

## ABSTRACT

Title of Dissertation:                   INDIVIDUAL CHARACTERISTICS OF  
STUDENTS WITH AND WITHOUT  
DISABILITIES WHO RECEIVED A WAIVER  
FOR THE REQUIREMENTS NECESSARY TO  
EARN A STANDARD DIPLOMA: A STUDY OF  
ONE SYSTEM

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The purpose of this study was to investigate the association of individual characteristics to include disability status, age, gender, and race-ethnicity on receiving a waiver from one or more of the requirements for the standard diploma among students with and without disabilities. Student data was drawn from a large, international school system, referred to as the Participating School System (PSS)<sup>1</sup> that operates schools throughout the world for military and civilian dependents. Descriptive statistics, chi-square tests, and logistic regression analyses were used.

The results demonstrated there was an association between age, race-ethnicity, disability status and receiving a waiver from the requirements for the standard diploma.

Logistic regression analyses showed that disability status, race-ethnicity, and age

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<sup>1</sup> The name of the school system, PSS, is pseudonym developed in response to policies that prohibit identification.

increased the odds of receiving any type of waiver, a mathematics waiver, a foreign language waiver, and an other course credit waiver (i.e., science, physical education). Regardless of a student's race-ethnicity, students with disabilities had increased odds of receiving a waiver than students without disabilities. Although students with disabilities were more likely to receive a waiver than students without disabilities, regardless of race/ethnicity, non-White students with disabilities had increased likelihood of receiving a waiver than White students with disabilities. Additionally, older students with disabilities had increased odds of receiving a waiver. Rationales for granting a waiver for students with disabilities cited were student disability status and academic weakness for granting the waivers. Recommendations stress establishing procedures and guidance for awarding a waiver from diploma requirements should be designed and articulated to parents, students, and school staff, and specific guidance is provided to special education teams to ensure that students with disabilities are afforded a commensurate educational experience that is provided to students without disabilities. School programs should develop appropriate interventions to support the academic needs of students.

INDIVIDUAL CHARACTERISTICS OF STUDENTS WITH AND WITHOUT  
DISABILITIES WHO RECEIVED A WAIVER FOR THE REQUIREMENTS  
NECESSARY TO EARN A STANDARD DIPLOMA: A STUDY OF ONE SYSTEM

by

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## Dedication

To my mother, Dora Krause for her unconditional support, encouragement, and love, you always encouraged me to chart my own course, I love you; and to my grandmother, Mary Alberta Thomas who was always there for me and who first opened the door to the pleasure of reading and to some extent, helped me begin this journey many years ago, and finally, to the power of the human spirit, you never know just what you're capable of accomplishing.

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## **List of Abbreviations**

ADA: the Americans with Disabilities Act of 1990  
AYP: adequate yearly progress  
CTE: career and technical education  
CPS: Current Population Survey  
EAHCA: the Education of All Handicapped Children Act  
EHA: the Education of the Handicapped Act  
ESEA: the Elementary and Secondary Education Act  
FAPE: free appropriate public education  
IDEA: the Individuals with Disabilities Education Act  
IEP: individualized education program  
LD: learning disability(ies)  
LEA: local education agency  
LRE: least restrictive environment  
NCLB: the No Child Left Behind of 2001  
NELS: National Education Longitudinal Study  
NLTS: National Longitudinal Transition Study  
NLTS2: National Longitudinal Transition Study 2  
OCR: Office of Civil Rights  
OSEP: Office of Special Education Programs  
PL: public law  
PSS: Participating School System  
Sec. 504: Section 504 of the Vocational Rehabilitation Act of 1973  
SIS: Student Information System used by the Participating School System  
SPSS: the Statistical Package of the Social Sciences  
USDOE: United States Department of Education

## Chapter I: Introduction

The successful completion of high school by meeting a pre-determined set of requirements culminates with the receipt of the diploma. The high school diploma has increased in importance since the beginning of the 19<sup>th</sup> century (Dorn, 1996); and in the 21<sup>st</sup> century, it has become a necessity for entering postsecondary education and achieving increased financial success later in life (Achieve, 2008; Alliance for Excellent Education, 2009; Rumberger, 2011; Yell, 2012). In fact, the number of students graduating with a diploma from high school has become an important gauge of success for the U.S. education system.

For decades, educational researchers and policymakers have focused on the rate of high school seniors exiting secondary school with a diploma; a figure commonly known as the high school graduation rate. Recent data on the national graduation rate in the U.S. show the average rate is around 70%, which means that over one million students do not receive a diploma each year (Rumberger, 2011). The U.S. graduation rate has fueled concern due to a number of factors, including international attention on the global economic market, the publication of *A Nation at Risk* in 1983, and the national media's pervasive message that the U.S. is falling behind our international counterparts (Rumberger, 2011). With the increased importance of graduating with a high school diploma, as well as increasing requirements for obtaining a diploma, the issue of ensuring that students with disabilities obtain a high school diploma has become a challenge for state and local education agencies.

In this chapter, I provide an overview and rationale for the present study by discussing key challenges that increased academic rigor presents for students with

disabilities as they seek to meet the requirements for receipt of a high school diploma. First, I discuss the value of the high school diploma and the impact of increased requirements and alternate options to the standard diploma. Second, I review the purpose of the study by discussing the four research questions, the dataset used, and the methodology. Finally, I discuss the importance of this study to the field of special education and educational policy makers.

### **Overview of the Diploma and Increased Educational Requirements**

The importance of receiving a high school diploma has increased over the years. Successfully completing high school with the diploma is the first step to securing meaningful employment in postsecondary life, and it is necessary if one intends to enter the working market in the information-based society of the 21<sup>st</sup> century (Dorn, 1996; Rumberger, 2011). Students who drop out of high school without earning a diploma have significantly higher rates of unemployment (Rumberger, 2011; U.S. Department of Labor, 2007) and increased dependence on social welfare systems (Rouse, 2005; Rumberger, 2011).

In response to the national attention focused on the low high school graduation rate and the need to provide students with the skills necessary to be productive citizens in life, state education agencies (SEAs) and their local education agencies (LEAs) have placed greater focus on the importance of increasing course rigor (Achieve, 2011; Johnson, Thurlow, & Stout, 2007; Yell, 2012); providing classroom instruction that aligns with raised academic standards (Achieve, 2011; Guy, Lee, & Thurlow, 1999; Jennings, 2012); and exiting students from high school with evidence that they have increased knowledge in the areas of English language arts, mathematics, and science

(Achieve, 2011; Kober & Stark Rentner, 2012; Rumberger, 2011). To meet this challenge, SEAs and LEAs have implemented new graduation requirements, like increasing the number of credits students must earn in specific subject areas and establishing exit exams that assess students' knowledge and competency in content areas (Gaumer Erickson, Kleinhammer-Tramill, & Thurlow, 2007; Johnson, Stout, & Thurlow, 2009; McIntosh, 2012; Thurlow, Vang, & Cormier, 2010). However, as Dorn (1996) noted well over a decade ago,

High among the views of many education critics in the recent past has been the belief that schools needs to raise standards, set specific requirements for graduating from high schools, and ensure that a diploma is a valuable credential...The problem with this set of goals is that raising standards by definition means making it more difficult to earn a diploma. (pp. 1-2)

Thus, U.S. school leaders have found it difficult to address the national pressure to increase the rigor of secondary education (Center on Education Policy, 2008; Lehr, Clapper, & Thurlow, 2005), while avoiding placing at a disadvantage those students whose abilities may not allow them to attain the new levels of rigor (Center on Education Policy, 2007; Dorn, 1996; Kaufmann, 1999).

### **Challenges for Students with Disabilities**

Rigorous graduation policies present a particular challenge for students with disabilities (Center on Education Policy, 2007; Hehir, 2006; Johnson, Stout, & Thurlow, 2009; Lehr et al., 2005). Kaufmann (1999) argued that it is unrealistic and potentially damaging to expect all students to achieve universal education standards. Kaufmann also expressed concern that students with disabilities would never catch up with their peers

without disabilities. Studies have shown that an increasing number of students with disabilities have proven unable to meet the minimum requirements for receiving the standard diploma (Johnson, Stout, & Thurlow, 2009). Students who cannot meet these conditions may receive an alternate diploma based on reduced or different requirements (Bouck & Washburn-Moses, 2010; Gaumer Erickson & Morningstar, 2009; Johnson, et al., 2007; Nord et al., 2011; Thurlow, Cormier, & Vang, 2009; Thurlow, et al., 2010). Research also has suggested that LEAs disproportionately award more alternate diplomas to students with disabilities than they do to students without disabilities (Johnson et al., 2009; Nord et al., 2011; Thurlow et al., 2010). Johnson, Thurlow, Stout, and Mavis (2007) recognized the problems students with disabilities face in meeting high school graduation requirements and noted the following:

The difficulties that students experience in passing state exit exams or meeting minimum criteria required for the receipt of a standard diploma should not result in lowered expectations, the narrowing of curricular or program options or a removal of the student from the general education curriculum. (p. 63)

Studies have also documented how minimum graduation requirements have changed over time (Jennings, 2012; Krentz, Thurlow, Shyyan, & Scott, 2005; Rumberger, 2011; Thurlow et al., 2010; Yell, 2012). In *The Nation's Report Card: America's High School Graduates*, Nord et al. (2011) found that although U.S. schools experienced an increase in the percentage of high school graduates who completed a more challenging secondary curriculum, the increase did not apply to students with disabilities. In fact, Nord et al. found that "45 percent of students with disabilities completed a below standard curriculum" (p. 9).

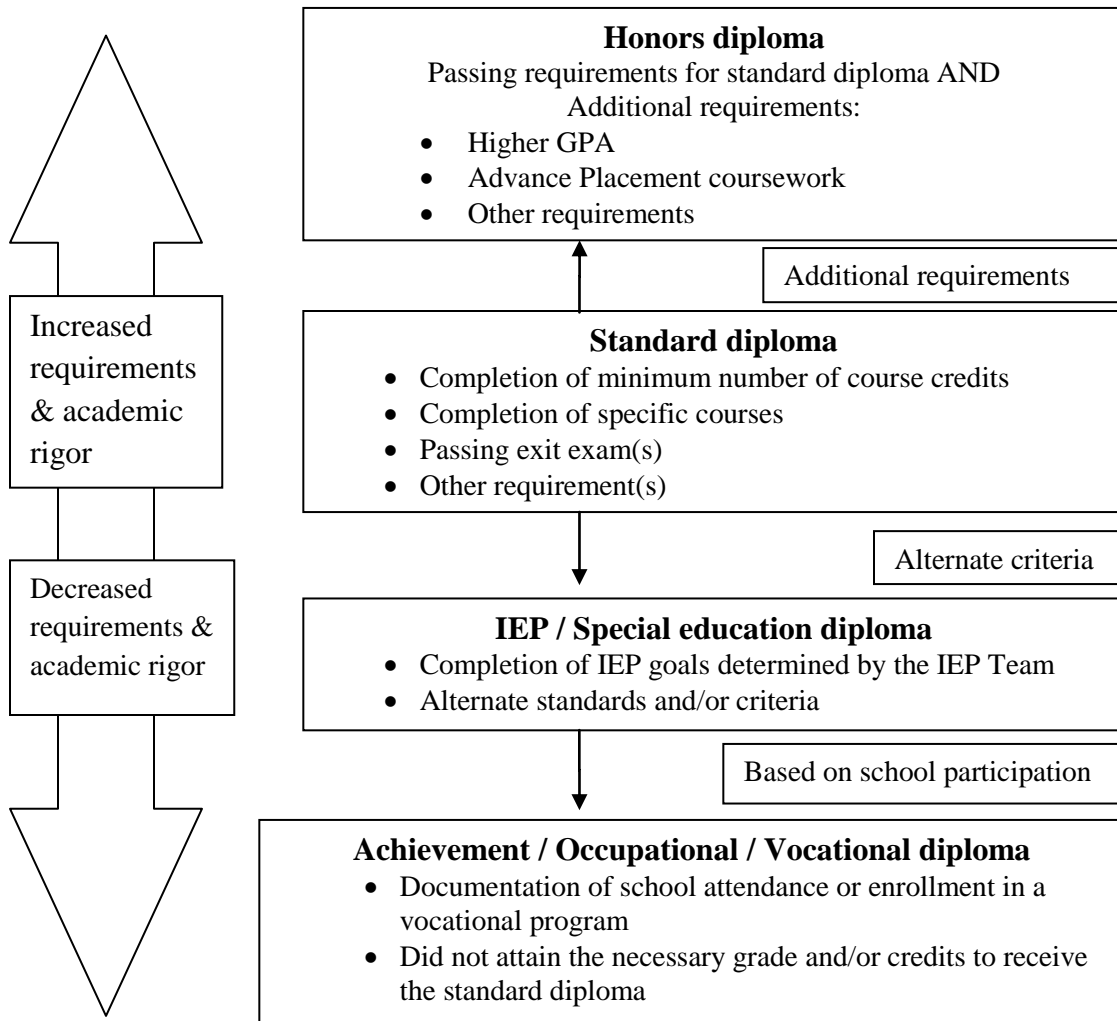


## **Alternative Diploma Options**

Over the years, SEAs and LEAs have developed a variety of ways through which students can earn a diploma. For the purposes of this study, I will refer to these options as *alternate diplomas*, even though these alternatives may include documents like the certificate of completion, which technically is not a diploma. Figure 1 displays a model of common secondary graduation options offered in U.S. schools.

The most current study of graduation and diploma options for students with disabilities identified a range of diploma options available throughout the 50 states (Johnson et al., 2007). These options include the *standard diploma*, earned by a student's successful completion of minimum course requirements, passage of exit exams, and other requirements (Johnson et al., 2007); *the honors diploma*, which establishes requirements in addition to the those conditions necessary to earn the standard diploma; *the Individual Education Program (IEP)/Special education diploma*, which is available to students with disabilities who have not met the standard diploma requirements, but have met their IEP goals; *the occupational/vocational diploma*, which is available to students who have attended high school, but have not met the requirements for standard diploma, and certifies that the student is well-trained and prepared to enter the workforce in a specific field like auto-mechanics, cosmetology, or culinary arts; and other options (Johnson et al., 2007).

**Figure 1.** Common Secondary Graduation Options in U.S. Schools



*Figure 1.* Range of graduation options offered in U.S. schools by the level of requirements and academic rigor.

In addition to alternative diploma options, SEAs and LEAs also allow students to apply for exemptions to the basic requirements for a standard diploma. Johnson et al. (2007) documented the types of allowances available to students with disabilities across states. These options included a reduction in the number of course credits (5 states); the substitution of courses for required course credits (21 states); reductions in test performance criteria (10 states); alternate coursework criteria as established by IEP Teams (32 states); and time extensions to allow students to complete required standards (22 states; Johnson et al., 2007). These allowances, or *waivers*, allow students who are unable to meet basic graduation requirements to obtain a standard diploma by reducing requisite coursework; lowering the performance criteria of end of course exams; and/or, establishing alternate courses in lieu of required coursework (Johnson et al., 2007; Thurlow et al., 2010).

The process for accessing a waiver varies widely among states (Thurlow et al., 2010), but the process typically begins with a formal request. The list of staff persons eligible to request a waiver varies from state to state. State agencies may allow requests from a student, a parent/legal guardian, an IEP team, or a school official (Krentz, Thurlow, Shyyan, & Scott, 2005; Thurlow et al., 2010). The individual responsible for approving the request also can range from a local decision maker (e.g., school principal or local school board) to the state department or board of education (Krentz et al., 2005; Thurlow et al., 2010). However, according to Johnson et al., (2007) in the majority of states (32 states), the IEP team makes the request for the alternate route and serves as the decision making body that grants approval. Thus, much of the approval process for

students with disabilities takes place at the local level, unlike the procedure for students without disabilities, which takes place at the state level.

Researchers have yet to thoroughly explore the impact of having multiple diploma options, making allowances, or waiving the requirements for receiving a standard diploma. Since 1995, researchers have conducted several national surveys that have identified the minimum graduation requirements and the range of diploma options available to students with and without disabilities (Guy et al., 1999; Johnson & Thurlow, 2003; Johnson et al., 2007; Johnson et al., 2009; Krentz et al., 2005; Thurlow et al., 1995; Thurlow et al., 2009; Thurlow et al., 2010; Thurlow, Ysseldyke, & Anderson, 1995). Other studies have focused on the impact of increased graduation requirements on students with disabilities (Johnson et al., 2009; Vernon, Baytops, McMahon, Padden, & Walther-Thomas, 2003). These studies have identified the approaches various public school systems' have adopted to establish minimum graduation requirements (Center on Education Policy, 2008; Johnson & Thurlow, 2003; Thurlow et al., 2009), high school exit exams (McIntosh, 2012; Zhang, 2009), and processes for requesting and/or accessing alternate diploma options (Krentz et al., 2005; Thurlow et al., 2010). Researchers have not yet specifically investigated the process of granting waivers or the educational characteristics that influence a student's receipt of a waiver of minimum requirements for the diploma. As educational leaders begin to understand the factors that increase a student's likelihood of receiving a waiver, they will be better equipped to implement appropriate systemic changes that will increase high school completion rates and ensure that more students meet all requirements for the diploma. As states continue to explore

alternate diploma options, particularly the waiver of requirements, this study will assist in the identification of factors associated with granting a waiver.

### **Graduation Policies in the Participating School System**

This exploratory study took place in a large, international school system, hereafter referred to as the Participating School System (PSS)<sup>2</sup> that operates schools throughout the world for military and civilian dependents. The PSS has established a Community Strategic Plan, and Goal one of this plan states that all students will meet or exceed challenging standards in academic content so they are prepared for continuous learning (Participating School System, 2012). In 2004, to adhere to the national trend towards increasing the system's secondary educational standards and high school graduation rate, the PSS revised the graduation requirements for its 2008 graduating class. The PSS designed these changes to make its high school diploma comparable to the standard diploma offered by most states in the U.S.

The changes in the requirements to earn the PSS standard diploma included (a) an increase in the number of required credits in selected content areas (i.e., Professional Technical Studies, and Physical Education); (b) an increase in the number of elective courses (from 4.5 to 6.0 credits); (c) an increase in the total required course credits (from 24.0 credits to 26.0 credits); (d) added specificity to required courses in science (Biology and either a Chemistry course or Physics course) and Professional Technical Studies (computer technology course ); and (e) the addition of a 2.0 cumulative grade point average (GPA) requirement (Participating School System, 2012). At the time of the present study, the PSS had three diploma options:

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<sup>2</sup> The name of the school system, PSS, is pseudonym developed in response to policies that prohibit identification.

- 1) a standard diploma for students with and without disabilities, earned by meeting all graduation requirements;
- 2) a standard diploma with alternate requirements/criteria (e.g., specific coursework, reduced GPA), available only to students with disabilities and designed by each student's IEP team; and
- 3) an honors diploma for students with and without disabilities, earned by the successful completion of at least four Advanced Placement courses and a cumulative GPA of 3.8 or higher (Participating School System, 2012).

Like many U.S. school systems, the PSS allowed exceptions to established graduation requirements for the standard diploma. The PSS has developed a course substitution list only for students with disabilities to assist the IEP team in identifying appropriate courses that might be substituted for selected courses (e.g., mathematics applications vs. Algebra I) required for receipt of the diploma. To access these courses, the school IEP team is convened to discuss the student's educational progress and educational needs and decide if the student should participate in the general education curriculum, or if a course substitution is needed due to the impact of the student's disability and educational progress. If the IEP team decides that the student with a disability requires the course substitution, the course is then counted toward requirements for the diploma.

Students with disabilities who took courses that were not identified on the course substitution list could receive a waiver of one or more minimum requirements. The waiver process began with the school principal, who was responsible for documenting

each waiver. Students could request a waiver if they met one or more of the following criteria:

- less than a 2.0 cumulative GPA;
- less than 26.0 cumulative course credits;
- at least one course substitution for a required course;
- missing a required course; or
- a special education student following an alternate graduation plan

(Participating School System, 2012).

Additionally, students who enrolled in the PSS during their senior year could receive a PSS standard diploma based on the requirements of the previous LEA (Participating School System, 2012).

The school system's graduation policy granted school principals the power to authorize a waiver of the minimum requirements under the following provisions:

- 1) a student could receive a waiver if it was in their best interest;
- 2) a student, who enrolled in a PSS high school during their senior year, and through no fault of his own, did not have sufficient time to meet the PSS diploma requirements, could receive a PSS diploma based on the previous LEA diploma requirements<sup>3</sup>;
- 3) a student who completed his junior year in the PSS, transitioned to a new LEA, and was unable to meet the diploma requirements of the new LEA, could receive the PSS diploma (system leaders added this authorization for students who transitioned frequently between LEAs), and

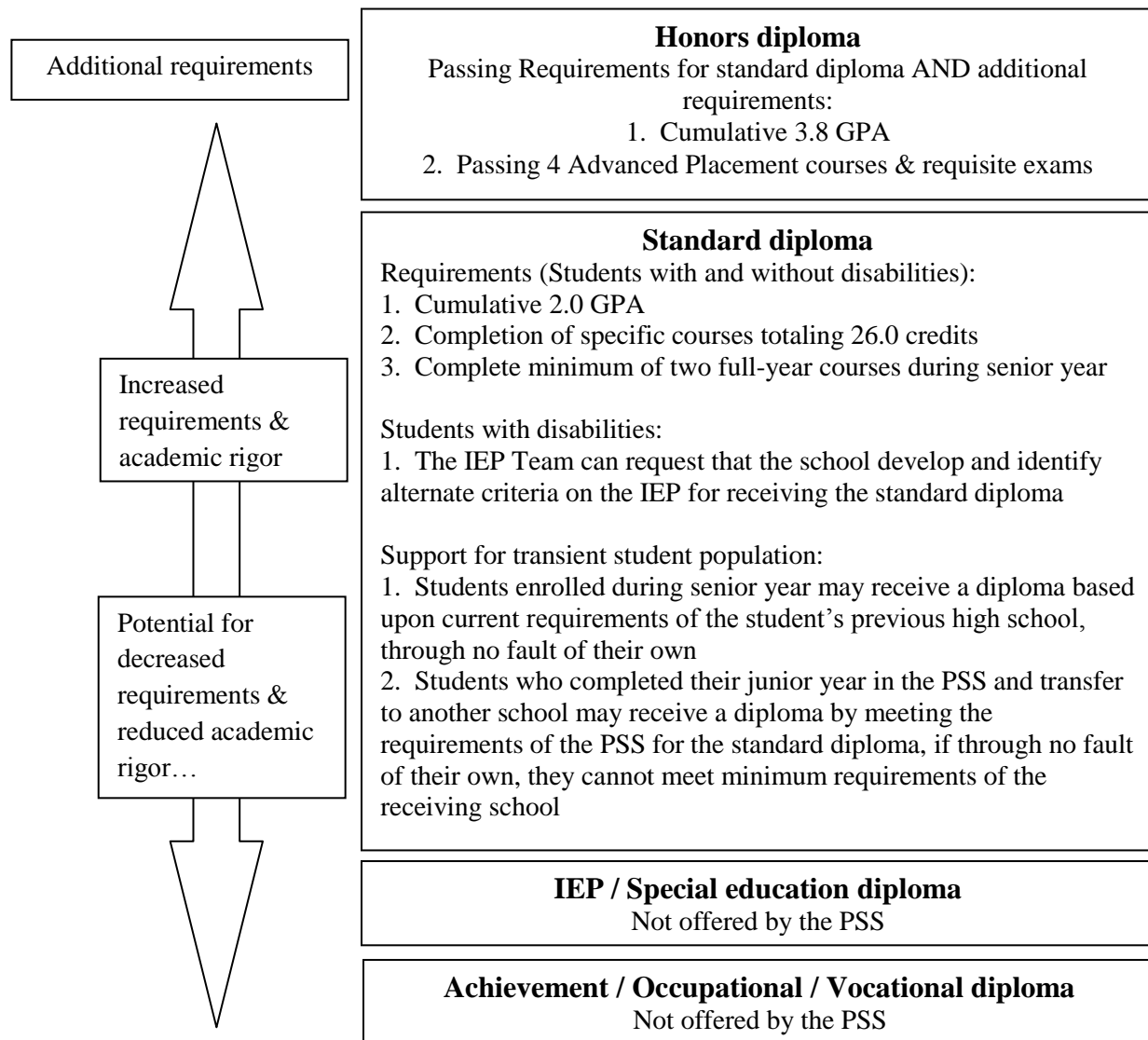
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<sup>3</sup> Established in support of students who transition schools frequently as included in the Interstate Compact for Educational Opportunities for Military Children

- 4) in unusual circumstances, a student could receive full credit if they failed the first semester of a course, but received a passing grade for the second semester of that same course (Participating School System, 2012).

Although the PSS implemented a formal process for waiving one or more requirements for the standard diploma, the system did not offer an array of alternate diploma options like many U.S. school systems. Figure 2 displays a model of diploma options offered by the PSS. All students (with and without disabilities) received the same type of document representing the standard diploma, regardless of whether they achieved all requirements for the standard diploma, or received a waiver of one or more of the minimum requirements. Additionally, students with disabilities, who were working toward an alternate set of requirements/criteria (e.g., specific coursework or reduced GPA) designed by each student's IEP team, also received the same standard diploma without documentation of this alternate set of criteria. This distinction between the PSS and U.S. schools is important, considering that (a) many U.S. schools have developed multiple diploma options (Johnson et al., 2007; Thurlow et al., 2010) and (b) numerous students have had difficulty meeting increased educational standards and/or passing requisite exit exams (Jennings, 2012; McIntosh, 2012).



**Figure 2.** Diploma Options Offered by the PSS

*Figure 2.* Diploma options offered by the PSS by the level of academic requirements and rigor.

