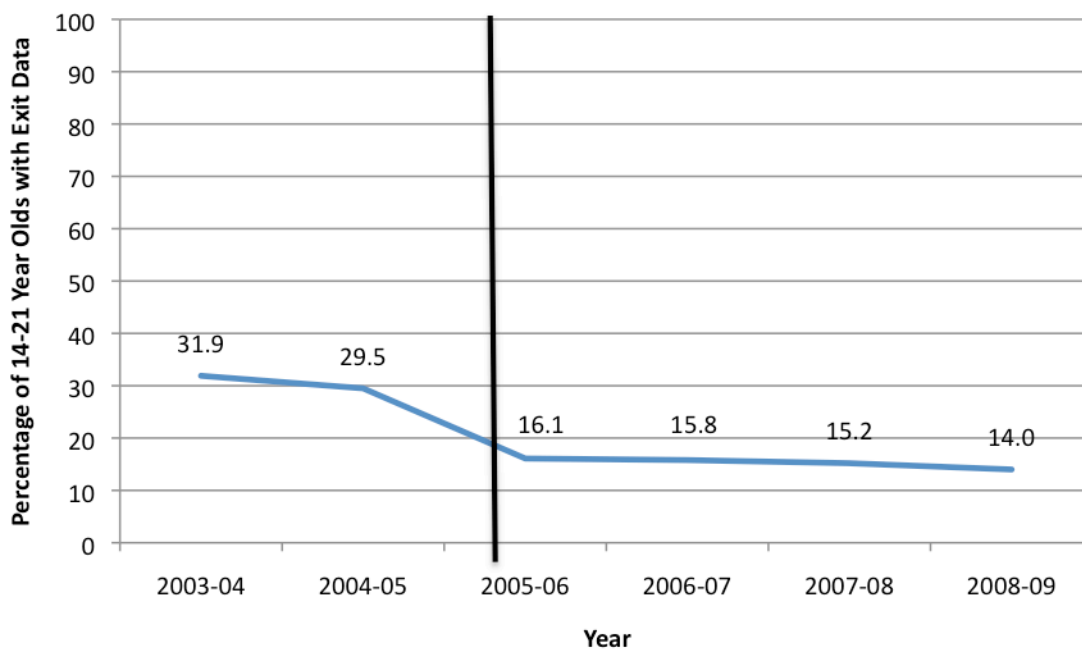
All this means that there is about to be a big shift in what we know about special education dropouts. We will finally have data that allow us to compare not only across states, but also across groups of students. These common data should be available in the fall of 2011. Still, the data will reflect those who graduate with a regular diploma; they will not give us a clear picture of students who complete school (but who do not earn a regular diploma) versus students who drop out of school.

Dropout Data for Special Education Students

Data on special education students who drop out of school are available from the Data Accountability Center (www.ideadata.org); these data are based on students who exited school during a specific year – an Exit Dropout Rate. The 2008-09 school year data indicated that approximately 13 percent of all special education students aged 14-21 who exited school did so by dropping out or moving and not known to be continuing (see

Figure 1). These percentages considered only those students for whom exit data were collected, which was a significantly lower number than the number of students aged 14-21 receiving special education services in fall 2007. Prior to 2005-06, special education dropout data included only those students considered by the schools to be dropouts (not those who had moved and were not known to be continuing in an education program; the latter group of students apparently was not included in the count of all students with exit data, which is used as the denominator in calculating rates in Figure 1).

Figure 1. National Dropout Rates for All Special Education Students

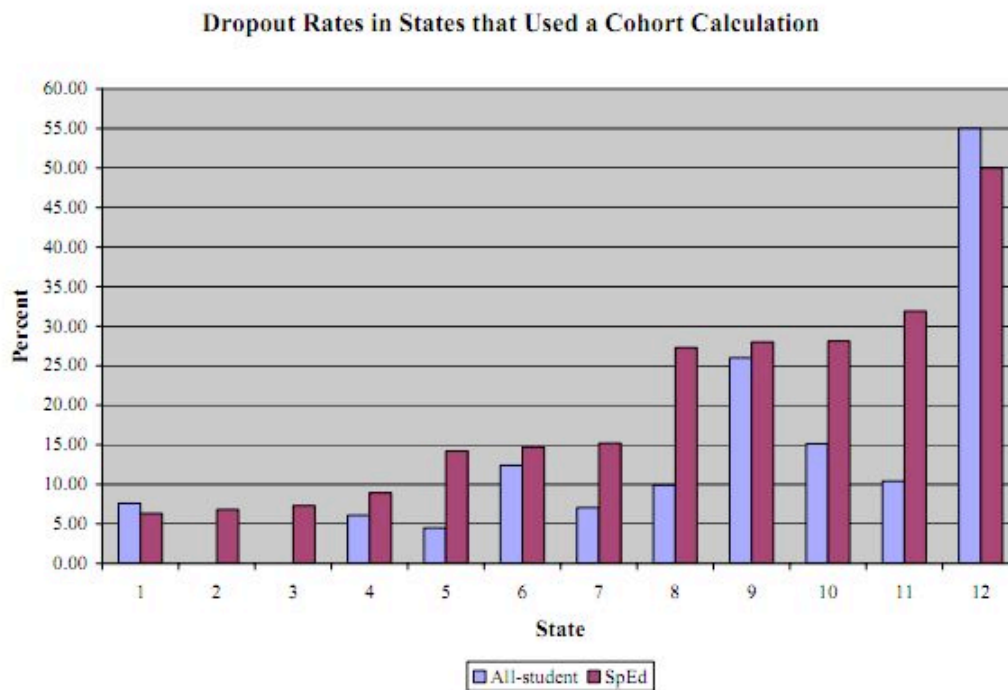


Note. These data are from the Data Accountability Center (www.ideadata.org). They are based on the 50 states plus the District of Columbia and Puerto Rico. The definition of "dropout" changed after 2004-05 (see vertical line); subsequent to that year, the dropout rate included students who had moved and were not known to be continuing in an education program. All percentages are based on the number of students with exit data. See Appendix A, Table A-1.

We cannot compare these data for special education students to dropout rates for non-special education students because national data that meet this definition of dropout are not available. In a recent analysis of data from states that used the same type of

definition for special education and all students (National Dropout Prevention Center for Students with Disabilities, 2006), there was a fairly consistent pattern of higher dropout rates for special education students (see Figure 2). In the 10 states with comparable data, the range in dropout rates for special education students varied from 5 to 55 percent. In all but two states, the dropout rate for special education students was higher than the rate for non-special education students. Still, these data need to be viewed cautiously. As the National Dropout Center recognized, there was variability in the ages of students included in the data (e.g., 14-21 for some states, 17-21 for other states; some states counted the GED as a regular diploma while others did not).

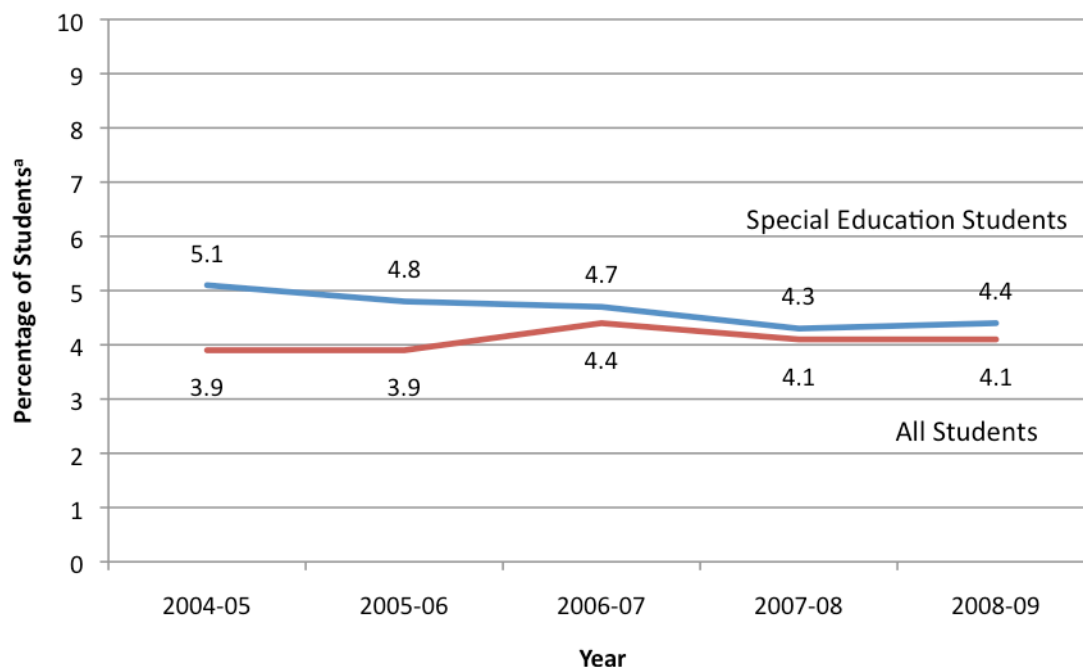
Figure 2. National Dropout Prevention Center Summary of States Using Cohort Dropout Calculations



Source: National Dropout Prevention Center for Students with Disabilities, 2006, p.5.

It is possible to estimate a percentage of special education students who dropped out that is somewhat comparable to rates calculated for all students. This can be done by basing rates on the total number of special education students aged 14-21 (see Figure 3). Still, the percentages for special education students in this figure are likely to be an underestimate of the dropout rate because they include in the denominator many students with significant cognitive disabilities; these students are unlikely to drop out of school until they simply age out. Students who age out are included in the count of dropouts in Figure 3, consistent with the recommendations of Fine (1991). There is no way to calculate the dropout rate of students in grades 9-12 (similar to the dropout rate for all students) because the dropout data for special education students are not disaggregated by grade or age (other than for ages 14-21 combined).

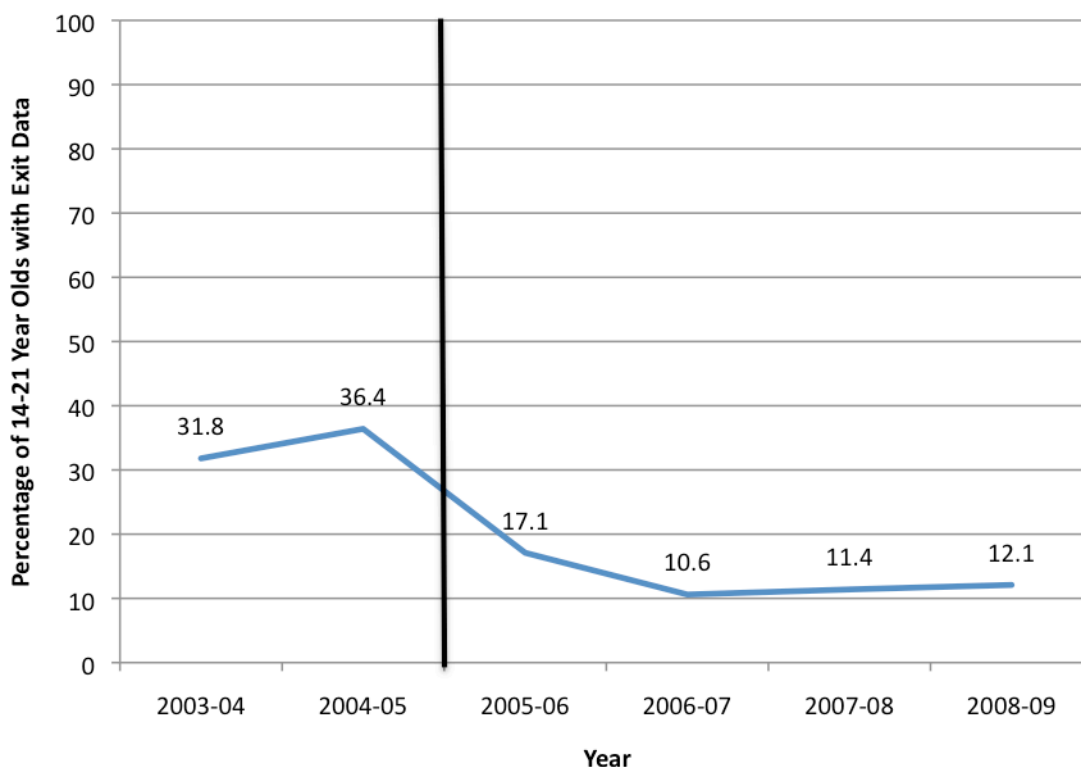
The data in Figure 3 suggest that differences between dropout rates for special education students and all students have been almost eliminated. This might be a reflection of the intensive efforts made in special education to address the dropout problem. Although reductions in differences may have occurred, the data limitations due to variability in defining dropout across states should be recognized and the data viewed with caution.

