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POSTSECONDARY PARTICIPATION AND COLLEGE CHOICE FOR STUDENTS WITH DISABILITIES: DOES HIGH SCHOOL MATTER?

Dana J. Kermanian

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Submitted by

DANA J. KERMANIAN

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Dedication

This dissertation is dedicated in loving memory of my grandparents, J.S. and Martha Lou Roberts and to my mother, Delana Earl. Although you have passed on from this world, from my earliest memories, you planted a dream in my heart of a better life and channeled an insatiable curiosity of mind into a pursuit of lifelong learning. Those seeds you planted have grown into a robust harvest of a love for learning and a passion for investing in people. This accomplishment would not have been possible without your generous outpouring of encouragement, love, and wisdom. I am eternally grateful to God for blessing me with three of the loveliest people I have ever known. Until we meet again, I will continue to carry your legacy forward to future generations.

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Abstract

Students with disabilities (SWDs) face unique challenges when it comes to the transition from high school to college. There is a lack of research regarding the effectiveness of college preparation for SWDs during their high school years. This quantitative dissertation explored the role of high school-built academic and social capital and other high school specific factors in increasing the likelihood of postsecondary participation and choice of a 4-year college. Bourdieu's (1986) sociological theory of forms of capital provided the theoretical framework for the study. The study employed the *High School Longitudinal Study of 2009* (HSLS:09; National Center for Education Statistics, n. d.) that provided a nationally representative sample of high school SWDs their post-high school choices by using descriptive and multivariate statistics. Results indicated that SWDs who gained academic capital did so by participating in advanced high school curriculum. In addition, the SWDs who acquired social capital did so through interaction with high school counselors regarding college planning. Students who acquired academic capital through academic programs and social capital through meeting with high school counselors for college planning were most likely to pursue postsecondary education by the age of 22 and choose a 4-year over a 2-year college as their first postsecondary institution. From a policy perspective, the study concludes that high school programs and support matter with respect to post-high school pathways chosen by SWDs.

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CHAPTER 1

INTRODUCTION

A college degree has become more important than ever for high school graduates to experience economic mobility as they transition into adulthood (Kena et al., 2015; U.S. Department of Education [USED], 2015). In fact, Carnevale et al. (2018) asserted that over 50% of the best paying jobs require a bachelor's degree and or specific skill training to address the current upskilling that has occurred within the labor market. Therefore, high school students need more guidance to make post-high school decisions, especially when it comes to participating in postsecondary education. Simultaneously, there has been an increased focus on college and career readiness as the primary mission for secondary schools (Falco & Steen 2018; Mishkind, 2014).

Researchers have demonstrated that student opportunities or lack thereof to build social and academic capital are linked to students' postsecondary participation (Bryan et al., 2017). In order to increase postsecondary participation, high schools have become more involved in helping students prepare for college admissions testing and exposing them to college prep courses (Warne et al., 2015). Along with that, high school administrators and faculty have recognized the need to adapt curriculum and initiate programs to assist all students with planning and transitioning from high school to college (Hutchins et al., 2019). For example, one way that has been sought by high school personnel has been to implement higher education planning by connecting students with institutions of higher education during their secondary studies (Zinth & Barnett, 2018). Dual credit (DC) is an opportunity to take college courses while in high school that counts as a credit for both institutions, high school, and college (J. L. Taylor, 2015). DC programs also help students enrich their academic capital through rigorous educational

experiences (Coffey, 2016). Furthermore, DC provides students with more exposure to collegiate vernacular, experiences, personnel, and faculty and thus growing their social capital (Carey, 2016). In high school, students can also complete academically rigorous curriculum by enrolling in Advanced Placement (AP) and International Baccalaureate (IB) programs (Thomas et al., 2013). These programs contribute to building and enriching student academic capital needed for postsecondary education (Kettler & Hurst, 2017).

Second, students from disadvantaged backgrounds may choose to participate in Upward Bound (UB), Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP), and other programs designed to support students to complete secondary education and encourage the pursuit of higher education (Sanchez et al., 2018). These are known as college access programs or social programs. Such programs are open to students who are not familiar with what is needed to prepare for college to help them learn about college and careers, develop social networks, and contribute to building their social capital (Glennie et al., 2015). Unfortunately, not all high school students are afforded the same opportunities to prepare them for postsecondary entry and success.

To equalize access to educational opportunities and create a pathway toward rewarding careers, high schools need to support all students. Building academic and social capital is a way to help them become college- and career-ready (Holland, 2015). Therefore, the role of the high school personnel, such as counselors has become more important in college planning (Robinson & Roksa, 2016). Moreover, Bryan et al. (2017) found that a college-going culture among high schoolers was linked to students' perception that high school personnel expected them to attend college. Those perceived expectations increased students' planning and participation in higher

education. In fact, high school personnel are cited as one of the strongest influencing factors for students pursuing higher education (Robinson & Roksa, 2016). The researchers found that school personnel involvement mitigated the negative impact of some sociodemographic factors and student personal characteristics such as disability (Holland, 2015).

However, when schools fall short, the role of parents becomes more necessary in shaping their students' futures. Parents play a significant role in supporting their children during the school years and guiding them to make post-high school choices (Ross, 2016). As a result, students from affluent families (Organisation for Economic Cooperation and Development, 2018) or who have educated parents (Redford & Hoyer, 2017) are most likely to possess the cultural and social capital that help them navigate the educational system. Meanwhile, first-generation students (Redford & Hoyer, 2017) or racial/ethnic groups who traditionally are underrepresented in higher education experience barriers in understanding the system or lack confidence in pursuing postsecondary education (Phillips et al., 2020). Certain student populations, such as students with disabilities (SWDs), also may be hesitant to pursue higher education. Many SWDs do not know if postsecondary institutions are prepared to accommodate their needs (Novakovic & Ross, 2015). For SWDs, the challenges they face make support from parents and high schools critical in helping with post-high school decisions (Connor, 2012).

Despite all the changes that have been made to improve transition and planning, as many as one-third of students who graduate with a high school diploma do not immediately attend college as reported by the U.S. Bureau of Labor and Statistics (2016). When looking at gaps for students from disadvantaged backgrounds including race, economic status, and first-generation students, the disparities are evident (Bryan et al., 2017). The research of Kena et al. (2015) found that students of the lowest socioeconomic status (SES) graduated college at a 14% rate, while

students of the highest SES graduated at a 60% rate. According to Fry (2021), only 26% of first-generation students complete a bachelor's degree, but for students with parents that have earned a bachelor's, the student attainment rate is 70%. Moreover, for SWDs, almost two-thirds will never participate in postsecondary education, and of the ones who do, only about one-third complete their degree (National Center for Education Statistic [NCES], 2019).

In recent years, SWDs have become an increasingly researched youth population due to their underrepresentation in higher education (Abreu et al., 2016; Couzens et al., 2015). This population identified in the public-school system (K-12), are required by law to have an Individualized Education Plan (IEP), and access to a team of professionals to assist them with their educational planning (IDEA, 2004). Part of the process allows for collegiate planning for the students who express interest in attending college as early as middle school through transition planning (IDEA, 2004). In addition, SWDs benefit from access to other high school counseling services and programs (Test et al., 2015). Nevertheless, researchers have found that this student population continues to experience barriers transitioning to higher education and could benefit from more intentional planning resources during high school.

Statement of the Problem

Participation in and completion of postsecondary education, enhance American youths' chances to experience economic and social mobility (Kena et al., 2015). There is however evidence of unequal access to educational and career opportunities for certain groups of students such as minorities, low-income students, first-generation students, immigrants, and SWDs (Cahalan & Perna, 2015). Parents and families cannot always guide young people to make post-high school decisions, which creates a disadvantage in accumulating the academic and social capital needed to succeed in college (Covarrubias et al., 2019). More than ever, secondary

education experiences are expected to be an important factor in equalizing access to educational resources to close opportunity gaps among students (Bloome et al., 2018). For students who are showing up to colleges and universities, many are unprepared for the rigor of collegiate-level work (Scott-Clayton, 2018). A lack of preparation for college is especially true for SWDs (NCES, 2019). They represent a specific population for which high schools are expected by law under the Individuals with Disabilities Education Act (IDEA; 2004) to provide professional guidance and support to facilitate the transition into postsecondary education and/or the workforce. However, the number of obstacles SWDs report facing can be daunting without the proper support (Vaccaro et al., 2015). SWDs continue to be less represented and achieve lower success rates in postsecondary education when compared to the entire student population (NCES, 2019). The same is true for the workforce, as reported by the U.S. Bureau of Labor and Statistics (2023), where two-thirds of individuals without disabilities compared to only one-fifth of individuals with disabilities are employed. Meanwhile, those who obtained postsecondary education, were most likely to be employed. Few studies examine differences in postsecondary access and choice within the SWDs group in relation to their high school capital and the support received from high school personnel (Test et al., 2015).

Purpose of the Study

The purpose of this quantitative study was to examine the post-high school pathways of a nationally representative sample of SWDs and to identify factors that contribute to their participation in postsecondary education and college choice. For this study "individuals with disabilities are defined as persons with a physical or mental impairment which substantially limits one or more major life activities. Major life activities include caring for one's self, walking, seeing, hearing, speaking, breathing, working, performing manual tasks, and learning"

(Section 504, 1973, para. 18). The researcher argued that high school experiences (i.e., participation in academically rigorous programs, college outreach programs, disability barriers, counselor and IEP support) have an impact not only on student college readiness as indicated by the type of capital obtained during high school (e.g., academic, social) but also on students' post-high school choices. While structural factors (e.g., sociodemographic characteristics) are expected to affect students' pathways, the study particularly focused on the contribution high school factors (i.e., college readiness and experiences) have on the college access for the SWDs group.

Research Questions

1. What are the profiles of students with disabilities with respect to sociodemographic characteristics (i.e., gender, race, SES, parental education), high school capital (academic and social), high school experiences such as achievement (i.e., GPA) and support (i.e., counselor advice, IEP), and participation in postsecondary education (i.e., enrollment, choice) by age 22?
2. What is the relative contribution of high school capital profiles to postsecondary participation by age 22, when controlling for sociodemographic characteristics (i.e., gender, race, SES, parental education) and high school experiences (i.e., achievement, academic support, IEP program)?
3. For SWDs who enroll in either 4-year public/private or 2-year public institutions by age 22, what is the relative contribution of high school capital profiles to college choice, when controlling for sociodemographic characteristics (i.e., gender, race, SES, parental education) and high school experiences (i.e., achievement, academic support, IEP program)?