### **Purpose of the Study**

This inquiry provided a unique opportunity to investigate the process of reducing or waiving one or more of the requirements for the standard diploma. Specifically, this study examined the characteristics of students with and without disabilities who received

a standard diploma from the PSS in May of 2012. I sought to identify those factors associated with waiving the requirements necessary for receiving a standard diploma.

Like many U.S. schools, the PSS has established a process of documenting and approving a waiver of the requirements for the diploma, to include specific coursework (i.e., mathematics, foreign language), minimum course credits (i.e., 26.0 credits), and/or, minimum GPA (i.e., 2.0 GPA), necessary to earn the diploma. Chapter 3 provides a detailed outline of the process employed by the PSS to document and approve any waiver of the requirements for the standard diploma.

### **Research Questions**

The following four research questions guided this study:

Research question 1: What are the educational (i.e., cumulative GPA, total course credits) and individual characteristics (i.e., age, gender, and race-ethnicity) of students with and without disabilities who graduated in 2012?

Research question 2: A). What are the individual characteristics of students with and without disabilities (i.e., age, gender, and race-ethnicity) who received any type of waiver of graduation requirements for a standard diploma in 2012? B). What are the individual characteristics of students with and without disabilities who received specific types of waivers in 2012 (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, or other course credit waiver)?

Research question 3: A). What is the probability that students with and without disabilities will receive any type of waiver of the graduation requirements for a standard diploma in 2012, controlling for other personal characteristics (i.e., disability status, age,

gender, and race-ethnicity)? B). What is the probability that students with and without disabilities will receive specific types of waivers in 2012 (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, and/or other course credit waiver), controlling for other personal characteristics?

Research question 4: What are the rationales for granting waivers to students with disabilities who graduated with a standard diploma in 2012, as documented on the PSS waiver request document?

### **Methodology**

The sample for this study included students (n = 3,203) who graduated with a standard diploma from the PSS in 2012. Data used in this study included individual characteristics (i.e., disability status, disability type, age, gender, and race-ethnicity) and educational characteristics (i.e., cumulative GPA, and course credits earned) retrieved from the PSS electronic student information system (SIS). I reviewed all diploma waiver packets submitted in 2012 for students with and without disabilities (n = 182), and conducted a more in-depth analysis of the waiver packets submitted for students with disabilities (n = 79) to identify the rationales for requesting the waiver of one or more of the requirements for the standard diploma.

### **Significance of the Study**

Since the 1980s, state leaders have worked to increase the minimum requirements necessary for students to graduate with a standard diploma. These increases in educational requirement have had a significant impact on students with disabilities. Research has shown that a greater number of students with disabilities exit school

through alternate pathways than their non-disabled counterparts (Rumberger, 2011; Zhang, 2009). Because this study focused on the factors that may influence students with disabilities meeting graduation requirements, it adds to the current literature base on the effects of increased educational standards, increased graduation requirements, and diploma options offered to students with disabilities. Expanding our understanding of the relationship between increased graduation requirements and the ability of students with disabilities to earn a standard diploma has significant implications for multiple stakeholders; including policymakers, administrators, parents, and students. This study also helps to inform future decisions of educational policy makers and administrators by identifying the rationales and specific factors that predict the receipt of a waiver of the requirements for receiving a standard diploma.

### **Definition of Key Terms**

***Accountability:*** pertaining to the field of education, the practice of holding schools, school systems, students, teachers, and administrators responsible for the academic performance of students

***Alternate diploma:*** a credential, often termed a “non-standard” diploma, issued by a high school that typically has fewer requirements than the standard diploma or provides exemptions to a specific requirement (e.g., includes the certificate of completion, certificate of attendance, special education or Individual Education Program [IEP] diploma, modified diploma, occupational diploma, or vocational diploma)

***Carnegie credit:*** a unit used to measure the high school credits a student has earned or must earn to complete a specific course of study

***Common Core State Standards:*** a state-led educational initiative, coordinated by the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO), to adopt a set of rigorous K-12 standards in English language arts and mathematics in the U.S.

***Elementary and Secondary Education Act (ESEA):*** federal legislation that funds education for both elementary and secondary schools in the U.S. and emphasizes equal access to education for all children

***End-of-course exam:*** an exam, taken upon completion of a course, based upon specific educational standards that align with the content of a specific high school course of study

***Exit exam:*** an assessment or exam (also termed a “graduation exam” or “high school exit exam”) that requires the student to achieve a certain score or proficiency level to graduate from high school and earn a standard diploma.

***High school diploma:*** a credential (also termed a “standard” or “regular” diploma), awarded by a high school after the successful completion of minimum academic requirements, that graduates can use to gain entry into a postsecondary institution or to demonstrate their eligibility for employment

***High school graduation:*** achieved when a student successfully meets all minimum requirements for completion of high school and receives a diploma

***High-stakes test:*** an assessment whose results can affect a student’s ability to graduate with a standard diploma, proceed to the next grade, or attain admission to an educational program

***Honors diploma:*** a credential awarded by a high school after the successful completion of minimum academic requirements and additional academic conditions that typically include a certain grade point average or supplemental coursework

***Individuals with Disabilities Education Act (IDEA):*** federal legislation that outlines the requirements for providing special education services to students with disabilities

***Individual Education Program (IEP) team:*** defined by IDEA as the team that decides a student's individual educational course of study, typically made up of a parent, one regular educator, a special educator, school administrator, student (if appropriate), and any additional educational personnel, as needed, to discuss the student's program

***Interstate Compact for Educational Opportunities for Military Children:*** Provides for the uniform treatment of military children transferring between school districts to minimize the impact of frequent school transition. The Council of State Governments' National Center for Interstate Compacts, the Department of Defense, national associations, federal and state officials, the Department of Education of each state, school administrators, and military families worked together to develop the Compact.

***The No Child Left Behind Act of 2001 (NCLB):*** the 2001 reauthorization of ESEA that emphasizes high educational standards and accountability in public schools

***Post-school outcomes:*** goals and achievements that a student typically accomplishes following graduation from or completion of high school (e.g., postsecondary education, employment, independent living, and community involvement)

***Postsecondary education:*** education pursued after graduating from high school that may take place in a range of settings (e.g., colleges, technical schools, universities, trade schools, and vocational programs)

**Required course:** an academic course that students must complete to earn the standard diploma (e.g., English Language Arts, Social Studies, Mathematics, Science, Foreign Languages or World Languages, Professional Technical Studies, Physical Education, Fine Arts, and Health Education)

**Special education course:** a specific K-12 course taught outside the general education setting by special educators

**Standard diploma:** a credential issued by a high school to a student who completes all minimum academic requirements

**Standards-based reform:** educational reform movement that emphasizes student performance measured against a set of rigorous academic performance standards

**Student with a disability:** a student who is eligible to receive special education services in the PSS and has a disability, to include autism, deaf-blindness, deafness, hearing impairment, intellectual disability, orthopedic impairment, other health impairment, emotional disturbance, specific learning disability, speech or language impairment, traumatic brain injury, visual impairment, or development delay

**Student management system:** an electronic system or database that stores individual student data that schools can retrieve frequently and store for a period of years (e.g., demographic, discipline records, health records, grades, educational transcript, and parent information)

**Waiver:** an official exception to the traditional graduation requirements for the standard diploma

## **Chapter II: Review of Literature**

### **Introduction**

Traditionally, obtaining a high school diploma in U.S. schools today is a precursor to accessing the postsecondary educational options (e.g., four-year university, two-year community college) necessary to be competitive in the global business market. Fifty years ago, unskilled positions comprised over 73% of the job market. To access these positions, candidates did not need to have a high school diploma or a postsecondary degree (National Collaborative on Workforce and Dignity, 2009). However, by the 20<sup>th</sup> century, over 70% of jobs required skilled labor, and all employees had to have advanced education degrees. The National Collaborative on Workforce and Dignity estimated that in the 21st century, two-thirds of all new jobs created in the U.S. would require advanced education from a two-year or four-year college or university. To access such advanced educational options, students must earn a high school diploma. To ensure that students attain maximum high school graduation rates, it is important for school leaders and educational policy makers to understand those factors associated with the successful completion of the minimum graduation requirements for earning the diploma, particularly among students with disabilities.

In this chapter, I reviewed the relevant literature pertaining to high school graduation for students with disabilities. This chapter is divided into the following main sections: a) obtaining a high school diploma; b) overview of policy and increased educational standards; c) minimum requirements and diploma options; and e) critical review of empirical research studies.



## **Obtaining a High School Diploma**

A review of literature from the past 30 years revealed extensive research on the negative effects of dropping out and failing to earn a diploma (Amos, 2008; Blackbory & Wagner, 1996; Rumberger, 2011; Wagner et al., 1991; Wagner, 2006). Researchers also have explored the long-term effects of dropping out of high school on students' with disabilities. These effects included reduced lifetime earnings, limited options for employment, and increased criminal activity (Alliance for Excellent Education, 2009; Landford & Cary, 2000; Rumberger, 2011; Wagner et al., 1991).

In 2008, the median income of individuals aged 18 through 67 who had not completed high school was roughly \$23,000 (U.S. Department of Commerce, 2009), compared to \$42,000 for students who possessed a high school credential (i.e., a diploma or GED)—a difference of \$19,000.00. The Bureau of Labor Statistics (BLS) 2010 data showed that individuals who did not graduate high school represented eight percent of the working population. The data also indicated that individuals without a high school diploma were more likely to become unemployed ((Bureau of Labor Statistics, 2010)). In 2010, the U.S. Department of Labor confirmed that a majority of unemployed adults had failed to earn a high school diploma.

The role that a high school diploma plays in expanding the postsecondary career options for students with disabilities cannot be underestimated. Students cannot seek to enroll in postsecondary institutions without first earning a high school diploma—a minimum requirement for acceptance into any two- or four-year college or university. Failing to earn a postsecondary degree significantly limits an individual's range of career options. It is no surprise that in today's global economy, a need exists for a more highly

skilled and trained workforce that has at least completed high school and earned a diploma—particularly in light of the reduced opportunities in the 21<sup>st</sup> century for blue-collar jobs.

Since the mid-1980s, educational policy makers and researchers have focused their attention on improving the postsecondary school outcomes for individuals with disabilities; these efforts included increasing opportunities for employment and independent living (National Council on Disability, 2000). To narrow, and eventually close, the employment and income gaps that currently exist between individuals with and without disabilities, policy makers must increase the range of available postsecondary options, particularly in two- and four-year colleges and universities (Dickinson & Verbeck, 2002; Horn & Carroll, 1997; Vogel & Adelman, 2000). Since 2000, several special education researchers have found a positive correlation between college attendance, higher salaries, and increased lifetime wages for individuals with disabilities (Dickinson & Verbeck, 2002; Madaus, 2006; Vogel & Adelman, 1992; Wehman & Yasuda, 2005). Madaus (2006) found that individuals with learning disabilities who graduated from a two-year or four-year college were more likely to have full-time employment, earn between \$30,000 and \$40,000 a year, and receive full employee benefits.

To underscore the importance of such educational attainment, the National Council on Disability (2004b) has stated in several reports that, “whenever possible, higher education is key to the economic prospects and aspirations for independence of youth with disabilities” (p. 69), and noted that “education and training after high school is

becoming more important for all students, especially for students with disabilities” (National Council on Disability, 2004a, p. 52).

### **Overview of Policy and Increased Educational Standards**

Educational policies have changed significantly over the past 25 years, and these changes have had a considerable impact on all students in the United States. Some of the most notable policy changes have (a) established the inclusion in accountability systems for students with disabilities and (b) increased in the requirements necessary to earn a high school diploma.

This increased focus on higher graduation rates and rigorous graduation requirements began in 1983, under the Reagan administration. That year, the federal government convened the National Commission on Excellence in Education. This commission developed the infamous publication *A Nation at Risk* (U.S. Department of Education, 1983), a report that criticized the educational system for producing less than average results and announced that American students were falling behind youth from other countries. In addition to addressing the poor national high school graduation rate, the report identified several strategies for making immediate improvements in the educational system. These recommendations included strengthening high school graduation requirements, adopting higher and measurable standards of academic excellence, increasing time spent on teaching, and raising teacher performance standards (U.S. Department of Education, 1983).

**America 2000.** In 1991, then President George Bush responded to many years of debate regarding low graduation rates by partnering with the National Governors Association (NGA) to pass America 2000. Through this bill, state and federal leaders

avowed that the U.S. would achieve a 90% graduation rate by the year 2000 (U.S. Department of Education, 1991). President Bush's America 2000 legislation, although well intended, established insurmountable goals, as the nation's educational system had yet to address existing challenges with data gathering procedures, end of course exams, and the implications of multiple diploma options (Dorn, 1996). Ultimately, the Bush Administration designed the policy to improve the graduation rate of all students, rather than to resolve existing inequities in the graduation process that resulted from having multiple graduation options in place since the 1970s (Dorn, 1996).

**Goals 2000: Educate America Act of 1994.** In 1994, the United States Congress enacted the Goals 2000: Educate America Act in response to the national education goals established during President Bush's 1989 Education Summit (McDonnell, McLaughlin, & Morris, 1997; Goals 2000: Educate America Act, 1994; "What is Goals 2000," 1994). This legislation began the movement toward implementing performance-based standards and the development of statewide assessments by awarding grants to any state that established such programs (Gronna, Jenkins, & Chin-Chance, 1998; Goals 2000: Educate America Act, 1994; "What is Goals 2000," 1994). The two most notable goals of this legislation were to increase the high school graduation rate to 90% and to ensure that 12<sup>th</sup> grade students exited high school with competitive skills in a variety of curricular areas, including English, math, and science (Goals 2000: Educate America Act, 1994; "What is Goals 2000," 1994).

Goals 2000 also mandated the large-scale educational testing of students as a manner of determining educational progress (Heubert & Hauser, 1999). For the first time, the Goals 2000 federal legislation placed an emphasis on providing access to a

standards-based educational program and curriculum to students with and without disabilities (Goals 2000: Educate America Act, 1994). This Act proved a critical turning point in the education of all students, and began an educational movement toward increasing educational standards and the requirements necessary to earn a high school diploma.

**The Elementary and Secondary Education Act.** The U.S. Congress reauthorized the Elementary and Secondary Education Act (ESEA) in 1994 and renamed it the Improving America's Schools Act. Federal leaders designed the reauthorized Act to build upon the Goals 2000 legislation and further the national movement toward secondary education reforms, while also instituting important new secondary education accountability requirements for schools (Heubert & Hauser, 1999). In response to the reauthorized legislation, state leaders had to develop their own educational assessments for Title I students that would align with state educational standards in content and educational performance. Ideally, these changes would "enable schools to provide opportunities for children served to acquire the knowledge and skills contained in the challenging content standards and to meet challenging state performance for all children" (Improving America's Schools Act, 1994, 20 U.S.C. section 6301(d)).

Additionally, the ESEA required the Secretary of Education to provide an annual report identifying the number of students who dropped out of secondary school (Richmond, 2009); however, the requirement did not include the annual student graduation rate. A number of authors have discussed the importance of identifying the number of students who drop out of U.S. schools each year (e.g., Barton, 2005; Catterall, 1987; Dunn, Chambers, & Rabren, 2004; Kaufman, Alt, & Chapman, 2004); however,

these studies omitted key information, like the number of students graduating on-time, the type of diploma graduates earned, and the number of students who did not complete school for reasons other than dropping out (Richmond, 2009).

**1997 IDEA amendments.** In 1997, President Bill Clinton signed into law the IDEA Amendments; described by many special education stakeholders as the most significant amendments since IDEA's inception in 1975 (Yell & Shriner, 2006). The legislation included a variety of new accountability provisions, including a provision requiring states to develop performance goals and indicators for students with disabilities and report student progress toward meeting these goals to both the public and federal government in a transparent manner (IDEA, 1997, Section 612(a)(17)(B)).

Many stakeholders viewed the inclusion of these new accountability provisions for students with disabilities as an important step forward in defending the rights of children with disabilities and maintaining high educational expectations for all students (Thurlow & Johnson, 2000). The legislation required that states hold students with disabilities to the same educational standards as students without disabilities, which guaranteed these students increased access to the general education curriculum, and ultimately improved classroom instruction because the amendment mandated that educators teach them the material covered on local and state exams (McDonnell et al., 1997).

**The No Child Left Behind Act.** In 2001, Congress reauthorized the ESEA and again changed the accountability requirements for schools in the United States (McLaughlin & Thurlow, 2003). The reauthorization, termed the No Child Left Behind Act (NCLB), mandated that all public schools bring every student up to state standards in

reading, math, and science within a certain period of time, and play an active role in closing the achievement gaps based on race, ethnicity, and language (Cohen, 2002; No Child Left Behind Act, 2001; Yell, 2012).

Although debates had raged over several years about the effectiveness of NCLB and its ability to improve educational outcomes for students and increase the U.S. high school completion rates (No Child Left Behind, 2001); the passage of NCLB resulted in at least one significant event: For the first time since the 1960s, when parent advocates and educational legislators first sought to protect the rights of all students, federal policy required the inclusion of data regarding students with disabilities as part of the local education agency (LEA) and state education agency (SEA) educational accountability requirements. To comply with NCLB, schools had to conduct annual assessments of students with disabilities based upon rigorous performance standards, and the results would help educational leaders determine if individual schools and districts had met NCLB's accountability requirements (Yell, 2012). However, NCLB statutes did not mandate that state leaders use such assessments to make graduation decisions, which would classify them as having high stakes for students (Johnson et al., 2007). The federal legislations did impose high stakes on systems and required all districts and states to include the graduation rate for all student subgroups (including students with disabilities) in adequate yearly progress (AYP) calculations (Johnson et al., 2007). Schools that failed to make AYP could face several consequences, including allowing students to transfer to other schools, offering supplemental educational services provided by an outside organization, replacing staff and other corrective actions, and perhaps ultimately, restructuring of the school (Goertz & Duffy, 2003).

The reauthorization of ESEA increased the emphasis on accountability for all students, including students with disabilities (Thurlow, 2004). The inclusion of all students in state and district accountability systems furthered the national movement for increased educational expectations for student with disabilities (McDonnell et al., 1997). It is not surprising that soon after the implementation of NCLB, many schools across the United States failed to make AYP due to the performance of students with disabilities (Center on Education Policy, 2009a). In fact, in 2003, the U.S. Department of Education made the decision to change policy and allow exceptions for certain groups of students with disabilities. The 2003 exception, commonly known as the 1% rule, allowed schools to test students with significant cognitive disabilities using alternate assessment aligned to alternate standards, but districts could count no greater than 1% of the passing scores toward AYP calculations.

In 2005, the federal government implemented a second exception, known as the 2% rule. This rule allowed schools to use alternate assessments aligned to alternate standards to test students without significant cognitive disabilities. Like the previous exception, schools could count no more than 2% of the passing scores on these assessments toward AYP calculations. By 2009, only eight states had offered students the alternate assessment based on modified standards (Albus, Lazarus, Thurlow, & Cormier, 2009). In 2011, U.S. Secretary of Education Arne Duncan rescinded the 2% rule, stating that the policy masked student performance and weakened accountability (U.S. Department of Education, 2011). Duncan further stated that the federal government would not develop a replacement policy, but instead would raise the educational expectations for students with disabilities (U.S. Department of Education, 2011).



With the inception of NCLB, states became responsible for identifying and publicly reporting the annual high school graduation rate for students both with and without disabilities. The challenge nationally became the interpretation of these data and the comparison of graduation rates from one state to another. Without the identification of a nationally consistent formula for calculating the number of students who graduated, policy makers have found it impossible to draw such comparisons.

**2004 IDEA reauthorization.** The 2004 IDEA reauthorization aligned with the NCLB provisions in its requirement that state leaders include students with disabilities in state and district assessments (Katsiyannis, Zhang, Ryan, & Jones, 2007). The Act also mandated that state leaders monitor graduation and dropout rates and establish goals for the performance of students with disabilities that aligned with the states' definition of AYP. Alternate assessments also had to align with the states' academic achievement standards or with alternate standards used by the state.

**Common Core State Standards.** In 2004, the U.S. National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO) coordinated a state led effort to develop Common Core State Standards. The goal of the Common Core project was to reduce the variance in the quality of academic standards in all U.S. schools through the establishment of a consistent national framework for preparing all children for college and success in the workforce (Council of Chief State School Officers, 2012). The standards drew from internationally benchmarked educational standards and evidence that students' mastery of standards in English language arts and mathematics would result in better student preparedness for entry into college and the workforce. The standards provided consistent, clear guidelines for the course content that students need

to learn in K-12 English language arts and mathematics. At the time of this study, 45 states, the District of Columbia, four territories, and the PSS had adopted the Common Core State Standards (Common Core State Standards Initiative, 2013). According to Achieve (2012) and the Council of Chief State School Officers, all English and mathematics instruction in states that have adopted the Common Core Standards will reflect the Common Core Standards by 2015.

**Summary of policies.** Changes instituted in federal laws and regulations over the past 25 years have required that states hold high schools accountable for increasing graduation rates for all students (including students with and without disabilities). It is important to note that this graduation rate excluded students who graduated through alternative means without meeting the minimum requirements necessary to earn a standard diploma. I discuss these alternative diploma options later in this chapter. Even though the NCLB (2001) did not have jurisdiction over states' graduation requirements, the Act did require that high schools report their graduation rate as an additional measure of educational accountability (Sec. 111(b)(2)(c)(vi)).

### **Minimum Requirements and Diploma Options**

SEAs and LEAs across the U.S. have established a wide range of minimum graduation requirements and diploma options. States vary in their locus of control in their identification of the minimum requirements necessary for students to graduate with a high school diploma (commonly referred to as the *standard high school diploma*). Johnson, Thurlow, and Stout (2007) identified six different types of arrangements that SEAs and LEAs employed:

1. the SEA provided minimum requirements, and the LEA added to them (34 states);
2. the state provided minimum requirements, and the LEAs did not add to them (8 states);
3. the state provided guidelines, and the LEAs set their own requirements (4 states);
4. the state provided no guidelines, and the LEAs set their own requirements (1 state);
5. the state provided no guidelines, and IEP teams established requirements (2 states);
6. state was in transition from local to statewide assessments (1 state); and
7. no response received from state (1 state).

A comparison of surveys by Johnson and Thurlow (2003) and Johnson, Thurlow, and Stout (2007) revealed that by 2007, the codification of graduation requirements and policies increasingly took place at the state, rather than the LEA level. Additionally, Johnson et al. (2007) found that the minimum requirements necessary to earn the standard diploma had increased in 28 states. Requirements for the standard diploma included completing specific courses, earning minimum credits, attaining a specific GPA, and passing an exit exam (Johnson & Thurlow, 2007). As of the 2009-2010 school year, more than 25 states required students to pass exit exams to receive a high school diploma (Center on Education Policy, 2010).

Since the beginning of the standards-based education movement in the early 1990s, SEAs have experimented with a range of diploma options for students with and

without disabilities. These experimentations resulted from educational leaders' efforts to address the diversity of students' educational abilities and individual needs, while extending to these students a highly rigorous exit credential known as the standard high school diploma (Dorn, 1996, 2003; Labaree, 1988). Educational leaders across the U.S. have responded to this challenge by creating new categories of diploma options for students with and without disabilities who are unable to meet the requirements necessary to receive a standard diploma (Johnson, Thurlow, & Stout, 2007).

Thurlow et al. (2010) found that states also had inconsistent policies that addressed the process of requesting an alternative diploma. According to the study, some states used the term *waiver* to describe the process of requesting an exception to the graduation requirements necessary to earn the standard diploma (Thurlow et al., 2010). Other states used the term to describe an alternative route to the standard diploma. This inconsistency contributes to the difficulty in identifying both the types of available diploma options and the various processes states have established for requesting and approving these options. For the purposes of this study, I will employ the term *alternate diploma* to describe the product of any variance from the requirements necessary to earn a standard diploma.

Typically, school representatives must make a request to their state or district on their student's behalf before a student can receive an alternative diploma. In the majority of the states where the alternate diploma is only available to students with disabilities (13 states), the IEP team makes the request and documents their appeal in each student's file. Thurlow et al. (2010) found that in a minority of the states, a district or school official made the request for the alternative diploma on the student's behalf. The provisions

identified for an alternate route can include exceptions from minimum course credit requirements, specific courses, or state exit exams.

Studies conducted since the mid-1990s have identified a number of alternatives to the standard diploma; including diplomas of high distinction, honors diplomas, certificates of completion, certificates of attendance, IEP diplomas for students with disabilities, occupational diplomas, and others (Achieve, 2011; Guy et al., 1999; Johnson et al., 2007; Johnson et al., 2009; Steinberg & Almeida, 2008; Thurlow et al., 1995; Thurlow et al., 2010). A study by Johnson, Stout, and Thurlow (2009), identified the following diploma options for all students (with and without disabilities):

- 16 states offered an honors diploma,
- six states offered a special education or IEP diploma,
- 19 states provided a certificate of attendance,
- 10 states had a certificate of achievement,
- three states offered an occupational diploma,
- and 10 states provided additional variances of these diploma options.

The authors identified 18 states that offered only a single diploma option to students with and without disabilities (Johnson et al., 2009). The majority of states ( $n = 33$ ) offered a range of diploma options, with Washington and Maryland offering the highest number of alternatives, nine and five, respectively (Thurlow et al., 2010). Johnson and Thurlow (2010) acknowledged that the data summarizing the alternatives to the standard diploma were likely to change frequently, in response to ongoing state efficiencies and reviews of states' graduation data.

In a study of the diploma options offered to students with and without disabilities in all 26 states that required exit exams, Thurlow et al. (2010) found that 10 states (Alaska, Florida, Georgia, Maryland, Massachusetts, New Jersey, New York, Ohio, Texas, and Washington) offered separate diploma options for all students (including students with disabilities). Only three states (Indiana, Mississippi, and Virginia) offered alternate routes for all students, and an additional six states (California, Idaho, Louisiana, Minnesota, New Mexico, and North Carolina) offered alternate routes only for students with disabilities.