Figure 3 Dropout Rates for Special Education and All Students

^a “Special Education Students” includes those aged 14-21. “All Students” includes those in grades 9-12. Note. The definition of “dropout” for this figure is the number of dropouts divided by the number of enrolled students. The data for special education students are from the Data Accountability Center (www.ideadata.org). They are based on the 50 states plus the District of Columbia and Puerto Rico. The data for all students are from NCES reports. See Appendix A, Table A-2.

Special education dropout rates in California have demonstrated a somewhat similar pattern across the years from those shown in the U.S. as a whole, with evidence of a slight decrease in dropout rates since 2004-05. Figure 4 shows the dropout rates from 2003-04 through 2008-09 for special education students in California, based on special education students with exit data. As in Figure 1, prior to 2005-06 dropout data included only those students considered by schools to be dropouts (not those who had moved and were not known to be continuing an education program).

Figure 4. Dropout Rates for All California Special Education Students



Note. These data are from the Data Accountability Center (www.ideadata.org). They are based on the 50 states plus the District of Columbia and Puerto Rico. The definition of "dropout" changed after 2004-05 (see vertical line); subsequent to that year, the dropout rate included students who had moved and were not known to be continuing in an education program. All percentages are based on the number of students with exit data. See Appendix A, Table A-3.

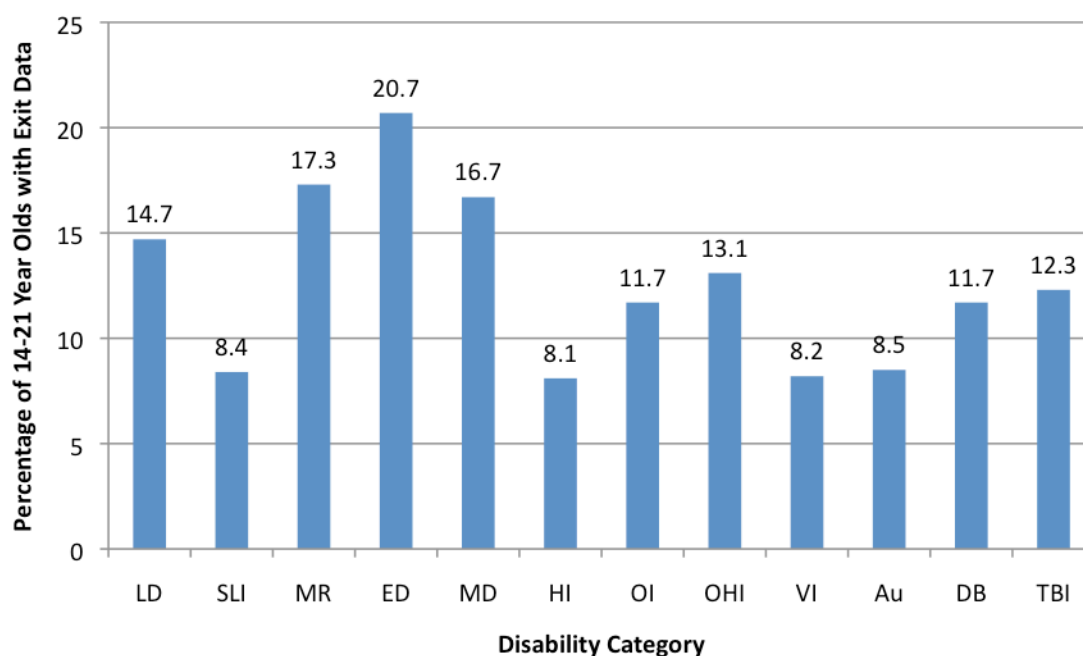
Figure 4 shows that, in general, the dropout rates for California were slightly lower than the dropout rates for the U.S. as a whole. California's data have shown a greater decrease in dropping out since 2004-05 compared to the national data.

Special Education Dropout Incidence by Category of Disability

Special education students are a heterogeneous group, including for example: those with sensory disabilities (e.g., deaf, blind), physical disabilities (e.g., orthopedic impairments), intellectual disabilities (e.g., mental retardation), behavioral disabilities (e.g., emotional/behavioral disturbance), and a variety of other disabilities (e.g., autism,

learning disabilities, speech impairments). Given the different challenges that the disability categories represent, it might be expected that they would differ in the extent to which they drop out of school. Indeed, the data confirm this hypothesis. In 2007-08, the most recent year of data available at the Data Accountability Center, the dropout rates differed considerably for different categories (see Figure 5). Students with emotional disturbance (ED) showed much higher dropout rates than all other special education students, while those with autism (Au), deaf-blindness, visual impairments (VI), hearing impairments (HI), speech-language impairments (SLI), and orthopedic impairments (OI) showed much lower rates.

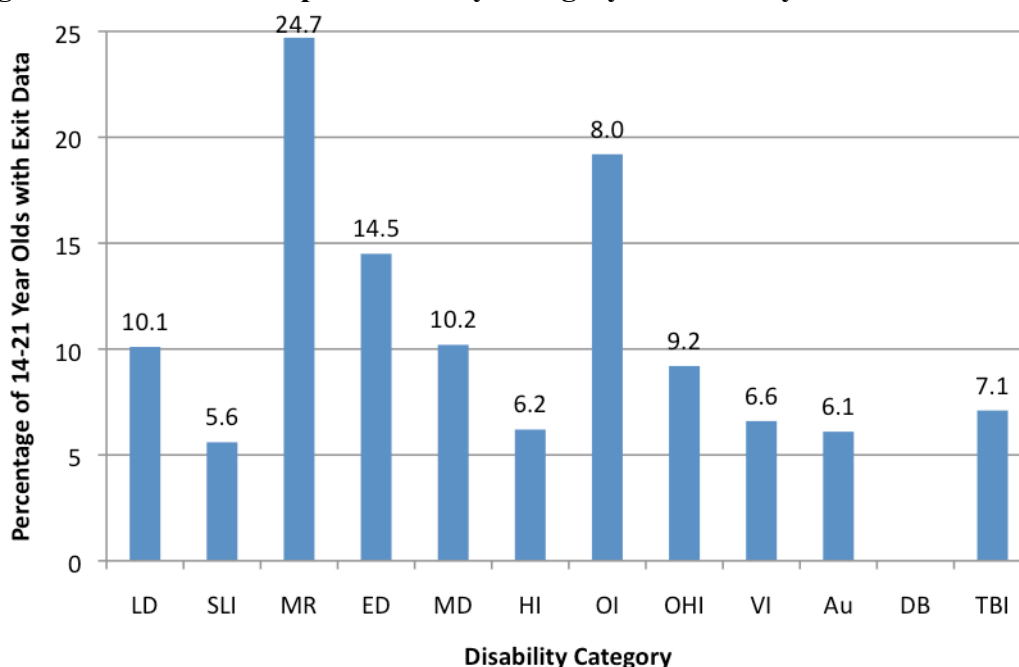
Figure 5. National Dropout Rates by Category of Disability



Note. These data are from www.ideadata.org for school year 2007-08. They are based on the 50 states plus the District of Columbia and Puerto Rico. Disability Category codes are: LD – learning disability; SLI – speech/language impairment; MR – mental retardation; ED – emotional disability; MD – multiple disability; HI – hearing impairment; OI – orthopedic impairment; OHI – other health impairment; VI – visual impairment; Au – Autism; DB – deaf-blind; TBI – traumatic brain injury. All percentages are based on the number of students with exit data. See Appendix A, Table A-4.

Figure 6 shows the dropout rates in California in 2007-08 for special education students with different categories of disability. In 2007-08, the most recent year of data available at the Data Accountability Center, the dropout rates differed for different categories. Students with emotional disturbance (ED) showed much higher dropout rates than all other students, followed by students with intellectual disabilities (MR), and then students with learning disabilities (LD). There were too few students with autism (Au) and deaf-blindness (DB) to calculate rates. Students with speech-language impairments had the lowest dropout rates in California. These patterns are similar to national patterns.

Figure 6. California Dropout Rates by Category of Disability



Note. These data are from www.ideadata.org for school year 2007-08. They are based on the 50 states plus the District of Columbia and Puerto Rico. Disability Category codes are: LD – learning disability; SLI – speech/language impairment; MR – mental retardation; ED – emotional disturbance; MD – multiple disability; HI – hearing impairment; OI – orthopedic impairment; OHI – other health impairment; VI – visual impairment; Au – Autism; DB – deaf-blind; TBI – traumatic brain injury. All percentages are based on the number of students with exit data. See Appendix A, Table A-5.

Economic and Social Consequences of Dropping Out of School

The social and economic consequences of dropping out are a serious problem not only for young people who received special education services, but also for their families, schools, communities, and society as a whole. Although these problems are similar to those experienced by their peers who did not receive special education services, they seem to be more pronounced for special education students. Unfortunately, there is only limited data available on the social and economic impacts of dropping out specifically for special education students. Still, we explore here what we do and do not know about the implications of dropping out of school for special education students in terms of employment, postsecondary participation, criminal activity and incarceration, and social and personal costs.

Employment

The long-term employment implications for special education student dropouts have not been fully examined. The National Longitudinal Transition Study-2 (NLTS-2) provided some information on the implications of dropping out on employment and earning levels. NLTS-2 followed and documented the post-school outcomes of students from a few weeks to up to two years after their exits from school. The study found that the advantages that accrue to high school special education graduates vs. dropouts are not evident in the employment domain in the first years after high school (Wagner, Newman, Cameto, & Levine, 2005). There was no *statistically significant* difference between those who did and did not finish high school, in their likelihood of working for pay outside of their homes: 46 percent of graduates were working compared with 38 percent of dropouts. Neither did the hourly wages of the two groups differ: 38 percent of special

education graduates and 51 percent of dropouts earned more than \$7.00/hour. Graduates were much less likely than dropouts to work full-time (34 percent vs. 59 percent), in part, because graduates were more likely than dropouts to be attending a postsecondary education school.

The lack of early employment differences between special education students who graduate and those who drop out of school needs to be examined in the context of the overall employment of individuals with disabilities. Adults with disabilities are only half as likely as those without disabilities to be employed (38 percent versus 78 percent), with an especially low employment rate among those who have more severe disabilities (Cornell RRTC, 2006). Among those who are employed, there is a gap in earnings: median annual earnings are \$30,000 for full-time year-round workers with disabilities, compared to \$36,000 for workers without disabilities (Cornell RRTC, 2006).