Method

This quantitative study employed data from the HSLS:09 (NCES, n.d.). The nationally representative HSLS:09 sample included over 20,000 ninth graders from nearly 1,000 schools across the United States in 2009. These students were followed throughout secondary and postsecondary education from ages of 15 to 22 through follow-up surveys administered two times in 2012 and 2016. Furthermore, additional information about the students was provided from surveys from parents, math and science teachers, school administrators, and school counselors.

For this study, the research sample was selected based on information of some type of student disability self-reported by high school students or parents, or students' self-reporting they had an individualized education plan (IEP) in ninth grade. The researcher utilized secondary analysis of data to reveal the relationships between students' high school academic and social capital acquired through participation in high school programs, and their postsecondary participation and college choice, when controlling for sociodemographic factors and high school experiences. The research design included descriptive statistics and multivariate analyses.

Theoretical Framework

The study was guided by Bourdieu's (1986) sociological theory of forms of capital. The researcher considered Bourdieu's notions of academic capital and social capital acquired during secondary education, and the notion of cultural capital related to parental education (Bourdieu, 1986, 1988). According to Bourdieu (1977), networks within society such as family, educational institutions, and workplace provide access to required resources present in fields of practice, needed for one's acquisition of capital. Bourdieu emphasized that a person's decisions are largely based on their available capital. Another crucial element of Bourdieu's theory is habitus,

which is two-fold. First, one's habitus is shaped by the person's current beliefs and dispositions, and second, habitus is responsible for one's motivations and further actions. Together, these will be reflected in someone's predictable decision-making. Utilizing the lens of Bourdieu's (1986) framework for this research study may provide a deeper understanding of how SWDs acquire high school capital, how forms of capital are related to other student characteristics, and how all these elements affect post-high school choices of SWDs.

Researcher's Standpoint

Working as a full-time faculty member of a community college for well over a decade, has afforded the researcher a wide array of experiences with a diverse population of students. Every student learns differently, and it is a passion of this research to develop a range of tools that help me support students increase their academic and social engagement. Furthermore, the researcher has worked with adult learners as well as high school students, delivering instruction in both the postsecondary and secondary learning environments. While working in both realms, it came to her notice that SWDs are accommodated differently in high school versus college. For example, students in high school are allowed a least restrictive environment meaning that they can learn with a resource teacher in a different classroom, or they can be mainstreamed and learn with all the rest of the students depending on the subject matter (IDEA, 2004). While in the general classroom, a resource teacher may be available to provide learning support. However, in higher education students are all required to be in the same classroom and students do not have access to resource teachers. In fact, according to the Americans with Disabilities (ADA) of 1990, which is the governing law for college students and only guarantees that SWDs have access to educational entities.

In addition, students that require testing for disabilities are provided that resource in K-12 institutions (IDEA, 2004), but in higher education they must pay for any type of diagnostics (ADA, 1990). IDEA (2004) guidelines are exclusively for high school students. Once a student graduates or ages out of high school, they are no longer covered by IDEA (2004), but fall under ADA (1990) and Section 504 of the Rehabilitation Act (1973). The differences in accommodations, services, and support for SWDs are pronounced and made the researcher interested in understanding how students felt the impact of the different accommodations and support both formally and informally received when they transition from high school to college.

A few semesters later in an accelerated summer course, a specific experience with a visually impaired student really piqued the researcher's interest. Sara (pseudonym), a recent high school graduate arrived to class promptly, chose her seat, and began writing notes as she listened to what was being read off from the syllabus. After class, she politely notified the researcher of her specific accommodations for the course and informed her that she was legally blind. The next day of class, the researcher provided her with large print notes. She thanked her profusely and said her other professor told her she could not do that. The researcher was baffled, and explained to the student it was her right to receive accommodations, and the problem sorted out the issue with the Disability Services coordinator.

Aside from receiving instructional support later than day one, the student faced other obstacles on campus. At that time, the Math lab was the only location on campus that used the enlarging software the student needed to read her textbooks. However, she was told she could not use the Math lab unless she was working on Math assignments. Then, due to campus construction, the handicap parking she had been using was roped off the rest of the semester. The student kept iterating how much harder college is to navigate than high school, but as more

challenges arose so did the student's perseverance. This experience made the researcher wonder what happens to other SWDs who are not as determined when entering a college campus unprepared to respond to their needs.

Other situations the researcher witnessed on campus have drawn her attention as well. She began noticing students doing things in class that made her think they might have some type of learning challenges. Occasionally, a student would tell her they had attention deficit hyperactivity disorder (ADHD) or they were Dyslexic, but they chose not to formally disclose it. Some of the students would explain they did not want to be stigmatized or treated differently by having to tell each professor they required accommodation. Others said they did not know there were services in college, because in high school it was all provided for them once being identified with a disability. Then the researcher began delving into research about the SWDs population. The same patterns emerged with these students struggling to maintain the continuation of services from secondary to postsecondary institutions.

Improving equity and closing achievement gaps for students that are not from the most advantaged backgrounds is a mission of educational institutions but is not always supported by programs and initiatives that create an effective learning environment for all students. As the researcher learned more about the SWDs population, she began advocating and influencing the policy and procedures at her institution to make the disclosure process as simple as possible for SWDs. In the same vein, this research study is a continuation of her work aimed at improving student transition and success for this group. Although research on student transition to college is vast and covers many areas, the focus is more on academic, social, and cultural aspects. However, transition to postsecondary education is more complex for SWDs who must overcome

barriers related to their own conditions along with those found in transitioning from high school to college.

Relevance and Significance of the Study

This research study is important because it contributes to understanding SWDs' transition to postsecondary education. If education is truly for all students, then SWDs deserve the same opportunities afforded to them as their counterparts. Federal laws have been put in place to ensure education and workforce entities provide the support necessary to increase participation and to ensure equality and equity (ADA, 1990; IDEA, 2004; Section 504, 1973).

Therefore, it is important to identify what impact high schools are making to support SWDs acquire the academic and social capital needed to pursue higher education. This research draws attention to differences in outcomes among the SDW population based on their acquisition of high school capital, so it can help educators elucidate the academic and social needs students have and consider interventions and services that would improve outcomes. A strong relationship between building capital and participation in postsecondary education may send a positive message on improving high school support in these areas for SWDs.

Although the study did not examine the effect of student services at higher education institutions, it may also raise awareness of the need to continue offering specific support for SWDs. Federal laws are in place to ensure high school students have access to an IEP to help them navigate the academic rigors of high school (IDEA, 2004). In addition, an IEP team is monitoring students' progress throughout high school. Postsecondary educational institutions are not required by law to provide the same types of support, because students are no longer covered under IDEA (2004). Study findings may suggest whether this service gap needs to be eliminated.

In addition, this study brings much needed attention to the SWDs population by focusing on differences in post-high school pathways within this student population. With that in mind, it may create opportunities to engage stakeholders to continuous improvement and further defining what roles secondary and postsecondary institutions should play in impacting student success for SWDs.

Definitions of Terms

Americans With Disabilities Act (ADA) of 1990. This civil rights legislation was passed by President George H. W. Bush to prevent discrimination for individuals based on disability status (ADA, 1990). It also ensures that this population has the same access to government programs, services, and employment.

Academic programs. Programs such as Advanced Placement (AP), International Baccalaureate (IB), and dual credit (DC), or taking any other college credits while in high school allow for students to earn college credits in high school. Early collegiate participation allows for students to gain access to the level of work expected in postsecondary education, and faculty teaching at a higher level than high school. AP allows students to take college-level courses and the AP Exams, which upon earning a qualifying score allows high school students to earn college credit (Warne, 2017). IB characterizes itself as "an academically challenging and balanced programme of education with final examinations that prepares students, aged 16 to 19, for success at university and life beyond" (IB Americas, 2013). Similarly, DC allows students the opportunity to take courses administered by 4-year or 2-year colleges for students while they are in high school (Troutman et al., 2018). Each of these programs allow students to build academic capital, because they are getting collegiate-level experiences while still in high school.

Social programs. Programs that support students with educational disadvantages are social programs or college access programs. For instance, the Federal TRIO Programs (TRIO) consist of outreach and student services programs for individuals from disadvantaged backgrounds (USED, 2022). Some programs under the TRIO umbrella, such as Talent Search (TS) and Upward Bound (UB), are specifically for first-generation and low-income students brought about by the Civil Rights Movement. GEAR-UP is for high school students of low socio-economic status. Advancement Via Individual Determination (AVID; 2021) is a program for students wanting college preparation from underrepresented backgrounds. Finally, Mathematics, Engineering, Science Achievement (MESA) is specifically geared toward preparing students who are not typically represented in STEM to give them opportunities that will promote interest and experiences with careers in STEM (Greenberg Motamedi & Singh, 2016).

Forms of capital. According to Bourdieu (1986), capital is the set of resources needed to be successful in a certain field or environment. Some people have the necessary capital, while others need to accrue more. For the purpose of this study, I considered the academic, cultural, and social forms of capital. Academic capital relates to the resources acquired by students through academically enriching experiences (Bourdieu, 1986). Cultural capital is acquired within family and can exist in three states: the embodied state, in the form of long-lasting dispositions; the objectified state, in the form of cultural goods (pictures, book, machines, etc.); the institutionalized state (e.g., educational qualifications). The embodied cultural capital is manifested as habitus that describes habits, skills, and dispositions acquired through our life experiences. Finally, social capital is gained through social influences and networks, and provide the individual with access to resources.

Individuals With Disabilities Education Act (IDEA). IDEA (2004) guarantees a free and appropriate education. This law covers students in K-12 up to the age of 21. Part of this law also created the IEP to help support children with disabilities throughout their K-12 educational experience.

Section 504 of the Rehabilitation Act. Section 504 of the Rehabilitation Act of 1973 guarantees equal opportunity for individuals with disabilities. It also prevents organizations and employers from preventing the participation of individuals with disabilities. This law covers students in K-12 and in higher education

Students with disabilities (SWDs). This term refers to any student with an emotional, intellectual, or physical disability that impairs their ability to learn (IDEA, 2004). SWDs are students reported to be on an IEP, or identified by students self-reporting, parents reporting, or school reporting of students who have at least one learning, mental, physical or other disability.