Thurlow et al. (2010) also found that a greater number of alternatives to the standard diploma were available in states that required students to take either end-of-course exams or one final exit exam to successfully complete the conditions for earning the standard diploma. Krentz et al. (2005) similarly concluded that these new testing requirements had led to increases in the number of states that offered an alternative diploma. The Krentz et al. study served to highlight a positive correlation between the number of states requiring new end-of-course or exit exams and the types of alternative diploma routes offered to students.

Research indicates that the process of accessing an alternate diploma varies across states. Some state leaders have mandated that students must first take the requisite high school exit exam before they can receive an alternate diploma. This requirement further highlights the disparity between educational standards established for students with disabilities and those developed for students without disabilities. Additionally, Thurlow et al. (2010) found that less than one-fourth of the states with exit exams required students with disabilities to take the exam prior to requesting an alternate diploma.

The variety of diploma options offered in U.S. schools has been a controversial and highly debated topic since alternate diploma options first became available. Proponents of a standard diploma have suggested that one consistent diploma would reinforce high expectations for student achievement and reenergize the value of the high school diploma in the 21<sup>st</sup> century labor market (Johnson et al., 2009; Phillips, 1993; Thurlow & Thompson, 1999). Proponents of an alternative to the standard diploma suggest that taking additional courses would result in the identification of content-specific endorsements (i.e., auto-mechanics, computer science) and make more students marketable (Benz et al., 2000); adding that the alternate diploma option could be appropriate for a number of students, including those with disabilities.

Researchers have found that support for multiple diploma options arose from the need to support and advocate for students who have had difficulty passing state exit examinations, a prerequisite to earning the standard diploma in 26 states since 2010 (Center for Education Policy, 2010; Nelson, 2006; Thurlow et al., 2010). Researchers have posited that these alternatives to the standard diploma ideally could motivate students to complete school and prevent them from dropping out (Heubert, 2002; Thurlow & Johnson, 2000). However, the long-term and postsecondary benefit of providing an alternative to the standard diploma remains unclear. At present, researchers have yet to explore the impact of earning an alternative diploma on students with or without disabilities.

Johnson and Thurlow (2007) found that the number of diploma options had decreased in schools throughout the U.S. This trend was likely the result of pressure to align the diploma with content standards and increase the knowledge and skills of

students earning a diploma. Despite this decrease, researchers identified an increase in the number of states that allow IEP teams to make graduation requirement decisions, including modifications and changes to minimum requirements (Johnson & Thurlow, 2003; Thurlow et al., 2010). In 2007, the number of states that allowed the IEP team to make graduation decisions increased to 32 from only 13 in 2002 (Johnson & Thurlow, 2003). This national trend has essentially transferred the responsibility for identifying the minimum requirements for graduation from the SEA or LEA level to the local school. At the time of this inquiry, no studies existed that explored the guidance provided by SEAs or LEAs to local school IEP teams or the basis the teams used to make these decisions

### **Alternative Diploma Options for Students with Disabilities**

Students with disabilities typically have more options for earning a high school diploma than do students without disabilities (Johnson & Thurlow, 2009; Johnson et al., 2007; Thurlow et al., 2010). These alternate routes for students with disabilities, like their non-disabled peers, typically provide exemptions from completing a particular type of curriculum or taking and/or passing an exit exam. Alternative options also may include opportunities for students to demonstrate proficiency through some other means or have one or more of the requirements necessary to earn the standard diploma waived. States have established myriad variations in the number and types of options, alternatives, or allowances made for students with disabilities, which has further complicated efforts to draw comparisons across states and identify national trends.

Reviews of the allowances states have made that enable students with disabilities to earn the standard diploma vary. Johnson et al. (2007) found that the most common allowance, offered by 22 states, involved granting additional time for students to



complete required course standards. Approximately one-quarter of states in the U.S. have offered alternates to the traditional course requirements for earning the standard diploma. Only three states (Indiana, Mississippi, and New Hampshire) did not make any allowances to help students with disabilities earn a diploma. Five states reduced the total number of credits required for the standard diploma, while an additional ten states offered lowered performance criteria (Johnson et al., 2007).

Thurlow et al. (2010) found that 18 states offered students with disabilities the option of taking an alternate route to obtaining the diploma without first taking the exit exam. Students only had the option to request an alternate route if they failed to pass the exit exam. As previously discussed, a greater number of states allowed students with disabilities an exception from taking the exit exam and receiving the alternate diploma (Thurlow et al., 2010).

### **Critical Review of Empirical Research Studies**

This section describes the process used to identify relevant studies that explored alternatives to the high school diploma or diploma options offered to all students (with and without disabilities) in U.S. schools. The section also includes a review of the designs, methods, and findings of each study, and a discussion of the strengths and weaknesses of the existing literature found through this process.

**Search methods.** I employed a two-step search process to identify studies related to alternative options to the standard high school diploma. I conducted the initial search through a review of the educational databases ERIC, EBSCO, PSCYCHINFO and Social Science Citation Index at the University of Maryland library. I used the following search terms in different combinations: secondary transcripts, secondary coursework, and

diploma options and student coursework. This search resulted in over 300 articles, so I expanded the search descriptors to include the following: diploma options, diploma options for students with disabilities, high academic, state and local district, high school completion, graduation requirements and students with disabilities, and alternate diploma. This narrowed search yielded 21 studies. Ten of the studies focused on all students [with and without disabilities] (Bouck & Washburn-Moses, 2010; Center on Education Policy, 2008; Krentz et al., 2005; McIntosh, 2011; Nord et al., 2011; Planty & Provasnik, 2007; Thurlow et al., 2009; Thurlow et al., 2010; Vernon et al., 2003; Zhang, 2009). An additional 11 studies focused only on students with disabilities (Gaumer Erikson, Kleinhammer-Tramill, & Thurlow, 2007; Johnson et al., 2009; Johnson et al., 2007; Newman et al., 2011; Shaver, Newman, Huang, Yu, & Knokey, 2011; Wagner et al., 2003; Wagner et al., 2003; Wagner et al., 2006; Wagner et al., 2006; Wagner et al., 2004; Yu et al., 2009).

I then conducted an ancestral search of the 21 studies and reviewed the reference lists of each citation previously included in this chapter. I found six additional studies, two of which focused on students with and without disabilities (Guy et al., 1999; Johnson et al., 2007). The remaining four studies addressed only students with disabilities (Johnson & Thurlow, 2003; Thurlow et al., 1995; Thurlow et al., 1997; Wagner et al., 1991). In total, my search yielded 27 studies, three of which were published in peer-reviewed journals (Bouck & Washburn-Moses, 2010; Johnson et al., 2009; Thurlow et al., 2009).

Due to the limited number of studies from peer-reviewed journals, I decided to include all of the empirical studies discovered from the research review process. In the

following sections, I review the designs, methods, and findings of these studies, and discuss the strengths and weaknesses of the existing literature.

I organized the 27 empirical studies into three groups that focused on graduation requirements and diploma options for all students: (a) graduation requirements and diploma options for students with and without disabilities, (b) secondary school experiences and characteristics of students with and without disabilities, and (c) academic performance of students with and without disabilities. Of the studies reviewed in this section, sixteen examined graduation requirements and diploma options ( $n = 16$ ), four explored secondary school experiences and characteristics ( $n = 4$ ), and seven investigated academic performance ( $n = 7$ ).

**Graduation requirements and diploma options for students with and without disabilities.** The first category of research studies was by far the largest, and included 16 empirical studies. I discovered these studies through the empirical research process by narrowing the search criteria to diploma options, state and local district, and alternate diplomas. Twelve of the studies addressed the graduation requirements and diploma options for all students (with and without disabilities), and an additional four studies focused only on graduation requirements, diploma options, and possible unintended consequences for students with disabilities.

Of the 16 studies, 14 used data gathered through a combination of survey methodologies, including reviews of state websites, state documentation, or interviews with state agency personnel (i.e., directors of special education, state assessment directors). The researchers developed surveys based upon information gleaned from this review process and sent the surveys to state personnel for completion and submission.

The two remaining studies used data gathered either from an analysis of data sets or interviews conducted with school counselors from one state. Of the 16 studies that addressed graduation requirements and diploma options for all students, 15 used some form of survey methodology and one (Gaumer Erickson, Kleinhammer-Tramill, & Thurlow, 2007) conducted an analysis of data gathered from several data sets.

*State surveys.* Each of the following 14 studies used similar survey methodology. Four of the studies (Guy et al., 1999; Johnson & Thurlow, 2003; Krentz et al., 2005; Thurlow et al., 1995) used similarly designed studies that they executed and created to build on each of the previous researchers' work conducted between 1995 and 2005.

The first study conducted in this series began in 1995 by Thurlow, Ysseldyke, and Anderson (1995) and identified the graduation requirements and diploma options offered in each state. The researchers gathered data through a review of state documentation on graduation requirements in the form of state statutes or regulations retrieved from each state's department of education. The study included information from all 50 states, 22 of which required further investigation through telephone calls with the states' department of special education to identify policies for students with disabilities (Thurlow et al., 1995).

The study resulted in the compilation of each state's minimum requirements for earning the standard diploma and the minimum requirement of Carnegie credits by curricular area. The minimum credits ranged from 10.25 (Illinois) to 24 credits (Florida and Utah). State policy allowed the LEA to augment these minimum requirements to establish standards that were more stringent. These increased requirements could include increased academic credits and/or successful completion of a high school exit exam

(Thurlow et al., 1995). In 1995, 17 states implemented requirements mandating that students had to take some form of exit exam to earn the standard diploma (Thurlow et al., 1995). The study found that all states offered the standard diploma for students with disabilities; however, the minimum requirements for the standard diploma often differed for this student group. Nineteen states required completion of Carnegie credits only, nine states allowed the IEP team to identify the students' graduation criteria, 17 states required successful completion of course credits and passing of the exit exam, and five states' policies were undefined or unclear.

Thurlow et al. (1995) found that few states offered a modified diploma or a certificate for students with disabilities. The authors acknowledged the challenges in gathering this data and noted that each LEA used extensive discretion in establishing minimum graduation requirements and diploma options (Thurlow et al., 1995). This discretion resulted in variances across the states in both the minimum graduation requirements and the type of diploma options available to students with disabilities.

Four years after the Thurlow, Ysseldyke, & Anderson (1995) study; Guy, Shin, Lee, and Thurlow (1999) conducted a follow-up inquiry. The purpose of their study was to update and further clarify high school graduation requirements for students with and without disabilities. Unlike Thurlow et al., Guy et al. conducted one survey of the high school graduation requirements for all students and a second survey that focused on the graduation requirements unique to students with disabilities. The researchers mailed the two surveys between February and August of 1998 to state assessment directors, transition specialists, and special education directors or their designees.

Guy et al. (1999) separated their results into four areas: (a) exit options, (b) general graduation requirements, (c) course credit requirements, and (d) graduation exams. They compared their findings with those from the study conducted by Thurlow et al. in 1995, and identified any changes in policies or trends since the 1995 study. The authors noted a wide array of graduation requirement policies in U.S. school systems, and explained the following:

The complexity of the system exists in more than just the requirements that students must meet to earn a standard diploma. It begins with the array of exit options that students have available to them (e.g., certificates of completion, IEP diplomas, honors diplomas), and the specific requirements that must be met to earn each of those types of documents." (Guy et al., 1999, p. 1)

Guy et al. (1999) found that since 1995, over one-third of the states either had changed the number of options for exiting school available to students with disabilities, established new options, or revised the requirements for earning the standard diploma for all students. Within four years, 11 of the 19 states that originally offered the standard diploma as the single exit option for students with disabilities had revised state policies by 1999 to include additional exit options (e.g., certificates). The number of states that required an exit exam as part of the minimum graduation requirement also had increased from 17 to 20 states. The authors also queried state assessment directors about the status of their graduation requirements and future plans for revision. Eighteen of the directors shared plans to revise exit options for students without disabilities, while 23 directors planned to review their policies for students with disabilities (Guy et al., 1999).

An additional 16 state representatives reported plans to either review or consider revising their graduation requirements for students without disabilities, and 14 states planned to do so for students with disabilities (Guy et al., 1999). The authors asserted that state leaders must consider the needs of all students, both with and without disabilities, when establishing exit options and requirements for graduating from high school, and suggested that policy makers continue to investigate the unintended consequences of these changes to graduation options.

The study by Guy et al. (1999) concluded with five recommendations for policy makers to consider when establishing high school graduation requirements:

- a) specify the assumptions underlying the graduation policies,
- b) ensure that graduation requirements reflect the variety of knowledge and skills that students are learning in school and will need after high school,
- c) consider the impact that leaving high school without a regular diploma will have on students' postsecondary options ,
- d) allow plenty of time for school leaders to implement changes in requirements, and
- e) make high school graduation decisions on the basis of multiple, relevant sources of information about students' knowledge and skills.

The authors also noted the impact of the education reforms in the late 1990s on state graduation policy, and suggested that policy makers must consider the intended and unintended consequences before implementing changes in the minimum requirements for earning the high school diploma (Guy et al., 1999).

Johnson and Thurlow (2003) conducted a similar study designed to build on the earlier research of Thurlow et al. (1995) and Guy et al. (1999). The authors sought to revise the listing of state graduation policies and graduation options for students with and without disabilities. The researchers anticipated that the revised listing would help to clarify the range of state graduation requirements and diploma options, identify the intended and unintended consequences of requiring students with disabilities to pass exit exams to receive the high school diploma, and ascertain the intended and unintended consequences of the various types of diploma options for students with disabilities (Johnson & Thurlow, 2003). The authors developed a survey instrument that aligned with the two prior studies conducted in 1995 and 1999 (Thurlow et al., 1995; Guy et al., 1999), and included similar state level respondents (i.e., state directors of special education, state assessment personnel). The data collection process included the use of both an online Internet survey and a written copy of the survey, along with phone interviews with the University of Minnesota research staff. Data collection took place between October 2001 and April 2002, with a 92% response rate (Johnson & Thurlow, 2003).

When reporting the results of the study, the authors noted the likelihood that changes in state policies had occurred since the completion of their data collection process. This statement was consistent with language presented in the two previous surveys (Thurlow et al., 1995; Guy et al., 1999), which emphasized the current state of changes to minimum state graduation requirements. The study verified the continued variance and diversity in minimum graduation requirements and diploma options throughout U.S. schools in 2003. The majority of states ( $n = 31$ ) established minimum



graduation requirements to which LEAs could add their own requirements, while other states established specific requirements that LEAs could not change (Johnson & Thurlow, 2003). Still other states let LEAs establish graduation policies (Johnson & Thurlow, 2003).

State leaders continued to make a range of diploma options available to students with and without disabilities, and only 13 states established the standard diploma as the sole diploma option for all students. Of the states that responded in this study, 34 offered multiple diploma options. Nebraska offered the highest number of alternative diplomas, with seven different diploma options (Johnson & Thurlow, 2003). The study revealed six main types of diploma options, including an honors diploma, a regular/standard diploma, an IEP/special education diploma, a certificate of attendance, a certificate of achievement, and an occupation diploma. A few states also offered an additional “other” diploma option for students (Johnson & Thurlow, 2003).

Johnson and Thurlow (2003) found that the number of states that required an exit exam for students to receive the standard diploma had increased to 27 since the two earlier studies. As mentioned above, Thurlow et al. (1995) identified 16 states, and Guy et al. (1999) identified 20 states. Johnson and Thurlow also noted that some confusion was apparent in the different definitions of an exit exam. The authors identified the states that required students to pass an exit test as a requirement for earning the standard diploma. Some states also required exams to earn mastery certificates (Oregon), special endorsements (Arizona), or a diploma with honors (Ohio; Johnson & Thurlow, 2003).

Johnson and Thurlow (2003) identified several intended and unintended consequences of state graduation requirements and diploma options. The authors found

that important unintended consequences of requiring students with disabilities to pass exit exams to receive the standard diploma included an increase in the number of students that failed to receive a diploma, higher dropout rates, a decrease in the number of students that graduated on time, and increased need to create alternative diplomas (Johnson & Thurlow, 2003). Johnson and Thurlow also identified several unintended consequences of providing a single diploma option, including increased dropout rates for students who could not meet the standard graduation requirements, the perception of the standard diploma as too general, and an increase in the number of special education students who remained in school because they could not meet minimum graduation requirements.

Johnson and Thurlow (2003) asserted that alternative diploma options had multiple unintended consequences. These consequences included lower expectations for some students with disabilities; the view that other diplomas were substandard; perceptions that multiple diplomas equated to special tracks for students to follow and made, access to the general education curriculum less attainable, and restrictions on postsecondary education and employment options (Johnson & Thurlow, 2003).

Krentz, Thurlow, Shyyan, and Scott (2005) conducted a fourth study that aligned with the objectives and purposes of these first three inquiries. Krentz et al. reviewed state websites for information about graduation examinations and details of alternate routes for obtaining the standard diploma for students with and without disabilities. The authors compiled the information into a table and mailed it to state assessment directors for verification. They followed up with these contacts via email and fax, and all but four state representatives responded. The study also analyzed the comparability of each alternate route with the states' standard route to earn the standard diploma. The authors

again mailed this comparison data to each state contact for review and verification. All but two contacts responded.

Krentz et al. (2005) also found that 27 states had implemented mandatory exit exams and required that students pass the exam to receive the standard diploma. Of the states that required an exit exam ( $n = 27$ ), 16 offered an alternate route to a standard diploma, and four states did not provide an alternate route. The authors labeled the remaining seven states as “test not active and no plans yet” (Krentz et al., 2005, p. 10). The authors found that most states offered two alternate routes to the diploma—one for all students (to include students with disabilities) and another only for students with disabilities. Of those states that provided an alternate route to the diploma ( $n = 16$ ), 13 offered the option to all students (including students with disabilities), and three states only made the option available to students with disabilities (Krentz et al., 2005).

Krentz et al. (2005) found that in most states, students typically only accessed an alternative route to the standard diploma after they or their representative had made a formal request and received approval at some level. Students with disabilities received accessed to and approval for an alternate route by the school IEP team more frequently than students without disabilities (Krentz et al., 2005). Consequently, students without disabilities frequently received a request to access the alternate diploma route from the student or parent themselves, rather than the school requesting this diploma route for students with disabilities (Krentz et al., 2005).

Krentz et al. (2005) also identified many variations in the nature of the alternative routes for students with and without disabilities. In general, however, the authors concluded that options for students with disabilities were significantly different than

those available for all students. For example, of the 13 states that offered an alternate route to the diploma to all students, 6 required all students to fail the state exit exam before pursuing alternative options, and 5 states required students with disabilities to first fail the exit exam (Krentz et al., 2005). The authors concluded the study with several recommendations for alternate routes to the standard diploma. They identified a significant disparity between the diploma options available to students with and without disabilities, which ultimately reinforced the perception that students with disabilities could not meet the required educational standards established by states and districts.

Johnson, Thurlow, and Stout (2007) sought to update the status of states' graduation policies across the U.S. for students with and without disabilities and explore the impact of offering multiple diploma options for students with disabilities. The authors collected data through a survey of state directors of special education in all 50 states and the District of Columbia, and completed the study just after the implementation of the reauthorization of ESEA. Their results indicated that fewer states required students to pass exit exams to earn the standard diploma. In addition, several states had reduced their use of the IEP diploma and had expanded other options to include the honors diploma. The authors found a significant variance between the diploma options available to students with disabilities and those available to students without disabilities.

As in earlier studies, Johnson et al. (2007) noted that the majority of states (n = 34) continued to identify minimum graduation requirements at the SEA level, while allowing LEAs the option of adding to the requirements. Since 2002, 28 states raised the minimum graduation requirements for the standard diploma for students with and without disabilities, while only one state (Kentucky) raised the requirements for students with

disabilities (Johnson et al., 2007). The authors acknowledged continued variance throughout U.S. high schools and noted that states were “experimenting with alternative diploma options” (Johnson et al., 2007, p. 15).

Johnson et al. (2007) also identified variances in allowances made so that students with disabilities could receive a standard diploma. This study was one of the first to highlight this important distinction. These allowances included holding all students to the same graduation standards, reducing the minimum number of Carnegie credits, offering students alternate courses, decreasing the level of performance criteria, permitting school IEP teams to develop individually-based allowances, granting extensions to the time required for course completion, and other alternative (Johnson et al., 2007). The most common allowance made by states for students with disabilities (n = 32) was permitting the school-level IEP team to make graduation decisions based upon an individual student’s abilities or the impact of the student’s disability on their ability to meet educational requirements (Johnson et al., 2007). The authors also found that many states (n = 14) documented an increase in the number of accommodations available for students with disabilities to take state exit exams (Johnson et al., 2007).

Thurlow, Cormier, and Vang (2009) examined the alternate routes that states established for students with and without disabilities to earn the standard diploma. The authors found that although the alternate routes were relatively consistent in terms of established requirements for earning the alternate diploma; the options were not consistent for students with disabilities. Overall, the number of alternate routes that required students to meet the same performance standards was greater for all students [19 of 23, 83%] than for students with disabilities [6 of 23, 26%] (Thurlow et al., 2009). This

finding suggested that states did not require students with disabilities to meet the same performance standards established for general education students.

Unlike the Krentz et al. (2005) study, which identified 12 alternate routes for all students (with and without disabilities) and 14 routes for students with disabilities, Thurlow et al. (2009) identified 23 alternate routes for all students and an additional 23 routes just for students with disabilities. The authors found that although there was an increase in the number of states offering alternate routes, the states offered no new types of alternate routes to the standard diploma (Thurlow et al., 2009). The authors also identified the GED as an alternative route to the standard diploma. Thurlow et al. reported, “By using the GED as an alternate route to the standard diploma, which is counted toward the graduation rate, the GED essentially has become a legitimate way to earn a diploma and be considered a graduate” (p. 146).

Thurlow, Vang & Cormier (2010) conducted a study similar to the Krentz et al. (2005) analysis of alternate routes that states provided to all students (with and without disabilities). The researchers conducted an online search of state websites between June and August of 2008 to explore state graduation requirements. They compiled their findings into tables and emailed the data to state directors for verification. They contacted all states during the verification process. Thurlow et al. focused on examining the alternate routes to earning the standard high school diploma that did not involve passing the high school exit exam during the 2008-09 school year. The researchers focused on the 26 states with exit exams, and discovered that 19 states had established one or more alternate routes, while seven had no alternate routes available (Thurlow et al., 2010). The authors also found that 10 of these 19 states had established separate

routes for all students (with and without disabilities) and for students with disabilities. According to their findings, three states offered alternate routes for all students and six states made alternate routes available only to students with disabilities (Thurlow et al., 2010). The authors acknowledged the difficulties they experienced when trying to discern the types of alternate routes, and attributed these challenges, in part, to the variance in the terminology used to identify the alternate routes in states and schools across the U.S. As Thurlow et al. explained, these differences made it difficult to, “find some of the most basic information about the route” (p. ii).

Consistent with the findings of earlier research presented in this section, Thurlow et al. (2010) found significant variability in the process of requesting and approving alternative routes to the standard high school diploma continues throughout schools in the U. S. States with exit exams continued to provide more alternate routes to the standard diploma than states that did not require an exit exam (Thurlow et al., 2010).

Vernon et al., (2003) conducted a similar study of state websites to explore diploma options available to all students, the requirements for passing exit exams to earn the standard high school diploma, and the additional diploma options afforded to students with disabilities. This study originally began in 2001 as a class project for doctoral students asked to review state website information and verify collected data with state officials via e-mail and telephone. The authors reported the following types of diploma options: standard diploma (n = 50), certificate (n = 27), honors diploma (n = 23), IEP/special diploma (n = 12), technical, vocational diploma (n = 7), and other options (n = 14; Vernon et al., 2003). Forty-eight percent of the states required an end-of-course exam, and many offered some type of alternative diploma when students failed to meet

testing requirements (Vernon et al., 2003). The authors did not include specific details of the states in the study. Consistent with research reported in this chapter, the authors of this study often found the descriptions for diploma options to be unclear and misleading.

Johnson, Thurlow, Stout, and Mavis (2007) conducted research on the diploma options offered in each U.S. state for all students (with and without disabilities), states' use of exit exams, and policies identified specifically for students with disabilities. The authors compared their findings with those of an earlier 2002 survey study (Johnson et al., 2003). Johnson et al. (2007) conducted the inquiry using online surveys completed over a two-year period (2006-2007) by state directors of special education at a response rate of one hundred percent.

Johnson et al. (2007) found that 21 states required all students (with and without disabilities) to pass an exit exam to receive a standard high school diploma, and an additional three states required only students without disabilities to pass the exit exam. Overall, 24 states reported required an exit exam, down from 27 states in 2003 (Johnson & Thurlow, 2003), and 20 states in 1999 (Guy et al., 1999). Johnson et al. (2007) revealed that, across the states, diploma options included the honors diploma, regular/standard diploma, IEP/special education diploma, certificates of attendance, certificates of achievement, occupational diplomas, and other variations. Thirty-three states offered multiple diploma options to all students (with and without disabilities), with five being the highest number of alternate diplomas offered by one state (Oregon; Johnson et al., 2007).

Johnson et al. (2007) identified the available options for all students (with and without disabilities) who were unable to pass the required exit exam. Eighteen states



allowed students to retake the exit exam, four offered an alternate form of the exam, and five states afforded students the opportunity to petition for an exemption from the test and still receive the standard diploma (Johnson et al., 2007). The authors also identified the required passing rate (or score) for exit exams. Eighteen states reported requiring the same minimum passing rate for students with and without disabilities (Johnson et al., 2007). However, four states (Minnesota, New Mexico, New York, and Washington) identified different passing scores for students without disabilities and students with disabilities (Johnson et al., 2007). Additionally, four states (Arizona, Idaho, New York, and Washington) also administered a separate test to different student groups. Johnson et al. concluded that the national trend of using exit exams as a requirement for receiving the standard high school diploma had been “leveling off” (p. 60), and cited research conducted since 1995 (Thurlow et al., 1995; Guy et al., 1999; Johnson & Thurlow, 2003; Krentz et al., 2005).