No data were found on employment consequences for special education dropouts in California. There are data from California that indicate negative effects for dropouts in general. Belfield and Levin (2007a) found in their analysis that, on average, a white high-school dropout at age 20 could expect to earn the equivalent in present value of \$586,660 over his or her lifetime. A high-school graduate's expected lifetime earnings are \$1,890,380—about double the lifetime income of a high school dropout. It is likely that this same differential in lifetime earnings exists for individuals who received special education services. Whether the difference is the same or greater is unknown because we do not have the data.

Limited access to employment opportunities has other implications and consequences. Employment often provides greater social interaction and connections that

reduce isolation and build social capital for an individual with disabilities. This benefit is especially valuable for people with disabilities, who generally are less likely to participate in many social activities (National Organization on Disabilities/Harris, 2000). What might be concluded is that, if the unemployment rate for people with disabilities is twice that of the general population, and their future employment and earnings are positively correlated with educational attainment, dropping out has further negative consequences for individuals with disabilities during their lifetimes.

College Participation

According to the 1995-96 National Postsecondary Student Aid Study (NPSAS: 96), roughly 6 percent of all undergraduates reported having a disability (National Center for Education Statistics, 2000). This compared with a 2.6 percent rate of participation documented in 1976 (Gajar, 1992). According to census data for 2008, approximately 4.8 percent of students in undergraduate colleges had a disability (U.S. Census Bureau, 2009). Students with disabilities were less likely than their peers without disabilities to be enrolled in public four-year colleges and universities, and more likely to attend either public two-year institutions or other institutions, including for-profit vocational training institutions (National Center for Education Statistics, 2000; U.S. Census Bureau, 2009). NLTS-2 reported an increase in student enrollment and participation in postsecondary education programs over the period 1987-2003. Newman (2005), for example, compared college participation data for youth who received special education services, aged 15-19, who had been out of school (as graduates or drop-outs) for up to two years. Over this time period, the percentage of these youth attending postsecondary schools after leaving high school more than doubled, from 15 percent (Cohort 1) to 32 percent (Cohort 2). By

2003, 19 percent of those in the study were attending postsecondary school, compared to 42 percent of the general population (Newman, 2005).

These data are important because projections suggest that the strongest job growth over the next decade will be in occupations requiring postsecondary education. Further, the gap in earnings between the different educational levels has progressively widened. In 1975, those with an advanced degree earned 1.8 times as much as a high-school graduate; by 1999, they earned 2.6 times as much (Day & Newburger, 2002); and by 2003, they earned 3.7 times as much (Baum & Payea, 2005). In 2008, median earnings of individuals with an advanced degree working full-time year round were \$55,700 compared to about \$33,800 for high school graduates (Baum, Ma, & Payea, 2010). As the American economy becomes increasingly knowledge-based, postsecondary education becomes more critical than ever (Carnevale & Desrochers, 2003).

Substantial differences have been found for special education students who completed high school and those who had dropped out. Within two years after leaving high school, 39 percent of special education graduates had enrolled in some kind of postsecondary education institution, more than four times the enrollment rate of dropouts (9 percent). Two-year community colleges were the most popular type of postsecondary school among graduates; 27 percent of graduates enroll in such schools. In contrast, high school dropouts were more likely to attend vocational, technical, or business schools; 8 percent of dropouts did so. About one-in-eight high school graduates enrolled in four-year colleges; not surprisingly, virtually no dropouts did (Wagner *et al.*, 2005). For special education students, the consequences of dropping out weigh heavily on future opportunities to access postsecondary education and the long-term benefits derived in

employment opportunities and future earnings. Similar data do not exist for special education students in California.

Criminal Activity and Incarceration

High school dropouts commit crimes at a higher rate than high school graduates (Belfield & Levin, 2007a). Presently, it is estimated that 82 percent of the prison population and 85 percent of juvenile justice cases are adolescents and adults who have dropped out of school (Stanard, 2003). A high percentage of these individuals are also individuals with disabilities. The estimated prevalence of adolescents with disabilities in the juvenile correction system, for example, ranges from 30 percent to 70 percent (Casey & Keilitz, 1990; Quinn, Rutherford, Leone, Osher, & Poirier, 2005). Wide variations in the prevalence rates are due to differences in state reporting mechanisms, methods for identifying individuals with disabilities, and methodological problems and limitations.

Quinn *et al.* (2005) present several theories that have emerged to explain the overrepresentation of young people with disabilities in the correctional system. One theory focuses on school failure and asserts that learning, emotional/behavioral, and intellectual disabilities lead either directly to school failure or transactionally to school problems and failure, causing negative self-image, leading in turn to school dropout, suspension, and delinquency (Osher, Woodruff, & Sims, 2002; Post, 1981). Another view, susceptibility theory, holds that individuals with disabilities have personality and cognitive deficits that predispose them to criminal or delinquent behavior (Quinn *et al.*, 2005). These characteristics include poorly developed impulse control, irritability, suggestibility, inability to anticipate consequences, and inadequate perceptions of social cues (Keilitz & Dunivant, 1987).

The economic burden of high crime and incarceration rates is significant. Belfield and Levin (2007a) assessed the overall fiscal costs of criminal activity at \$22 billion annually for the state of California in policing and judiciary expenditures alone. NLTS-2 found that by the time students had been out of high school up to two years, 29 percent had been arrested at least once, and 20 percent had been convicted and were on probation or parole. In comparing high school graduates to dropouts, neither have experienced a significant increase over time in having been on probation or parole. However, on other measures, special education dropouts demonstrated more serious criminal justice system involvement as they aged (Wagner *et al.*, 2005). They showed significant increases in the likelihood of both being arrested and incarcerated. Despite criminal justice system involvement for both high school graduates and dropouts over time, special education graduates had lower rates of criminal justice system involvement. For example, up to two years out of high school, 56 percent of dropouts had been arrested, and 34 percent had been on probation or parole, compared with 19 percent and 16 percent of special education high school graduates (Wagner *et al.*, 2006).

Social and Personal Costs

For special education students, completing high school increases the odds that the individual will have an opportunity to secure meaningful employment leading to economic self-sufficiency and independence. Employment is the key to reducing the individual's financial dependence on government programs, family members, and society as a whole. Employment, in turn, provides greater social interaction and connections that reduce the isolation that individuals with disabilities often experience in attempting to become independent in their communities. Employment also provides a valued social role

in society and helps create a sense of personal efficacy and social integration that contribute to life satisfaction (Schur, 2002).

Dropping out of high school diminishes these positive opportunities for personal and social development and growth. Dropping out also increases the future likelihood of continued dependence on family members for financial and social support. Historically, the family has played a central role in the care of individuals with disabilities, well into their adulthood. With some notable exceptions, most studies have ignored individual family expenses and instead have focused on the public expenses for the state, county, or other governmental jurisdiction (Lewis & Johnson, 2004). They have also focused on various services, such as the cost of a specific medical disability (e.g., Hogan, Rogers, & Msall, 2000), the comparative costs of differing residential facilities (e.g., Haycox, 1995), or the correlates of the costs of disability services (e.g., Campbell & Heal, 1995). Seldom have they focused on the direct resource use and costs of continued in-home family care when the individual with a disability fails to achieve economic and social independence, and remains for an extended period within the family home.

Without a doubt, care of a family member with disabilities costs more, both in cash expenditures and extraordinary indirect costs, than care for a family member without disabilities (Lewis & Johnson, 2004). The adverse effects or costs for the families of individuals with disabilities are many and varied. Baldwin (1985), for example, drew a distinction between direct financial costs (e.g., extra spending in the household for healthcare insurance costs, dental insurance, and personal living expenses), and indirect financial costs (e.g., loss of potential earnings) and psychological costs (e.g., restricted social life, raised stress levels in the family home). While dropping out alone is not the

only factor contributing to increased levels of family financial and psychological impact of disability, it does contribute to prolonged levels of economic dependence and, ultimately, reliance on family for support.

Causes of Special Education Students Dropping Out

The reasons why special education students drop out are in many ways similar to those of students in the general population. Dropping out is influenced by an array of factors related to the student's social background, educational experiences, and community setting in which he or she resides. It is a gradual process of disengagement from school that includes reduced participation, less successful outcomes, and reduced sense of identification and belonging, culminating in the student's early departure from school (Alexander, Entwistle, & Horsey, 1997; Doll & Hess, 2001; Fredericks, Blumenfeld, & Paris, 2004; Rumberger, 2008).

Special education students have only occasionally been the focus of dropout research (Kortering & Braziel, 1999; Reschly & Christenson, 2006; Wolman, Bruininks, & Thurlow, 1989), despite the provision of special education programs and supports, the high stakes of dropping out for students, families, taxpayers, and schools, and the poor post-school outcomes for special education dropouts. Although the number of research studies examining correlates and predictors of dropout for special education students is much smaller than the number examining dropout for the general population (Lehr, Hansen, Sinclair, & Christensen., 2004), there is research that provides insights on factors that are associated with dropping out for special education students.

Research conducted to date, for example, points to several variables associated with greater likelihood of dropping out for special education students, including: low

socioeconomic status (SES), non-English speaking, or Hispanic home background (Wagner *et al.*, 2005). Additionally, students with emotional/behavioral disorders who drop out tend to be older and more likely to have parents who are unemployed and have less education (Lehr, 1996).

Alterable variables (Finn, 1989, 1993) associated with increased risk of dropout include rates of high absenteeism and tardiness (Gwynne, Lesnick, Hart, & Allensworth, 2009; Sinclair, Christensen, Evelo, & Hurley, 1998; Sinclair, Christenson & Thurlow, 2005; Zigmond & Thornton, 1985), low grades and history of course failure (Thompson-Hoffman & Hayward, 1990; Lehr *et al.*, 2004; Christenson, Sinclair, Thurlow & Evelo, 1999; Rotermund, 2007), limited parental support, low participation in extra-curricular activities, alcohol and drug problems (Wagner *et al.*, 2006), and negative attitudes toward school (MacMillan, 1991). High levels of school mobility (Sinclair *et al.*, 1998) and retention in grade are also associated with dropout for special education students. One study found that 90% of students with learning disabilities who repeated a grade dropped out (Zigmond & Thornton, 1985).

Studies also have examined factors from an institutional perspective (Rumberger, 2008). The level of services received (e.g., amount of time designated for special education service), the way services are delivered (e.g., pull out or direct participation in the general education curriculum), and the types of services being provided (e.g., counseling, vocational guidance) have been studied and associated with dropout for special education students (Wagner, 1995; Wagner *et al.*, 2006). Students with emotional/behavioral disabilities were less likely to drop out if they spent more time participating in the general education curriculum, received tutoring services, and were in

schools that maintain high expectations of special education students (Wagner et al., 2006). Lower rates of dropout are also associated with a receipt of instruction emphasizing independent living skills and training for competitive employment (Bruininks, Thurlow, Lewis, & Larson, 1988). In addition, a higher number of school transfers (mobility) and frequent changes in the level of services received have been associated with increased likelihood of dropout (Edgar, 1987; Wagner, 1995).