CHAPTER 2

LITERATURE REVIEW

The primary focus of this study is to explore whether high school academic and social capitals effect postsecondary participation and college choice for SWDs. Chapter 2 provides an overview of the existing literature related to policies and practices implemented by K-12 administrators and educators to prepare high school students for college. In addition, and specifically related to this study, special education policies, IEPs, and strategies to increase college preparation for the SWDs population will be reviewed. Along with SWDs-specific metrics, this chapter will examine the general context of secondary education dominated by the movements supporting college and career readiness, the development of college preparatory programs and college outreach programs, and the overall college-going culture focused on building academic and social capital. The chapter will also examine literature on the influence and support from counselors, parents, and the IEP team on SWDs in relation to postsecondary participation. Furthermore, the theoretical framework of Bourdieu's (1986) forms of capital is proposed to guide the study and provide greater understanding of how SWDs gain academic and social capital in high school that contributes to their postsecondary participation.

Educational Policy for Students With Disabilities

Understanding federal law and policy regarding how SWDs are served both in K-12 and in higher education is important for scholars, policymakers, and key stakeholders. There are notable differences between how SWDs are served in high school and in higher education institutions that may affect student transitions to college. In K-12, the federal legislation that covers SWDs are IDEA (2004) and Section 504 of the Rehabilitation Act (1973). Additionally, the onus falls on the school district for providing everything students need to be successful.

Students may have a Section 504 (1973) plan with the school if they need informal accommodations such as wheelchair access to a classroom. When students transition to higher education, they are no longer covered by IDEA (2004) and instead are covered by ADA (1990) and Section 504 of the Rehabilitation Act (1973). This shift in federal guidelines changes the responsibility from the education entity to the student when it comes to seeking academic support and accommodations.

Individuals With Disabilities Education Act (IDEA)

IDEA (2004) is a law that was passed to support children with disabilities in the K-12 system. It contains the following six pillars: The Individualized Education Plan (IEP), free appropriate public education (FAPE), least restrictive environment (LRE), appropriate evaluation, parent and teacher participation, and procedural safeguards (i.e., protect the rights of students and parents, while also giving them an avenue to settle their disputes with districts). IDEA (2004) also requires that schools identify potential students who have disabilities by conducting diagnostic testing.

There are different types of disabilities accepted under the IDEA law, such as mental, physical, learning, or multiple disabilities (IDEA, 2004). Students who are identified by the district as having some type of disability receive an Individualized Education Plan (IEP), which is meant to provide them with accommodations to allow for a least restrictive environment (LRE) and guarantees a free appropriate public education (FAPE) or an individualized education plan that will prepare them for future educational and career opportunities. For instance, to equalize the learning environment for students with learning disabilities they may receive accommodations such as extra time on exams, individualized instruction, or even a private testing room. Other accommodations provided may be to increase accessibility for students with

physical or mental disabilities. These types of accommodations may include use of a service animal, a ramp or elevator accessible classroom, software that may provide subtitles for the hearing impaired, or audio or Braille for students with visual impairments.

However, when students transition to higher education, the laws governing the students only guarantee access to educational opportunities (ADA, 1990; Section 504, 1973). Meanwhile, the K-12 law, IDEA (2004) requires support for SWDs. Thus, what occurs in high school to prepare SWDs for college is of great importance, because the support is diminished once a student enrolls in higher education.

Therefore, another way SWDs are assisted is through development of a transitional plan (IDEA, 2004). Transitional plans can be developed as early as middle school to provide a roadmap for how students will move from high school to college or the workforce. IDEA (2004) specifically details transition services as consisting of the following:

> The term "transition services" means a coordinated set of activities for a child with a disability that—(A) is designed to be within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from school to post-school activities, including postsecondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation; (B) is based on the individual child's needs, taking into account the child's strengths, preferences, and interests; and (C) includes instruction, related services, community experiences, the development of employment and other post-school adult living objectives, and, when appropriate, acquisition of daily living skills and functional vocational evaluation. (p. 118)

The details are fully ironed out before SWDs graduate high school or age out of the system at 21. Because the transitional plans can be related to college or career planning post high school, the IEP team may also include collegiate or workforce professionals as part of the support team. For students moving on to higher education, they can hand over their transitional plans to the designated officials at their respective institutions of higher education. In theory, the plan is meant to maintain a seamless flow of services from high school to college (IDEA, 2004).

Section 504

Students in both K-12 and higher education are covered by Section 504 of the Rehabilitation Act (1973). Section 504 guarantees a free and appropriate education (FAPE). This specific law requires reasonable accommodation be provided for students. However, the accommodations cannot create an undue financial burden to the educational entity or expect to fundamentally change the nature of the educational programming. This means that assignments cannot be radically changed, or schools cannot be required to expend large amounts of money for equipment to make a program more accessible. The types of accommodations provided are as follows: notetakers, course substitutions, early registration, equipping school owned computers with adaptive hardware and software (USED, 2021).

According to Section 504 (1973), K-12 and higher education students are guaranteed use of auxiliary aids. Therefore, the educational entity must provide access to additional support if students need them due to visual or hearing impairments, physical, or other disabilities order to participate in the learning process. One difference for K-12 students is that under IDEA (2004) they can be provided their own auxiliary aid if it does not create a financial burden to the institution. However, Section 504 (1973) only requires access be provided for college students with disabilities. In addition, college students are not provided accommodations or accessibility

services at their postsecondary institution unless they formally identify themselves and can document their disability to the respective disability services office personnel (Section 504, 1973). Depending on how SWDs were assisted in high school with transitional services (e.g., knowledge of rights and responsibilities), their attendance at a higher education institution may prove challenging.

Americans With Disabilities Act

ADA (1990) covers college students in higher education, if students choose to formally identify themselves to the higher education institution. Specifically, Title II prohibits discrimination based on disability by any local, state, or federal entity receiving federal funds. However, unlike IDEA that requires K-12 schools to proactively identify SWDs, under ADA (1990) student must identify themselves to the intuition in order to receive formal support. The people protected under ADA (1990) include those who:

> (1) have a physical or mental impairment that substantially limits one or more major life activities, (2) have a record of such an impairment, or (3) are regarded as having such an impairment. Major life activities include walking, seeing, hearing, speaking, breathing, learning, working, caring for oneself, and performing manual tasks. (Pacer National Parent Center on Transition and Employment, n.d., para 2)

Individuals with disabilities are ensured civil rights under ADA (1990) when it comes to employment and education in that they cannot be prevented from opportunities based on their disability status.

A College-Going Culture

In the United States, attending college after high school is one of the greatest predictors of upward mobility and success (USED, 2015). In fact, to successfully compete in today's

workforce and earn a living wage, the importance of a college degree cannot be overstated (Carnevale et al., 2018). This is especially true for students from disadvantaged backgrounds. The idea of the American higher education system is that regardless of one's background, the obtainment of a college education should promote and increase equity (Astin & Astin, 2015). Schools and communities promote a college-going culture among young Americans. However, while some strides have been made, there are still groups who are struggling to enter the collegiate pipeline.

College and Career Readiness: A Brief History

In the last few decades, there was a shift in the role of a high school education from developing an informed citizenry to ensure students' college and career readiness (Baker et al., 2005; Dougherty et al., 2006). According to Husband and Hunt (2015), the No Child Left Behind Act (NCLB) of 2001 was arguably one of the most far-reaching reforms of the United States public educational system. This bipartisan legislation impacted every aspect of K-12 education from curriculum to funding. NCLB marked an impactful shift in federal government involvement in local school districts (USED, 2004). President Bush made poignant remarks about the degrading state of education in the United States before Congress by stating: "We have a genuine national crisis. More and more, we are divided into two nations. One that reads, and one that doesn't. One that dreams, and one that doesn't" (USED, 2004, p. 1).

What followed NCLB was a national concern over college and career readiness. The next iteration of NCLB, was President Obama's bipartisan Every Student Succeeds Act (ESSA, 2015). ESSA continued to build on the work of preparing students for success in college and careers. One of its biggest contributions was the focus on increasing equity for students from

disadvantaged backgrounds. It included provisions for high quality assessments for SWDs to help them receive the most effective accommodations in high school.

Were high school students adequately prepared for college? According to Callan et al. (2006), college and career readiness was a major concern, because the number of people with collegiate training were in decline, while the need for skilled labor was on the rise. Conley (2012) came up with a framework for measuring student readiness. He defined college and career readiness as

> A student who is ready for college and career can qualify for and succeed in entry-level, credit-bearing college courses leading to a baccalaureate or certificate, or career pathway-oriented training programs without the need for remedial or developmental coursework (p. 1).

Conley's definition of college and career readiness differentiates the two components. College readiness was related to the acquisition of a wide array of general education, while career readiness was connected to more attitudinal abilities such as teamwork and motivation.

By 2010, Common Core (CC) was nationally released to help high schools beef up their curriculums (Porter et al., 2011). At that time, 47 states plus the District of Columbia chose to replace their previous state standards for the national ones developed in CC. In addition to and around the same time, college testing agencies created their own benchmarks for college readiness. The American College Test (ACT) became involved in college readiness research to corelate how prepared students were for college based on their test scores (Radunzel & Noble, 2012). They found that only 25% of students were college ready by a composite score of all four subjects on its test (i.e., math, science, reading, and English) in 2012. Along with ACT, the

College Board also began creating college readiness metrics and conducting research to correlate secondary and postsecondary education success (Wyatt et al., 2011).

The next iteration of college readiness was implementing high school redesign (HSR) initiatives. The Bill and Melinda Gates Foundation in partnership with the National Association of Boards of Education have funded and promoted HSR (Fowler et al., 2014). The point of HSR was to increase expectations put on teachers and students, as well as expand student engagement strategies within high school. Fowler et al. (2014) argued that with the increased focus on creating quality experiences in high school, all students should benefit, including SWDs. They recommend utilizing universal design for learning (UDL), which encourages teachers and learners to utilize multiple ways of teaching, learning, and engagement. UDL improves the learning environment to become a benefit to all students, not just SWDs.

With the focus squarely on college readiness, research identified persistent preparedness gaps for students from disadvantaged backgrounds. Particularly, students of low socioeconomic status (SES) and those who are first generation were not being prepared as well for the rigors of college (Bryant, 2015). Weis et al. (2014) found that high SES students have better information about college and clearer pathways to higher education than students from low SES backgrounds. Taylor and Bicak (2020) also found that navigating the decision to participate in and the options to fund postsecondary education can be a difficult process for first-generation college students.