Since 2002, the Center on Education Policy (CEP), an independent nonprofit organization located in Washington, D.C., has studied state high school exit exams and their impact on students’ ability to earn the regular high school diploma. Between 2008 and 2011, the CEP also provided data on alternate paths to receiving the diploma. In 2008, the annual CEP report found that states continued to develop new paths to earning the high school diploma, while also modifying the procedures currently in place for these alternative paths (Center on Education Policy, 2008).

Each of the 23 states that withheld the diploma when students did not pass the mandated high school exit exam had established alternative paths to the standard diploma (CEP, 2008). Additionally, 18 states had alternate paths for students without disabilities

and three for English language learners (CEP, 2008). The study also reported that of the states that offered an alternative diploma, 50% provided information on the percentage of students that completed high school with the alternate diploma in 2007 (CEP, 2008). As part of their review of each state's graduation policies and requirements, the researchers found that a greater number of students with disabilities earned an alternate diploma than did students without disabilities (CEP, 2008). In Mississippi, for example, a significant number of students (62%) with disabilities graduated in 2007 with a certificate of completion or an occupational diploma.

The CEP study revealed that the majority of states did not report annual data on the number of students with or without disabilities that earned an alternative diploma. Researchers have yet to explore or document the true impact of state exit exams and the provision of an alternative diploma on the postsecondary success of all students.

The 2009 CEP annual report identified similar findings to that of the 2008 report exploring alternative paths to graduation for students with and without disabilities. Based upon the results of a survey administered to state department of education officials in all 26 states that required an exit exam, the report revealed that 19 states identified alternative pathways for students without disabilities, 22 established alternate routes for students with disabilities, and two provided alternative options for English language learners (Zhang, 2009). Many states that required an exit exam for the standard diploma established options specific to students with disabilities. For example, 14 states established alternative assessments, and 11 states offered waivers for students having difficulty passing the exam (Zhang, 2009). Zhang also noted that the limited availability of information on students with disabilities because the IEP teams at the local school

level typically made decisions about graduation options, and most states did not collect these data.

The second part of the Zhang (2009) study included an interview of state department of education officials' in three states chosen for their development of alternative pathways to the diploma, public discussions surrounding exit exams, and the instability of high school assessment and graduation policies. The states that participated in the study (Maryland, New Jersey, and Washington) revealed that they relied heavily on the recommendations made by state advisory committees, both in the design and implementation of alternative pathways to the diploma for students with and without disabilities (Zhang, 2009). Each state revealed the challenge of providing a flexible process for earning the diploma and meeting individual student needs while addressing increased pressure to raise the level of educational rigor. State officials also noted the importance of monitoring the use of alternative pathways, providing sufficient training to educators, and communicating to stakeholders all policies regarding the high school diploma (Zhang, 2009).

The 2011 CEP study provided updates to the information included in the 2010 report, and used a similar survey methodology of state department of education officials. Unlike studies from previous years, the 2011 inquiry collected survey data from all fifty states rather than only the 26 states with exit exams. The study found that 25 states required students to pass the state exit exam to earn the standard diploma, while an additional five states mandated that students take the exam without requiring successful completion to receive the standard diploma (McIntosh, 2011). The study revealed that three states (Georgia, North Carolina, and Tennessee) no longer required students to pass

the state exit exam to earn the standard diploma, and instead used students' grade in a required course (McIntosh, 2011). The study did not include the details of the courses required for graduation, but it did identify a national decline in the number of students who had to pass a high school exit exam to receive a standard diploma between the 2009-10 and 2010-11 school years (65% and 74%, respectively; McIntosh, 2011). The author attributed this decline to the ongoing national debate regarding college and career readiness and increased postsecondary options (McIntosh, 2011).

My review of existing literature revealed two additional studies that focused only on graduation requirements for students with disabilities. These inquiries utilized a survey methodology similar to that of the previous 13 studies. In the first study, Thurlow, Ysseldyke, and Reid (1997) conducted a review of statutes and regulations in 50 states regarding graduation requirements for students with and without disabilities. States that did not include language specific to students with disabilities received a follow-up telephone interview to their department of special education.

Thurlow et al. (1997) found that alternate diploma options, referred to as *exit documents*, and requirements for the same types of alternate diploma (e.g., certificate of attendance, waiver) varied from state to state. Thurlow et al. identified a number of diploma options for students with disabilities, including the standard diploma (n = 19), standard diploma or certificate (n = 17), standard or modified diploma (n = 10), and standard diploma, modified diploma, or certificate (n = 4). The authors found that 44 states had increased the minimum number of Carnegie courses required for the standard diploma (Thurlow et al., 1997). Course requirements ranged from 10.25 credits (Illinois) to 24.0 credits (Florida, Utah), with the average ranging from 16 to 20 credits (Thurlow et

al., 1997). Additionally, LEAs in several states could establish additional requirements for earning the standard diploma, like an exit exam, competency test, or increased academic requirements. The study noted that 17 states also required an exit exam (Thurlow et al., 1997). States typically reserved the certificate-of-attendance diploma for students with severe to profound disabilities.

Johnson, Stout, and Thurlow (2009) conducted a study to explore the intended and unintended consequences of multiple diploma options and the requirement to pass an exit exam prior to receiving the standard diploma. The authors developed a survey to align the questions with findings from previous studies (Thurlow et al., 1995; Guy et al., 1999; Johnson & Thurlow, 2003), and sent the survey to state directors of special education in all 50 states between May 2006 and April 2007. The researchers had a 100% response rate.

The study revealed that responsibility for establishing minimum graduation requirements differed across the states, and this responsibility contributed to the establishment of a range of graduation requirements and diploma options (Johnson et al., 2009). Although the majority of states kept the responsibility of setting minimum requirements at the state level, in 34 states, the LEA could add to these requirements (Johnson et al., 2009). Additionally, in eight states, the SEA was only responsible for providing guidelines, while the LEA established local district requirements. Eight states did not allow the LEA to add any new requirements (Johnson et al., 2009).

Johnson et al. (2009) also found that nationally, the requirements for earning the standard diploma increased in 28 states for students with and without disabilities. Two states (Idaho and Illinois) increased the requirements only for students without

disabilities, and one state (Kentucky) increased requirements for students with disabilities (Johnson et al., 2009). Johnson et al. found that the range of diploma options for students with and without disabilities was consistent with previous research reported in this chapter, and included the regular/standard diploma (50 states), honors diploma (16 states), IEP/special education diploma (6 states), certificate of attendance (19 states), certificate of achievement (10 states), occupational diploma (3 states), and other variations (10 states).

Johnson et al. (2009) also identified several unintended consequences of requiring students with disabilities to pass exit examinations to receive a standard diploma. Because of this requirement, students often remained in school longer to complete all of the requirements for the standard diploma, schools experienced higher dropout rates, and many students with disabilities were unable to receive the standard diploma (Johnson et al., 2009). Students with disabilities who could not obtain a standard diploma experienced limited access to postsecondary education options because colleges did not place a high value on the alternate diploma (Johnson et al., 2009).

***Other research methods.*** During my review of literature, I found two additional studies that used other research methods. In the first study, Gaumer Erickson, Kleinhammer-Tramill, and Thurlow (2007) investigated the relationship between alternative high school diplomas and graduation testing. The study used data retrieved from several data sets compiled by the Office of Special Education Programs (OSEP) in an annual report to Congress on the number of students with disabilities that graduated from high school. The researchers conducted a comparison between students who received a certificate of completion, rather than the standard diploma, those states that

required students to pass an exit exam for receipt of the diploma, and those states that did not require an exit exam for receipt of the diploma. The results indicated that students with disabilities exited without a diploma more frequently than their non-disabled counterparts, and this phenomenon occurred more frequently in states that required a high school exit exam (Gaumer Erickson et al., 2007). The study also revealed that no statistical difference existed in the ethnicity of students with disabilities who received the certificate of attendance. Students of all ethnic groups were more likely to receive certificates of attendance in states that had exit exams in place. Students with mental retardation, multiple disabilities, and autism also were more likely to receive certificates of attendance than other disability types. The authors suggested this finding resulted from the fact that many states reserved the certificate of completion for students with more significant disabilities (Gaumer Erickson et al., 2007).

In 2010, Bouck and Washburn-Moses examined the implementation of the Indiana's high school exit exam waiver policy for students with and without disabilities. The researchers conducted the study via an online survey of high school counselors, and examined the counselors' implementation of the established waiver process. The surveys had a 60% response rate. Bouck and Washburn-Moses found that students without disabilities received a waiver for the exit exam almost as much as students with disabilities (84% and 89%). According to the data collected, participating schools consistently implemented the waiver process; however, the authors did note that several districts in the state added additional waiver requirements to those already established by the state. These additional mandates included requiring special tests or mandating that students or parents initiate the waiver request process (Bouck & Washburn-Moses, 2010).

Data on the reason for disparities between the low number of students who applied and the high number of students who failed to pass the exit exam was inconclusive (Bouch & Washburn-Moses, 2010). The authors suggested additional data was necessary to understand this outcome.

**Characteristics and school experiences of secondary students.** The following four studies explored the educational experiences of students with and without disabilities, and examined the type of schools students attended, the classroom environments in which they received educational services, and the types of educational support services they received. I discovered these studies during the empirical research process by narrowing the search criteria to diploma options, state and local district, and alternate diplomas. I included these studies because the research on the characteristics of secondary students with disabilities is limited. This process yielded the following four studies.

Wagner et al. (1991) conducted one of the first empirical studies on the educational performance of secondary students with disabilities. Wagner et al. completed the study for SRI International, as part of the National Longitudinal Transition Study of Special Education Students (NLTS). The researchers collected the NLTS data using multiple methods, including telephone interviews with parents, reviews of students' school records, and surveys of educators. The study sample included more than 8,000 youth with disabilities, ages 13 to 21, who attended secondary school during the 1985-86 school year. This study revealed that the majority of secondary students with disabilities (90%) attended regular education schools with nondisabled students, and determined that schools were usually large, with greater than 1,151 students (Wagner et al., 1991). The



inquiry revealed that students with disabilities completed a combination of academic, nonacademic, and vocational courses; and the majority of students (90%) took a minimum of one academic course during their final year in high school (Wagner et al., 1991). Eighty-six percent of the students took most of these courses in the regular education classroom, and about 17% of students took all classes in the regular education classroom (Wagner et al., 1991).

Wagner et al. (1991) explored the educational performance of students with disabilities during high school through the examination of four variables: absenteeism, course grades, minimum competency test performance, and retention. Overall, the authors found that students with disabilities at the secondary level fared more poorly than their nondisabled counterparts in each area. Secondary school students with disabilities averaged 15 absences in a school year, about one-third did not pass at least one course during their final year in school, and less than half of the students who took the state mandated exit exams passed the test (Wagner et al., 1991). The authors also noted high retention rates, and determined that 1 out of 10 students who failed to graduate were subsequently retained at their grade level (Wagner et al., 1991).

The second National Longitudinal Transition Study of Special Education Students (NLTS-2) followed the NLTS in 2001 and explored the characteristics, experiences, and outcomes of secondary school students with disabilities in grades 7 or above over a 10-year period. In 2003, Wagner et al. (2003) published a study using data from the NLTS-2 that addressed the instructional contexts, programs, and class participation of students with disabilities. The NLTS-2 researchers gathered data for the study using telephone interviews with parents or guardians during the summer of 2001, a mail survey completed

by school staff during the spring of 2001- 02, and surveys distributed to general educators who taught secondary students with disabilities (Wagner et al., 2003).

Wagner et al. (2003) found that the majority of students with disabilities attended regular public schools located in their local neighborhoods, and determined that more than 60% of the students' coursework focused on academics (language arts, mathematics, social studies, and science). However, only 1 in 5 students with disabilities took a foreign language (Wagner et al., 2003). The NLTS-2 data revealed an increase in the number of students taking challenging courses (e.g., Pre-Algebra, Algebra) since the original NLTS study. The majority of students with disabilities (9 out of 10) participated in one general education course, and most (70%) took one or more academic courses in the general education setting (Wagner et al., 2003). These figures represented a significant increase from the initial NLTS study. According to the NLTS-2 data, students with disabilities also routinely participated in vocational education courses offered as part of the general education curriculum, instead of taking special education courses.

Wagner et al. (2003) also explored the types of support that general education teachers offered students with disabilities, and found that 60% of these students took general education courses with teachers who were unaware of the student's unique educational needs (i.e., accommodations, modifications, behavioral support), and therefore, received insufficient support from the majority of their instructors. Furthermore, fewer than 50% of the regular educators received any information about how to address individual student's needs (Wagner et al., 2003). Additionally, the majority of students receiving academic instruction in the special education classroom

received instruction in smaller groups than those provided for students in the general education classroom.

Wagner, Newman, and Cameto (2004) released a comparative study for SRI International between the completion of the NLTS and NLTS-2 studies. Wagner et al. explored the changes over time in the secondary school experiences of students with disabilities. The study examined four specific characteristics of the schools these students attended: programs, courses, instructional setting, and academic performance. Consistent with earlier studies, students with disabilities were more likely to attend regular public schools, and students in the NLTS-2 study were much more likely to take academic courses in the general education setting than students in NLTS (Wagner et al., 2004).

Wagner et al. (2004) found that the academic performance of students with disabilities improved in the NLTS-2 study, and they observed an increase in the number of students who earned grades of A or B overall. However, the authors noted that over 19% of students in the NLTS-2 study primarily earned grades of D or F, overall. This figure is only somewhat lower than the 24% identified in the initial NLTS study. The authors also found that students with disabilities experienced a significant increase (67%) in their suspension rate between the NLTS and NLTS-2 study (Wagner et al., 2004).

In 2007, the National Center on Education Statistics (NCES) completed The Condition of Education report that addressed recent developments and trends in education. The 2007 report included an analysis of student high school course-taking trends that used national transcript data from 1982-2005. The NCES sought to determine the number of credits states required for high school graduation and identify any changes

in this requirement since 1980. The study revealed that, since 1980, almost all states increased the number of minimum course requirements for students with and without disabilities, and 37 states required students to take at least 20 Carnegie credits to earn the standard diploma (Planty & Provasnik, 2007). Typically, the minimum course requirements included four years of English, and three or more years of mathematics, science, and social studies. Additionally, consistent with the findings reported from earlier studies detailed in this chapter, as of 2006, 22 states required all students to pass an exit exam to receive the standard high school diploma (Planty & Provasnik, 2007). The nature of each state's exit exam varied in content, and some states required successful completion of math, English/language arts, and/or science exams to be implemented by 2012 (Planty & Provasnik, 2007).

*Academic performance.* I reviewed seven empirical studies related to the academic performance of students with and without disabilities. I discovered these studies through the empirical research process by narrowing the search criteria to high school academic performance, diploma options, state and local district, and alternate diploma.

Wagner et al. (2003) conducted one of the first empirical studies that investigated the achievement of secondary students with disabilities as part of the NLTS-2 study for SRI International. The researchers investigated the achievement of youth with disabilities, in grade 7 or higher, who received special education services. Wagner et al. found that most students with disabilities received passing grades. However, schools considered one-fourth of students taking courses in the general education classroom to be behind their peers in their management of coursework, and a significant number of

students functioned below grade level in both math and reading (Wagner et al., 2003). The study revealed that generally, respondents viewed students as self-sufficient and able to manage self-care skills (Wagner et al., 2003). The overall self-determination skills were high among students with disabilities (Wagner et al., 2003).

Wagner et al. (2003) also investigated the school programs in which youth with disabilities participated. The authors found that students who took more general education classes had fewer absences from school, as did students who took vocational education courses (Wagner et al., 2003). Students also were closer to their grade level in both math and reading (Wagner et al., 2003). Students with disabilities, however, generally received lower grades from general educators than students without disabilities. The authors also identified a possible negative relationship between student outcomes and the provision of educational services, accommodations, and supports.

Wagner, Newman, Cameto, and Levine (2006) followed the Wagner et al. (2003) study with a similar inquiry that also used the NLTS-2 data. The researchers investigated the academic achievement of youth with disabilities in language arts, mathematics, social studies, and science. The results of the study, using standard scores with a mean of 100 and standard deviation of 15, indicated that more than three-quarters of students with disabilities scored below the identified mean than their non-disabled peers, and more than 2% of those students earned scores below 70 (Wagner et al., 2006).

The authors found that students experienced the greatest academic difficulty in their reading courses (Wagner et al., 2006). They also observed that the achievement in many disability areas varied across the academic areas they assessed. For example, students with hearing impairments scored higher than students with learning impairments

in mathematics calculation, although they scored lower in science and social studies (Wagner et al., 2006). Students with mental retardation, and those with multiple disabilities, scored lower across all achievement areas, while students with higher functional cognitive skills demonstrated higher academic achievement. The authors also found a correlation between high absenteeism and lower math scores, and concluded that students with disciplinary problems, more often than not, scored lower in mathematics (Wagner et al., 2006).

Wagner et al. (2006) also provided an overview of the findings from Wave 2 of the NLTS-2 study data collected in 2003 from youth ages 15 to 19 years. This 2006 report explored the achievement of youth with disabilities and provided a comparison with the performance of youth without disabilities in the following areas: language arts, science, social studies, and mathematics. The results presented in this study were consistent with the results released by Wagner, et al. (2006), but provided additional information about high school completion and students' postsecondary experiences. The completion rate data revealed that youth with visual or hearing impairments, autism, and orthopedic impairments completed high school at rates of 85% or better; youth with learning disabilities, mental retardation, speech, or traumatic brain injury experienced a 72% completion rate; and youth with emotional impairments demonstrated the lowest high school completion rate of 56% (Wagner et al., 2006).

Newman et al. (2011) conducted the most current study that addressed the secondary school performance of students with disabilities. This inquiry also used the data from the NLTS2 study, and explored a number of factors; including the type of course credits earned, educational setting, and educational performance of students with

disabilities. The study found that, on average, students with disabilities earned fewer course credits than did students without disabilities (22.7 vs. 24.2); however, students with disabilities took more vocational and nonacademic courses and fewer traditional academic courses (i.e., mathematics, science) than did students without disabilities (Newman et al., 2011). Furthermore, students with disabilities earned more credits in learning support courses provided by special educators; however, the study's findings did not include the reason for this trend. The majority of students with disabilities earned over 72% of their course credits in the general education setting and earned the other 28% of their credits in the special education setting (Newman et al., 2011). Lastly, the author's found that the GPA of students with disabilities was lower than that of students without disabilities (Newman et al., 2011).

**Types of credits.** Using transcript data retrieved between 2001 and 2009, Newman et al. (2011) found that in comparison to their non-disabled peers, students with disabilities earned fewer credits overall (22.7 vs. 24.2), particularly in academic areas. Additionally, students with disabilities earned more credits in vocational, nonacademic, and non-vocational courses than students without disabilities (Newman et al., 2011). The majority of students with disabilities (96%) took a vocational course during their high school experience, which accounted for more than 20% of their total credits earned. This figure was statistically higher than that of students without disabilities (Newman et al., 2011).

**Settings.** Newman et al. (2011) found that students with disabilities earned more of their credits in general education courses than in special education courses (16.7

credits vs. 6.1 credits, respectively). Furthermore, about one-quarter of students with disabilities took their courses in the general education setting.

***Grade performance.*** Newman et al. (2011) determined that the grade performance of students with disabilities was lower than students without disabilities (2.3 vs. 2.7 on a 4-point scale, respectively), and found that the majority of students with disabilities (45%) had GPAs less than 2.25. Students scored better (2.5 GPA) in vocational or nonacademic courses than they did in academic courses (2.1 GPA; Newman et al., 2011).

***Students with mental retardation.*** Yu, Newman, and Wagner (2009) used NLTS-2 data to explore the school experiences and academic achievement of students with mental retardation. The study included data from Wave 1 of the NLTS-2 and direct assessments using six subtests from the research edition of the Woodcock-Johnson III Tests of Achievement, conducted between 2002 and 2004 with youth between the ages of 16 and 18 years. Yu et al. found that 96% of students with mental retardation took at least one academic course, and determined that 94% took language arts courses, 92% took mathematics courses, 74% took science courses, and 9% took foreign language courses.

The study revealed that vocational course participation was high among the target population, as over 78% of students took at least one course (Yu et al., 2009).

Nonacademic course participation was also high, with a 78% enrollment in physical education, 73% enrollment in life-skills, and a 34% enrollment in study skills courses (Yu et al., 2009). The majority of students (92%) received instruction in the special education classroom (92%), while 69% of students received instruction in the general



education classroom (Yu et al., 2009). The majority of students with mental retardation received grades of C or lower overall (Yu et al., 2009).

***Students with hearing impairments.*** In 2011, Shaver et al. (2011) conducted a similar study focusing only on the academic performance of students with hearing impairments. The study used direct assessment data and surveys completed during the NLTS-2 study in the 2001-02 school year with students 14 to 18 years old. Shaver et al. gathered direct assessment data using six subtests from the Woodcock-Johnson III Tests of Achievement administered in 2002 and 2004.

The results of the study indicated that secondary students with hearing impairments took a variety of courses during any given semester. These courses included an average of academic courses (61%), vocational courses (13%), and other non-vocational education courses (26%; Shaver et al., 2011). The majority of students (78%) took at least one course in the general education classroom, and 64% took courses delivered in the special education classroom (Shaver et al., 2011). Almost half (47%) of students with hearing impairments participated in general education classes without modification, and 54% received some form of modification (Shaver et al., 2011). The academic achievement of students with hearing impairments was lower than their non-disabled peers in all cores academic areas (mathematics, reading, science, and social studies; Shaver et al., 2011).

**Student academic performance: Summary of research.** Since 1982, the U.S. Department of Education's National Center for Education Statistics (NCES) has conducted periodic surveys of U.S. high schools to explore the curricular offering for and course-taking patterns of high school students. This data from the High School Transcript

Study (HSTS), conducted along with the National Assessment of Educational Progress (NAEP), increased accountability by identifying national trends in course offerings and student performance. However, The Nation's Report Card (2011) was the first report to include information on students with disabilities (Nord et al., 2011).

Nord et al. (2011) analyzed the educational performance of students with disabilities using data collected from 610 public high schools as part of the 2009 HSTS study. Results indicated that 2009 graduates with and without disabilities earned over 3.0 credits more than students who graduated in 1990 (23.6 vs. 27.2 credits, respectively). Nord et al. also found that a higher percentage of students completed more challenging curriculum levels, and two-thirds of graduates took Algebra 1 before high school. In 2009, approximately 8% of high school graduates with a disability earned fewer academic credits than students without disabilities (26.8 vs. 27.2 credits) and fewer credits in other academic courses (3.7 vs. 5.4 credits; Nord et al., 2011). Forty-five percent of students with disabilities completed a below-standard curriculum that consistently offered an insufficient number of science courses (Nord et al., 2011).

Nord et al. (2011) provided limited data on the educational performance of students with disabilities, and did not include specific data that addressed the type of educational services students received (e.g., accommodations, modifications, related services) or the setting in which schools provided services (i.e., general or special education). Furthermore, the graduation data for students with disabilities was not comprehensive. The data included only students who graduated with a regular diploma and excluded students who either received waivers for minimum graduation requirements or earned an IEP diploma or certificate of completion. This limitation is problematic

because the report excluded a substantial number of students with disabilities in this subgroup that received a waiver or alternate diploma.

The results of the study indicated that one-quarter of the 2009 graduates completed a below-standard curriculum, “Thirty-four percent of graduates with a parent who did not finish high school completed a below standard curriculum compared to 20 percent of graduates with a parent who graduated from college” (Nord et al., 2011, p. 9). The authors further stated that, “Sixty-three percent of English language learners (ELL) and 45 percent of students with disabilities (SD) completed a below standard curriculum compared with approximately 25 percent of non-ELL and non-SD graduates” (Nord et al., 2011, p. 9). These results do not bode well for the two subgroups that require the greatest amount of educational support, interventions, and curricular modifications.

**Critique of the studies reviewed.** This review identified a variety of literature that addressed the graduation requirements and diploma options for secondary students with and without disabilities. The 27 empirical studies have many strengths, use a large sample group, and generally have strong external validity. The discussion section of many of the studies included an identification of limitations. A significant limitation of each of the studies was the absence of an effect size. In the sections below, I discuss the required components of the empirical research study, which include designs, participants, procedures, and validity of the 27 studies I reviewed (see Appendix for further details and a comparison of the purposes, samples, variables, analysis methods, and findings of each study).

**Designs.** Each of the 27 studies included in this review have descriptive designs. Gay, Mills, & Airasian (2006) defined a descriptive study as, “collecting numerical data

to test hypotheses or answer questions about the current subject of study” (p. 601). Additionally, 10 of the studies (Gaumer Erikson et al., 2007; Wagner et al., 2004; Wagner et al., 2003; Planty & Provasnik, 2007; Newman et al., 2011; Wagner et al., 2006; Wagner et al., 2006; Wagner et al., 2003; Shaver et al., 2011; Yu et al., 2009) used longitudinal data collected at different periods of time over multiple years. While the analysis of data over multiple years provides an opportunity to identify trends, a significant limitation of descriptive studies is the inability to identify reliable causal inferences (Shadish, Cook, & Campbell, 2002).