Some special education students who have dropped out have been involved in interviews, surveys and focus groups to investigate reasons associated with their dropping out of school. Wagner *et al.* (2006) found in NLTS-2 that among the 30% who did not complete high school, the most common reason reported for dropping out was their dislike of their school experience overall (36%) and poor relationships with teachers and other students (17%). These reasons are quite consistent with national data collected for all students collected in 1990 and 2002, as well as with data for students in California (Rotermund, 2007). A lack of relevant high school curriculum appears repeatedly as a main reason given by special education and non-special education students for dropping out of school or pursuing alternative education services (Guterman, 1995; Lichtenstein, 1993). In addition, student comments from individual interviews suggest factors that might facilitate staying in school, including: changes in personal attitude or effort, changes in the attendance and discipline policies, and more supportive teachers (Kortering & Braziel, 1999).

Christenson, Sinclair, Lehr and Hurley (2000) conducted a synthesis of information from a variety of studies that have been conducted on students' reasons for staying in school. Among the more recurring and consistent themes are: supportive

family and home environment, interaction with and involvement of committed and concerned educators and other adults, improved attitude and increased motivation to obtain a diploma, positive and respectful interaction between staff and students, satisfaction with the learning experience (e.g., social climate, instructional climate, school course offerings, and school rules), relevance of the curriculum, and fair discipline policies.

The focus on alterable variables within the broader context of student engagement is useful in our discussion of special education students who drop out of school. Recognizing the differences between those variables that educators and others can influence and those that are static is important when thinking about interventions for curtailing dropout rates of special education students (Thurlow, Sinclair, & Johnson, 2002).

The field of special education is based, in part, on its capacity to positively alter the student's learning experience through accommodations, remediation, and alteration of assessment, curriculum, and instructional strategies and practices. Alterable variables, therefore, are the focus of efforts to reduce dropout and increase school completion, and ideally, graduation with a regular diploma. Table 1 identifies status and alterable predictor variables that are commonly cited in special education research studies as influencing school completion and dropout rates. These predictor variables are derived from numerous studies that have been conducted since the mid-1980s (Finn, 1989, 1993; Fredericks *et al.*, 2004; Lehr, Sinclair, & Christenson, 2004; Macmillan, 1991; Rosenthal, 1998; Rumberger, 1987, 2008; Rumberger & Lin, 2008; Thurlow *et al.*, 2002).

Table 1. Variables Associated with Dropping Out of School

Status Variables

- ***Age.*** Students tend to be older compared to their grade level peers.
- ***Gender.*** Students who drop out tend to be male. Females who drop out often do so due to reasons associated with pregnancy.
- ***Socio-economic background.*** Dropouts are more likely to come from low income families.
- ***Ethnicity.*** The rate of dropout is higher on average for African American, Hispanic, and Native American youth.
- ***Native language.*** Students who come from non-English backgrounds are more likely to have higher rates of dropout.
- ***Region.*** Students are more likely to drop out if they live in urban settings as compared to suburban or non-metropolitan areas. Dropout rates are higher in the South and the West, than in the Northeast region of the U.S.
- ***Mobility.*** High levels of household mobility contribute to increased likelihood of dropping out.
- ***Ability.*** Lower scores on measures of cognitive ability are associated with higher rate of dropout.
- ***Disability.*** Students with disabilities (especially those with emotional/behavioral and learning disabilities) are at greater risk of drop out.
- ***Parental employment.*** Dropouts are more likely to come from families in which the parents are unemployed.
- ***School size and type.*** School factors that have been linked to dropout include school type and large school size, including classroom size.
- ***Family structure.*** Students who come from single parent families are at greater risk of dropout.

Alterable Variables

- ***Grades.*** Students with poor grades and poor academic performance overall are at greater risk of dropout.
 - ***Disruptive behavior.*** Students who drop out are more likely to have exhibited behavioral and disciplinary problems in school.
 - ***Absenteeism.*** Rate of attendance is a strong predictor of dropout.
 - ***School policies.*** Alterable school policies associated with dropout include raising academic standards without providing supports, tracking and frequent use of suspension.
 - ***School climate.*** Positive school climate is associated with lower rates of dropout.
 - ***Parenting.*** Homes characterized by permissive parenting styles have been linked with higher rates of dropout.
 - ***Sense of belonging.*** Alienation and decreased levels of participation in school have been associated with increased likelihood of dropout.
 - ***Attitudes towards school.*** The beliefs and attitudes (e.g., locus of control, motivation to achieve) that students hold towards school are important predictors of dropout.
 - ***Educational support in the home.*** Students whose families provide higher levels of educational support for learning are less likely to drop out.
 - ***Retention.*** Students who drop out are more likely to have been retained at grade level than students who graduate. Using national education longitudinal study data, being held back was identified as the single biggest predictor of dropping out.
 - ***Stress life events.*** Increased levels of stress and the presence of stressors (e.g., financial difficulty, health problems, early parenthood) are associated with increased rates of dropout.
-

In California, the independent evaluation of the California High School Exit Examination (CAHSEE) has provided the opportunity to gather information from students about why some of them leave school (Becker, Wise, & Watters, 2009). Survey results indicated that special education students and English Language Learners were more likely than other students to report that they would probably not receive a high school diploma, and that they saw less similarity between what they learned in courses and what was on the test. Those special education students who reported that the CAHSEE was not important were also more likely to report that they would not earn a high school diploma. Although this pattern of results may partially reflect the on-and-off again deferral of the requirement for special education students to pass CAHSEE to receive a regular diploma, it also may suggest the importance of the lack of access to the curriculum for these students.

The California research on the effects of graduation requirements that include passing a test (Reardon, Atteberry, Arshan, & Kurlaender, 2009) reflects a broader concern nationally about the effects of educational reform and exit exams on special education students and their likelihood of dropping out of school. School districts and schools nationwide have been actively experimenting with graduation requirements and the development of alternative diploma options. This has been done to ensure that high standards for graduation are enforced and that alternative routes to graduation and alternative exit credentials or diplomas are available for those students who experience challenges in meeting the high standards. The rationale for developing these alternative strategies is, in part, to increase school completion rates (but not necessarily to increase the federally-defined graduation rate).

Solutions

Solving the challenge of too many students dropping out of school has been a long-time goal in the U.S. (McPartland, 1994; Orr, 1987; Weis, Farrar, & Petrie, 1989), one that has been particularly difficult to reach for special education students. There have been two primary approaches to addressing the problem. One is to change in some way the school completion document (alternative diploma option) that students earn or the manner in which they earn a regular diploma (alternative route to regular diploma). Another is to implement specific strategies with the goal of changing the student's pathway to dropping out.

Alternative Diplomas and Alternative Routes to a Regular Diploma

Alternative Diploma Options. In a national survey of states, Johnson, Thurlow, and Stout (2007) found a significant level of variation across states in the type and number of alternative diploma options. Eighteen states offered only the regular diploma to all students. A total of sixteen states offered honors diplomas, six states offered IEP/special education diplomas, nineteen states granted certificates of attendance, ten states granted certificates of achievement, three states offered occupational diplomas, and ten states provided variations of these diploma options. The highest number of diploma options was found in Oregon, reporting five different options. Nine states reported four options, and ten states reported offering three options. At the time of the study, California reported three diploma options – regular diploma, certificate of attendance, and certificate of achievement.

The General Education Development diploma (GED) is a form of alternative diploma that all students can earn. An apparent relationship between more difficult state

exit exams and higher rates of GED test taking has been documented (Warren, Jenkins, & Kulick, 2006). Rumberger (2004) reported that a high-school equivalency diploma does not yield the same benefits as a regular high school diploma. Other studies have found that GED recipients do not reach the same levels of economic well-being as the recipients of standard high-school diplomas (Cameron & Heckman, 1993; Rumberger & Lamb, 2003; Tyler, 2004). Some researchers have differentiated health outcomes, specifically less smoking, for those with a regular high school diploma compared to those with a GED (Kenkel, Lillard, & Mathios, 2006). More recently, Heckman, Humphries, and Mader (2010) concluded that the GED has minimal labor market value, and that just a few GED recipients are able to use it as a pathway to success in postsecondary environments.

The longer range social and economic consequences of receiving an alternative diploma for students, whether is special education or not, is not well documented or understood. What we do know is that special education students are more likely to receive an alternative diploma than students in the general high school population (Gaumer-Erickson, Kleinhammer-Tramill, & Thurlow, 2007). Additionally, special education students in states that use “high-stakes” exit exams were more likely to receive exit certificates than their peers in non-exit-exam states. The question is whether receiving something other than a standard high-school diploma limits the access to future postsecondary education, employment, and other adult life opportunities as the GED seems to do for all students (Johnson *et al.*, 2002).

One study asked employers about their willingness to hire individuals with various types of alternative diplomas and found that the employers differentiated among

these as well as in comparison to a standard diploma (Hartwig & Sitlington, 2008). The employers were least willing to hire those with certificates of attendance, achievement, or completion, and most willing to hire those with occupational diplomas and GEDs. Few states have sought to thoroughly discuss and reach consensus on the “meaning” and “rigor” of alternative diplomas with, at a minimum, postsecondary education program representatives and employers (Johnson *et al*, 2007). Johnson *et al*. (2007) found that only seven states (Alabama, Florida, Georgia, Kentucky, Maryland, Mississippi, and Nevada) indicated that they include both postsecondary education representatives or employers in such discussions. California reported that it did not involve either party. All of this weighs heavily on students’ potential for employment, future earnings, and other opportunities.

Alternative Routes to Regular Diploma. Thurlow, Cormier, and Vang (2009) examined the extent to which states with exit exam requirements provide alternative ways for special education students to earn a regular diploma. They found that 23 alternative routes for special education students existed in the 26 states that had implemented exit exams as a requirement for earning a regular diploma. Seven of the 26 states had no alternative route. The number of alternative routes in the 19 states that had them ranged from one route (six states) to nine routes (one state). Most states had 1-3 alternative routes. In 2004, the California legislature (Senate bill 964-Burton) required the Superintendent of Public Instruction to develop—and the State Board Education to approve—and provide alternatives for students with disabilities to receive a standard high school diploma. By 2008, the California Education Code 60851(c) allowed local school district governing boards to waive the requirement to pass the California High School

Exit Examination (CAHSEE) for students with disabilities who test with a modification score of 350 or above. This waiver applied, beginning with the class of 2008, to special education students (those who had an active IEP) or students with disabilities not receiving special education services who were on a Section 504 accommodations plan (in accordance with the Rehabilitation Act of 1973). In July 2010, the California State Board of Education endorsed the idea of an alternative route for students with disabilities to demonstrate the same knowledge and skills as shown by those students who pass the CAHSEE. The exact nature of the alternative route was under consideration in late 2010.

For special education students, the alternative routes varied from simply being exempted from taking the exit exam to having to take a different test (Thurlow, Vang, & Cormier, 2010). Special education students were less often required to first take (and not pass) the regular exit exam before having access to an alternative route to earning a regular diploma. Thurlow *et al.* also noted the lack of research on the implications of earning a regular diploma through alternate routes that may not require the same rigor as the regular route. It is possible that alternative routes may, in fact, reduce the dropout rate, yet result in students who do not have the knowledge and skills that they need to succeed in postsecondary educational or work environments.

Dropout Prevention Strategies

Although the research is limited on ways to decrease dropping out of school among special education youth and increase their successful graduation from high school, there is research on dropout prevention for students in general that has been evaluated and summarized by the U.S. Department of Education's What Works Clearinghouse (Dynarski, Clarke, Cobb, Finn Rumberger, & Smink, 2008). Dynarski et al. (2008) made

six recommendations for practices to support dropout prevention. Although these were based on research not specifically targeted to students with disabilities, there is evidence that they are important for these students as well. Each of the recommendations is summarized here. All of these address alterable variables rather than status variables discussed by Finn (1989, 1993) and others.