College Participation and Choice

According to the National Center for Education Statistics (NCES, 2022a), in 2020 college enrollment among 18 to 24-year-olds was 40%, although differences are visible by gender and race/ethnicity groups. For instance, there are differences in college enrollment by race-ethnicity:

Asian students at 64%, White at 41%, Hispanic at 36%, Black at 36%, two or more races at 34%, Pacific Islander at 34%, and American Indian/Alaska Native at 22% (NCES, 2022a). For Black students, their college attendance by October following enrollment dropped by 12% when comparing year 2010 and 2020 (NCES, 2022b). From 2010 to 2020, females were more likely to attend college than their male counterparts (NCES, 2022a). Specifically, the immediate college enrollment rate in 2020 was 59% by males and 66% by females. As for SWDs, they comprise 19% of college enrolled population with comparable percentages for male (19%) and female (20%) (NCES, 2016). In the 2015-2016 academic year, the racial/ethnic composition among SWDs was as follows: 28% Native American, 24% Pacific Islanders, 21% White, 18% Hispanic, 17% African American, and 15% Asian.

Differences in college enrollment suggest possible social inequities in access to higher education opportunities for various student populations. In addition, research shows that college choice differences deepen social inequality in a highly stratified system (Shavit et al., 2007). Students can choose from technical schools, community colleges, and public or private four-year universities and colleges. In 2014, 42% of students were enrolled in public two-year institutions, 35% of students at public four-years, 15% at private nonprofit four-years, (50% of students attended a four-year including public and private populations), and finally 7% of students were at for-profit institutions (Ma & Baum, 2016). In 2020, 43% of high school graduates enrolled in four-year institutions, while 20% enrolled in two-year institutions (NCES, 2022b). There was no major difference between the enrollment of males and females at two-year and four-year institutions. However, in 2014 the majority of students who attended community colleges were Black at 44% and Hispanic at 55% (Ma & Baum, 2016). Asian students were more likely to attend a public four-year over a public two-year institution. White students attended public four-

years and two-years at the same rate of 39%. Hispanic students had the lowest rate of attendance at private four-year universities. Nevertheless, community colleges play an important role in creating access for students from first-generation and low-income families (Ma & Baum, 2016). Nearly half of all students who obtain a bachelor's degree started their education at a community college according to the National Student Clearinghouse (2015). In the college choice studies, researchers did not disaggregate data for SWDs.

High School Achievement

Many colleges and universities are using multiple measures to determine college readiness including class rank, GPA, standardized test scores, high school exit exams, and advanced coursework. For instance, Black et al. (2016) found that high school exit exams such as the State of Texas Assessment of Academic Readiness (STAAR) and college entrance exams like the Texas Success Initiative Assessment (TSIA) were the best predictors of college success. They also described how the state of Texas utilizes automatic admittance for students ranked in the top 10% of their class. It is not just in Texas, Papay et al. (2022) assert that many states have resorted to using exit exams to assess college readiness with California being one of the first. The California High School Exit Exam (CAHSEE) was first enacted in 2004 and by 2009, 24 of the 50 states had enacted some form of exit exam to assess college readiness (Reardon et al., 2010).

Ngo and Kwon (2015) found that using multiple measures such as high school GPA helped accurately place and predict success for students in math courses at community colleges. Richardson et al. (2012) found that high school GPA combined with psychosocial factors was the best predictor of college readiness. Similarly, Westrick et al. (2015) emphasized the importance of high school GPA as a part of their assessment of college readiness metrics. For

SWDs, researchers have also been looking at nonacademic factors related to college and career readiness as well (Morningstar et al., 2017). In this qualitative study, focus group data from state-designated professionals with expertise on special education, college and career readiness, and secondary transition was collected and analyzed. The framework they developed included "academic engagement, academic mindsets, learning processes, critical thinking, social skills, and transition knowledge" (p. 2). Each of these areas could aid students in the acquisition of the academic and social capital needed to successfully transition to higher education.

College Preparation During High School

High school is an important training ground for colleges. While in high school there are important experiences and influences on students that orient them toward pursuing higher education and influence college choice. In this section, the researcher will examine literature about the impact of academic programs (AP, DC, and IB), social programs (AVID, GEARUP, MESA, UB and TS), and other influencing factors such as parents, counselors, and the Individualized Education Plan (IEP) team on preparing students for college.

Academic Programs

Many high schools incorporate opportunities for students to complete collegiate level work while still in the support network of high school. These opportunities come through academic programs like Advanced Placement (AP) (Cisneros et al., 2014), International Baccalaureate (IB) (Khost et al., 2017), and Dual Credit (DC) (Kilgore & Wagner, 2017) programs, all intended to improve college preparedness. Student participation in academic programs while in high school has been used to increase academic capital. In fact, Barnett and Kim (2014) found many benefits to students seeking collegiate experiences during high school. Students were able to experience rigorous college-level work while still having the social support

and structure of their high schools. Other benefits were the social connections students made with collegiate faculty and peers who are college-minded, which comes together to create a college-going culture in high schools through higher level academic experiences. Through connections with academic personnel, students can acquire more academic and social capital. Research shows that collegiate-level curriculum programs are more likely to attract students from advantaged backgrounds (Warne et al., 2015).

Advanced Placement

Advanced placement is an important option for high school students who are looking to be prepared for the rigors of college (Hemelt et al., 2020). According to Sadler et al. (2016) students take advanced course work and at the conclusion of the course sit for standardized tests. If they score at a certain level, they can be awarded college credit by the universities and colleges they attend. Because students must pass a common national assessment in order to earn credit, some researchers have argued makes it a more objective standard (Sadler et al., 2016).

International Baccalaureate

The mission of IB programs is rigorous academic preparedness and beyond. The scope of IB is broader than increasing academic rigor and college preparedness. Their goal is to develop students that are knowledgeable and compassionate (IB Americas, 2013). Students ages 16 to 19 take courses that not only prepare them for college, but the IB structure provides opportunities for skill development that transfers to the workforce and life (IB Americas, 2013). Moreover, IB programs have been expanding worldwide in the last few decades as a way of preparing students for the rigors of college (Dickson et al., 2018). Much like AP, researchers hold that IB provides a much more accurate standard of college readiness because of the end-of-course exams students must pass (Ackerman et al., 2013). According to Perna et al. (2015), both the USED and Gates

Foundation have sought to increase access and improve equity through scaling up participation in IB programs for low-income students. This expansion is meant to provide students from disadvantaged backgrounds with the academic and social capital necessary to participate successfully in higher education and the workforce.

Dual Credit

DC is another way for students to gain exposure to collegiate coursework while in high school that does not require standardized testing to receive credit like the AP and IB programs. Troutman et al. (2018) found that if students take any college course while in high school, that practice correlates with higher retention and high school graduation rates. Other research has shown that students who participated in DC while in high school had higher grade point averages (GPA). Having a higher GPA was a benefit that carried through to their second semester of community college when compared to students who did not participate in DC (Young et al., 2014). Some benefits of DC are that it helps reduce the time to college degree and lowers the cost of college (Tobolowsky & Allen, 2016), which contributes to improving access to higher education for the students from low SES and first-generation backgrounds who participate in DC. Although the number of students taking DC coursework continues to increase[1], Sadler et al. (2016) argued that AP is superior to DC in determining college readiness. The reason being, students are not required to pass a standardized test at the conclusion of a DC course, which may make it more susceptible to the faculty's subjectivity. While college preparation is important for increasing student academic capital, another issue that is being addressed through DC enrollment is improving college access.

[1] Dual credit in the state of Texas has increased 650% since 2000. Hispanic student makes up the largest percentage of students taking advantage of the program in the state (Troutman et al., 2018).

Social Programs

Much has been done to equalize opportunities for students who are underrepresented in higher education. Out of the Civil Rights Movement, several programs were developed to increase educational opportunity post high school (USED, 2022). Since then, the role and scope of social programs that help build social capital have expanded (Toutkoushian et al., 2018). These programs are meant to decrease educational disparities among students (Perna, 2015). For instance, first-generation students have some of the largest gaps in postsecondary participation, because they often lack knowledge about college (Toutkoushian et al., 2018). Avery et al. (2014) also found that programs that promote college coaching and mentoring benefit low-income students. They saw an increase in completion of the Free Application for Federal Student Aid (FAFSA), college admissions, and attendance by students who participate in social programs. The specific social programs that will be covered in this section are Advancement Via Individual Determination (AVID), Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP), Upward Bound (UB), Talent Search (TS), and Mathematics, Engineering, Science, Achievement (MESA). These college outreach programs have been developed to close the gaps and expose underrepresented students to initiatives that improve their academic and social capital (Perna, 2015), which is also an important goal for SWDs.

Advancement Via Individual Determination

Research has shown AVID to improve college readiness among underrepresented students in higher education (Morley et al., 2021). According to AVID (2021) reporting data, AVID graduates who attend college and are first-generation or low-income students have a college graduation rate at 42% within 6 years. Students of the same sociodemographic who did not participate in AVID graduate at a mere 11% rate over the same time period. They also report

that 94% of 2021 AVID seniors completed all college entrance requirements for four-year universities. When broken down by race, that group included 95% of Asian students, 96% of Black, 93% of Hispanic, 91% of other, and 95% of White students. Huerta and Watt (2015) found in their research that students who participated in AVID in high school and attended institutions of higher education persisted through their freshman to sophomore year. Although, community college students earned credits at a slower rate than university students. Furthermore, the college students still utilized the learning strategies taught to them through the AVID program. Another important benefit of AVID was found by Kirk and Watt (2018) who showed that students participating in AVID demonstrated higher self-efficacy when it came to college persistence and career preparation.

Gaining Early Awareness and Readiness for Undergraduate Programs

GEAR UP was a program developed out of the Higher Education Act of 1965 by President Bill Clinton in 1998 (USED, 2008). This program was created to work with high school students who were interested in higher education but needed remediation to help them be prepared for the rigor of college. Like many outreach programs, GEAR UP was designed to increase representation in higher education among low-income and first-generation students (Arendale, 2020). This program helps students develop skills and equip them to be successful in collegiate pursuits. Alhaddab and Aquino (2017) researched the impacts of three programs including GEAR UP. They found that GEAR UP increased access and participation in college after high school, when compared to students of the same demographics. In related research by Bowman et al. (2018), GEAR UP has shown to have a positive impact on postsecondary participation.

Upward Bound

UB was the first TRIO program developed through the Educational Opportunity Act of 1964 (Arendale, 2020). UB has three iterations, one focused on students interested in general education fields, one specifically for math and science, and the last one is for veterans (USED, 2022). The first two programs focus on high school students, and the veterans' version works with people coming out of the military to help them get ready for higher education. Pitre and Pitre (2009) specifically discussed the importance of outreach programs like UB for low-income and first-generation students. UB increased equity by widening a pathway for students who are typically underrepresented in higher education. They noted the origin and importance of TRIO programs like UB:

> Fifty years ago, the Federal Higher Education Act was passed, and the USED instituted the first federally supported education programs designed to increase the college enrollment and completion rates of economically disadvantaged and underrepresented ethnic background students. (p. 96)

Since that time, that is exactly what UB has sought to do by providing culturally and academically enriching experiences for students whose families lack the appropriate resources.