The majority of the studies (Bouck et al., 2010; Center on Education Policy, 2008; Guy et al., 1999; Johnson et al., 2009; Johnson & Thurlow, 2003; Johnson et al., 2007; Johnson et al., 2007; Krentz et al., 2005; McIntosh S., 2011; Thurlow et al., 2009; Thurlow et al., 2010; Thurlow et al., 1995; Thurlow et al., 1997; Wagner et al., 1991; Vernon et al., 2003; Zhang, 2009) used survey methodology to gather the research data. The survey methodology employed a combination of written or electronic survey questions, telephone interviews, small focus groups, or reviews of publicly available documentation. Although each of these studies examined the academic performance of students with disabilities or their ability to meet established minimum state or district graduation requirements, none of the studies identified a causal relationship between specific variables associated with students with disabilities and their educational performance or ability to meet minimum graduation requirements.

***Participants and data sets.*** Several of the studies in this literature review used large-scale data sets available to all researchers. Gaumer Erikson, Kleinhammer-Tramill and Thurlow (2007), for example, used comprehensive statistics for school years 2001-02

and 2002-03 from the OSEP data sets and NCES Common Core of Data for school years 2001-02. The studies conducted by Planty & Provasnik (2007) and Nord et al. (2011) used data from the High School Transcript Study, a representative national sample of high school transcript data conducted between 1982 - 2005 and 2008-09, respectively. Ten of the studies (Gaumer Erikson et al., 2007; Wagner et al., 2004; Wagner et al., 2003; Planty & Provasnik, 2007; Newman et al., 2011; Wagner et al., 2006; Wagner et al., 2006; Wagner et al., 2003; Shaver et al., 2011; Yu, Newman, & Wagner, 2009) used data from the NLTS-2, a nationwide study of the secondary and postsecondary outcomes for students with disabilities.

The studies that used large-scale data sets with a representative sample from students across the U.S. demonstrated greater external validity than one might see in research studies that might have higher internal validity. However, it is difficult to compare the results of studies like Bouck and Washburn-Moses (2010), which explored the implementation of the waiver process for the state exit exam in Indiana, to studies with large, national data sets, because the samples are disparate. The studies also are difficult to compare because of the vast differences in the effects of variables on the completion of minimum high school requirements. For example, Wagner et al. (2006) included more academic variables like achievement test scores, absenteeism, and functional skills. In contrast, the study conducted by Wagner et al., (2003) examined the achievement of students using variables of disability type, school adjustment, school engagement, and individual student characteristics like age, gender, and race. While there are similarities in the research questions used in Wagner et al.'s 2003 and 2006 inquiries, the differences in the data analysis and variables make it difficult to draw

comparisons between the studies. The type of data samples selected, the variables used for the analysis, and the context of the studies also influence comparability across studies.

**Variables.** There were a large number of independent variables across the studies. The dependent variables included academic achievement, diploma options, or characteristics of the school experience of students with and without disabilities. The consistent use of variables increased the likelihood of comparing different empirical studies.

Several studies used similar variables to define students' school experience and environment (Shaver et al., 2011; Wagner et al., 2003; Wagner et al., 2004; Yu et al., 2009). However, Nord et al., (2011) and Planty and Provasnik (2007) excluded the school environment as a variable for analysis in the achievement of students. Multiple studies featured similar independent variables (e.g., race and GPA), and tended to have consistent definitions. For example, the studies consistently defined GPA using a 4-point scale (Newman et al., 2011; Nord et al., 2011).

The definition of academic achievement or performance was inconsistent in a number of studies. Several inquires (Shaver et al., 2011; Wagner et al., 2006; Yu et al., 2009) examined the academic achievement of students with disabilities and included the independent variable of achievement testing, while excluding GPA. Two studies (Newman et al., 2011; Nord et al., 2011) included GPA as an independent variable and a component of student achievement. Additionally, researchers consistently used the definition of disability in many studies (Newman et al., 2011; Shaver et al., 2011; Wagner et al., 2003; Wagner et al., 2003; Wagner et al., 2004, 2006; Yu et al., 2009).

***Procedures and data analysis.*** Few of the researchers (Bouck & Washburn-Moses, 2010; Guy et al., 1999) from this review included a procedures section in their articles. Although many of the studies included an executive summary, an overview section, a methods section, and a results section; the absence of a procedures section could impact the reliability of the study.

Fewer than 50% of the studies reviewed in this chapter utilized statistical methods to analyze their data. There were eight exceptions, each of which clearly described the methods used to analyze their data (Bouck & Wasburn-Moses, 2010; Nord et al., 2011; Planty & Provasnik, 2007; Thurlow et al., 2010; Wagner et al., 2003; Wagner et al., 2004; Wagner et al. 2006). Only one study (Gaumer Erickson et al., 2007) used an extensive statistical analysis that included descriptive statistics (mean, range, standard deviation, sum, and percentage), independent sample *t* tests, analysis of variance (ANOVA), correlation, and repeated measures designs.

None of the studies reviewed reported the effect size. The effect size of an empirical review study enables researchers to effectively interpret and compare findings across studies (Kline, 2009). The effect size is an important statistical tool in the measurement of the "magnitude of the impact of the independent variable on the dependent variable" (Kline, 2009, p. 153). None of the studies reported confidence intervals.

**Summary of critical research review.** A review of the 27 empirical studies in this chapter revealed that over 50% of the studies (Center on Education Policy, 2008; Guy et al., 1999; Johnson et al., 2009; Johnson et al., 2003; Johnson et al., 2007; Johnson et al., 2007; Krentz et al., 2005; McIntosh, 2011; Thurlow et al., 2009; Thurlow et al.,

2010; Thurlow et al., 1995; Thurlow et al., 1997; Wagner et al., 1991; Vernon et al., 2003; Zhang, 2009) explored the minimum requirements for earning a standard diploma (i.e., Carnegie credit, course type, exit exam) and the alternate routes to exiting high school for students with and without disabilities (i.e., IEP diploma, certificate of attendance, certificate of achievement, occupation diploma, honors diploma, or other). While these efforts took an important step towards understanding the impact of minimum graduation requirements for students with disabilities, the studies did not include an analysis of the variables that predict a student's failure to meet the established minimum graduation requirements.

Although several of the studies reviewed in this section identified possible unintended consequences that can occur when students receive an alternate diploma (Johnson et al., 2007, 2009; Johnson & Thurlow, 2003), none of the studies included an analysis of the factors that related to or predicted the receipt of a standard diploma requirement waiver for students with disabilities. Furthermore, none of the researchers explored whether a correlation existed between individual student demographics and the pursuit of one alternate diploma option over another.

Several studies reviewed in this chapter explored the educational performance, individual student demographics, and school/program characteristics of students with disabilities (Erikson et al., 2007; Newman et al., 2011; Nord et al., 2011; Planty & Provasnik, 2007; Shaver et al., 2011; Wagner et al., 2004; Wagner et al., 2001, 2003, 2006, 2006; Yu et al., 2009) utilizing data sets representative of the national population of students with disabilities. These results assist in generalizing the research findings across all U.S. schools.



Additional research is needed in several areas to identify the relationships between specific student characteristics and students' ability to earn a standard diploma. The absence of effect sizes and confidence intervals, which affect the reliability and validity of the existing studies, is of particular concern. In addition to the methodological issues, the majority of the literature reviewed large, diverse samples, with the exception of the study conducted by Bouck and Washburn-Moses (2010), which examined the implementation of the waiver process in Indiana. Gaumer Erickson, Kleinhammer-Tramill, and Thurlow (2007) conducted an analysis of students with disabilities who received either the standard diploma or a nontraditional exit certificate. However, the authors did not distinguish between the types of nontraditional exit certificate received. Despite the fact that there are presently up to seven different alternate diploma options available in U.S. schools, the true impact of these additional exit options remains unknown. As states continue to revise the minimum requirements for receiving the standard diploma and accessing alternate diploma options, it will be important to conduct research on how these revised requirements affect student outcomes.

### **Chapter Summary**

This chapter detailed the history of the high school diploma, the legislation passed to support the educational needs of all students (with and without disabilities), and the federal policies created to improve access to the general education curriculum for students with disabilities. Over the years, the diploma has increased in importance, and it currently serves as a bridge that facilitates the transition between secondary education and advanced educational options (four-year university or two-year community college) and

economic and vocational success in the 21<sup>st</sup> century (National Collaborative on Workforce & Dignity, 2009; Rumberger, 2011).

For more than a quarter century, state leaders have grappled with the challenge of establishing a balance between increased course rigor (based on the national educational standards movement), increased student content knowledge (particularly in the areas of English language arts, mathematics, and science), and the pressure of increasing the high school graduation rate. While educational policy makers and school officials agree upon these ultimate goals, the path to achieving these goals is as varied as the personalities of those involved in the process.

The meaning of and requirements for the standard high school diploma also has evolved in multiple ways, and policy makers have developed multiple variations in the course requirements, Carnegie credits requirements, and the types of alternatives offered to the standard diploma. As noted earlier in this chapter, although state leaders have attempted to offer students additional options for exiting high school, it is unclear what impact these options have on the postsecondary educational and career opportunities available to students with disabilities.

Additional questions remain unanswered regarding the factors that predict the ability of students with disabilities to successfully meet the requirements to receive a standard diploma. Furthermore, the empirical research has not yet determined why some students with disabilities are unable to meet minimum graduation requirements, nor have these studies identified strategies that will narrow the achievement gap between students with disabilities and the general education population.

Educational leaders cannot overlook the difficulties that students with disabilities encounter in passing state exit exams. As state leaders revise the minimum graduation requirements necessary to earn the diploma, they must consider the impact of these assessments and the alternate options available to students with disabilities who fail to pass the requisite exit exams.

### **Chapter III: Methodology**

The purpose of this study was to investigate the characteristics of students with and without disabilities who received a standard diploma from the PSS in May of 2012. I sought to identify those factors associated with waiving the requirements necessary for receiving a standard diploma. These factors included: 1) disability status, 2) gender, 3) age, and 4) race-ethnicity. There were four research questions:

Research question 1: What are the educational (i.e., cumulative GPA, total course credits) and individual characteristics (i.e., age, gender, and race-ethnicity) of students with and without disabilities who graduated in 2012?

Research question 2: A). What are the individual characteristics of students with and without disabilities (i.e., age, gender, and race-ethnicity) who received any type of waiver of graduation requirements for a standard diploma in 2012? B). What are the individual characteristics of students with and without disabilities who received specific types of waivers in 2012 (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, or other course credit waiver)?

Research question 3: A). What is the probability that students with and without disabilities will receive any type of waiver of the graduation requirements for a standard diploma in 2012, controlling for other personal characteristics (i.e., disability status, age, gender, and race-ethnicity)? B). What is the probability that students with and without disabilities will receive specific types of waivers in 2012 (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign

language course credits waiver, and/or other course credit waiver), controlling for other personal characteristics?

Research question 4: What are the rationales for granting waivers to students with disabilities who graduated with a standard diploma in 2012, as documented on the PSS waiver request document?

### **Data Sources**

The sample for this study included students with and without disabilities who graduated with a standard diploma from the PSS in 2012. Individual characteristics data (i.e., disability status, age, gender, and race-ethnicity) and educational characteristics data (i.e., cumulative GPA, and course credits earned) used for this study were obtained from a single Web-based student information system (SIS) which contained data that were entered into and accessible in real time. Since all data used in this study represented standard requirements necessary to register and attend the PSS, there were few missing data. Parents reported the individual characteristics of students who graduated in 2012 (i.e., disability status, age, gender, and race-ethnicity), and school registrars then entered the data into the PSS SIS. Either the school guidance counselor and/or the school registrar entered the data on educational characteristics (i.e., cumulative GPA, and course credits earned). Individual Education Program Team Case Managers entered data on disability type for students receiving special education services.

The PSS had an established protocol for documenting all waivers for the requirements necessary to earn a standard diploma. To identify the types and frequency of waivers granted to students who graduated in 2012, I reviewed all waiver packets submitted to the PSS. The PSS required that applicants submit several documents as part

of the waiver packet, including the *PSS Waiver Request Document*, which identified the type(s) of waiver(s) granted, and rationale for granting the waiver. I retrieved the following data from each *PSS Waiver Request Document*: (a) the type of waiver(s) granted (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, or, other course credit waiver), and (b) the rationale for granting the waiver to students with disabilities only. I coded this rationale using the protocol described later in this chapter.

### **Procedures**

The process for investigating each research question followed the following phases. Figure 3 identifies the procedure for data collection phases I, II, and III. Phase I began with the identification of the total number of students with and without disabilities who graduated from the PSS in the spring of 2012. Student data retrieved from the PSS SIS identified a total sample of 3,203 PSS students with and without disabilities. Inclusion criteria for this study included students without disabilities ( $n = 2,995$ ) who graduated in the spring of 2012 with a standard diploma and students eligible for special education services based upon the PSS special education eligibility criteria with a current Individual Education Program ( $n = 208$ ). Student data were entered into SPSS and coded beginning with the number 1 and ending with 3,203 - the total number of students meeting the selection criteria. Second, individual characteristics of the student sample (i.e., age, gender, race-ethnicity, and disability type) was retrieved from the PSS SIS and entered into SPSS next to the unique student identification number. Third, the disability category of students with disabilities ( $n = 208$ ) was identified by reviewing student special education data from the PSS SIS and the disability category

was entered into SPSS next to unique student identification number. The PSS had 12 special education disability categories to include: autism, deafness, deaf-blindness, hearing impairment, other health impairment, orthopedic impairment, traumatic brain injury, visual impairment- including blindness, emotional impairment, speech or language impairment, learning impaired - specific learning disability, learning impaired - intellectual disorder (mental retardation) (Participating School System, 2012). The PSS did not include a category of multiple disabilities. Finally, transcript data for students with and without disabilities was retrieved from the PSS SIS to identify the total course credits earned, and cumulative GPA. This information was added to the SPSS dataset for each student.

Phase II involved the identification of students with and without disabilities who graduated in 2012 and received a diploma waiver. This process entailed reviewing all waiver request packets (n = 182) submitted to the PSS Headquarters Office. There were 79 students with disabilities and 103 students without disabilities who graduated in 2012 with one or more minimum requirements for the standard diploma waived. And finally, Phase III involved applying a coding process to the dataset based on the results from Phase II.

### **Waiver Request Procedure**

The PSS established a multi-step process for requesting and approving a waiver for one or more of the requirements to earn the standard diploma. This process entailed determining necessity for the waiver request, gathering required documentation, and obtaining approval (Figure 4). This process began at the school level with a review of the student's educational progress by school staff to identify if the student was on-track for

**Figure 3.** *Flow Chart of the Procedure for Gathering Data in Phases 1, 2, 3, & 4*

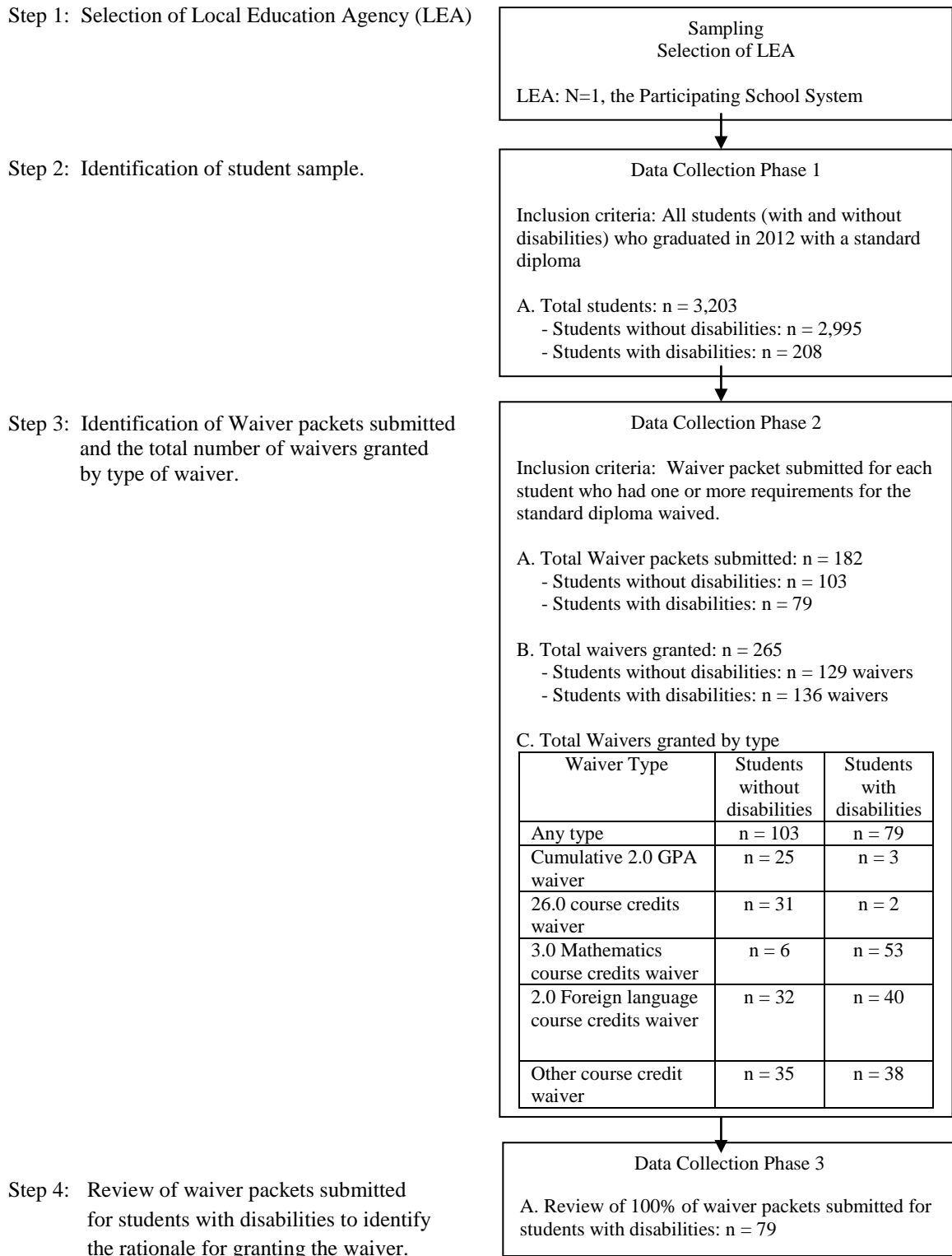


Figure 3. Process of gathering student graduation data for the study.



meeting the requirements for the PSS standard diploma to include specific course credits (i.e., mathematics, foreign language, and science), completion of 26.0 total course credits, and a cumulative 2.0 GPA. For students with disabilities, a meeting was convened with the student's IEP Team to discuss the impact of the student's identified disability on meeting the requirements for receipt of the standard diploma. If it was determined that the student could not meet all requirements for the standard diploma, the waiver option was explained to the student and parent, and if requested, the parent was asked to write a statement on the student's behalf. The school counselor was then responsible for documenting the rationale for the waiver on the *waiver request document*. The *waiver request document*, the written parent request, the student's transcript, and the student's 4-year graduation plan would become the student's official waiver packet that must be reviewed by the PSS administrative leadership for approval.

The PSS established a 3-level approval process that began with the approval of the school principal, the PSS District Superintendent, and finally approval of the PSS Area Superintendent. At each level, signed approval was required on the *waiver request document* and all approved waiver packets were forwarded to the PSS Headquarters Office by June 30 of each year for review.

### **Analyses of Results**

Several different analyses were conducted in this study to answer the four research questions. The analyses included descriptive statistics, chi-square tests of independence, and logistic regression. The individual student waiver request documents were reviewed for all students (with and without disabilities). For those waiver requests submitted for students with disabilities, a coding system was developed to identify the

rationales for granting the waivers. A description of the variables and specific analyses used in this study are provided in the following paragraphs.

**Figure 4.** *Process of Granting a Waiver of Requirements for the Standard Diploma*

*Offered by the PSS<sup>4</sup>*

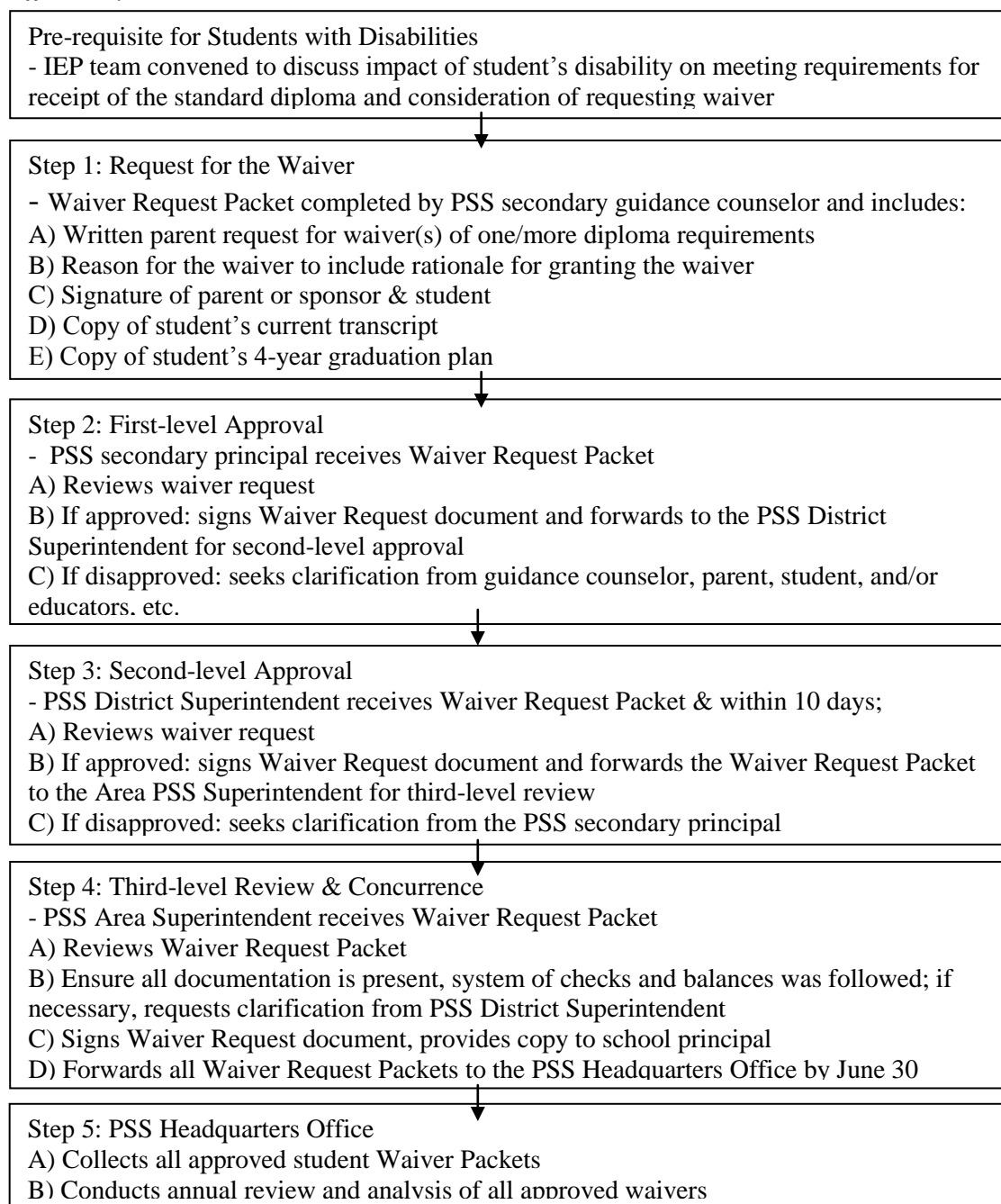


Figure 4. Waiver approval process established by the PSS.

<sup>4</sup> Study included only those waivers submitted in Step 5 to the PSS Headquarters Office.

## Description of Variables

This section identifies the individual characteristics and educational characteristics of the student sample analyzed in this study. The selection of variables was informed by the four research questions and findings from the review of literature in Chapter II. A description of the variables selected for this study is included in this section.

**Individual characteristics.** The variables identified to address student specific data included age, gender, race-ethnicity, disability status, and disability type. Data for these variables was obtained from the PSS SIS. The variables included:

**Gender.** Student gender is a nominal variable (male/female). Male students were coded 1 and female students were coded 2.

**Age-Categorical.** Student's chronological age at graduation was converted to a categorical variable grouped in the following age categories; <16 years, 17 years, 18 years, and 19+ years. This variable was used for research question 2 for the chi-square analyses.

**Age-Year.** Student's chronological age at graduation is a continuous variable identified in years. This variable was used for research question 3 for the logistic regression analyses.

**Race-ethnicity.** Student race-ethnicity was identified in the following categories: White (yes = 1, no = 0), Hispanic-Latino (yes = 1, no = 0), Black/African American (yes = 1, no = 0), Asian (yes = 1, no = 0), and Multi-racial (yes = 1, no = 0). For the logistic regression analysis, the researcher combined Asian & Multi-racial due to the small number of participants for these two categories.

***Disability status.*** Each student had an identified disability and was receiving special education services with an Individual Education Program (IEP) (yes = 1, no = 0).

***Disability type.*** Disability type included the 12 disability categories identified by the PSS. Each disability type was coded in the following manner; autism (yes = 1, no = 0); deafness (yes = 1, no = 0); deaf-blindness (yes = 1, no = 0); hearing impairment (yes = 1, no = 0); other health impairment (yes = 1, no = 0); orthopedic impairment (yes = 1, no = 0); traumatic brain impairment (yes = 1, no = 0); visual impairment- including blindness (yes = 1, no = 0); emotional disturbance (yes = 1, no = 0); speech or language impairment (yes = 1, no = 0); learning impairment - specific learning disability (yes = 1, no = 0); or learning impairment - intellectual disability (yes = 1, no = 0).

***Educational characteristics.*** Data for the educational variables was obtained from the PSS waiver request document to identify the types of diploma waivers granted, and to identify each student's educational progress, student transcripts were reviewed to identify the total course credits earned and cumulative GPA. The coding system to analyze the rationales used to grant waivers is provided in this section. The variables included:

***Total course credits earned.*** This variable identifies the cumulative number of course credits earned and are reported in 0.5 increments (i.e., 0.5, 1.0, 1.5, etc.).