Recommendation 1. Utilize data systems that support a realistic diagnosis of the number of students who drop out and that help identify individual students at risk of dropping out (diagnostic). This recommendation refers to a recognized need to have data that help schools and educators understand who is most likely to drop out of school. Important information for such databases include those variables most related to students dropping out of school that are alterable, such as absenteeism, suspensions, and getting behind in credits. The importance of monitoring special education students, whether via a person who checks and gathers data on the attendance of the student, disciplinary actions against the student, or progress in classes, has been demonstrated in research for these students as well (Christenson, Sinclair, Thurlow, & Evelo, 1999; Sinclair, Christenson, Evelo, & Hurley, 1998).

Recommendation 2. Assign adult advocates to students at risk of dropping out (targeted intervention). This recommendation refers to the demonstrated effects of having an adult who connects with the student, the student's family, and the school to serve as an advocate for the student. An established connection between the adult and the student is critical, as is the role of the adult in advocating for the student and addressing social and emotional needs as well as academic needs. This adult advocate role is modeled after one of the commonly identified protective factors in resiliency literature—

the presence of an adult in a child's life to fuel motivation and foster the development of life skills needed to overcome obstacles (Masten & Coatsworth, 1998). Some of the strongest support for this recommendation came from studies that involved special education students (Larson & Rumberger, 1995; Sinclair et al, 1998; Sinclair, Christenson, & Thurlow, 2005).

Recommendation 3. Provide academic support and enrichment to improve academic performance (targeted intervention). This recommendation indicates the importance of engaging the student in school and working to support the academic performance of the student. The academic support may come through special tutoring or academic programs designed to meet the individual student's needs. Dynarski et al. (2007) also suggested that promoting engagement may include rewards for performance. The need for and effects of academic support for special education students in preventing dropouts has been documented in the literature (Larson & Rumberger, 1995).

Recommendation 4. Implement programs to improve students' classroom behavior and social skills (targeted intervention). This recommendation refers to the need to work on student behavior and social skills, as well as to provide ways for students to deal with communication and interaction problems that emerge. Strategies that work to establish psychological connections within the academic environment (e.g., positive behavioral approaches, positive peer interactions, positive relationships with adults) in addition to active student behavior (attendance, participation, pro-social behavior) are among those most essential in promoting positive student social skills and behavior. Dropout prevention approaches for these students have noted the challenges of disruptive behaviors and have implemented specific strategies for promoting better problem solving

about behavioral and communication approaches used in school (Larson & Rumberger, 1995; Sinclair et al., 2005). Cobb, Sample, Alwell, and Johns (2005) conducted a comprehensive review of research on the relationship between cognitive-behavioral interventions/therapies and dropout outcomes for secondary-aged youth receiving special education services. One of the conclusions these researchers drew from previous studies was that the vast majority of problem behavior interventions were conducted to address problem behaviors as an impediment to learning academic content rather than as a threat to dropout. Thus, much of the research on behavioral interventions is limited in terms of examining the impact of such interventions in the arena of dropout prevention.

Recommendation 5. Personalize the learning environment and instructional process (schoolwide intervention). This recommendation refers to the importance of individualizing the learning and instructional environment for the student. Doing so promotes interactions between students and teachers and reduces the likelihood of the student becoming alienated from the school. Studies that support this recommendation come primarily from looking at all students rather than a subgroup of students, such as special education students. Since the inception of federal special education law in 1975, individualization has been the hallmark of planning and delivery of services to special education students. The individualized education program (IEP) of each child is the primary locus for planning services and supports that address students' academic, behavioral, and psychological engagement with school and learning.

Recommendation 6. Provide rigorous and relevant instruction to better engage students in learning and provide the skills needed to graduate and to serve them after they leave school (schoolwide intervention). This recommendation refers to the need to

ensure that students actually master the content that is needed for them to be prepared for postsecondary environments, whether through a career or through postsecondary education. As with Recommendation 5, above, support for this recommendation is derived primarily from studies focused on all students rather than on a subgroup of students, such as students receiving special education services.

Models with Demonstrated Effectiveness on Graduation Rates for Special Education Students

The recommendations of Dynarski et al. (2008) focus broadly on an array of policies and practices for increasing graduation rates for special education students. Over the years, these and other strategies have been systematically demonstrated and researched. What has evolved is several intervention “models” that have been recently reviewed in terms of their efficacy in reducing dropout rates among all students. The U.S. Department of Education’s What Works Clearinghouse (WWC), established in 2002, serves as a central source of scientific evidence on what works in education. Programs, products, practices, and policies that meet the evidence standards of WWC are archived within this clearinghouse for public access. WWC publishes intervention reports that evaluate research on school- and community-based dropout prevention curricula and instructional strategies for middle and high schools.

Other sources of evidence-based and promising practices include the National Dropout Prevention Center/Network (NDPC/N) and the National Dropout Prevention Center for Students with Disabilities (NDPC-SD), both located at Clemson University in South Carolina. NDPC/N serves as a clearinghouse on issues related to dropout prevention and offers strategies designed to increase the graduation rates of middle- and high-school students. This Center, operating since 1986, conducts third-party evaluations

and Program Assessments and Reviews (PAR) of current dropout prevention programs, in an effort to identify effective program practices, strategies, and models. In 2004, the U.S. Department of Education's Office of Special Education Programs (OSEP) established NDPC-SD as part of OSEP's Technical Assistance and Dissemination Network, which supports the implementation of the Individuals with Disabilities Education Act (IDEA). NDPC-SD works with states to build their capacity in designing and implementing effective, evidence-based interventions and programs to address dropout among special education students.

Several program models identified from these primary sources are described briefly in this section. Four of the models have been demonstrated to be effective for special education students (ALAS, APEX, Check & Connect, and Iowa Behavioral Alliance) and three are considered general high school reform models (Career Academies, Coca Cola Value Youth Program, and Talent Development High Schools). In several cases, positive effects have been achieved for both special education and non-special education students by these models.

***ALAS.** Achievement for Latinos through Academic Success (ALAS)* is an intervention for middle- and high-school students that is designed to address student, school, family, and community factors that affect dropping out. Each student is assigned a counselor/mentor who monitors attendance, behavior, and academic achievement. The counselors work with students and their parents to address problems, offer mediation, and provide feedback on school progress. Students are trained in problem-solving, self-control, and assertiveness skills. Parents also receive training in parent-child problem-solving, how to participate in school activities, and how to contact teachers and school

administrators to address issues. One study of ALAS met the evidence standards of WWC. ALAS was found to have positive effects on staying in school and on progressing in school at the end of the intervention. Further information about the program can be found at <http://www.alasdropoutprevention.com/>.

APEX. Achievement in Dropout Prevention and Excellence (APEX) is a project of the Institute on Disability at the University of New Hampshire. APEX provides direct services, training, and technical assistance to New Hampshire schools that have higher than state average dropout rates and high rates of disciplinary problems among special education students. It provides high-quality training for middle and high schools throughout the state. The primary dropout prevention component of APEX is a comprehensive systems-change model called “Positive Behavioral Interventions and Supports” (PBIS). PBIS is a systematic, evidence-based behavioral support and improvement process that consists of three levels of tiered interventions, including: schoolwide (a schoolwide leadership team is formed in each school to evaluate and re-design discipline systems, using the PBIS model), secondary (a team of specialists and administrators is established in each school that focuses on students who exhibit challenging behaviors and who are at risk for school failure, due to academic, social, or behavioral issues), and intensive (a facilitator is assigned to individual students to provide intensive interventions for students who are struggling to complete their program or who have already dropped out of school. Positive results from APEX have been demonstrated. Further information about the program can be found at <http://www.iod.unh.edu/apex.html>.

Check & Connect. Check & Connect was developed, beginning in 1990, with a federal grant awarded to the Institute on Community Integration, at the University of Minnesota. The intervention has been implemented in urban and suburban communities; in elementary-, middle-, and secondary-school settings; and with both special education and non-special education youth. Initial development and testing of the Check & Connect model was conducted with middle-school students with emotional and behavioral disorders and learning disabilities. Check & Connect consists of four main components: (1) a *monitor* who functions as the student's mentor and case manager; (2) regularly *checking* on the student's school adjustment, behavioral and academic progress; (3) intervening in a timely manner to re-establish and maintain the student's *connection* to school and learning and to enhance the student's academic and social competency; and (4) establishing a connection with the student's *family*, when possible. One study of Check & Connect met the evidence standards of the What Works Clearinghouse (WWC) (Sinclair *et al.*, 1998); a second study met WWC's standards with reservations (Sinclair *et al.*, 2005). Positive results of the Check & Connect model include: school retention (Check & Connect students were significantly less likely than similar control-group students to have dropped out of school) and progressing in school (students in Check & Connect earned significantly more credits toward high-school completion than did control-group subjects). More information about the program can be found at <http://ww.ici.umn.edu/checkandconnect/>.

Iowa Behavioral Alliance. The Iowa Behavioral Alliance is a collaborative effort of Drake University, Iowa State University and the Iowa Federation of Families for Children's Mental Health. The focus is on students considered as having behavioral

disorders, mental health issues, or significant social, emotional, or behavioral needs. There are three components of the Iowa Behavioral Alliance: positive behavior support, mental health initiatives, and dropout prevention. Dropout prevention is guided by an advisory group and includes key elements, such as: identification of existing programs and implementation of new dropout prevention approaches based on best practice, reduction of dropout rates drawing upon a range of intervention strategies, including positive behavioral interventions and supports (PBIS); reductions in absenteeism; suspensions and expulsions; increased participation in extracurricular activities at the middle and high school levels; and increased awareness and use of alternative school resources and supports. A state profile of promising practices in dropout prevention for students with behavioral disorders is compiled by this program. This document is published and disseminated to educators and human service providers and families. Evidence of effectiveness and outcomes achieved by these models are included in individual school-based profiles and widely disseminated. Information regarding the Iowa Behavioral Alliance can be found at <http://www.educ.drake.edu/rc/alliance.html>.

Career Academies. The Career Academies were developed more than 35 years ago as a dropout prevention strategy, and targeted youth most considered at risk of dropping out of high school. Currently, Career Academies have broadened the kinds of students they serve, consistent with integrating rigorous academic curricula with the intent to track students who are preparing for postsecondary education. Career Academies are schools within school programs, operating as high schools. They offer career-related curricula, based on a theme, academic coursework, and work experience through partnership with local employers. WWC found that Career Academies demonstrated

potentially positive effects on staying and progressing in school. Since 1993, MDRC has been conducting a rigorous evaluation of the Career Academies approach. Findings from the MDRC study provide compelling evidence that Career Academies produce substantial and sustained improvement in the post-high-school labor market outcomes of youth. Additional information about Career Academies can be found at <http://www.naf.org> or at <http://www.mdrc.org>.

Coca Cola Value Youth Program. The Coca Cola Value Youth Program was first developed by the Intercultural Development Research Association (IDRA) in 1984. This cross-age tutoring program takes students who are at risk of dropping out and places them as tutors of younger students. The tutors learn self-discipline and develop self-esteem, and schools shift to the philosophy and practices of valuing students considered at-risk. A primary component of the curricular framework is to prepare secondary students to tutor elementary students. The objectives are improving the students' self-concept, tutoring skills, and literacy skills. The Results show that tutors stay in school, increase academic performance, improve school attendance and advance to higher education. The Coca Cola Value Youth Program was extensively researched in 1989, using a longitudinal, quasi-experimental design, with data collected for the treatment and comparison group students before tutoring began, during implementation, and at the end of their first and second program years. Results from this research study show that the program had a statistically significant impact on the dropout rate, reading grades, self-concept, and attitudes toward school. Additional information about the program can be found at http://www.idra.org/Coca-Cola_Valued_Youth_Program.html/.