Talent Search

TS was created in 1965 as part of the Higher Education Act of 1965 (USED, 2011). TS is one of eight federal TRIO programs. TRIO is specifically tasked with serving "low-income individuals, first-generation college students, and individuals with disabilities to progress through the academic pipeline from middle school to postbaccalaureate programs" (USED, 2022, para. 1). It was in part a response to the Civil Rights Movement and was a program created during the war on poverty. Alhaddab and Aquino (2017) found that TS had the greatest impact

on postsecondary participation when compared to GEAR Up and UB. TS was specifically developed to reach students from disadvantaged backgrounds starting in middle school to give support toward high school graduation and postsecondary participation.

Mathematics, Engineering, Science Achievement

Another program, MESA, was specifically developed to encourage and prepare students who have been historically underrepresented in STEM fields (Verdín & Godwin, 2018). Verdín and Godwin (2018) found that MESA provided much needed support to Latina women pursuing the engineering field. Enriquez et al. (2014) found that the MESA program helped enhance academic, financial, social, and cultural capital among students from racial minorities who were preparing for careers in the STEM field. Greenberg and Singh (2016) found that students who participated in the MESA sponsored afterschool programs had better grades and test scores than students who did not participate. Overall, MESA does help students who are interested in the STEM fields. These students are exposed to opportunities and resources to help them grow in their academic and social capital.

In summary, many of the academic rigor and outreach college programs are designed to serve students from disadvantaged backgrounds. Although there is a consensus that SWDs belong to this student population, current research and reporting focus less on this group. While many collegiate programs report SWDs participation, according to Freeman-Green et al. (2018), there are very few programs that disaggregate data to convey student outcomes. For instance, in their review of 15 programs including AP, IB, UB, and AVID, only 2 of 15 programs showed outcomes for SWDs.

Other Influencing Factors on College Success

Another important aspect in preparing students for college consists of the people who influence their post-high-school decisions. Many students seek and value the influence of family and friends on their future college and career prospects (Sultana & Mahmud 2020; Thampoe, 2016). Another important influence on students is high school personnel (Velez, 2020). As part of my argument for this research, I emphasized the expected role of high school personnel, more specifically counselors, as an important influence and support for high school students transitioning from high school to college. Specifically, for SWDs, not only parents and counselors, but also the IEP team has an important influence (Rowe & Francis, 2020). This section will delve into the social influences in high school and the impact they can have on students' postsecondary choices, for students in general and for SWDs in particular.

Parents

Throughout K-12, parental involvement with schools and with their children has been a longstanding subject of research (e.g., Epstein, 1995; Ho, 2009; Núñez et al., 2015). Parents are also an important factor regarding postsecondary participation (Amaro-JimÃŠnez et al., 2020). Thampoe (2016) argued that parents have the greatest influence when it comes to college and career choices. Their findings suggest that many students are motivated to succeed because they perceived it makes their parents proud. They also found that students rely on parents for key insights about themselves, such as what future career choices may best suit them. When parents have pertinent knowledge about what their children need to navigate the transition from high school to higher education, they exert a positive impact on their child's academic performance (Amaro-JimÃŠnez et al., 2020). More specifically, having parents who are knowledgeable about

college admittance and enrollment processes improves the chances of postsecondary participation for students from disadvantaged backgrounds.

Conversely, when parents were less knowledgeable or able to help their students, there was a negative impact on participation (Amaro-JimÃŠnez et al., 2020). For instance, when parents did not have a clear understanding about deadlines for admission, scholarships, and FAFSA, their children had more difficulty transitioning to college. Also, students struggled more when parents lacked clarity about what was needed for college admission requirements such as test scores or high school transcripts. Toutkoushian et al. (2018) found that when parents had not graduated from college, children were much less likely to attend college when compared to second-generation students. Similarly, Sapungan and Sapungan (2014) found that parental apathy has a negative impact on college-going beliefs. However, obtaining the encouragement of their parents had a positive effect on student participation and successful transition to college. For instance, parental involvement in college planning for SWDs has shown to positively impact postsecondary participation (Connor, 2012). In other words, the college-going culture within a family and parental attitude about the importance of college make a difference. Trainor's (2010) research found that cultural and social capital resources associated with parents were needed to make them a productive member of the IEP team.

Counselors

Presently, high school students have a multitude of obligations they are required to manage, which creates a need for counselor support (Dupere et al., 2015). Students must balance schoolwork, extracurricular activities, career and college planning, and navigating college admissions requirements. High schoolers need help coping with the stress of their busy schedules along with the added pressures of navigating the transition to higher education. In addition to the

important role of parents, counselor involvement with students in high school has been shown to improve postsecondary participation as well (Poynton & Lapan, 2017). Given the need for student support, Bryan et al. (2011) found that the lower the counselor-to-student ratio the better. Not only did students manage the requirements of high school more successfully, but a lower ratio also increased the likelihood of students' postsecondary participation. In addition, the more often the students specifically met with a counselor about college admissions strengthened the chances the students would apply for college. Poynton and Lapan (2017) emphasized that counselor involvement was especially poignant when students felt a personal connection with their high school counselors. In a related study, Velez (2020) showed a direct correlation between the likelihood of postsecondary participation and the time counselors spent with students regarding college admissions and financial aid. In fact, Velez's (2020)

> findings show[ed] that high school seniors who talked one-on-one with a school counselor were: (1) 6.8 times more likely to complete a FAFSA, or Free Application for Federal Student Aid; (2) 3.2 times more likely to attend college; and (3) 2 times more likely to attend a bachelor's degree program. (p. 21)

The longer students spent with high school counselors increased the likelihood of college enrollment and on-time college graduation within four years. Engberg and Gilbert (2014) correlated interactions with counselors with a higher likelihood of students choosing a four-year institution. Another study conducted by Avery et al. (2014) found that low-income students benefit the most from time spent with counselors. Unfortunately, these students have the least amount of access to trained counselors because they are often attending schools with less resources. Bryan et al. (2011) also found the earlier in high school students sought guidance the better. In addition, a strong counselor-student relationship mitigated the negative impact for

students created by low SES. Finally, the high school counselor relationship to students promotes students completing the college application process and helps create a college-going culture in high schools (Robinson & Roksa, 2016).

Individual Education Plan Team

As stipulated by IDEA (2004), students who are identified in K-12 schools as having one or more disabilities are afforded an IEP team that assumes specific roles to help implement the plan. This team consists of the student, parents, teachers, diagnosticians, and other key personnel to develop the best educational path forward for the student. Along with developing the IEP, this team also assists the student with transition planning to help the student prepare for the workforce or postsecondary opportunities after high school. The research of Rowe and Francis (2020) emphasized the importance of members of the IEP team having cultural competence and awareness of how microcultures intersect such as disability status and race or ethnicity because these factors may cause the students to perceive negative messaging and influence them in a negative way regarding academic achievement. De Boer et al. (2018) have found a relationship between educator expectations and student achievement for SWDs. When the IEP team sets high expectations and loftier goals, the students were found to achieve more and vice versa. Doren et al. (2013) emphasized the importance of professional development for IEP team members in creating meaningful IEPs for SWDs.

Another important aspect related to the IEP team is access to transition services that allow developing a post-high-school transition plan for SWDs. IDEA (2004) allows for higher education personnel to serve on an IEP team to aid with transition services. However, it is not mandatory to have collegiate representatives included in the process. Griffin et al. (2010) emphasized parents of SWDs felt it was important to include college representatives in their

children's transitional plans. Many parents of SWDs believed that attending college would help their children navigate adulthood and provide better career opportunities. In the research conducted by Grigal et al. (2011), they found only 25% of students with intellectual disabilities had postsecondary education included as an option in their transition plans. However, Newman et al. (2016) found that SWDs were more likely to find support in higher education when their transition plans provided accommodation requirements beyond high school.

Students With Disabilities in High School and Beyond

High school for SWDs is an important arena to prepare them for college and beyond (Theobald et al., 2019). With a great push from federal and state governments to guide students toward college readiness (Hutchins et al., 2019; Mann & Martin, 2016), SWDs are primed for postsecondary participation. However, researchers have shown they are less likely to attend college and are underprepared for the rigors of college when compared to their counterparts (NCES, 2019). In this section I will discuss the research related to SWDs' preparation in high school, career prospects, high school intervention, SWDs in higher education, and the barriers they face in higher education, and finally, the interventions for them in college.

Students With Disabilities in High School

The research that has been conducted on high school SWDs' preparation for college is sparse. However, research has found that the high school graduation rates are 67.1% for students served under IDEA, which is much lower than all students who graduate at 84.6% rate (NCES, 2019). Furthermore, postsecondary participation rates for SWDs are almost 20% lower than for students without disabilities. With respect to college and career readiness, Lombardi et al. (2015) compared critical thinking skills metric for students with and without disabilities. They found that these students struggle with critical thinking skills at an important transitional time in high

school. However, the SWDs who have better transitional outcomes were able to make personal and positive connections with faculty and support staff and were able to successfully self-advocate for their academic needs (Barber, 2012; National Council on Disability, 2012).

Theobald et al. (2019) found the more time SWDs spent in general education classrooms with their peers without disabilities, the more likely was their on-time high school graduation and college attendance. Recently, schools embraced an inclusion model of special education in which they are placed in general classrooms most of the time. The researchers conducted this study by comparing outcomes for groups of SWDs who spent more time outside of the general classroom versus those who were included with other students. One of the key findings was that for the SWDs population, the amount of time they were able to spend in the general classroom had a positive impact on achievement.

Increasing technology use has also been shown to improve outcomes for SWDs (Lombardi et al., 2017). These researchers successfully implemented a model of increasing information technology literacy with SWDs through use of an online software program. This software allowed students to utilize technology in their transition planning process while also increasing their literacy in information technology. By exposing students to new software and increasing their tech literacy, these students could use more advanced technological interventions, which may impact the goal of increasing preparation for college and career readiness. This intervention was done as a way of improving access to transition services for students on an IEP. Increasing students' confidence with technology is a great benefit in this highly digital world and is a way of increasing their capital.