***Cumulative GPA.*** Schools provide a cumulative grade point average (GPA) for earned course credits, and base the figure on a standard four-point scale commonly used by LEAs. The scale corresponded to letter grades that students earned for courses: 1) grade of A = 4.0 GPA; 2) grade of B = 3.0 GPA; 3) grade of C = 2.0 GPA; 4) grade of D

= 1.0 GPA; and 5) grade of E or F = 0.0 GPA. The cumulative GPA represents the average of all of the student's earned course credits.

***Cumulative 2.0 GPA waiver.*** The PSS requires a minimum 2.0 GPA to receive the standard diploma. Students who did not have a cumulative 2.0 GPA were granted this waiver type, a cumulative 2.0 GPA waiver (yes = 1, no = 0).

***26.0 course credits waiver.*** The PSS requires a minimum of 26.0 course credits earned to receive the standard diploma. A student earns 0.5 course credits for each semester they successfully complete a course. Successful completion as defined by the PSS is defined by earning a grade of D- or better. Students who had not earned 26.0 total course credits were granted this waiver type, a 26.0 course credits waiver (yes = 1, no = 0).

***3.0 mathematics course credits waiver.*** The PSS requires a minimum of 3.0 mathematics credits earned to receive the standard diploma. Students who had not earned 3.0 mathematics course credits were granted this waiver type, a 3.0 mathematics course credit waiver (yes = 1, no = 0).

***2.0 foreign language course credits waiver.*** The PSS requires a minimum of 2.0 foreign language course credits earned in the same foreign language (i.e., Spanish, French, German, etc.). Students who had not earned 2.0 foreign language course credits were granted this waiver type, a 2.0 foreign language course credits waiver (yes = 1, no = 0).

***Other course credit waiver.*** A fifth variable was created to capture students who were granted a waiver for one or more additional required course credits for the standard

diploma from the PSS (i.e., science, social studies, physical education, etc.) (yes = 1, no = 0).

***Waiver rationale 1:*** Student's current or prior academic performance was poor (yes = 1, no = 0).

***Waiver rationale 2:*** Impact of the student's specific disability type and assessed academic weakness identified by an assessment (e.g., Woodcock Johnson Test of Achievement) administered as part of the special education eligibility process in a specific domain (i.e., mathematics, expressive language, language processing).

***Waiver rationale 3:*** Impact of the student's specific disability type and the frustration displayed by the student in an academic course (e.g., mathematics, or foreign language) (yes = 1, no = 0).

***Waiver rationale 4:*** The rationale for the waiver was unclear based upon the submitted documentation (yes = 1, no = 0).

***Waiver rationale 5:*** Graduation requirements based on previous Local Education Agency and not the requirements of the PSS (yes = 1, no = 0).

**Analyses.** The SPSS computer program, Version 21.0, was used for all statistical analyses performed in this study. As discussed below, SPSS was used to compute (a) frequencies and percentages for categorical variables; (b) means, and ranges for continuous variables; (c) cross tabulations for pairs of categorical variables with associated chi-square tests of independence; and (e) logistic regression for assessing predictions. The following procedures were performed to answer each of the four research questions.

**Research question 1.** What are the educational (i.e., cumulative GPA, total course credits) and individual characteristics (i.e., age, gender, and race-ethnicity) of students with and without disabilities who graduated in 2012?

To answer research question one, I used the FREQUENCIES procedure in SPSS to analyze graduation data of students with and without disabilities (n = 3,203), stratified by gender, age, race-ethnicity, disability status, and disability type for students with disabilities. Descriptive statistics for nominal variables (i.e., gender, race-ethnicity, disability status, disability type, waiver type received (i.e., any waiver, cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, other course credit waiver) were calculated to include the number of cases and percentages; and descriptive statistics for continuous variables (i.e., age-categorical, cumulative GPA, and total course credits earned) included the frequency, mean, and minimum and maximum values. Through this descriptive analysis, I identified the characteristics of students with and without disabilities who graduated from the PSS in 2012. Results are displayed in table format.

**Research question 2.** A). What are the individual characteristics of students with and without disabilities (i.e., age, gender, and race-ethnicity) who received any type of waiver of graduation requirements for a standard diploma in 2012? B). What are the individual characteristics of students with and without disabilities who received specific types of waivers in 2012 (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, or other course credit waiver)?

To answer research question two, I reviewed each of the waiver request packets that were submitted for each student (one per student) to the PSS Headquarters office to identify the type and frequency of waivers granted for students with disabilities. I then used chi-square statistics to identify the presence of a significant association between students' disability status and their receipt of each waiver type (i.e., any waiver, cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, other course credit waiver). Additional chi-square statistics stratified by each disability status (disabled and non-disabled) identified significant associations between: 1) gender and receiving each waiver type; 2) race-ethnicity and receiving each waiver type; and 3) age-categorical and receiving each waiver type. Each chi-square test incorporated the CROSSTABS procedure in SPSS; which provided the number and percentage of students in each subcategory. The CROSSTABS procedure provided the results of the chi-square test of independence and the associated  $p$  value ( $p < .05$ ) used to identify significant associations. Howell (2009) suggested that when two categorical variables are compared, the chi-square test of independence is the appropriate analysis to determine if two variables are independent or related (Howell, 2009, p. 145).

**Research question 3.** A). What is the probability that students with and without disabilities will receive any type of waiver of the graduation requirements for a standard diploma in 2012, controlling for other personal characteristics (i.e., disability status, age, gender, and race-ethnicity)? B). What is the probability that students with and without disabilities will receive specific types of waivers in 2012 (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign



language course credits waiver, and/or other course credit waiver), controlling for other personal characteristics?

To answer research question 3, I conducted individual logistic regression analyses for receipt of any type of waiver, and for each specific type of waiver (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, other course credit waiver) independently. Each model included the independent variable having or not having a disability, controlling for age-year, gender, and race-ethnicity. I performed the following procedures. First, a logistic regression model including the independent variable and potential confounders was performed. If disability status and race-ethnicity were significant, an additional model including the interaction of disability status\*race-ethnicity was performed. If the interaction was significant, additional logistic regression models stratified by each race-ethnic group were performed. Confidence intervals,  $p$  values ( $p < .05$ ), and odds ratio of receiving the waiver types were computed, and reported to identify statistically significant results.

***Research question 4.*** What are the rationales for granting waivers to students with disabilities who graduated with a standard diploma in 2012, as documented on the PSS waiver request document?

To answer research question 4, I reviewed 100% of the waiver request packets submitted for students with disabilities ( $n = 79$ ) in a series of four steps. Step one began with reading of each of the waiver request packets provided to the PSS Headquarters Office and identifying the common rationales documented on the waiver request document used for granting the waiver(s). The coding system I developed identified 5

specific rationales used for granting the waiver request. The rationales used for this study included.

- ***Waiver rationale 1:*** Student's current or prior academic performance was poor.
- ***Waiver rationale 2:*** Impact of the student's specific disability type and assessed academic weakness identified by an assessment (e.g., Woodcock Johnson Test of Achievement) administered as part of the special education eligibility process in a specific domain (i.e., mathematics, expressive language, language processing).
- ***Waiver rationale 3:*** Impact of the student's specific disability type and the frustration displayed by the student in an academic course (e.g., mathematics, or foreign language).
- ***Waiver rationale 4:*** The rationale for the waiver was unclear based upon the submitted documentation.
- ***Waiver rationale 5:*** Graduation requirements based on previous Local Education Agency and not the requirements of the PSS.

In step two, I assigned the corresponding rationale code (i.e., 1, 2, 3, 4, or 5; yes = 1, no = 0) for each waiver request packet and entered this code in the SPSS data file next to the corresponding student number for the 79 students with disabilities who were granted a waiver. After this coding process, I conducted an analysis of the types of rationales by using the FREQUENCIES procedure in SPSS to calculate the number of cases of each rationale and percentage. The frequency of each waiver rationale (i.e., 1, 2, 3, 4, or 5) is displayed in a table and disaggregated by disability type.

**Inter-rater reliability.** To ensure inter-rater reliability for assigning a rationale code to each of the waiver request documents for students with disabilities, a 20% random sample was reviewed for accuracy by a PSS Instructional Systems Specialist, hereafter referred to as the rater, who was familiar with the waiver process. First, I assigned a number of 1 to 79 on each of the waiver request packets. Next, I used the random number generator feature on the online service, <http://stattrek.com/statistics/random-number-generator.aspx> to generate a  $\geq 20\%$  (16) random number list between 1 and 79. The random number generator assigned the following numbers: 36, 47, 58, 25, 44, 43, 68, 73, 78, 65, 24, 47, 36, 11, 63, and 67. The rater was given the waiver request packets for the randomly assigned numbers and a separate data collection sheet to identify the rationale code for each waiver request packet. See Appendix A and for the directions used to test inter-rater reliability and Appendix B for the data collection sheet used.

The rater was given the letter explaining the inter-rater process (Appendix A) and I further discussed the process with her to ensure understanding. Next, the rater was given the 16 waiver packets and 16 data collection sheets. The rater then placed the randomly assigned number in section one of the data collection sheet, and read the rationale documented on the waiver request packet with the same corresponding number. Next, the rater circled one of the five rationale codes listed in section two of the data collection sheet. This process was repeated until each of the 16 waiver request packets had been reviewed. I then compared the rationale codes selected by the rater with the rationale codes I had identified for the same waiver packets. Of the 16 waiver packets reviewed, 14 were identically rated. The two waiver packets that were rated inconsistently were the

result of the rater overlooking the schools comment on the PSS waiver request document identifying the student's poor academic performance and mistakenly coding the two waiver packets as Waiver rationale 1: The student's current or prior academic performance was poor; rather than selecting Waiver rationale 2: Impact of the student's specific disability type and assessed academic weakness identified by an assessment (e.g., Woodcock Johnson Test of Achievement) administered as part of the special education eligibility process in a specific domain (i.e., mathematics, expressive language, language processing). The Inter-rater reliability was identified at an acceptable level of 87%.

### **Institutional Review Board and Confidentiality**

Permission to conduct this study was obtained following the Institutional Review Board procedures established by the University of Maryland and procedures required by the PSS. Confidentiality was established and maintained throughout the research process by storing copies of student waiver request packets in a locked file cabinet at all times and the SPSS files were password protected at all times. All copies of student waiver request packets were shredded and electronic data (i.e., SPSS data set) deleted after two months.

### **Chapter Summary**

This chapter provided a detailed description of the analyses used in this study for each of the four research questions. A description of the data source, data sample, and specific details regarding the data set for the study was provided to give background information. A section identifying the steps used to collect the data for this study was included, followed by the process of requesting and approving a waiver from the requirements for the diploma implemented by the PSS. In addition, a description of the

individual characteristics (i.e., gender, age, race-ethnicity, disability status and disability type) and educational characteristics (i.e., waiver types, cumulative GPA, and total course credits earned) used in the study was provided. Finally, the SPSS software was used to answer each of the four research questions and performed each of the statistical analyses for the study.

## Chapter IV: Results

The purpose of this study was to investigate factors associated with granting a waiver of the requirements for receiving a standard diploma for students with disabilities who graduated in 2012 from the PSS. The factors investigated included: 1) disability status, 2) gender, 3) age, and 4) race-ethnicity. The study was designed to address gaps in the current body of research, specifically the lack of descriptive quantifiable data related to both the extent and types of waivers granted to students with disabilities as well as the reasons for granting such waivers. This chapter presents the results of the analyses performed to address each of the four research questions.

### Research Question 1

Research question 1: What are the educational (i.e., cumulative GPA, total course credits) and individual characteristics (i.e., age, gender, and race-ethnicity) of students with and without disabilities who graduated in 2012? To answer research question 1, I identified the individual characteristics (i.e., age-categorical, gender, race-ethnicity, disability status), and educational characteristics (i.e., cumulative GPA, course credits earned) of students with and without disabilities using the FREQUENCIES procedure in SPSS.

**Individual characteristics.** I used data generated from the PSS student information system (SIS) to address the first research question. Table 1 identifies the individual characteristics of students with and without disabilities who graduated in 2012. I identified a total of 3,203 students as having graduated in spring of 2012. Of this group, 208 (6.5%) students were identified as having a disability.

**Gender and race-ethnicity.** Among the 208 students identified as having a disability, males (n = 132, 63.5%) outnumbered females (n = 76, 36.5%). Among the 2,995 students without an identified disability, females slightly outnumbered males (n = 1,521, 50.8%; n = 1,474, 49.2%). Overall, there were more White students with and without disabilities (n 93, 44.7%; n = 1,351, 45.1%, respectively) than other racial-ethnic groups. There was a greater representation of Black/African American students with disabilities than without disabilities (n = 48, 23.1%; n = 455; 15.2%), while Asians were under represented among students with and without disabilities (n = 8, 3.8%; n = 246, 8.2%).

Table 1

*Characteristics of Students who Graduated in 2012 from the PSS*

2012 graduates		Students with disabilities		Students without disabilities		Total students	
		n	%	n	%	N	%
Gender	Male	132	63.5%	1,474	49.2%	1,606	50.2%
	Female	76	36.5%	1,521	50.8%	1,597	49.8%
	Total	208	6.5%	2,995	93.5%	3,203	100.0%
Race-ethnicity <sup>a</sup>	White	93	44.7%	1,351	45.1%	1,444	45.1%
	Hispanic/Latino	29	14.0%	525	17.5%	554	17.3%
	Black/African American	48	23.1%	455	15.2%	503	15.7%
	Asian*	8	3.8%	246	8.2%	254	7.9%
	Multi-racial*	30	14.4%	418	14.0%	448	4.0%
Total		208	6.5%	2,995	93.5%	3,203	100.0%

<sup>a</sup> The analysis for students with disabilities (n=4) and students without disabilities (n=23) does not include data for respondents who declined to state.

\*Asian & Multi-racial were combined for the logistic regression analysis

**Age.** Table 2 details the ages of students who graduated in 2012. Ages ranged from 15 to 24 years. In the 15-16 years age group there were no students with disabilities

and few students without disabilities ( $n = 22, 0.7\%$ ). The 17 years age group included fewer students with disabilities ( $n = 31, 15.0\%$ ) than students without disabilities ( $n = 895, 30.0\%$ ). The majority of students with disabilities ( $n = 123, 59.0\%$ ) and without disabilities ( $n = 1,856, 62.0\%$ ) were in the 18 years age group. Finally, there were 276 students in the +19 age group, which had fewer students with disabilities ( $n = 54, 26.0\%$ ) than students without disabilities ( $n = 222, 7.3\%$ ).

Table 2

*Age of Students With and Without Disabilities*

Student type	Age in years								Total	
	15-16		17		18		+19		N	%
	n	%	n	%	n	%	n	%		
Students with disabilities	0	0.0%	31	15.0%	123	59.0%	54	26.0%	208	6.5%
Students without disabilities	22	0.7%	895	30.0%	1,856	62.0%	222	7.3%	2,995	93.5%
Total	22	0.7%	926	28.9%	1,979	61.7%	276	8.7%	3,203	100.0%

**Disability type.** Table 3 details the disability types of the 208 students identified as receiving special education services. The majority of students were identified as Learning Impairment-Specific Learning Disability ( $n = 124, 59.6\%$ ) and Other Health Impairment ( $n = 35, 16.8\%$ ). Next were students with Autism ( $n = 21, 9.6\%$ ), Emotional Disturbance ( $n = 9, 4.3\%$ ), Learning Impairment-Intellectual Disability ( $n = 6, 2.9\%$ ), Speech-Language Impairment ( $n = 5, 2.4\%$ ), and due to the low sample size, the disability types of Deaf, Blind, Hearing, Vision were collapsed ( $n = 5, 2.4\%$ ). The disability types, Orthopedic Impairment and Traumatic Brain Injury, were each small ( $n = 2, 1.0\%$ ).



Table 3

*Students With Disabilities by Disability Type*

Disability type	Total	
	N	%
Autism	20	9.6%
Deaf, blind, hearing, vision	5	2.4%
Emotional disturbance	9	4.3%
Other health impairment	35	16.8%
Orthopedic impairment	2	1.0%
Traumatic brain injury	2	1.0%
Speech—Language impairment	5	2.4%
Learning impairment—Specific learning disability	124	59.6%
Learning impairment—Intellectual disability	6	2.9%
Total	208	100.0%

**Educational characteristics.** Key educational data pertaining to students with and without disabilities are provided in the following section. These include total course credits earned, cumulative GPA, and the number of students with and without disabilities who received a waiver for one or more of the requirements for a standard diploma.

**Course credits/Cumulative GPA.** Table 4 displays the range of total course credits earned and cumulative GPA for students with and without disabilities. The mean course credits earned was similar for both students with disabilities ( $M = 28.2$ ) and students without disabilities ( $M = 28.6$ ) (Table 4). The course credits earned for students with disabilities ranged from 24.5 credits to 37.5 credits, while the earned course credits for students without disabilities ranged from 12.0 credits to 39.5 credits.

Table 4

*Course Credits and Mean Cumulative GPA for Students With and Without Disabilities*

Student type	n	M	Range of course credits earned	
Students with disabilities	208	28.2	24.5	37.5
Students without disabilities	2,995	28.6	12.0	39.5

Student type	n	M	Range of cumulative GPA	
Students with disabilities	208	2.8	1.7	4.0
Students without disabilities	2,995	3.1	1.5	4.4

**Research Question 2**

Research question 2: A). What are the individual characteristics of students with and without disabilities (i.e., age, gender, and race-ethnicity) who received any type of waiver of graduation requirements for a standard diploma in 2012? B). What are the individual characteristics of students with and without disabilities who received specific types of waivers in 2012 (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, or other course credit waiver)? To answer research question 2, I reviewed each of the waiver request packets submitted to the PSS Headquarters office to identify the type and frequency of waivers granted for students with disabilities. I then used chi-square statistics to identify the presence of significant differences between students with and without disabilities who received any type of waiver and students with and without disabilities who received specific types of waivers (i.e., cumulative 2.0 GPA, 26.0 course credits, 3.0 mathematics course credits, 2.0 foreign language course credits, and other course credits). Additional chi-square statistics stratified by disability status were

performed to identify significant differences between gender and receiving each waiver type, race-ethnicity and receiving each of waiver type, and age and receiving each waiver type. Each variable was dichotomously coded and groups were compared using 2x2 contingency tables, using chi-square as the statistic to analyze the difference between the observed and expected frequencies. The reader should interpret the chi-square results with caution due to the small sample size, which may have impacted the statistical power of each analysis conducted for students with disabilities and for students without disabilities.

**Waivers.** Table 5 displays the number of students who had a waiver packet submitted for one or more of the requirements for a standard diploma. Of the 3,203 students who graduated in 2012, 182 (5.7%) students had a waiver packet submitted for at least one of the minimum requirements for the standard diploma. This included 79 (2.5%) students with disabilities and 103 (3.2%) students without disabilities. In total, 3,021 students graduated and met all requirements for the standard diploma. Of those graduates who met the requirements for the standard diploma, 129 (4.0%) were students with disabilities and 2,892 (90.3%) were students without disabilities.

Table 5

*Waiver Request Packets Submitted for Standard Diploma Requirements*

Student type	Waiver request packet submitted				Total count and percentage	
	Yes		No			
	n	%	n	%	N	%
Students with disabilities	79	2.5%	129	4.0%	208	6.5%
Students without disabilities	103	3.2%	2,892	90.3%	2,995	93.5%
Total students	182	5.7%	3,021	94.3%	3,203	100.0%

Table 6 displays the proportions of students with disabilities who had a waiver request packet submitted to those who did not, by disability type. The PSS has established a multi-level process for requesting and approving a waiver from one or more requirements to earn the standard diploma. This process included completion of the waiver request document that was important in capturing the reason for the waiver(s), rationale for requesting the waiver(s), and requires the signatures of the secondary school team members (e.g., student, parent, principal) responsible for granting the waiver(s). The waiver request packet includes the waiver request document, copy of the student's current secondary transcript, 4-year graduation plan, and written parent request. The majority of the 79 students with disabilities with a waiver packet submitted had Learning Impairment - Specific Learning Disabilities (n = 53, 67.1%) or Other Health Impairment (n = 12, 15.2%). Five students with Autism (6.3%) and Emotional Disturbance had the same number of waiver packets submitted, students with a Learning Impairment-Intellectual Disability had fewer requests (n = 3, 3.8%). There were no waiver packets submitted for students who were Deaf, Blind, Hearing, Vision Impaired, Traumatic Brain Injury, or Speech - Language Impairment.

Table 6

*Waiver Request Packets Submitted for Standard Diploma Requirements by Disability**Type*

Disability type	Waiver request packet submitted				Total count	
	Yes		No			
	n	%	n	%	n	%
Autism	5	6.3%	15	11.6%	20	9.6%
Deaf, blind, hearing, vision	0	0.0%	4	3.8%	5	2.4%
Emotional disturbance	5	6.3%	4	3.1%	9	4.3%
Other health impairment	12	15.2%	24	17.8%	35	16.8%
Orthopedic impairment	1	1.3%	1	0.7%	2	0.9%
Traumatic brain injury	0	0.0%	2	1.6%	2	0.9%
Speech—Language impairment	0	0.0%	5	3.8%	5	2.4%
Learning impairment—Specific learning disability	53	67.1%	71	55.3%	124	59.9%
Learning impairment—Intellectual disability	3	3.8%	3	2.3%	6	2.8%
Total	79	38.0%	129	62.0%	208	100.0%

The number and percentage of each waiver type granted is displayed in Table 7. As previously identified in Table 5, of the 3,203 students who graduated in 2012, 182 students received at least one waiver with a total of 265 waivers granted to these 182 students. Students with disabilities ( $n = 136$ , 51.3%) received 7 more waivers than did students without disabilities ( $n = 129$ , 48.7%). Students without disabilities received more waivers for the cumulative 2.0 GPA and 26.0 course credits ( $n = 25$  and  $n = 31$ , respectively) than students with disabilities ( $n = 3$  and  $n = 2$ , respectively). However, of the 79 students with disabilities that received a waiver for one or more requirements, a significant number of students ( $n = 53$ ) received a waiver for one or more mathematics

course credit(s), to include Algebra I and/or Algebra II, and one or more foreign language course credit(s) (n = 40).

Table 7

*Waivers Granted by Type*

Waiver type	Students with disabilities		Students without disabilities		Total waivers	
	n	%	n	%	n	%
Cumulative 2.0 GPA	3	2.2%	25	19.4%	28	10.6%
26.0 course credits	2	1.5%	31	24.0%	33	12.5%
3.0 mathematics course credits	53	38.9%	6	4.6%	59	22.3%
2.0 foreign language course credits	40	29.4%	32	25.0%	72	27.1%
Other course credit	38	28.0%	35	27.0%	73	27.5%
Total waivers	136	51.3%	129	48.7%	265	100.0%

**Disability status.** Table 8 presents the chi-square analysis conducted to investigate the association between disability status and receiving a waiver. The chi-square test of independence confirmed an association between disability status and receiving a waiver of any type,  $X^2(1, N = 208) = 432.995, p = .001$ . Additional chi-square tests also confirmed an association between disability status and receiving a mathematics waiver,  $X^2(1, N = 208) = 687.467, p = .001$ ; disability status and receiving a foreign language waiver,  $X^2(1, N = 208) = 291.974, p = .001$ ; and disability status and receiving a waiver for other course credits,  $X^2(1, N = 208) = 255.372, p = .001$ . The chi-square test did not reveal an association between disability status and receiving either a cumulative 2.0 GPA or 26.0 course credits waiver.

Table 8

*Chi-Square Test of Receiving a Waiver as a Function of Having a Disability*

Waiver type	Waiver received	With disabilities (n = 208)	Without disabilities (n = 2,995)	Total (n = 3,203)	$X^2$	df	p
Any waiver	Yes	79	103	162	432.995	1	< .001*
	No	129	2,892	3,021			
Cumulative 2.0 GPA	Yes	3	25	28	0.829	1	.363
	No	205	2,970	3,175			
26.0 course credits	Yes	2	31	33	0.010	1	.919
	No	206	2,964	3,170			
3.0 mathematics course credits	Yes	53	6	59	687.467	1	< .001*
	No	208	2,995	3,203			
2.0 foreign language course credits	Yes	40	32	72	291.974	1	< .001*
	No	168	2,963	3,131			
Other course credit	Yes	38	35	73	255.372	1	<.001*
	No	170	2,960	3,130			

\*  $p < .001$ 

**Gender.** Tables 9 and 10 present the chi-square analyses conducted to investigate the association between receiving each type of waiver and gender stratified by disability status. The chi-square test of independence for students with disabilities confirmed there was no association between gender and receiving any waiver type. For students without disabilities (Table 10), the chi-square test of independence found an association between receiving a cumulative GPA waiver and gender,  $X^2(1, N = 2,995) = 5.236, p = .022$ .