Talent Development High Schools. The Talent Development High Schools is a school reform model for restructuring large high schools with persistent student attendance and discipline problems, poor student achievement, and high dropout rates. The model includes both structural and curricular reforms and calls for schools to reorganize into small learning communities to reduce student isolation and anonymity. The program also emphasizes high academic standards and provides all students with a college-preparatory academic sequence. One study of Talent Development High Schools met the evidence standards of WWC with reservations for positively influencing student progress in school. Information on the model's history and current resources for program implementation are available from Johns Hopkins University's Center for the Social Organization of Schools at <http://web.jhu.edu/CSOS/tdhs/index.html>.

Summary

There is an increasing body of evidence stressing the importance of addressing the dropout problem and raising graduation rates for all students, but particularly for those students at higher risk for dropping out of school. There is clear evidence, despite controversy about definitions and limited data for special education students, that across the United States and in California, special education dropouts are significant in number, averaging about 4 percent nationally if based on enrollment data and 13 percent nationally and 11 percent in California, if based on exiting student data. Dropout rates based on enrollment data, though probably underestimating the dropout rate, suggest that differences in dropout rates between special education and all students have virtually disappeared. One of the most striking and disturbing concerns is the higher dropout rate of some groups of special education students, particularly those with

emotional/behavioral disabilities.

The definitional issues that surround calculations of dropout rates and graduation rates are likely to be lessened by new requirements from the U.S. Department of Education for all states to use the same definition to calculate graduation rates starting with the class of 2010-11. Further, because the new definition applies to special education students and because their results must be disaggregated, parents, educators, and policymakers are likely to have better data than ever before. The definitional requirements are likely to raise expectations and encourage educators to help more special education students to earn a regular diploma rather than the handful of other alternative diploma options available in many states.

The social and economic consequences of dropping out are clear: dropouts are more likely to experience diminished lifetime earnings due to under-employment and higher rates of unemployment, to achieve only limited access to postsecondary education programs, to engage in criminal activity and become incarcerated, and to become dependent on social welfare systems and family for financial assistance and support.

Although there are many similarities between special education students and other students who drop out of school, young people receiving special education services who drop out experience disproportionately higher rates of unemployment, incarceration, and financial dependency. Given the magnitude and social, economic, and personal implications of the dropout problem among special education students, the case can readily be made to increase societal investments in ensuring that these students successfully complete high school. The costs and their implications for services deserve far greater attention by policymakers and education leaders and professionals at the

national, state, and local levels.

It is well documented in available state level data reports and independent research studies that special education students are more likely to have experienced poor school performance, stressful life events, and grade retention, as well as being more likely to have demonstrated behavioral and disciplinary problems, and absenteeism, all of which are related to dropping out of school. As one study in California suggested, special education students are also likely to have had limited access to the same curriculum as other students, resulting in a vicious circle of low performance and poor grades.

Demonstrated approaches to dropout prevention exist, and a number of these have shown their effectiveness specifically with special education students. The models are similar in that they focus on alterable variables rather than status variables. Nevertheless, the current trends toward modest improvements in graduation rates among special education students are insufficient. Increased attention and societal investments in interventions, strategies, and programs that emphasize student engagement and retention, especially for special education students, are critically needed.

References

- Achieve. (2008). *Out of many, one: Toward rigorous common core standards from the ground up*. Washington, DC: Author.
- Alexander, K. L., Entwisle, D. R., & Horsey, C. (1997). From first grade forward: Early foundations of high school dropout. *Sociology of Education*, 70, 87-107.
- Alliance for Excellent Education. (2009). *Every student counts: The role of federal policy in improving graduation rate accountability* (Policy Brief). Washington, DC: Author.
- Amos, J. (2008). *Dropouts, diplomas, and dollars: U.S. high schools and the nation's economy*. Washington, DC: Achieve for Excellent Education.
- Baldwin, A. Y. (1985). Programs for the gifted and talented: Issues concerning minority populations. In E. Horowitz & M. O'Brien (Eds.), *The gifted and talented: Developmental perspectives* (pp. 223-249). Washington DC: American Psychological Association.
- Balfanz, R., & Legters, N. (2005). *The graduation gap: Using promoting power to examine the number and characteristics of high schools with high and low graduation rates in the nation and each state* (CSOS Policy Brief). Baltimore, MD: Johns Hopkins University. Retrieved January 8, 2010 from www.csos.jhu.edu/pubs/power/GradGap_PolicyBrief.pdf.
- Baum, S., Ma, J., & Payea, K. (2010). *Education pays 2010: The benefits of higher education for individuals and society*. New York: College Board.
- Baum, S., & Payea, K. (2005, rev ed.). *The benefits of higher education for individuals and society*. Washington, DC: The College Board, College Entrance Examination Board.
- Belfield, C. R., & Levin, H. M. (2007a). *The economic losses from high school dropouts in California*. California Dropout Research Project Report: Santa Barbara CA.
- Belfield, C., & Levin, H.M. (2007b). *The price we pay: Economic and social consequences of inadequate education*. Washington, DC: Brookings Institution Press.
- Bruininks, R. H., Thurlow, M. L., Lewis, D. R., & Larson, N. W. (1988). Post-school outcomes for students in special education and other students one to eight years after high school. In R. H. Bruininks, D. R. Lewis, & M. L. Thurlow (Eds.), *Assessing outcomes, costs, and benefits of special education programs* (pp. 99-111) (Project Report Number 88-1). Minneapolis: University of Minnesota, University Affiliated Program.

- Cameron, S. V., & Heckman, J. J. (1993). The nonequivalence of high school equivalents. *Journal of Labor Economics*, *111*, 1-47.
- Campbell, E. M., & Heal, L. W. (1995). Prediction of cost, rates, and staffing by provider client characteristics. *American Journal on Mental Retardation*, *100*, 17-35.
- Carnevale, A. P., & Desrochers, D. M. (2003). *Standards for what? The economic roots of K-12 reform*. Princeton, NJ: Educational Testing Service.
- Casey, P., & Keilitz, I. (1990). Estimating the prevalence of learning disabled and mentally retarded juvenile offenders: A meta-analysis. In P. E. Leone (Ed.), *Understanding troubled and troubling youth* (pp. 82-101). Newbury Park, CA: Sage.
- Center for Comprehensive School Reform and Improvement. (2006, January). Subgroup performance and school reform: The importance of a comprehensive approach. *The Center for CSRI Newsletter*, 1-3.
- Christenson, S. L., Sinclair, M. F., Lehr, C. A., Hurley, C. M. (2000). Promoting successful school completion. In L. Minke & G. C. Bear (Eds.), *Preventing school problems promoting school success* (pp. 211-257). Bethesda, MD: NASP Publications.
- Christenson, S. L., Sinclair, M. F., Thurlow, M. L., & Evelo, D. (1999). Promoting student engagement with school using the Check and Connect model. *Australian Journal of Guidance and Counselling*, *9*(1), 169-184.
- Cobby, B., Sample, P., Alwell, M., & Johns, N. (2005). *Effective interventions in dropout prevention: A research synthesis*. Washington, DC: U.S. Department of Education, Office of Special Education Programs.
- Connell, J. P., Spencer, M. B., & Aber, J. L. (1994). Education risk and resilience in African-American youth: Context, self, action, and outcomes in school. *Child Development*, *65*, 493-506.
- Cornell RRTC. (2006). *2005 Disability status reports*. Ithaca, NY: Rehabilitation Research and Training Center on Disability Demographics and Statistics, Cornell University.
- CSOS Technical Notes. (no date). *Using promoting power data to estimate school-level graduation rates*. Baltimore, MD: Center for Social Organization of Schools. Retrieved January 8, 2011 at <http://web.jhu.edu?CSOS/graduation-gap/power/technotes.htm>.
- Day, J. C., & Newburger, E. (2002). The big payoff: Educational attainment and synthetic estimates of work-life earnings. In *Current Population Reports* (pp. 23-

- 210). Washington, DC: U.S. Census Bureau.
- Doll, B., & Hess, R. S. (2001). Through a new lens: Contemporary psychological perspectives on school completion and dropping out of high school. *School Psychology Quarterly, 16*(4), 351-356.
- Domina, T., Ghosh-Dastidar, B., Tienda, M. (2010). Students left behind: Measuring 10th to 12th grade student persistence rates in Texas high schools. *Educational Evaluation and Policy Analysis, 32*(2), 324-346.
- Dynarski, M., Clarke, L., Cobb, B., Finn, J., Rumberger, R., & Smink, J. (2008). *Dropout prevention: A practice guide* (NCEE 2008-4025). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee.wwc>.
- Edgar, E. (1987). Secondary programs in special education: Are many of them justifiable? *Exceptional Children, 53*(6), 555-561.
- Education Commission of the States. (2010). *State graduation rate goals for high school accountability (State Notes)*. Denver, CO: Author. Retrieved from: <http://mb2.ecs.org/reports/Report.aspx?id=865>
- Fine, M. (1991). *Framing dropouts: Notes on the politics of an urban public high school*. Albany, NY: State University of New York Press.
- Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*, 117-142.
- Finn, J. D. (1993). School engagement and students at risk (U.S. Department of Education, National Center for Education Statistics, NCES 93-470). Washington, DC: U.S. government printing Office.
- Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology, 82*(2), 221-261.
- Finn, J. D., & Voelkl, K. E. (1993). School characteristics related to student engagement. *Journal of Negro Education, 62*, 249-268.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109.
- Gajar, A. (1992). University-based models for students with learning disabilities: The Pennsylvania State University in Mode. In F. R. Rusch, L. DeStefano, J. G. Chadsey-Rusch, L. A. Phelps, & E. Szymanski (Eds.), *Transition from school to adult life: Models, linkages, and policy*. Sycamore, IL: Sycamore Publishing Company.

- Gaumer-Erickson, A.S., Kleinhammer-Tramill, J., & Thurlow, M.L. (2007). An analysis of the relationship between high school exit exams and diploma options and the impact on students with disabilities. *Journal of Disability Policy Studies, 18*(2), 117-28.
- Guterman, B. R. (1995). The validity of categorical learning disabilities services: The consumer view. *Exceptional Children, 62*, 111-124.
- Gwynne, J., Lesnick, J., Hart, H.M., & Allensworth, E.M. (2009). *What matters for staying on-track and graduating in Chicago Public Schools: A focus on students with disabilities*. Chicago, IL: Consortium on Chicago School Research.
- Hartwig, R., & Sitlington, P.L. (2008). Employer perspectives on high school diploma options for adolescents with disabilities. *Journal of Disability Policy Studies, 19*(1), 5-14.
- Haycox, A. (1995). *The costs and benefits of community care: A case study of people with learning difficulties*. Aldershot, United Kingdom: Avebury.
- Hayes, R. L., Nelson, J.-L., Tabin, M., Pearson, G., & Worthy, C. (2002). Using school-wide data to advocate for student success. *Professional School Counseling, 6*, 86-95.
- Heckman, J.J., Humphries, J.E., Mader, N.S. (2010). *The GED* (NBER Working Paper No. 16064). Cambridge, MN: National Bureau of Economic Research.
- Hogan, D. P., Rogers, M. L., & Msall, M. E. (2000). Functional limitations and key indicators of well-being in children with disability. *Archives of Pediatrics and Adolescent Medicine, 154*, 1042-1048.
- Heubert, J. P. (2002). Disability, rate, and high-stakes testing for students. In G. Orfield & D. Losen, *Editions 2002. Minority issues in special education*. Cambridge, MA: Harvard Education Publishing Group.
- Heubert, J. P. & Hauser, R. M. (1999). *High stakes: Testing for tracking, promotion and graduation*. Washington, DC: National Academy Press.
- Johnson, D. R., Stodden, R. A., Emanuel, E. J., Luecking, R., & Mack, M. (2002). Current challenges facing secondary education and transition services for youth with disabilities: What research tells us. *Exceptional Children, 68*(4), 519-531.
- Johnson, D.R., Stout, K.E., & Thurlow, M.L. (2009). Diploma options and perceived consequences for students with disabilities. *Exceptionality, 17*(3), 119-134.