Career Prospects

Another important aspect that SWDs do not fare as well as their peers in is employment (Center for Advancing Policy on Employment for Youth, n.d.). Youths with disabilities need to have a support framework to ensure they are in the best position to join a skilled workforce. According to the Federal Bureau of Labor and Statistics (2016), approximately one-fifth of individuals with disabilities were gainfully employed when compared to two-thirds of their peers. In almost a decade, the statistics from U.S. Department of Labor (2023) showed those percentages have only slightly changed with 19.1% in 2021 of people with disabilities (PWDs) being employed in comparison to 63.7% of their nondisabled peers. Then in 2022, 21.3% of PWDs were employed compared to 65.4% of people without disabilities. In addition, unemployment for individuals with disabilities showed disparities by race: for Blacks 15.1% and Hispanics 13.3%, when compared with Whites 9.3% and Asians 8.5%. It is important to note that these unemployment rates are calculated based on people who had searched for employment over four weeks. Many individuals with disabilities become discouraged from not finding employment opportunities, and so the unemployment statistics are likely higher because many do not even search for jobs.

High School Interventions for Students With Disabilities

There are some interventions for SWDs that can improve high school outcomes and employment prospects. For instance, work-based learning experiences (WBLE) have shown to improve career readiness outcomes across populations (Cook et al., 2015). WBLE activities include but are not limited to career exploration through planning, assessments, service learning, job shadowing, and internships. Researchers Theobald et al. (2019) found a significant positive correlation for SWDs between having a higher concentration of career and technical education

(CTE) courses in high school and likelihood of being employed upon graduation. In another study, Dougherty et al. (2018) conducted secondary data analysis based on Massachusetts CTE data and found that SWDs who participated in CTE courses had higher high school graduations rates. They also found that they acquired career certifications at higher rates than their non-participating peers. However, according to Theobald et al. (2019) there is no direct correlation between participation in CTE programs and transitioning to postsecondary education. The impact of CTE appears to only strengthen SWDs workforce participation. Grigal et al. (2011) found that it was important for SWDs to have competitive goals for both postsecondary education and employment in their transition plans. In addition, external professionals (outside of the school) were also a key element of successful post-high school outcomes.

Students With Disabilities in Higher Education

SWDs face significant challenges when transitioning to higher education (Haber et al., 2016). For instance, Couzens et al. (2015) found from the self-identified SWDs in their study that SWDs are not always easily identifiable by faculty and university support staff. They noted that it is evident if one sees students in wheelchairs or with service animals that the student has a disability, but cognitive and learning disabilities are not readily apparent. Students with invisible disabilities may fly under the radar especially if they have not sought accommodations through formal support networks. These students said that making use of informal networks of support and flexibility given by faculty may allow for a more successful transition to college. For instance, a student may develop relationships with peers and obtain support through study groups. Also, some faculty are more lenient with deadlines, offer students autonomy when it comes to assignments, and encourage students to meet with them for additional instruction and support during office hours. Lyman et al. (2016) sought to delve into reasons students chose not

to use accommodations. It ranged from simply not knowing how to obtain accommodation to students thinking accommodations were not needed or would not be helpful. However, Lyman et al. (2016) emphasized better outcomes for the students who do seek accommodations. Again, this comes back to the importance of college students being agents of their transition which is more likely to happen when students possess academic and social capital.

Due to the growing importance of higher education, there has been a large focus in the research literature about postsecondary outcomes (Westrick et al., 2015). Theobald et al. (2019) found that very little research has delved into the outcomes and experiences in higher education for SWDs. Yet, Abreu et al. (2016) asserted that SWDs have become a growing population in higher education so it should be an important student population to research. However, despite federal legislation and high school and collegiate personnel designated to support their preparedness in high school and transition to college, SWDs fall behind their counterparts in college admittance, attendance, retention, and graduation (Couzens et al., 2015; NCES, 2019) possibly because the colleges do not include sufficient specific services for them. Specifically, the IEP was designed to increase access and promote success for SWDs in the K-12 system as part of the IDEA law (Cook et al., 2015; IDEA, 2004), but no similar policy has been considered in higher education.

Barriers for Students With Disabilities in College

The first large hurdle students who transition must face is they go from a high school environment with a lot of support to higher education institutions where any support offered will be dependent on students' knowledge of the new system and how well they are able to advocate for themselves (ADA, 1990; IDEA, 2004). Much like anyone new to college, many SWDs enter a foreign environment not understanding how to navigate it (Lyman et al., 2016). For SWDs who

may have some knowledge of the system, many have been advised to forgo seeking out support in order to avoid perceived stigmatization (Osborne, 2018).

Even more concerning is that some SWDs who observe a lessening of support in college, believe that the accommodations available to them will not be beneficial (Lyman et al., 2016). For those reasons, students do not want to appear different from their peers (Grimes et al., 2017; Grimes et al., 2021, 2019; Lyman et al., 2016). Avoiding stigma is one of the strongest motivators, because SWDs wanted to be seen by faculty, staff, and fellow students as capable of collegiate-level work. In fact, Osborne (2018) found that many students were concerned about what their peers would think if they found out they were receiving accommodations.

Nondisclosure also creates academic problems for SWDs. For example, Grimes et al. (2021) found that the students in their study who avoided to complete disclosure forms, struggled to stay academically engaged. This is problematic because research found that low student engagement is associated with less successful outcomes. These students recognized the work was much more difficult for them without the use of accommodation. Another study, conducted by Grieve et al. (2014), found that freshman students specifically diagnosed with psychological disabilities such as anxiety or depression lacked metacognitive strategies to help them accurately assess how well they were doing in their courses. Without proper executive functioning skills (e.g., time management, goal setting, and study skills), students did not even realize they needed help until it was too late (Grieve et al., 2014).

Postsecondary Education Interventions for Students With Disabilities

On a positive note, there are some interventions that make a difference in collegiate outcomes for SWDs. Lindsay et al. (2016) found that for SWDs, mentorship programs have been shown to increase postsecondary and workforce participation. Hotez et al. (2018) found similar

results about mentoring SWDs. They discovered a 2-week mentorship program just before beginning college helped improve autistic students' social and self-advocacy skills. Other research has emphasized that SWDs need to participate in transitional programs to build self-advocacy skills (Newman et al., 2011).

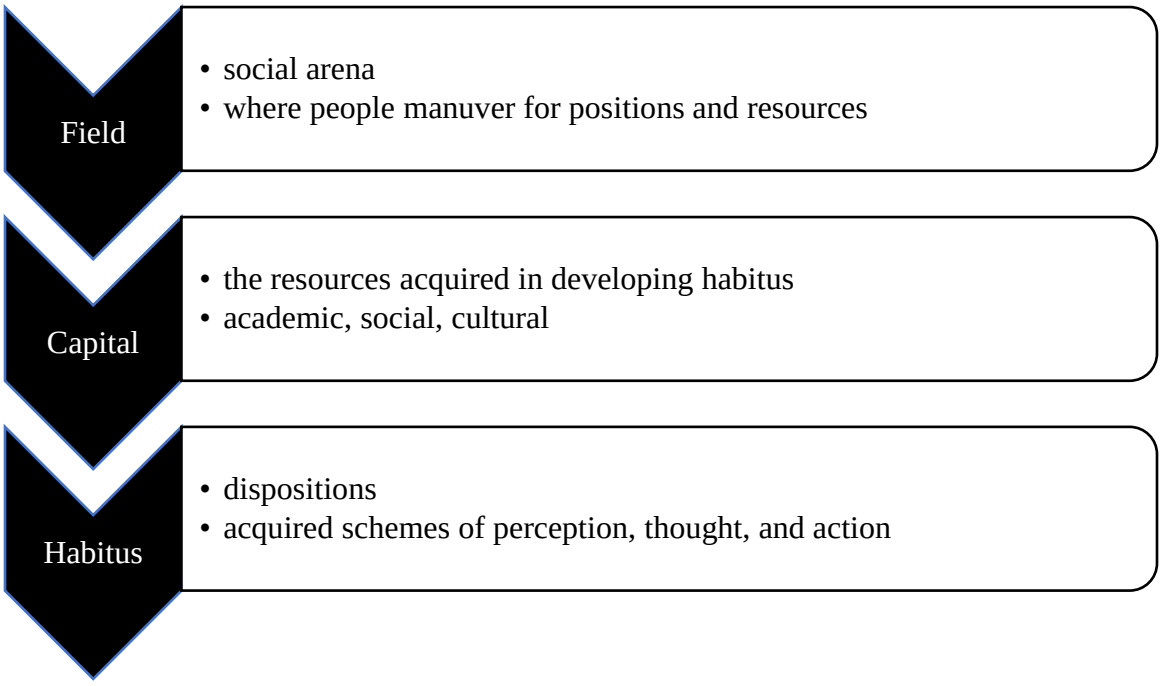
Moreover, Lyman et al. (2016) reported that students who participated in the formal disclosure and received accommodations had higher matriculation and graduation rates than students who chose to remain hidden. Therefore, identifying SWDs early on (i.e., as early as high school while students are in the transition process) is imperative for their academic success (Grieve et al., 2014). Moreover, encouraging students to utilize formal support in college should also be key to their success. Transitioning to college necessitates that students take personal responsibility for their choices as adults for acquiring their own accommodations and using support services. However, confidence, responsibility and knowledge about post-high-school choices and further actions should be built during high school years, through purposeful acquisition of academic and social capital.

Theoretical Framework

The current study draws from Bourdieu's (1986) theory of forms of capital as its theoretical framework. Specifically, the application of the framework to SWDs and the acquisition of academic and social capital in high school by students have been examined by the researcher. Figure 2.1 presents a simplified version of Bourdieu's sociological model including concepts useful for research on SWDs for this study.

Figure 2. 1

Bourdieu's Theoretical Model



Academic enrichment experiences should improve students' academic capital, while social influences that shape college-going beliefs and skills should increase social capital. Bourdieu (1984) also defined cultural capital as "familiarity with the legitimate culture within a society" (p. 20) and saw families passing on cultural capital to their children. In the process, children develop habitus as a set of dispositions that increase their ability to navigate the fields of education.

Background to Bourdieu's Theory

The seminal work of Bourdieu on forms of capital has been widely applied in educational research (Bourdieu, 1984, 1986; Bourdieu & Passeron, 1977). Scholars have found Bourdieu's theory provides "an informal academic standard, a class attribute, a basis for social selection, and a resource for power which is salient as an indicator/basis of class position" (Lamont & Lareau, 1988, p. 156). Forms of capital useful for this research are academic, social, and cultural capital.

The discussion will also benefit from an understanding of habitus as dispositions that allow the individual to navigate a field of practice.

Through his observations of the French educational system, Bourdieu (1988) saw that "academic capital is obtained and maintained by holding a position enabling domination of other positions and their holders, such as all the institutions entrusted with controlling access to the [academic] corps" (p. 20). Acquisition of academic capital comes from academically enriching experiences that allow people to acquire what is needed to compete for resources and for establishing a position in the field of education.