Table 9

*Chi-Square Test of Receiving a Waiver as a Function of Gender for Students With Disabilities*

Waiver type	Waiver received	Gender		Total (n = 208)	$X^2$	df	p
		Male (n=132)	Female (n = 76)				
Any waiver	Yes	50	29	79	.002	1	.968
	No	82	47	129			
Cumulative 2.0 GPA	Yes	3	0	3	1.753	1	.186
	No	129	76	205			
26.0 course credits	Yes	1	1	2	.158	1	.691
	No	131	75	206			
3.0 mathematics course credits	Yes	34	19	53	.015	1	.904
	No	98	57	155			
2.0 foreign language course credits	Yes	28	12	40	.913	1	.339
	No	104	64	168			
Other course credit	Yes	26	12	38	.493	1	.483
	No	106	64	172			



Table 10

*Chi-Square Test of Receiving a Waiver as a Function of Gender for Students Without Disabilities*

Waiver type	Waiver received	Gender		Total (n = 2,995)	$X^2$	df	p
		Male (n = 1,474)	Female (n = 1,521)				
Any waiver	Yes	57	46	103	1.601	1	.206
	No	1,417	1,475	2,892			
Cumulative 2.0 GPA	Yes	18	7	25	5.236	1	.022*
	No	1,456	1,514	2,970			
26.0 course credits	Yes	20	11	31	2.934	1	.087
	No	1,454	1,510	2,964			
2.0 mathematics course credits	Yes	2	4	6	.607	1	.436
	No	1,472	1,517	2,989			
2.0 foreign language course credits	Yes	18	14	32	.640	1	.424
	No	1,456	1,507	2,963			
Other course credit	Yes	15	20	35	.573	1	.449
	No	1,459	1,501	2,960			

\*  $p < .05$

**Race-ethnicity.** Tables 11 and 12 present the chi-square analyses conducted to investigate the association between receiving each type of waiver and race-ethnicity stratified by disability status. A chi-square test of independence confirmed an association between receiving a waiver and race-ethnicity for students with disabilities,  $X^2(1, N = 208) = 10.338, p = .016$ , and students without disabilities,  $X^2(1, N = 2,995) = 13.794, p = .003$ . The chi-square test of independence also revealed an association between receiving a mathematics waiver and race-ethnicity for students with disabilities,  $X^2(1, N = 208) = 15.386, p = .002$ . An association also existed between receiving a waiver for other course credit and race-ethnicity for both students with disabilities,  $X^2(1, N = 208) = 13.608, p = .003$ , and students without disabilities,  $X^2(1, N = 2,995) = 9.617, p = .022$ . In addition, a

chi-square test of independence demonstrated an association between receiving a cumulative GPA waiver and race-ethnicity,  $X^2(1, N = 2,995) = 25.965, p = .001$ , and a 26 course credit waiver and race-ethnicity,  $X^2(1, N = 2,995) = 7.966, p = .047$ , for students without disabilities.

Table 11

*Chi-Square Test of Receiving a Waiver as a Function of Race-Ethnicity for Students With Disabilities*

Waiver type	Waiver received	Race-ethnicity				$X^2$	df	p
		White (n = 93)	Latino+ (n= 29)	Black^ (n = 48)	Asian/ Multiracial (n= 38)			
Any waiver	Yes	25	11	25	18	10.338	3	.016**
	No	68	18	23	20			
Cumulative 2.0 GPA	Yes	2	1	0	0	2.408	3	.492
	No	91	28	48	38			
26.0 course credits	Yes	0	0	1	1	2.932	3	.402
	No	93	29	47	37			
3.0 mathematics course credit	Yes	12	8	18	15	15.386	3	.002**
	No	81	21	30	23			
2.0 foreign language course credit	Yes	19	2	11	8	3.428	3	.330
	No	74	27	37	30			
Other course credit	Yes	9	5	10	14	13.608	3	.003**
	No	84	24	38	24			

\*\*  $p < .05$

+Hispanic or Latino

^Black/African American

Table 12

*Chi-Square Test of Receiving a Waiver as a Function of Race-Ethnicity for Students Without Disabilities*

Waiver type	Waiver received	Race-ethnicity				$X^2$	df	p
		White (n = 1,351)	Latino+ (n = 525)	Black^ (n = 455)	Asian/ Multiracial (n = 664)			
Any waiver	Yes	50	20	24	9	13.794	3	0.003*
	No	1,301	505	431	655			
Cumulative 2.0 GPA	Yes	4	10	10	1	25.965	3	< 0.001*
	No	1,347	515	445	663			
26.0 course credits	Yes	13	7	9	2	7.966	3	0.047*
	No	1,338	518	446	662			
3.0 mathematics course credits	Yes	3	1	2	0	2.670	3	0.445
	No	1,348	524	453	664			
2.0 foreign language course credits	Yes	20	2	6	4	6.150	3	0.105
	No	1,331	523	449	660			
Other course credit	Yes	22	2	8	3	9.617	3	0.022*
	No	1,329	523	447	661			

\*  $p < .001$

\*\*  $p < .05$

+Hispanic or Latino

^Black/African American

**Age.** Tables 13 and 14 present chi-square analyses conducted to investigate the association between receiving each type of waiver and the categorical age variable (i.e., 15-16, 17, 18, +19) stratified by disability status. Data revealed an association between age and receiving a waiver for students without disabilities,  $X^2(1, N = 2,995) = 22.831, p = .001$ . The chi-square test of independence also demonstrated an association between age and receiving a cumulative 2.0 GPA waiver for students with disabilities,  $X^2(1, N = 208) = 8.681, p = .013$ , and students without disabilities,  $X^2(1, N = 2,995) = 49.304, p = .001$ .

Additionally, the chi-square test of independence demonstrated an association between age and receiving a foreign language waiver for both students with disabilities,  $X^2(1, N = 208) = 7.150, p = .028$ , and students without disabilities,  $X^2(1, N = 2,995) = 49.304, p = .001$ . Lastly, a chi-square test of independence revealed an association between age and receiving a waiver for other course credits for students with disabilities,  $X^2(1, N = 208) = 13.477, p = .001$ .

Table 13

*Chi-Square Test of Receiving a Waiver as a Function of Age for Students With Disabilities*

Waiver type	Waiver received	Age				$X^2$	df	p
		15-16 (n = 0)	17 (n = 31)	18 (n = 123)	+19 (n = 54)			
Any waiver	Yes	0	11	42	26	3.220	2	.200
	No	0	20	81	28			
Cumulative 2.0 GPA	Yes	0	0	0	3	8.681	2	.013**
	No	0	31	123	51			
26.0 course credits	Yes	0	1	1	0	2.222	2	.329
	No	0	30	122	54			
3.0 mathematics course credits	Yes	0	8	26	19	3.902	2	.142
	No	0	23	97	35			
2.0 foreign language course credits	Yes	0	4	19	17	7.150	2	.028**
	No	0	27	104	37			
Other course credit	Yes	0	7	13	18	13.477	2	< .001*
	No	0	24	110	36			

\*  $p < .001$

\*\*  $p < .05$

Table 14

*Chi-Square Test of Receiving a Waiver as a Function of Age for Students Without Disabilities*

Waiver type	Waiver received	Age				$X^2$	<i>df</i>	<i>p</i>
		15-16 (n = 22)	17 (n = 895)	18 (n = 1,856)	+19 (n = 222)			
Any waiver	Yes	1	29	53	20	22.831	3	< .001*
	No	21	866	1,803	202			
Cumulative 2.0 GPA	Yes	0	4	10	11	49.304	3	< .001*
	No	22	891	1,846	211			
26.0 course credits	Yes	0	9	16	6	6.807	3	.078
	No	22	886	1,840	216			
3.0 mathematics course credits	Yes	0	2	2	2	6.313	3	.097
	No	22	893	1,854	220			
2.0 foreign language course credits	Yes	1	7	16	8	17.456	3	< .001*
	No	21	888	1,840	214			
Other course credit	Yes	0	16	16	3	4.805	3	.187
	No	22	879	1,840	219			

\*  $p < .001$

### Research Question 3

Research question 3: A). What is the probability that students with and without disabilities will receive any type of waiver of the graduation requirements for a standard diploma in 2012, controlling for other personal characteristics (i.e., disability status, age, gender, and race-ethnicity)? B). What is the probability that students with and without disabilities will receive specific types of waivers in 2012 (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, and/or other course credit waiver), controlling for other personal characteristics?

The sections below present the logistic regression for waiver/no waiver, 2.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, and other course credits waiver. These sections do not include the logistic regression analyses for waiver types cumulative 2.0 GPA and 26.0 course credits waiver, due to the small sample size of waiver packets submitted for students with disabilities in each waiver category (cumulative 2.0 GPA,  $n = 3$ ; 26.0 course credits,  $n = 2$ ). The results were not reliable because of the small number of waivers granted.

**Waiver/ No waiver.** I conducted a logistic regression analysis for receipt of a waiver considering the four student personal characteristics (i.e., disability status, age, gender, and race-ethnicity), and the interaction between disability status and race-ethnicity (Table 15). Age (OR = 1.58; 95% C.I. = 1.24 - 2.01;  $p$ -value =  $<0.001$ ) and disability status (OR = 4.53; 95% C.I. = 2.16 - 9.49;  $p$ -value =  $<0.001$ ) significantly predicted receipt of a waiver. Results indicated that older students had increased odds (1.58 times) of receiving a waiver, and students with disabilities had increased odds (4.53 times) of receiving a waiver than students without disabilities. Students with disabilities were almost five times more likely to receive a waiver than students without disabilities. The model also demonstrated a significant interaction between race-ethnicity and disability status (OR = 1.69; 95% C.I. = 1.26 - 2.29;  $p$ -value =  $<0.001$ ). For this reason, stratified logistic regression models were performed for each race-ethnicity.

This paragraph presents the results of the logistic regression for interaction between disability status and race-ethnicity (Table 16). Results indicated having a disability increased the odds of receiving a waiver, regardless of the student's race-ethnicity. Specifically, White students with disabilities had increased odds (6.7 times) of

receiving a waiver than White non-disabled students (OR = 7.69; 95% C.I.= 4.37 - 13.55; p-value = <0.001) and are almost 7 times more likely to receive a waiver than students without disabilities; Hispanic-Latino students with disabilities had increased odds (12.6 times) of receiving a waiver than non-disabled Hispanic-Latino students (OR = 13.64; 95% C.I.= 5.51 - 33.75; p-value = <0.001) and are almost 13 times more likely to receive a waiver; Black/African American students with disabilities had increased odds (15.5 times) of receiving a waiver than Black/African American non-disabled students (OR = 16.51; 95% C.I. = 8.05 - 33.90; p-value = <0.001) and are almost 17 times more likely to receive a waiver. Asian/Multi-racial students with disabilities also had increased odds (52.2 times) of receiving a waiver than Asian/Multi-racial non-disabled students (OR = 53.15; 95% C.I. = 20.23 - 139.66; p-value = <0.001) and almost 52 times more likely to receive a waiver. It should be noted that there is a potential limitation due to the sample size of students with disabilities. In summary, although students with disabilities are more likely to receive a waiver than students without disabilities, regardless of race/ethnicity, non-White students with disabilities have increased likelihood of receiving a waiver than White students with disabilities.

Table 15

*Summary of Logistic Regression Analysis Predicting Receipt of Waiver With Interaction of Race*

Predictor	<i>B</i>	<i>SE</i>	<i>OR</i>	95% CI	<i>p</i>
Constant	-11.19	2.33	0.00		< 0.001*
Gender <sup>a</sup>					
Male	-0.13	0.17	0.88	[0.63, 1.23]	0.451
Age-Year <sup>b</sup>	0.46	0.12	1.58	[1.24, 2.01]	< 0.001*
Race-Ethnicity <sup>c</sup>	-0.16	0.09	0.85	[0.72, 1.01]	0.069
Disabled <sup>d</sup>	1.51	0.38	4.53	[2.16, 9.49]	< 0.001*
Interaction					
Race-Ethnicity *					
Disabled	0.53	0.15	1.69	[1.26, 2.29]	< 0.001*

*Note.* CI = confidence interval for odds ratio (OR)

<sup>a</sup> Comparison group = female

<sup>b</sup> Age-Year = continuous

<sup>c</sup> Comparison group = White

<sup>d</sup> Comparison group = not disabled

\**p* < .001



Table 16

*Summary of Logistic Regression Analysis Predicting Receipt of Waiver Stratified by Race*

Predictor	<i>B</i>	<i>SE</i>	<i>OR</i>	95% CI	<i>p</i>
White (Model 1)					
Constant	-11.46	3.26	0.00		< 0.001*
Gender <sup>a</sup>	-0.04	0.26	0.96	[0.58, 1.58]	0.866
Age-Year <sup>b</sup>	0.45	0.17	1.57	[1.12, 2.20]	0.009
Disabled <sup>c</sup>	2.04	0.28	7.69	[4.37, 13.55]	< 0.001*
Hispanic/Latino (Model 2)					
Constant	-14.85	6.29	0.00		0.018**
Gender <sup>a</sup>	-0.57	0.41	0.56	[0.25, 1.25]	0.159
Age-Year <sup>b</sup>	0.68	0.34	1.97	[1.02, 3.82]	0.045
Disabled <sup>c</sup>	2.61	0.46	13.64	[5.51, 3.75]	< 0.001*
Black/African American (Model 3)					
Constant	-16.70	6.31	0.00		0.008*
Gender <sup>a</sup>	0.22	0.36	1.25	[0.62, 2.51]	0.528
Age-Year <sup>b</sup>	0.73	0.33	2.09	[1.08, 4.02]	0.028
Disabled <sup>c</sup>	2.80	0.37	16.51	[8.05, 3.90]	< 0.001*
Asian/Multi-racial (Model 4)					
Constant	-9.30	4.97	0.00		0.062
Gender <sup>a</sup>	-0.34	0.49	0.71	[0.28, 1.84]	0.486
Age-Year <sup>b</sup>	0.30	0.27	1.35	[0.79, 2.30]	0.268
Disabled <sup>c</sup>	3.97	0.49	53.15	[20.23, 139.66]	< 0.001*

Note. CI = confidence interval for odds ratio (OR)

<sup>a</sup> Comparison group = female

<sup>b</sup> Age-Year = continuous

<sup>c</sup> Comparison group = not disabled

+Hispanic or Latino

\**p* < .001

\*\* *p* < .05

**2.0 foreign language course credits waiver.** Table 17 details the results of a logistic regression analysis conducted for receipt of a 2.0 foreign language course credits waiver, considering the four student personal characteristics (i.e., disability status, age, gender, and race-ethnicity). Age (OR = 1.77; 95% C.I. = 1.29 - 2.42; *p*-value = < 0.001), Hispanic-Latinos as compared to White students (OR = 0.29; 95% C.I. = 0.09-0.83; *p*-

value =  $< .05$ ), and disability status (OR = 15.93; 95% C.I. = 9.47 - 26.80; p-value =  $< 0.001$ ) significantly predicted receipt of a 2.0 foreign language course credits waiver. Results indicated that older students had increased odds (2.0 times) of receiving a 2.0 foreign language waiver. Hispanic-Latino students had 72.0 percent lower odds of receiving a 2.0 foreign language course credits waiver than White students. Students with disabilities had increased odds (16.0 times) of receiving a 2.0 foreign language course credits waiver than students without disabilities. The analyses of interactions between disability status and race-ethnicity were conducted; however results were not significant and are not reported.

Table 17

*Summary of Logistic Regression Analysis Predicting Receipt of a Foreign Language Waiver*

Predictor	<i>B</i>	<i>SE</i>	<i>OR</i>	95% CI	<i>p</i>
Constant	-14.46	3.03	0.00		0.000
Gender <sup>a</sup>	-0.20	0.27	0.82	[0.46, 1.37]	0.444
Age-Year <sup>b</sup>	0.57	0.16	1.77	[1.29, 2.42]	$< 0.001^*$
Race-Ethnicity <sup>c</sup>					
Hispanic/Latino	-1.25	0.54	0.29	[0.09, 0.83]	0.021**
Black/African American	0.09	0.32	1.09	[0.59, 2.04]	0.776
Asian/Multi-racial	-0.47	0.36	0.63	[0.312, 1.26]	0.192
Disabled <sup>d</sup>	2.77	0.26	15.93	[9.47, 26.80]	$< 0.001^*$

<sup>a</sup> Comparison group = female

<sup>b</sup> Age-Year = continuous

<sup>c</sup> Comparison group = White

<sup>d</sup> Comparison group = not disabled

\* $p < .001$

\*\* $p < .05$

**3.0 mathematics course credits waiver.** Table 18 details the results of a logistic regression analysis conducted for receipt of a 3.0 mathematics course credits waiver considering the four student personal characteristics (i.e., disability status, age, gender,

and race-ethnicity). Age (OR = 1.80; 95% C.I. = 1.22 - 2.68; p-value = < 0.003), Black/African American students as compared to White students (OR = 4.11; 95% CI = 1.87 - 9.03; p-value = < .001), Asian/Multi-racial students as compared to White Students (OR = 2.94; 95% 1.26 - 26.83; p-value <.05), and disability status (OR = 137.86; 95% C.I. = 57.02 - 333.30; p-value = < 0.001) each significantly predicted receipt of a 3.0 mathematics course credits waiver. Results indicated that older students had increased odds (2.0 times) of receiving a 3.0 mathematics course credit waiver. Black/African American students had increased odds (3.11 times) of receiving a 3.0 mathematics waiver than White students and Asian/Multi-racial students were 1.94 times more likely to receive a 3.0 mathematics waiver than White students. Students with disabilities had increased odds (136.8 times) of receiving a 3.0 math waiver than students without disabilities. This suggests that students with disabilities are almost 137 times more likely to receive a mathematics waiver than students without disabilities. Furthermore, these findings also suggest that Black/African American and Asian/Multi-racial students are almost 2 to 3 times more likely to receive a mathematics waiver than White students regardless of age or disability status. It is important to note that there is a potential limitation due to the sample size of students with disabilities and students for each race-ethnic group. The interaction between disability status and race-ethnicity was also conducted; however results were not significant and are not reported.

Table 18

*Summary of Logistic Regression Analysis Predicting Receipt of a Mathematics Waiver*

Predictor	<i>B</i>	<i>SE</i>	<i>OR</i>	95% CI	<i>p</i>
Constant	-17.86	3.84	0.00		0.000
Gender <sup>a</sup>	0.04	0.32	1.04	[0.56, 1.96]	0.898
Age-Year <sup>b</sup>	0.59	0.20	1.80	[1.22, 2.68]	0.003**
Race-Ethnicity <sup>c</sup>					0.004**
Hispanic/Latino	0.89	0.49	0.07	[0.94, 6.35]	0.066
Black /African American	1.41	0.40	4.11	[1.87, 9.03]	< 0.001*
Asian/Multi-racial	1.08	0.43	2.94	[1.26, 6.83]	0.012**
Disabled <sup>d</sup>	4.93	0.45	137.86	[57.02, 333.30]	< 0.001*

<sup>a</sup> Comparison group = female

<sup>b</sup> Age-Year = continuous

<sup>c</sup> Comparison group = White

<sup>d</sup> Comparison group = not disabled

\**p* < .001

\*\**p* < .05

**Other course credit waiver.** Table 19 presents data from a logistic regression analysis conducted for receipt of a waiver for other course credits considering the four student personal characteristics (i.e., disability status, age, gender, and race-ethnicity). A student's disability status significantly predicted receipt of a waiver for other course credits (OR = 17.99; 95% C.I. = 10.79 - 30.00; *p*-value = < 0.001). Students with disabilities had increased odds (16.9 times) of receiving an other course credit waiver as compared to students without disabilities. This suggests that students with disabilities are almost 17 times more likely to receive an other course credit waiver than students without disabilities. The predictors of gender, age, and race-ethnicity were not significant for receipt of an other course credit waiver. The interaction between disability status and race-ethnicity was also analyzed; however results were not significant and are not reported.

Table 19

*Summary of Logistic Regression Analysis Predicting Receipt of Other Course Credit**Waiver*

Predictor	<i>B</i>	<i>SE</i>	<i>OR</i>	95% CI	<i>p</i>
Constant	-4.81	0.75	0.01		0.000
Gender <sup>a</sup>	0.05	0.25	1.05	[0.64, 1.72]	0.856
Age-Year <sup>b</sup>	0.90	0.20	1.09	[0.73, 1.64]	0.662
Race-Ethnicity <sup>c</sup>					0.313
Hispanic/Latino	-0.47	0.43	0.63	[0.27, 1.46]	0.280
Black /African American	0.35	0.32	1.42	[0.76, 2.64]	0.275
Asian/Multi-racial	0.22	0.32	1.25	[0.67, 2.33]	0.486
Disabled <sup>d</sup>	2.90	0.26	17.99	[10.79, 30.00]	< 0.001*

Note. CI = confidence interval for odds ratio (OR)

<sup>a</sup> Comparison group = female

<sup>b</sup> Age-Year = continuous

<sup>c</sup> Comparison group = White

<sup>d</sup> Comparison group = not disabled

\**p* < .001

#### Research Question 4

Research question 4: What are the rationales for granting waivers to students with disabilities who graduated with a standard diploma in 2012, as documented on the PSS waiver request document? To answer research question 4, I reviewed each waiver packet to identify the common rationales documented on the waiver request document for the 79 students with disabilities who were granted a waiver. I then coded each rationale for receiving the waiver(s) following a five-level coding protocol originally detailed in Chapter 3. These protocols included

- **Waiver rationale 1:** Student's current or prior academic performance was poor.
- **Waiver rationale 2:** Impact of the student's specific disability type and assessed academic weakness identified by an assessment (e.g., Woodcock

Johnson Test of Achievement) administered as part of the special education eligibility process in a specific domain (i.e., mathematics, expressive language, language processing).

- ***Waiver rationale 3:*** Impact of the student's specific disability type and the frustration displayed by the student in an academic course (e.g., mathematics, or foreign language).
- ***Waiver rationale 4:*** The rationale for the waiver was unclear based upon the submitted documentation.
- ***Waiver rationale 5:*** Graduation requirements based on previous Local Education Agency and not the requirements of the PSS.

Of the 208 students with disabilities who graduated in 2012, 79 students with disabilities had a waiver packet submitted to the PSS Headquarters Office requesting a total of 136 waivers. The majority of waiver packets submitted included waiver requests for mathematics, foreign language, and other course credits (i.e., physical education, science). Of the 79 students with disabilities who obtained a waiver, 53 students (67%) received a waiver for one or more mathematics course credits, 40 students (51%) received a waiver for one or more foreign language course credits, and 38 students (48%) received a waiver for one or more other course credits. The majority of rationales for these waiver requests were based on the students' assessed academic weakness, poor prior performance, or display of frustration.

The review of each waiver packet submitted for students with disabilities identified inconsistencies in the statements made by the PSS IEP team for waiving one or more diploma requirements. These included when the waivers were granted (i.e., the time

of the school year when the IEP team met), the rationales included on the waiver request documents (e.g., student frustration, likelihood of the student not being successful due to the level of course rigor, or poor student performance), which staff members were in attendance (e.g., school counselor, special educator, general educator) and their relationship to the student (e.g., current or prior special or general educator) and there also appeared to be a lack of understanding of the PSS school system's criteria for when to waive requirements (e.g., waiving courses without documentation of curricular accommodations attempted, or without student's first participating in the course).

Overall, comments included on the waiver request documents appeared to suggest general lowered expectations for students with disabilities and what they were capable of accomplishing academically in light of their identified disability (e.g., student with a learning impairment could not be successful taking a foreign language course, or having a mathematics disability and not being able to successfully participate in an Algebra I course).

Table 20 presents a summary of the five rationales used to justify each waiver request packet. The most frequently used rationale was Rationale 2, "impact of the student's specific disability type and assessed academic weakness." A review of the comments provided on the waiver request packet noted the impact of the student's assessed academic weakness using standardized testing (e.g., Woodcock Johnson Test of Achievement) conducted during the special education eligibility process. Comments provided on waiver packets submitted for many students who received a mathematics waiver referenced the student's assessed deficit in mathematics (e.g., mathematical functions below the 10% on the Woodcock Johnson Test of Achievement), and the

challenges the student experienced in higher-level courses like Algebra I and II. Several student waiver request packets (n = 14) justified the mathematics waiver by noting the student's anticipated difficulty in a mathematics course, rather than his or her past performance. This rationale suggests that the PSS excluded students from taking some requisite courses due to their having a disability, instead of their poor performance or assessed academic weakness in mathematics.

Several mathematics waiver requests were submitted for students without assessed deficits in mathematics. For example, several waiver packets submitted (n = 22) were for students with assessed academic deficits in language processing or information processing, rather than an assessed deficit in the area of mathematics. In each instance, the waiver request document included language requesting the student to be excluded from taking a higher-level mathematics course (e.g., Algebra I, & Algebra II).

Comments provided for students who received a foreign language course waiver included, "the student previously twice failed a foreign language course," "student had been unsuccessful in a foreign language course even with excessive accommodations," or "assessed language and reading comprehensive difficulties would result in problems in a foreign language."

Comments for Rationale 1, "student's current or prior academic performance was poor", included statements supporting the students exclusion from participating in a foreign language course due to the students anticipated "frustration level"; or "emotional needs" (for a student with emotional disturbance). Additionally, one student's waiver packet for a cumulative GPA and mathematics course credit waiver indicated, "...his [the student's] past performance is a strong indicator that he will not mathematically be able



to raise his cumulative GPA to the required minimum level prior to the end of the school year.”

Table 21 displays the number of waiver packets submitted for students with disabilities by disability type and rationale (n = 79). Students identified as Learning Impairment- Specific Learning Disability received a waiver more frequently than other disability types because of their assessed academic weakness. Applicants consistently documented this rationale with an explanation of the student’s assessed area of academic weakness (i.e., mathematics, information processing, and language delay) and the negative impact this academic deficit would have on the student’s educational progress and ability to meet the minimum requirements for the standard diploma.

For Rationale 3, “impact of the student’s specific disability type and the frustration displayed by the student in an academic course,” one waiver packet was submitted for a student with an emotional disturbance, two packets were submitted for students other health impaired, specifically ADHD, and four were submitted for Learning Impairment- Specific Learning Disability. Comments referenced the student’s frustration level, performance, non-complaint classroom behavior, and one comment included, “...student seems to be getting more and more frustrated in class, [has] basically shut down.”

The rationales indicated on seven waiver packets were unclear or ambiguous. Three of the waiver packets were submitted for Rationale 5, “based upon the graduation requirements of the student’s previous Local Education Agency.”