- Johnson, D. R., Thurlow, M. L., & Stout, K. E. (2007). *Revisiting graduation requirements and diploma options for youth with disabilities: A national study*. Minneapolis, MN: National Center on Educational Outcomes, Institute on Community Integration, University of Minnesota.
- Johnson, D. R., Thurlow, M. L., Stout, K. E., & Mavis, A. (2007). Cross-state study of high stakes testing practices and diploma options. *Journal of Special Education Leadership, 20*(2), 53-65.
- Kannapel, P. J., & Clements, S. K. (2005). *Inside the black box of high-performing high-poverty schools*. Lexington KY: Prichard Committee for Academic Excellence.
- Keilitz, I., & Dunivant, N. (1987). The learning-disabled offender. In C. M. Nelson, R. B. Rutherford, & B. I. Wolford (Eds.), *Special education in the criminal justice system* (pp. 120-37). Columbus, OH: Merrill.
- Kenkel, D., Lillard, D., & Mathios, A. (2006). The roles of high school completion and GED receipt in smoking and obesity. *Journal of Labor Economics, 24*(3), 635-660.
- Kortering, L. J., & Brazier, P. M. (1999). Staying in school: The perspective of ninth-grade students. *Remedial and Special Education, 20*(2), 106-113.
- Larson, K.A., & Rumberger, R.W. (1995). ALAS: Achievement for Latinos through Academic Success. In H. Thornton (Ed.), *Staying in school: A technical report of the dropout prevention projects for junior high school students with learning and emotional disabilities*. Minneapolis, MN: University of Minnesota, Institute on Community Integration.
- Lehr, C. A. (1996). Students with emotional behavioral disorders: Predictors and factors associated with dropout and school completion. Unpublished paper. University of Minnesota, Minneapolis, MN.
- Lehr, C.A., Clapper, A.T., & Thurlow, M.L. (2005). *Graduation for all: A practical guide to decreasing school dropout*. Thousand Oaks, CA: Corwin Press.
- Lehr, C. A., Hansen, A., Sinclair, M. F., & Christenson, S. L. (2003). Moving beyond dropout towards school completion: An integrative review of data-based interventions. *School Psychology Review, 32*(3), 342-364.
- Lehr, C. A., Sinclair, M. F., & Christenson, S. L. (2004). Addressing student engagement and truancy prevention during the elementary school years: A replication study of the Check & Connect model. *Journal of Education for Students Placed at Risk, 9*(3), 279-301.

- Lewis, D. R., & Johnson, D. R. (2004). Costs and outcomes of family care for individuals with developmental disabilities. In K. C. Lakin & R. Stancliffe (Ed.), *Costs of services for persons with disabilities in community settings*. Boston: Paul Brookes Publishing.
- Lichtenstein, S. (1993). Transition from school to adulthood: Case studies of adults with learning disabilities who dropped out of school. *Exceptional Children*, 59, 336-347.
- MacMillan, D. L. (1991). *Hidden youth: Dropouts from special education*. Reston, VA: The Council for Exceptional Children.
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist*, 53, 205-220.
- McPartland, J.M. (1994). Dropout prevention in theory and practice. In R.J. Rossi (Ed.), *Schools and students at risk: Context and framework for positive change* (pp. 255-276). New York: Teachers College Press.
- National Center for Education Statistics (1997). National postsecondary student education and study: Methodology report. Washington, DC.
- National Center for Education Statistics (2000). Dropout rates in the United States: 1999 (NCES 2001022). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.
- National Center for Education Statistics. (2009). *Dropout and completion rates in the United States: 2007* (NCES 2009-064). Washington, DC: U.S. Department of Education.
- National Center for Education Statistics. (2010). *The condition of education 2010*. Washington, DC: U.S. Department of Education, Author. (Table A-19 available via online Fast Facts, <http://nces.ed.gov/fastfacts/display.asp?id=16>).
- National Commission on Adult Literacy. (2008). *Reach higher, America: Overcoming crisis in the U.S. workforce*. Washington, DC: Author.
- National Dropout Prevention Center for Students with Disabilities. (2006). *An analysis of state performance plan data for Indicator 2 (dropout)*. Retrieved from http://www.ndpc-sd.org/documents/Analysis_of_State_Reports/NDPC-SD-Report-on-Indicator-2-2005-2010-SPP.pdf.
- National Longitudinal Transition Study* (1988-1992). Menlo Park CA: Stanford Research Institutes International.

- National Longitudinal Transition Study-2 (2005). *After high school: A first look at the postschool experiences of youth with disabilities: A report from the National Longitudinal Transition Study-2 (NLTS2: Prepared for: Office of Special Education Programs, U.S. Department of Education*. Menlo Park CA: SRI International.
- National Organization on Disability (N.O.D.)/Harris. (2000). *2000 Survey of Americans with disabilities*. National Organization on Disability/Louis Harris and Associates.
- Newman, L. (2005). *Family involvement in the educational development of youth with disabilities. A special topic report of findings from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.
- Orr, M.T. (1987). *Keeping kids in school: A guide to effective dropout prevention programs and services*. San Francisco: Jossey-Bass.
- Osher, D., Woodruff, D., & Sims, A. (2002). Schools make a difference: The difference between education services for African-American children and youth and their overrepresentation in the juvenile justice system. In D. Losen (Ed.), *Minority issues in special education* (pp. 93-116). Cambridge, MA: The Civil Rights project, Harvard University, and the Harvard Education Publishing Group.
- Post, C. H. (1981). The link between learning disabilities and juvenile delinquency: Cause, effect and "present solutions." *Juvenile and Family Court Journal*, 32, 58-68.
- Quinn, M. M., Rutherford, R. R., Leone, P. E., Osher, D. M., & Poirier, J. M. (2005). Youth with disabilities in juvenile corrections: a national survey. *Exceptional Children*, 71(3), 339-45.
- Reardon, S.F., Atteberry, A., Arshan, N., & Ku8rlander, M. (2009). *Effects of the California High School Exit Exam on student persistence, achievement, and graduation*. , Stanford, CA: Stanford University, Institute for Research on Education Policy & Practice.
- Reschly, A., & Christenson, S. L. (2006). School completion. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention, and intervention* (pp. 103-113). Bethesda, MD: National Association of School Psychologists.
- Richmond, E. (2009). *Every student counts: The role of federal policy in improving graduation rate accountability*. Washington, DC: Alliance for Excellent Education.
- Rosenthal, B. S. (1998). Nonschool correlates of dropout: An integrative review of the literature. *Children & Youth Services Review*, 20(5), 413-433.
- Rotermund, S. (2007). *Why students drop out of high school: Comparisons from three national surveys* (Statistical Brief Number 2). Santa Barbara, CA: University of

California Santa Barbara, California Dropout Research Project.

- Rumberger, R. W. (1987). High school dropouts: A review of issues and evidence. *Review of Educational Research*, 57(2), 101-121.
- Rumberger, R. W. (2004). Why students drop out of school. In G. Orfield (Ed.), *Dropouts in America*. Cambridge, MA: Harvard Education Press.
- Rumberger, R. W. (2008). *Solving California's dropout crisis*. (Report of the California Dropout Research Project Policy Committee.) Santa Barbara: California Dropout Research Project, University of California, Santa Barbara. (http://cdrp.ucsb.edu/dropouts/pubs_policyreport.htm).
- Rumberger, R., & Lamb, S. (2003). The early employment and further education experiences of high school dropouts: A comparative study of the United States and Australia. *Economics of Education Review*, 22(4), 553-566.
- Rumberger, R. W., & Larson, K. A. (1998). Student mobility and increased risk of high school dropout. *American Journal of Education*, 107, 1-35.
- Rumberger, R., & Lin, S. A. (2008). *Why students drop out of school: A review of 25 years of research*. Santa Barbara: California Dropout Research Project, University of California, Santa Barbara.
- Ryan, A. M. (2000). Peer groups as a context for the socialization of adolescents' motivation, engagement, and achievement in school. *Educational Psychologist*, 35, 101-111.
- Sailor, W., & Roger, B. (2005). Rethinking inclusion: Schoolwide applications. *Phi Delta Kappan*, 86(7), 503-509.
- Schur, L. (2002). The difference a job makes: The effects of employment among people with disabilities. *Journal of Economic Issues* 36(2), 1-9.
- Sinclair, M. F., Christenson, S. L., Evelo, D. L., & Hurley, C. M. (1998). Dropout prevention for youth with disabilities: Efficacy of a sustained school engagement procedure. *Exceptional Children*, 65(1), 7-21.
- Sinclair, M. F., Christenson, S. L., Lehr, C. A., & Anderson, A.R. (2003). Facilitating student engagement: Lessons learned from Check & Connect longitudinal studies. *The California School Psychologist*, 8, 29-41.
- Sinclair, M. F., Christenson, S. L., & Thurlow, M. L. (2005). Promoting school completion of urban secondary youth with emotional or behavioral disabilities. *Exceptional Children*, 71(4), 465-482.

- Skinner, E. A., Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85, 571-581.
- Stanard, R. P. (2003). High school graduation rates in the United States: Implications for the counseling profession. *Journal of Counseling and Development*, 81, 217-222.
- Steinberg, A., & Almeida, C. A. (2008). *Raising graduation rates in an era of high standards: Five commitments for state administration*. Washington, DC: Achieve, Jobs for the Future Project.
- Stillwell, R., Sable, J., and Plotts, C. (2011). Public School Graduates and Dropouts From the Common Core of Data: School Year 2008–09 (NCES 2011-312). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved [date] from <http://nces.ed.gov/pubsearch>.
- Swanson, C.B. (2004). *Who graduates? Who doesn't? A statistical portrait of public high school graduation, class of 2001*. Washington, DC: Urban Institute.
- Thompson-Hoffman, S., & Hayward, B. (1990). Students with handicaps who drop out of school. Paper presented at the annual conference of the National Rural and Small Schools Consortium, Tucson, AZ.
- Thurlow, M.L., Cormier, D.C., & Vang, M. (2009). Alternative routes to earning a standard high school diploma. *Exceptionality*, 17(3), 135-149.
- Thurlow, M. L., & Johnson, D. R. (2000). High stakes testing and students with disabilities. *Journal of Teacher Education*, 51(4), 305-314.
- Thurlow, M. L., & Quenemoen, R. F. (in press). Standards-based reform and students with disabilities. In J.M. Kauffman & D.P Hallahan (Eds), *Handbook of special education*. New York: Routledge.
- Thurlow, M. L., Sinclair, M. F., & Johnson, D. R. (2002, July). *Students with disabilities who drop out of school – Implications for policy and practice*. Minneapolis: University of Minnesota, Institute on Community Integration, National Center on Secondary Education and Transition.
- Thurlow, M., Vang, M., & Cormier, D. (2010). Earning a high school diploma through alternative routes (Synthesis Report 76). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes
- Tyler, J. H. (2004). Basic skills and the earnings of dropouts. *Economics of Education Review*, 23, 221-35.
- U.S. Census Bureau. (2006). *Current population survey: Educational attainment in the*

U.S. Washington, DC: Author.