Furthermore, Bourdieu (1988) saw the world through a hierarchal structure, in which actors are part of the game, and some know the rules or have various forms of capital, while others do not and must gain capital in order to successfully navigate the field or arena. For instance, social capital describes the resources people derive from their social networks. It can be acquired during primary socialization within family and secondary socialization in schools. During primary socialization, students also inherited the cultural capital of their family which shapes their habitus and helps them navigate, successfully, the norms and rules of educational institutions.

In an academic setting, students use what Bourdieu referred to as habitus or socialized norms to guide them through navigating the field of their academic setting. Trainor (2008) asserted that the American habitus is built on the expectation that high school students will attend college to be viewed as successful adults. During high school, SWDs are not only practicing in the field of secondary education but are also immersed in the field of special education. Some expect this will continue when entering higher education. However, there is the

incongruence within special education fields across the secondary and postsecondary systems that may create a challenge for SWDs and limit their success at college.

Application of Bourdieu's Theory

Many scholars have used Bourdieu's (1986) theory of capital to convey how the gaps in capital that students possess are linked to the outcome disparities among students (Gaddis, 2013; Gaddis & Murphy, 2021; Horvat et al., 2003). Undoubtedly, students need to acquire the skills and access resources (i.e., build capital) to be successful in college. Pishghadam and Zabihi (2011) emphasized the relationship between the acquisition of social and cultural capital and competitive academic capital for college success. Other researchers have looked at preparation of students in high school science fields through a Bourdieusian lens (Archer et al., 2015; 2017). In both studies, the researchers sought to extend Bourdieu's concepts to the field of science. Trainor (2008) conducted a study looking at the social and cultural capital SWDs need to be transitioning from high school to college. This researcher found that there was a gap in the application of Bourdieu's theory to this population transitioning to postsecondary education. Trainor emphasized the benefit for researchers to utilize forms of capital to better understand the SWDs population.

Bourdieu's (1986) academic and social capital is an appropriate theoretical framework for this study for a few reasons. The type of available data allows to operationalize both academic and social capital and examine their benefits toward postsecondary participation and college choice. Therefore, understanding how SWDs acquired academic and social capital will help further explicate the outcomes. Though Bourdieu's (1986) theory has been applied to examine many facets of the education field, it has been underutilized for explaining the postsecondary participation and college choice of SWDs. This subject matter lends itself well to

a discussion of how capital formation contributes to SWDs high school preparation and transition to higher education (Trainor, 2008).

Summary

In summary, this chapter contains the pertinent research related to SWDs and how high school prepares them for higher education. The researcher takes an in-depth look at the policies that govern how SWDs are served in high school and higher education. The history of college readiness as an important movement within high schools to become a postsecondary pipeline and support the American college-going culture was discussed by the researcher. Mechanisms for how students are building academic and social capital in high school are detailed by the researcher. The researcher also delved into the literature about preparation of SWDs for postsecondary success. Finally, Bourdieu's (1986) theory of capital was explored by the researcher as it applies to the field of education, and it has been proposed to guide this study.

CHAPTER 3

METHOD

The purpose of this quantitative study was to examine to what extent high school contributed to postsecondary participation and college choice among a nationally representative sample of SWDs. The study's assumption was that high school experiences (i.e., achievement, counselor advice and IEP support) impact not only on student college readiness as indicated by the type of capital obtained during high school (e.g., academic, social) but also on students' post-high-school choices. While structural factors (e.g., sociodemographic characteristics) affected students' pathways, the study particularly focused on the contribution high school factors (i.e., college readiness and experiences) have on paving the way to college for the SWDs group. The study addressed the following research questions:

1. What are the profiles of students with disabilities with respect to sociodemographic characteristics (i.e., gender, race, SES, parental education), high school capital (i.e., academic and social), high school experiences such as achievement (i.e., GPA) and support (i.e., counselor advice, IEP), and participation in postsecondary education (i.e., enrollment, choice) by age 22?
2. What is the relative contribution of high school capital profiles to postsecondary participation by age 22, when controlling for sociodemographic characteristics (i.e., gender, race, SES, parental education) and high school experiences (i.e., achievement, academic support, IEP program)?
3. For SWDs who enroll in either 4-year public/private or 2-year public institutions by age 22, what is the relative contribution of high school capital profiles to college choice, when controlling for sociodemographic characteristics (i.e., gender, race, SES, parental

education) and high school experiences (i.e., achievement, academic support, IEP program)?

Research Design

This section will detail the specifics of the research design. It will include the data source, explain how the research sample was derived and describe the analytical model. Finally, the dependent and independent variables will be explained, along with the data analysis procedures.

Data

This quantitative study utilized data from the *High School Longitudinal Study of 2009* (HSLS:09, NCES, n. d.). The HSLS:09 sample included over 23,000 ninth graders from nearly1,000 schools across the United States in 2009. This is a nationally representative sample including students from various regions, socioeconomic backgrounds, and different ethnic/racial groups. Also, the high schools sampled all 50 states as well as the District of Columbia. These students were followed up to age 22 through secondary and postsecondary education. Furthermore, additional information about the students was provided from surveys from parents, math and science teachers, school administrators, and school counselors.

The HSLS:09 student database was collected in the fall of 2009 (Grade 9) with two follow-up surveys administered in the spring of 2012 (Grade 11) and in 2016 (NCES, 2018). In the summer of 2013, either students or parents answered a short survey to complete a fall status update. Then in 2013–2014 high school transcript data were collected and paired with a summer/fall status update. The second follow-up student survey was conducted from March 2016 through January 2017 when students were 21 to 22 years-old, about 3 years after high school graduation for most of the cohort. Finally, postsecondary financial aid records and

transcripts were collected in 2017 from institutions of higher education and released in 2019 (NCES, 2018). Additional information on HSLS:2009 is provided in Appendix A.

NCES (n.d.) provides access to HSLS:09 database through public-use data and restricted-use data. Some of the original data has been altered in the public-use files to prevent any risk of revealing responding school or student identities. This study employed public-use data based on student surveys from the base-year (2009) and the follow-up surveys (2012 and 2016) as well as parent survey data from the base-year (2009).

Research Sample

The research sample was selected based on self-reported information by high school students or parents regarding some type of student disability, or students self-reporting participation in an IEP in Grade 9. Preliminary exploration of the data showed that 7,540 students (almost one-third of the HSLS:09 sample) were selected based on this criterion. Of those, complete information on secondary education variables was available for N = 6,656 students (88.3% of the HSLS:09 SWDs sample). However, data on postsecondary participation were missing for some students which likely reduced the research sample for the study to N = 6,278 (83.3% of the original HSLS:09 SWDs sample). Also, in order to examine the college choice, the researcher focused only on comparing enrollment in public/private non-profit 4-year with public 2-year and disregarded participation in other institutions (i.e., mainly for-profit). This has reduced the sample of SWDs college participants to N = 4,221 (Table 3.1).

Table 3.1

Research Sample

HSLS:09 sample	HSLS:09 SWDs sample	SWDs sample with secondary data	PSE info by age 22 (N = 6,656 → 6,278)	College choice (N = 4,529 → 4,221)
N = 23,503	N = 7,540	N = 6,656 (88.3% of HSLS:09 SWDs)	Yes: 4,529 No: 1,749	Public/Private 4yr: 2,557 Public 2yr: 1,664 (Other: 308 not included)

Note. PSE = postsecondary education

Analytical Model

Table 3.2 presents the main concepts employed in the study aiming at examining the effects individual student sociodemographic factors, high school capital, and high school experiences have on student outcomes. The researcher created a typology of high school program-built capital that will represent the design variable of the study. Thus, high school academic capital acquisition is hypothesized to be measured by participation in academically rigorous programs such as AP, IB, and DC. Meanwhile, college outreach programs such as AVID, GearUp, MESA, TS, UB would contribute to building social capital.

Table 3.2

Analytical Model

Sociodemographic factors	High school program-built capital	High school experiences	Student outcomes	
-Gender -Race/ethnicity -SES -Parental education	-Academic capital (AP/IB/DC/ college level credits) -Social capital (AVID/GearUp/ MESA/TS/UB)	-Achievement (GPA) -Student support (counselors, IEP)	Postsecondary participation (Yes/No)	College choice (Public/private 4-yr vs. Public 2-yr)

Student high school experiences were related to the level of academic achievement and the support SWDs receive in school that could affect their post-high-school decisions. Although high school experience factors in the proposed analytical model also describe some forms of academic and social capital, the focus of the study was on the role of high school programs that build students' college and career readiness. Achievement level (GPA) can be also viewed as an indicator of academic capital while a supportive environment reflected in counselors' guidance and the availability of IEP planning programs are sources of social capital.

Finally, sociodemographic factors were also included. They were comprised of gender, race/ethnicity, socio-economic status (SES), and parental education. Although parental education is a source of cultural capital and SES an indicator of family economic capital, these factors are treated as control variables in the post-high-school pathways models.

The focal variables included in the model were student post-high-school pathways defined by postsecondary participation by age 22 and choice of first institution attended (i.e., four-year public/private or two-year public institutions). College choice is an important outcome because two-year colleges attract more students from racial minorities and lower socioeconomic status than four-year institutions (Ma & Baum, 2016).

Variables

Table 3.3 introduced different sets of variables used in the analysis. The first column shows the variable name and the original survey items used to derive it. The second column indicates the variable type (e.g., numerical, ordinal scale, or categorical) and some information on derived variables. The third column indicates the variable categories. The sample selection is based on survey items that identify the self-reporting of a disability by student or parent, or information of student receiving IEP. Although this is not a longitudinal study, data from

different survey years were used to consolidate the information regarding specific indicators and reduce the missing information (e.g., SES, parental education, high school capital, counselor support). More details about the survey items description are presented in Appendix B.