Table 20

*Rationale for Granting Waiver to Students With Disabilities by Waiver Type*

Rationale	Waiver type					Total	
	2.0 GPA <sup>^</sup>	26.0 CC	3.0 Math CC	2.0 FL CC	Other CC		
1) Poor academic performance*	1	0	10	7	8	26	
2) Disability type/academic weakness	2	2	35	23	26	88	
3) Disability type/student frustration	0	0	4	5	0	9	
4) Unclear rationale	0	0	4	2	4	10	
5) GR of LEA not the PSS	8	0	0	3	0	3	
Total waivers	n	3	2	53	40	38	136
	%	2.2%	1.5%	38.9%	29.4%	28.0%	100%

*Note.* LEA = Local Education Agency; GR = graduation requirements; PSS = Participating School System

\*poor current or prior academic performance

<sup>^</sup> cumulative 2.0 GPA

Table 21

*Waiver Packets Submitted for Students With Disabilities by Disability Type and**Rationale*

Disability type	Rationale				
	1	2	3	4	5
Disability type	Poor academic performance*	Disability type/ academic weakness	Disability type/academic frustration	Unclear rationale	GR of LEA not the PSS
Autism	1	3	0	1	0
Deaf, blind, hearing, vision	0	0	0	0	0
Emotional disturbance	1	3	1	0	0
Other health impairment	3	6	2	1	0
Orthopedic impairment	0	1	0	0	0
Traumatic brain injury	0	0	0	0	0
Speech—Language impairment	0	0	0	0	0
LI—Specific learning disability	10	31	4	5	3
LI—Intellectual disability	0	3	0	0	0
<b>Total</b>	<b>15</b>	<b>47</b>	<b>7</b>	<b>7</b>	<b>3</b>

*Note.* LEA = Local Education Agency; GR = graduation requirements; PSS = Participating School System; LI = learning impairment

\*poor current or prior academic performance

### **Chapter Summary**

The results of this study revealed that students with disabilities were more likely to receive a waiver of the requirements for the standard diploma than students without disabilities. Of the characteristics investigated in this study, disability status, age, and race-ethnicity, were found to increase the likelihood of receiving a waiver for the

requirements necessary to receive a standard diploma. The data revealed no statistically significant relationship between gender and a student's receipt of a waiver, with the exception of students without disabilities and receiving a cumulative 2.0 GPA waiver. When examining the associations between receiving any waiver type, a 3.0 mathematics course credit waiver, a 2.0 foreign language course credits waiver, or a other course credit waiver, students with disabilities were more likely to receive these waivers than their non-disabled counterparts. The data revealed no association between having a disability and a student's receipt of either a cumulative 2.0 GPA waiver or a 26.0 course credits waiver.

There was an association between race-ethnicity and students receiving any type of waiver, a 3.0 mathematics course credit waiver, and an other course credit waiver. The data indicated that no association existed between race-ethnicity, disability status, and waiver types for the cumulative 2.0 GPA waiver, the 26.0 course credit waiver, or the 2.0 foreign language course credits waiver.

Further analysis using logistic regression identified that disability status, age, and race-ethnicity significantly increased the odds and likelihood of receiving a waiver for students with disabilities. Results indicated that having a disability increased the odds for receiving a waiver, regardless of a student's race-ethnicity. Characteristics that increased the odds of receiving a 2.0 foreign language course credit waiver included the student's disability status and age. Additionally, Hispanic/Latino students were less likely to receive a 2.0 foreign language course credit waiver compared to White students. Black/African American students and Asian/Multi-racial students were not more likely to receive a 2.0 foreign language course credit waiver than White students. Disability status,

age, and race-ethnicity, each increased the odds for Black/African American and receiving a 3.0 mathematics course credit waiver. Hispanic/Latino and Asian/Multi-racial students were not more likely to receive a 3.0 mathematics course credit waiver than White students. For receipt of the other course credit waiver, only disability status increased the odds of receiving this waiver type.

Analysis of the rationales used for granting a waiver to the 79 students with disabilities who graduated in 2012 from the PSS revealed that application reviewers consistently cited the impact of the student's specific disability type and assessed academic weakness as the reason for granting the waiver. Additionally, comments suggested that the PSS excluded many students with disabilities from participating in courses because of the anticipated frustration or anxiety the students might display in the classroom environment as a result of their disability.

In the next chapter I discuss the implications of these findings related to educational policy, practice, and future research regarding the characteristics of students with disabilities and their ability to meet the requirements for the standard diploma.

## Chapter V: Discussion

This study provided an opportunity to explore and identify the characteristics associated with the receipt of a waiver for the requirements necessary to earn the standard diploma among students with and without disabilities. These factors included: 1) disability status, 2) gender, 3) age, and 4) race-ethnicity. The sample for this study comprised students with and without disabilities who graduated with a standard diploma from the PSS in 2012. Student data used in this study consisted of individual characteristics (i.e., disability status, age, gender, and race-ethnicity) and educational characteristics (i.e., cumulative GPA and course credits earned).

I used chi-square analyses to examine the differences between students with and without disabilities and the factors associated with their receipt of a waiver (i.e., cumulative 2.0 GPA waiver, 26.0 course credits waiver, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, other course credit waiver). I followed the chi-square tests with logistic regression analyses to determine if certain variables (i.e., disability status, age, gender, and race-ethnicity) increased a student's odds of receiving any type of waiver or a specific type of waiver. Finally, I reviewed the rationales for granting waivers to students with disabilities documented on the waiver packets submitted to the PSS Headquarters Office.

This chapter presents a discussion of the study's findings. I begin the chapter with a discussion of the significant discoveries of this study, which included individual characteristics that increased the odds of receiving a waiver of the requirements for a standard diploma among a group of twelfth grade students with and without disabilities. Next, I discuss the implications of this study for educational policy and practice. I

conclude with a discussion of the limitations of this study and directions for future research.

### **Findings**

Overall, this study revealed several individual characteristics associated with a students' receipt of a waiver of the requirements for earning a standard diploma among students with and without disabilities. Chi-squares tests showed significant group differences between students overall regarding their receipt of a waiver based on disability status, race-ethnicity, and age; however, the test demonstrated that gender was only associated with the receipt of a cumulative 2.0 GPA waiver among students without disabilities. Logistic regression models indicated that disability status, race-ethnicity, and age, significantly increased the odds that students would receive any type of waiver, a 2.0 foreign language course credit waiver, a 3.0 mathematics course credit waiver, or a waiver for any other course credit. Results of the logistic regression models for receiving any type of waiver conducted for the interaction between disability status and race-ethnicity were also significant. The interaction between disability status and race-ethnicity were conducted for specific types of waivers; however results were not significant and are not reported.

Logistic regression analyses for waiver types cumulative 2.0 GPA and a 26.0 course credits waiver were not reported due to the small sample size of waiver packets submitted for students with disabilities.

**Characteristics of the student sample.** The majority of students with and without disabilities graduated from the PSS in 2012 and met the requirements for receipt of the standard diploma. Less than five percent of the 2012 graduating class received a

waiver of one or more of the minimum diploma requirements. Among students with disabilities, more students were identified as having a learning impairment-specific learning disability. The age of the students who graduated in 2012 ranged from 15-16 to 21 years, though the majority of students with disabilities fell into the 18 years age group. Overall, there were more White students with disabilities than other racial-ethnic groups, followed by Black/African American and Hispanic/Latino students. Although prior research found that students with disabilities earned fewer course credits and had a lower GPA than students without disabilities (Newman et al., 2011; Nord et al., 2011; Wagner et al., 2006), this study found the mean course credits earned was similar for both students with and without disabilities.

**Disability status.** A student's disability status was found to increase a student's odds of receiving any type of waiver and the specific waiver types, 3.0 mathematics course credits waiver, 2.0 foreign language course credits waiver, and an other course credit waiver. Students with disabilities were almost five times more likely to receive a waiver than students without disabilities.

**Individual characteristics.** In this block of characteristics, I included race-ethnicity, age, and gender. Overall, when combined with race-ethnicity, having a disability increased a student's odds of receiving any type of waiver regardless of their race-ethnicity. Asian/Multi-racial students with disabilities had the greatest odds of receiving a waiver, followed by Black/African American students with disabilities, Hispanic/Latino students with disabilities, and finally White students with disabilities. Although students with disabilities were more likely to receive a waiver than students without disabilities, regardless of race/ethnicity; non-White students with disabilities



were more likely to receive a waiver than White students with disabilities. However, for receipt of a 2.0 foreign language course credits waiver, Hispanic-Latino students with disabilities were less likely to receive this waiver type than were White students with disabilities. It is unclear if this is due to Hispanic-Latino students with disabilities receiving foreign language course credits based upon language fluency in their first language (e.g., Spanish). Results of this study also indicated that older students with and without disabilities had increased odds of receiving a waiver. However, student gender was not found to be associated with receiving any type of waiver for students with or without disabilities. The one exception was for students without disabilities; an association was found between gender and receiving a cumulative 2.0 GPA waiver. Results should be interpreted with caution due to the small sample size of the study.

**Educational characteristics.** A review of the rationales used by the PSS for granting waivers to students with disabilities proved quite informative. PSS representatives granted the majority of waiver requests based upon each student's (a) assessed academic weakness (as determined during the special education eligibility process), (b) poor prior performance, and/or (c) frustration displayed in the educational setting. These findings support existing research which identified the challenges encountered by students with disabilities as they sought to meet increased rigorous secondary requirements (Heubert, 2001; Kaufman, 1999). The results of this study were also consistent with previous studies which indicated that students with disabilities, more than their non-disabled peers, exit high school having completed a below-standard curriculum (Nord et al., 2011).

The PSS IEP team documented that by nature of the student's disability, the student would be unable to successfully complete some of the established requirements for receipt of the standard diploma (e.g., Algebra I). These findings suggest an alternate set of expectations is at play; one set for students without disabilities and another set for students with disabilities. Furthermore, as previously mentioned, students with disabilities had increased odds of receiving a 3.0 mathematics waiver than their non-disabled peers. This is an important finding considering the emphasis placed on mathematics and the need for student's to exit high school with an increased understanding of mathematics concepts. A review of the waiver request documents submitted for students with disabilities revealed that Algebra I and/or Geometry were the type of courses commonly waived. School special education teams, administrators, and regular educators should work to identify appropriate accommodations and/or modifications to increase student participation in such general education courses. These findings are consistent with the view established by Dorn (1996) that by nature of increasing the requirements of the standard diploma it will be more difficult for marginalized groups such as students with disabilities to successfully meet the raised bar of educational expectations for receipt of the standard diploma.

### **Implications for Policy and Practice**

The implications presented in this section are speculative because of the limitations presented in the following section. However, the findings of this study raise several important questions that educational leaders should include in their discourse about alternate diploma options and waiving minimum diploma requirements. One of the most compelling findings of this study revealed that students' disability status increased

the likelihood that they would receive a waiver, particularly for the 2.0 mathematics course credit and 3.0 foreign language course credits requirements. When combined with race-ethnicity, students with disabilities of any racial-ethnic group were more likely to receive a waiver than students without a disability. These findings are consistent with previous research, which concluded that students with disabilities found it difficult to meet the increased requirements for the standard diploma (Center on Education Policy, 2007; Hehir, 2006; Johnson, Stout, & Thurlow, 2007; Kaufmann, 1999; Lehr et al., 2005).

Although the PSS established a process for requesting and granting waivers, the PSS has never investigated the characteristics of students who received one or more waivers of the requirements for the diploma. The results of this study revealed the PSS IEP team awarded waivers without understanding the intent of the PSSs policy for offering diploma waivers. My review of the rationales noted on the waiver request documents identified inconsistencies in the statements made by school staff and found that the majority of students with disabilities were systematically excluded from participating in rigorous courses, particularly mathematics and foreign language. Comments documented on the waiver requests revealed that IEP teams excluded students solely on the basis of their disability status and the likelihood that they would be unsuccessful should they participate in such courses. The findings of this study are telling in that the IEP team awarded waivers to the requirements for the standard diploma for students with disabilities without requiring students to participate in rigorous courses (e.g., Algebra I, Geometry); courses which would have increased their content knowledge and increased their likelihood for post-secondary success.

In light of these findings, this study revealed that the PSS IEP team had overall lowered expectations for students with disabilities than the expectations of performance for students without disabilities. To improve the integrity of the waiver process and the consistent implementation of the PSSs policy for granting waivers, the PSS should develop specific criteria and a clear protocol to be followed at the school level when considering the waiving of diploma requirements. Training of both general and special education staff should occur to ensure consistent implementation of the PSSs waiver policy. Additionally, school administrators and district superintendents should also receive training to provide appropriate oversight. The absence of such guidance and training will leave room for local interpretation by school personnel and disproportionate granting of waivers for minimum diploma requirements. To also assist in greater accountability and consistent implementation, the PSS should reconsider the locus of control for granting waivers to the district superintendent's level, rather than the local PSS IEP team.

This study suggests that granting of waivers should be made judiciously, following a clear set of criteria, and only after students have been afforded the opportunity to participate in challenging rigorous courses. Solely excluding students from rigorous courses without first providing sufficient accommodations and targeted instructional supports is incongruent with the intent of IDEA, NCLB, and now the Common Core State Standards Initiative.

The findings of this study are timely in light of the Common Core State Standards Initiative that will raise expectations for the educational achievement of all students (to include students with disabilities) and increase their content knowledge in core academic

areas (i.e., mathematics, English language arts). Many SEAs plan on maintaining existing requirements for receipt of the standard diploma to include requisite exit exams, specific rigorous courses, or offer alternate options to the diploma (McIntosh, 2012). Since many of the states that have adopted the Common Core Standards also allow the IEP team to make decisions for students with disabilities regarding the completion of high school and earning the diploma (Johnson & Thurlow, 2003; Thurlow et al., 2010), the findings of this study should be reviewed carefully by SEAs as they evaluate their processes for reducing or waiving diploma requirements. As this first study of its kind to investigate the characteristics of students who received waivers, this study revealed that the decisions made by the IEP team are often incongruent with the intent of the educational standards movement to provide greater equity to all students, the IDEA, NCLB, and now with goal of the Common Core State Initiative.

That students with disabilities have increased odds of receiving a waiver of the requirements for the standard diploma than their non-disabled peers is telling in light of the language in the IDEA that ensures equal access to a free and appropriate education (20 U.S.C.A. § 1415(k)(I)(B); 34 C.F.R. § 300 et seq) for students with disabilities. This finding supports the opinion that providing alternate diploma options, or waivers for the requirements for the standard diploma, should be considered carefully in the context of the due process rights guaranteed by the IDEA (20 U.S.C.A. § 1415(k)(I)(B)).

School educators and administrators interested in identifying students who may be unable to successfully complete the requirements for the standard diploma can examine student records and evaluate the extent to which they are making progress and take particular note of students with disabilities and a student's race-ethnicity. Educators

and administrators can follow this review with the implementation of evidence-based educational interventions that increase student success (Christenson & Anderson, 2002). Clearly, better educational screening services and the use of effective response to intervention (RTI) strategies and programs and early intervention – at the elementary and middle school levels - should be considered to increase student’s content knowledge for later success in high school, with the hopes of completing minimum course requirements.

### **Limitations/Directions for Future Research**

While this study revealed many significant findings, readers should interpret its implications cautiously. Due to the small sample size of students with disabilities in this study, I did not investigate the association between a specific disability type and receiving a waiver. Future studies should include larger student samples and explore the impact of having a specific disability type (e.g., learning impairment-specific learning disability, emotional disturbance, etc.) on a student’s ability to obtain a waiver(s) of requirements for the standard diploma. Furthermore, since I found that race-ethnicity and age both served as significant predictors of receiving a waiver, future studies should consider investigating the effect of multiple factors, and the interactions between these multiple factors (i.e., disability type and race-ethnicity; disability type and age) on a student’s likelihood of receiving a waiver.

Additionally, while I found a significant association between certain individual student factors—age, race-ethnicity, and disability status—and students’ receipt of a waiver, I did not investigate the impact of the students’ educational services or programs. Future research in this area would help SEAs and LEAs to develop appropriate educational services for students with disabilities.

I did not investigate the impact of socio economic status on a student's likelihood of receiving a waiver. Future research should look at the relationship between a student's socio economic status and multiple factors (i.e., disability status, age, and race-ethnicity) and how this may impact their receiving a waiver.

### **Chapter Summary**

The purpose of this study was to identify the characteristics associated with waving the requirements for receiving the standard diploma. Overall, the findings extend the existing research documenting the challenges faced by students with disabilities in meeting the increased requirements for receipt of the standard diploma. Importantly, this study found several characteristics associated with students receiving a waiver to include disability status, race-ethnicity, and age. This study suggests the granting of waivers should be made judiciously, following a clear set of criteria, and only after students have been afforded the opportunity to participate in challenging rigorous courses. Although this study was limited due to the sample size the findings remain timely for the considered of U.S. SEAs and LEAs as they continue to review the types of diplomas options offered. Future research should include larger student sample sizes and also investigate the impact of specific disability types and possible association with receiving a waiver.

Examining the complex interactions between a student's disability status, age, and the type of educational supports received is needed to gain a better understanding of why students with disabilities are unable to meet the requirements for the standard diploma. Particularly with the advent of the Common Core State Standards Initiative, as states

continue to experiment with alternatives to the standard diploma, SEAs and LEAs must clearly understand the student characteristics associated with receiving a waiver.

It would also be beneficial to hear from students with disabilities themselves. Qualitative research to include interviews, surveys, and classroom observations can provide additional information regarding students' experiences in high school and the challenges encountered in the completion of requirements for the standard diploma. I end this study hoping that, at the very least, this study has raised important questions and provided additional pathways for further investigation.



## Appendices

## Appendix A

*Articles Included in the Critical Review of Research Studies: Graduation Requirements and Diploma Options for Students with and without Disabilities*

Study	Description of Purpose
Bouck & Washburn-Moses, 2010	To examine the implementation of an alternate route to the standard diploma in one state. Also to examine the consistency of implementation of the states exit exam waiver procedure for students with and without disabilities.
Center on Education Policy, 2008	To identify current states trends in requiring exit exams as part of the minimum criteria to earn the standard diploma. Reports on an increase in the number of end-of-course exams and a decrease in the number of year-end exit exams.
Gaumer Erickson, Kleinhammer-Tramill, & Thurlow, 2007	To analyze the relationship between high school exit exams and diploma options for students with disabilities. Also, to investigate if exit certificates are awarded to students with disabilities than students without disabilities, and characteristics of students who receive nontraditional exit certificates. Recommendations for graduation polices are offered.
Guy, Shin, Lee, & Thurlow, 1999	To identify the graduation requirements and diploma options for students with and without disabilities. Also to provide policy makers with graduation database to track changes over time as policy changes are implemented. Recommendations for graduation polices are offered.
Johnson & Thurlow, 2003	To examine results of national study on state graduation and diploma options for student with and without disabilities. Also to identify the varieties and differences of polices across the U.S., intended and unintended consequences of required exit exams and multiple diploma options.

Recommendations for graduation polices are offered

- Johnson, Stout, & Thurlow, 2009 To replicate a 2002 survey of state graduation policies and diploma options for students with and without disabilities. Also, policies were examined regarding intended and unintended consequences of multiple diploma options. Recommendations for graduation polices are offered.
- Johnson, Thurlow, & Stout, 2007 To update the status of graduation policies, minimum requirements, and diploma options for 2007 students with and without disabilities. Also to identify the varieties and differences of polices across the U.S., intended and unintended consequences of required exit exams and multiple diploma options. Recommendations for graduation polices are offered.
- Johnson, Thurlow, Stout, & Mavis, 2007 To describe the range of graduation requirements, testing practices, and alternate diploma options for students with and without disabilities. Also, what is the procedure for students with disabilities who fail the exit exam.
- Krentz, Thurlow, Shyyan, & Scott, 2005 To identify the alternate diploma options to include required exit exams and if waivers are available to students who do not pass the tests. Also, what are the criteria for students to access the alternate routes.
- Thurlow, Cormier, & Vang, 2009 To investigate the alternate routes available that states with exit exams provide for students with and without disabilities.
- Thurlow, Vang, & Cormier, 2010 To examine current alternate routes to the standard diploma for students with and without disabilities. Recommendations for graduation polices are offered.
- Thurlow, Ysseldyke, & To identify state graduation requirements and policies are applied to students with

- Anderson, 1995 disabilities. Also, the extent to which students with disabilities receive the standard diploma or an alternate certificate.
- Thurlow, Ysseldyke, & Reid, 1997 To investigate the status of alternate diploma options and how state policies are applied to students with disabilities. Also, what are the types of exit documents available to students with disabilities and are they required to participate in the state exit exam.
- Vernon, Baytops, McMahon, Padden, et al., 2003 To identify the types of diploma options available to students with and without disabilities. Also, the types of options that are only available to students with disabilities.
- Zhang, 2009 To identify long term trends of state graduation policies and student performance. Also, the study looks at long-term changes in the exams offered over an eight-year period to include trends in alternate paths to the standard diploma, and the pass rates of state exit exams.

## Appendix B

*Articles Included in the Critical Review of Research Studies: Secondary School Experiences and Characteristics of Students with and without Disabilities*

Study	Description of Purpose
Planty & Provasnik, 2007	To examine data from high school transcripts studies that were conducted between 1982 to 2005, to identify what states require for coursework and Carnegie credits necessary to graduate with the standard diploma. Also, the study looks at student participation in advanced courses to include science, mathematics, and foreign language.
Wagner, Newman, & Cameto, 2004	To compare the results of the National Longitudinal Transition Study and the National Longitudinal Transition Study-2, and identify the characteristics of students with disabilities, their school programs, participation, and attendance.
Wagner, Newman, D'Amico, Jay, et al., 1991	To detail finding from the National Longitudinal Transition Study of students with disabilities who transitioned from high school to early adulthood. The study examined experiences of students in the areas of education, personal independence, and employment.
Wagner, Newman, Cameto, Levine, et al., 2003	To identify the results of the National Longitudinal Transition Study-2 regarding secondary students with disabilities, their individual characteristics, schools attended, types of school programs, classroom services, instruction in the general education classroom, and vocational courses/services.

## Appendix C

*Articles Included in the Critical Review of Research Studies: Academic Performance of Students with and without Disabilities*

Study	Description of Purpose
Newman, Wagner, Huang, Shaver, et al., 2011	To examine the results of the National Longitudinal Transition Study-2 regarding the educational performance of secondary students with disabilities to include credits earned, and performance (GPA).
Nord, et al., 1991	To identify the results of the National High School Transition Study and the National Assessment of Educational Progress for students with and without disabilities. Results include data on course credits earned, comparison by gender, race/ethnicity, and academic performance (GPA).
Shaver, Newman, Huang, Yu, et al., 2011	To examine the results of the National Longitudinal Transition Study-2 regarding the educational performance of secondary students with hearing impairments to include courses taken, credits earned, comparison with other disability categories, and academic performance (GPA).
Wagner, Marder, Blackorby, Cameto, et al., 2003	To examine the results of the National Longitudinal Transition Study-2 regarding the educational performance of secondary students with disabilities regarding their level of school engagement, academic performance, social adjustment, and level of independence.
Wagner, Newman, Cameto, & Levine, 2006	To examine the results of the National Longitudinal Transition Study-2 regarding the educational performance of secondary students with disabilities, specifically academic achievement and functional skills.
Wagner, Newman, Cameto,	To examine the result of the National Longitudinal Transition Study-2, Wave 1 and Wave 2 data,

- Levine, et al., 2006 specifically regarding academic achievement, factors related to academic achievement, functional skills the educational performance of secondary students with disabilities, and post-secondary outcomes.
- Yu, Newman, & Wagner, 2009 To examine the results of the National Longitudinal Transition Study-2 regarding the educational performance of secondary students with mental retardation to include courses taken, credits earned, comparison with other disability categories, and academic performance (GPA).

## Appendix D

## Letter to participant assisting with inter-rater reliability

Dear Ms. M., Participating School System Instructional Systems Specialist,

I appreciate your willingness to assist in establishing inter-rater reliability for my doctoral dissertation. You are being given a random sample of approximately 27 (20%) waiver requests submitted to the Participating School System, and 27 blank data collection sheets - one for each waiver request. Please complete each data collection sheet and return all documents to me (all waiver request documents (27) and corresponding coding sheets (27) in the enclosed envelope within 2 business days. Directions are written in italics on each data collection sheet.

Sincerely,

David Jay Cantrell

## Appendix E

## Inter-rater Reliability Instructions and Data Collection Sheet

Directions: You will be reviewing 27 waiver request documents. This sheet will serve as the data collection sheet to record your identification of the waiver rationale documented on each of the 27 waiver requests. Please ensure that your response below corresponds to the waiver request document number, listed in section 1.

Section 1: Waiver Request Document Number: \_\_\_\_ (Write the number of the waiver request document to be reviewed on this data collection sheet)

Section 2: Identification of the rationale documented on the waiver request document:

1) Using the waiver request document that corresponds to the number written above, read the rationale provided on the waiver request document - located in the box in the middle of the page labeled - "Give a brief explanation for each category checked above."

2) After reading the rationale, use the following coding system to identify the reason for granting the waiver. Circle one of the waiver rationales below (1, 2, 3, 4, or 5) that best correlates with the rationale written on the waiver request document.

- Waiver rationale 1: The student's current or prior academic performance was poor.
- Waiver rationale 2: The impact of the student's specific disability type and assessed academic weakness (i.e., mathematics, expressive language).



- Waiver rationale 3: The impact of the student's specific disability type and the frustration displayed by the student in an academic course (i.e., mathematics, or foreign language).
- Waiver rationale 4: Unclear rationale.
- Waiver rationale 5: Graduation requirements based on previous Local Education Agency and not the requirements of the PSS

3) After circling the waiver rationale above, proceed to the next waiver request, and complete a new data sheet until all 27 waiver requests have been reviewed and coded.

After reviewing and rating each of the waiver requests, return all waiver request documents (27) and corresponding coding sheets (27) in the enclosed envelope to the Researcher.

Sincerely,

David Jay Cantrell

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