U.S. Census Bureau. (2008). *Current population survey: Type of college and year enrolled*. Washington, DC: Author. Retrieved from www.census.gov/population/www/socdemo/school/cps2008.html.

U.S. Department of Education. (2007). *Twenty-eighth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: Author.

U.S. Department of Education. (2008a, Oct). Title I – Improving the academic achievement of the disadvantaged: Final rule. *Federal Register*.

U.S. Department of Education. (2008b). *Numbers and rates of public high school dropouts: School year 2004-05: First look* (NCES 2008-305). Washington, DC: Institute of Education Sciences, National Center for Education Statistics.

U.S. Department of Education. (2008c). *Public school graduates and dropouts from the Common Core of Data: School year 2005-06: First look* (NCES 2008-353rev). Washington, DC: Institute of Education Sciences, National Center for Education Statistics.

U.S. Department of Education. (2010a). *Public school graduates and dropouts from the Common Core of Data: School year 2006-07: First look* (NCES 2010-313). Washington, DC: Institute of Education Sciences, National Center for Education Statistics.

U.S. Department of Education. (2010b). *Public school graduates and dropouts from the Common Core of Data: School year 2007-08: First look* (NCES 2010-341). Washington, DC: Institute of Education Sciences, National Center for Education Statistics.

U.S. Department of Education (2010c). *Twenty-ninth annual report to Congress on the implementation of the Individuals with Disabilities Education Act, 2007* (Vol. 2). Washington, DC: Office of Special Education and Rehabilitative Programs.

U.S. Department of Education. (2011). *Public school graduates and dropouts from the Common Core of Data: School year 2008-09: First look* (NCES 2011-312). Washington, DC: Institute of Education Sciences, National Center for Education Statistics.

U.S. Department of Labor. (2003). So you're thinking of dropping out of school. Retrieved December 31, 2003, from <http://www.dol.gov/asp/fibre/dropout.htm>

- Wagner, M. (1995). Outcomes for youths with serious emotional disturbance in secondary school and early adulthood. *Critical Issues for Children and Youth*, 5(2), 90-112.
- Wagner, M., Newman, L., Cameto, R., & Levine, P. (2005). Changes over time in the early postschool outcomes of youth with disabilities. A report of findings from the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2 (NLTS2). Menlo Park, CA: SRI International.
- Wagner, M., Newman, L., Cameto, R., Levine, P., & Garza, N. (2006). An overview of findings from wave two of the National Longitudinal Transition Study-2 (NLTS2). Menlo Park, CA: SRI International.
- Warren, J.R., Jenkins, K.N., & Kulick, R.B. (2006). High school exit examinations and state-level completion and GED rates, 1975 through 2002. *Educational Evaluation and Policy Analysis*, 28(2), 131-152.
- Wiener, R., & Hall, D. (2004). Accountability under No Child Left Behind. *Clearing House*, 78(1), 17-21.
- Weis, L., Farrar, E., & Petrie, H.G. (Ed.). (1989). *Dropouts from school: Issues, dilemmas, and solutions*. Albany, NY: State University of New York Press.
- Wolman, C., Bruininks, R. H., & Thurlow, M. L. (1989). Dropouts and drop out programs: Implications for special education. *Remedial and Special Education*, 10(5), 6-20.
- Zigmond, N., & Thornton, H. (1985). Follow-up of post-secondary age learning disabled graduates and drop-outs. *Learning Disabilities Research*, 1, 50-55.

Appendix A
Dropout Data for Figures

Table A-1. Numbers and Sources of Data for Figure 1

Year	Number of Dropouts	Number with Exit Data	Percentage Dropouts	Source of Numbers
2003-04	124,711	390,436	31.9	www.ideadata.org , 2003-04: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out</i> plus <i>Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2004-05	113,338	384,723	29.5	www.ideadata.org , 2004-05: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out</i> plus <i>Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2005-06	108,579	674,832	16.1	www.ideadata.org , 2005-06: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped</i> plus <i>Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2006-07	106,036	671,614	15.8	www.ideadata.org , 2006-07: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out</i> plus <i>Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2007-08	96,337	632,633	15.2	www.ideadata.org , 2007-08: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out</i> plus <i>Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2008-09	97,305	692,616	14.0	www.ideadata.org , 2008-09: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out</i> + <i>Reached Maximum Age</i>) and Number of <i>Exiting Total</i>

Table A-2. Numbers and Sources of Data for Figure 3

Year	Number of Dropouts	Number of Enrolled Students	Percentage Dropouts	Source of Numbers
Special Education Students				
2004-05	113,338	2,233,421	5.1	www.ideadata.org , 2007-08: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>); 2007: Table 1-1 for All Disabilities 14-21 yrs <i>Enrolled Students</i>
2005-06	108,579	2,256,631	4.8	www.ideadata.org , 2005-06: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>); 2007: Table 1-1 for All Disabilities 14-21 yrs <i>Enrolled Students</i>
2006-07	106,036	2,258,631	4.7	www.ideadata.org , 2006-07: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>); 2007: Table 1-1 for All Disabilities 14-21 yrs <i>Enrolled Students</i>
2007-08	96,337	2,245,897	4.3	www.ideadata.org , 2007-08: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>); 2007: Table 1-1 for All Disabilities 14-21 yrs <i>Enrolled Students</i>
2008-09	97,305	2,235,183	4.4	www.ideadata.org , 2008-09: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>); 2007: Table 1-1 for All Disabilities 14-21 yrs <i>Enrolled Students</i>
All Students				
2004-05	540,382	Not provided	3.9	U.S. Department of Education (2008b), NCES 2008-305, 2004-05: Table 1 for Number of Dropouts; Table 3 for Percentage of Dropouts
2005-06	549,149	13,964,557	3.9	U.S. Department of Education (2008c), NCES 2008-353rev, 2005-06: Table 4 for Number of Dropouts, Enrollment, Percentage of Dropouts
2006-07	617,948	14,020,715	4.4	U.S. Department of Education (2010a), NCES 2010-313, 2006-07: Table 4 for Number of Dropouts, Enrollment, Percentage of Dropouts
2007-08	613,379	14,808,821	4.1	U.S. Department of Education (2010b), NCES 2010-341, 2007-08: Table 4 for Number of Dropouts, Enrollment, Percentage of Dropouts
2008-09	607,789	14,954,795	4.1	U.S. Department of Education (2011), NCES 2011-312, 2008-09: Table 4 for Number of Dropouts, Enrollment, Percentage of Dropouts

Table A-3. Numbers and Sources of Data for Figure 4

Year	Number of Dropouts	Number with Exit Data	Percentage Dropouts	Source of Numbers
2003-04	10,393	32,644	31.8	www.ideadata.org , 2003-04: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out plus Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2004-05	13,027	35,760	36.4	www.ideadata.org , 2004-05: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out plus Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2005-06	11,461	67,200	17.1	www.ideadata.org , 2005-06: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out plus Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2006-07	6,879	64,648	10.6	www.ideadata.org , 2006-07: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out plus Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2007-08	7,050	61,956	11.4	www.ideadata.org , 2007-08: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out plus Reached Maximum Age</i>) and Number of <i>Exiting Total</i>
2008-09	7,635	63,087	12.1	www.ideadata.org , 2008-09: Table 4-1 for All Disabilities for Number of Dropouts (<i>Dropped Out plus Reached Maximum Age</i>) and Number of <i>Exiting Total</i>

Table A-4. Numbers and Sources of Data for Figure 5

Disability Category	Number of Dropouts	Number with Exit Data	Percentage Dropouts	Source of Numbers
LD	50,865	346,308	14.7	www.ideadata.org , 2007-08: Table 4-1a for Specific Learning Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
SLI	1,940	23,097	8.4	www.ideadata.org , 2007-08: Table 4-1b for Speech or Language Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
MR	10,973	63,261	17.3	www.ideadata.org , 2007-08: Table 4-1c for Mental Retardation for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
ED	18,977	91,843	20.7	www.ideadata.org , 2007-08: Table 4-1d for Emotional Disturbance for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
MD	2,098	12,591	16.7	www.ideadata.org , 2007-08: Table 4-1e for Multiple Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
HI	531	6,532	8.1	www.ideadata.org , 2007-08: Table 4-1f for Hearing Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
OI	580	4972	11.7	www.ideadata.org , 2007-08: Table 4-1g for Orthopedic Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
OHI	8,884	67,974	13.1	www.ideadata.org , 2007-08: Table 4-1h for Other Health Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
VI	175	2,126	8.2	www.ideadata.org , 2007-08: Table 4-1i for Visual Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
Au	904	10,598	8.5	www.ideadata.org , 2007-08: Table 4-1j for Autism for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
DB	17	145	11.7	www.ideadata.org , 2007-08: Table 4-1k for Deaf-Blindness for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
TBI	393	3,186	12.3	www.ideadata.org , 2007-08: Table 4-1l for Traumatic Brain Injury for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data

Disability Category codes are: LD – learning disability; SLI – speech/language impairment; MR – mental retardation; ED – emotional disability; MD – multiple disability; HI – hearing impairment; OI – orthopedic impairment; OHI – other health impairment; VI – visual impairment; Au – Autism; DB – deaf-blind; TBI – traumatic brain injury.

Table A-5. Numbers and Sources of Data for Figure 6

Disability Category	Number of Dropouts	Number with Exit Data	Percentage Dropouts	Source of Numbers
LD	4,080	40,219	10.1	www.ideadata.org , 2007-08: Table 4-1a for Specific Learning Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
SLI	165*	2,926	5.6	www.ideadata.org , 2007-08: Table 4-1b for Speech or Language Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
MR	845 ⁺	3,422	24.7	www.ideadata.org , 2007-08: Table 4-1c for Mental Retardation for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
ED	1,001	6,917	14.5	www.ideadata.org , 2007-08: Table 4-1d for Emotional Disturbance for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
MD	85 ⁺	314	10.2	www.ideadata.org , 2007-08: Table 4-1e for Multiple Disabilities for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
HI	56*	903	6.2	www.ideadata.org , 2007-08: Table 4-1f for Hearing Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
OI	158 ⁺	823	19.2	www.ideadata.org , 2007-08: Table 4-1g for Orthopedic Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
OHI	422	4,565	9.2	www.ideadata.org , 2007-08: Table 4-1h for Other Health Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
VI	20*	304	6.6	www.ideadata.org , 2007-08: Table 4-1i for Visual Impairments for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
Au	79* ⁺	1,296	6.1	www.ideadata.org , 2007-08: Table 4-1j for Autism for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
DB	Data Suppressed	26	---	www.ideadata.org , 2007-08: Table 4-1k for Deaf-Blindness for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data
TBI	17*	241	7.1	www.ideadata.org , 2007-08: Table 4-1l for Traumatic Brain Injury for Number of Dropouts (<i>Dropped Out + Reached Maximum Age</i>) and Number with Exit Data

Disability Category codes are: LD – learning disability; SLI – speech/language impairment; MR – mental retardation; ED – emotional disability; MD – multiple disability; HI – hearing impairment; OI – orthopedic impairment; OHI – other health impairment; VI – visual impairment; Au – Autism; DB – deaf-blind; TBI – traumatic brain injury.

* Data suppressed for either *Dropped Out* or *Reached Maximum Age*

⁺ More than one-half were students who *Reached Maximum Age*