Table 3.3

Variables

Variable/construct name (original survey item)	Type	Category/code
Sample selection		
Disability reported	Derived	0 = no
Student: X4DISABLED, S4DIFCONC, S4MHDISBL, S4ADHD, S4LEARNDISBL, S4DEAF, S4BLIND, S4OTHDISBL, S4ILLDIS	2-category variable	1 = yes (select SWDs sample)
Parent: P1SLD, P1DD, P1AUTISM, P1ADHD, P1EAREYE, P1JOINT, P1INTELLEC		
IEP: X1IEPFLAG		
Sociodemographic characteristics		
Gender (X2SEX)	2-category variable	0 = female 1 = male
Race/ethnicity (X2RACE)	Derived 6-category variable	1 = Indigenous 2 = Asian 3 = Black 4 = Hispanic 5 = multiracial 6 = White
SES quintiles (X1SESQ5, X2SESQ5, X4X2SESQ5)	Ordinal scale [1–5]	Derived mean score
Parental education (X1PAREDU, X2PAREDU)	Derived 4-category variable	1 = high school/less & certificates 2 = associate degree 3 = bachelor's degree 4 = graduate degree

Table 3.3 (continued)

Variable/construct name (original survey item)	Type	Category/code
High school program-built capital		
Academic (AC; S2ANYAP, S2ANYIB, S2ANYDUAL, S3AP, S3IB, S3DUAL, S3NYCLGCRED) Social (SC; S2EVERTALENT, S2EVERUPWARD, S2EVERGEARUP, S2EVERAVID, S2EVERMESA; S1TALENTSRCH, S1UPWARDBND, S1GEARUP, S1AVID, S1MESA)	Derived 4-category variable	0 = No programs 1 = Social programs 2 = Academic programs 3 = Both programs
High school experiences		
Academic achievement (X3TGPATOT)	Ordinal scale [0–4]	Derived mean score
IEP (X1IEPFLAG)	2-category variable	0 = No; 1 = Yes
HS counselor advice regarding college (S1CNSLTLKCLG, S2TALKCLGCNSL, S3CNSLCLG, S3CNSLAID)	2-category variable	0 = No; 1 = Yes
HS counselor advice regarding job/career (S1CNSLTLKJOB, S1PLANCNSL, S2TALKHSCNSL, S3CNSLJOB)	2-category variable	0 = No; 1 = Yes
Student outcomes		
Postsecondary participation (X5PS1SEC, X4PS1SECTOR)	Derived 2-category variable	0 = No; 1 = Yes
College choice (X5PS1SEC, X4PS1SECTOR)	Derived 2-category variable	0 = public 2-yr 1 = public/private non-profit 4-yr

Note. AC = academic capital; SC = social capital.

Postsecondary Participation

Students were asked about postsecondary participation after high school graduation up to age 22 when the final follow-up was conducted. Students reported participation status by age 22. Based on the reported data, the researcher created a 2-category variable to indicate participation and nonparticipation.

College choice

Students also identified which was the postsecondary institution they entered first. The categories are aggregated by institution level (two-year or four-year) to create a 2-category variable: four-year public/private or two-year public institutions.

High School Variables

Several variables in the data provide information on the acquisition of academic and school-built social capital. For academic capital, I used information on students who completed academically rigorous curriculum in high school through Advanced Placement (AP), International Baccalaureate (IB), Dual Credit (DC), and/or took any college credit during high school. For social capital, participation in collegiate outreach programs like Talent Search (TS), Upward Bound (UB), Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP), Mathematics, Engineering, Science Achievement (MESA), and/or Advancement Via Individual Determination (AVID) were considered. Based on this information a typology of high school capital was created as a four-category variable: No academic capital and no social capital; No academic capital but social capital; Academic capital but no social capital; Academic capital and social capital. Then, high school experiences were indicated by students' overall achievement (GPA) and the type of support obtained from counselors related to either college or job/career guidance, and from the IEP team for academic planning.

Control Variables

The control variables are gender, race/ethnicity, socio-economic status, and parental education. Gender is a 2-category variable (female/male). Race/ethnicity is a 6-category variable: Indigenous, Asian, Black, Hispanic, Multiracial, and White. Socio-economic status (SES) is reported as a 5-category variable (SES quintiles) but will be treated as an ordinal scale measure.

Parental education indicates the highest level of education of any of the parents and is described by a 4-category variable: high school/less and certificates, associate degree, bachelor's degree, and graduate degree.

Data Analysis

The predictive analytical software Statistical Package for the Social Sciences (SPSS Statistics 26) was used to analyze the data. To address the research questions, both descriptive statistics and multivariate analyses were utilized. Table 3.4 indicates for each research question, the set of variables and the statistical procedures to be employed.

Table 3.4

Research Questions and Analyses

Research Question	Variable	Procedure
RQ1: What are the profiles of students with disabilities with respect to sociodemographic characteristics (i.e., gender, race, SES, parental education), high school capital (i.e., academic and social), high school experiences such as achievement (i.e., GPA) and support (i.e., counselor advice, IEP), and participation in postsecondary education (i.e., enrollment, choice) by age 22?	High school capital & Gender Race/ethnicity SES Parental education GPA Advice from counselor IEP	Descriptive statistics (e.g., frequency distributions)
RQ2: What is the relative contribution of high school capital profiles to postsecondary participation by age 22, when controlling for sociodemographic characteristics (i.e., gender, race, SES, parental education) and high school experiences (i.e., achievement, academic support, IEP program)?	DV: Postsecondary participation IVs: High school capital Gender Race/ethnicity SES Parental education GPA Advice from counselor IEP	Sequential binomial logistic regression: Participant vs. Non-participant

Table 3.4 (continued)

Research Question	Variable	Procedure
RQ3: For SWDs who enroll in either 4-year public/private or 2-year public institutions by age 22, what is the relative contribution of high school capital profiles to college choice, when controlling for sociodemographic characteristics (i.e., gender, race, SES, parental education) and high school experiences (i.e., achievement, academic support, IEP program)?	DV: College choice IVs: High school capital Gender Race/ethnicity SES Parental education GPA Advice from counselor IEP	Sequential binomial logistic regression: Public/private 4-yr vs public 2-yr

Note. DV = dependent variable; IV = independent variable.

The statistical procedures include descriptive statistics (e.g., means and standard deviations, frequency distributions; Agresti, 2007). Sequential binomial logistic regressions were employed to determine the likelihood of student outcomes (i.e., postsecondary participation and college choice) by the set of variables hypothesized to affect the outcomes. The sequential binomial logistic regression models included first the high school capital variable (Model 1), followed by full models with all variables included (Model 2). The use of binomial logistic regression is appropriate since postsecondary participation and college choice are dichotomous variables (Chatterjee et al., 2000). Thus, for Research question 2 and 3, the binomial logistic regressions are used to find the likelihood of being a participant versus non-participant, or the likelihood to enroll in a 4-year institution (public or private) as compared to a 2-year college. The independent variables can be categorical or continuous. The binomial logistic regression model allows to find the likelihood of the outcome for each category of a categorical variable relative to a reference group, or when increasing a continuous variable by one unit.

CHAPTER 4

FINDINGS

The purpose of this quantitative study was to explore to what extent high school factors contributed to the postsecondary participation and college choice for a nationally representative sample of students with disabilities (SWDs). The study's assumption was that the type of capital obtained during high school (e.g., academic, social) that builds college readiness and SWDs' high school experiences (i.e., achievement, counselor advice, and IEP support) would have an impact on students' post-high school choices. While structural factors (e.g., sociodemographic characteristics) affected students' pathways, the study focused on the contribution to postsecondary participation and choice associated with high school factors (i.e., college readiness and experiences), with focus on college readiness. This study was conducted to address the gap in the literature related to the SWDs population's postsecondary pathways.

Chapter 4 presents the findings of this study. IBM SPSS Statistics for Windows, Version 29.0 was used to examine the research questions presented in Chapter 3. First, the SWDs research sample was described and compared with the SWDs HSLS:09 sample using frequency distributions. To address the next two research questions, sequential binomial logistic regressions were used to predict the likelihood of postsecondary participation (RQ2), and the likelihood to enroll in a 4-year institution rather than 2-year institution (RQ3). Chapter 4 findings are organized by research question.

Research Question 1

What are the profiles of students with disabilities with respect to sociodemographic characteristics (i.e., gender, race, SES, parental education), high school capital (i.e., academic and social), high school experiences such as achievement (i.e., GPA) and

support (i.e., counselor advice, IEP), and participation in postsecondary education (i.e., enrollment, choice) by age 22?

This section conveys data related to student characteristics, high school factors (i.e., experiences and capital), and postsecondary outcomes of the SWDs research sample. The research sample included SWDs who provided high school information on the relevant study variables (n = 6,656). The research sample was 88% of the SWDs HSLS:09 sample.

Table 4.1 contains frequencies of categorical data (counts and percentages) and mean values for ordinal measures for the SWDs research sample and the SWDs HSLS:09 sample. The categorical variables included student characteristics (sociodemographic info), high school program-built capital (social and/or academic programs), high school experiences (counselor advice regarding college and career, IEP participation in ninth grade), and post high school outcomes (postsecondary participation and college choice). For ordinal variables (GPA, SES), mean values are presented. The variable names are included in the first column, while the second and third columns convey the statistical data for both the SWDs research sample, and the SWDs HSLS sample. The researcher focused on the SWDs research sample and identifies potential differences with the SWDs HSLS sample which is nationally representative.

Student Characteristics

The composition of the research sample showed just over 5% more males than females (52.8% vs. 47.2%). This was also reflective of the SWDs HSLS:09 sample of having more males than females. For race/ethnicity composition, the largest groups were White (57.9%), followed by Hispanic (15.5%), Black (9.9%), multiracial (9.4%), Asian (6%), and Indigenous (1.4%), with a very similar composition in the SWDs HSLS:09 sample. The socioeconomic status (SES) was

grouped into five quintiles. The results convey that the highest two quintiles had the larger percentages, fifth (25.5%) and fourth (21%), while the third (18.2%), second (17.7%), and first

Table 4.1

Frequency Distributions: Research Sample and High School Longitudinal Sample (Counts/Column%)

Variable	Research sample (n = 6,656)	HSLS:09 sample (N = 7,540)
Student characteristics		
Gender		
Female	3,144 (47.2%)	3,511 (46.6%)
Male	3,512 (52.8%)	4,029 (53.4%)
Race/ethnicity		
Indigenous	90 (1.4%)	105 (1.4%)
Asian	397 (6.0%)	439 (5.8%)
Black	659 (9.9%)	775 (10.3%)
Hispanic	1,029 (15.5%)	1,212 (16.1%)
Multiracial	624 (9.4%)	688 (9.1%)
White	3,857 (57.9%)	4,321 (57.3%)
SES		
First quintile (lowest)	1,166 (17.5%)	1,372 (18.2%)
Second quintile	1,180 (17.7%)	1,378 (18.3%)
Third quintile	1,213 (18.2%)	1,387 (18.4%)
Fourth quintile	1,400 (21.0%)	1,552 (20.6%)
Fifth quintile (highest)	1,697 (25.5%)	1,848 (24.5%
Missing	0	3 (0.0%)
SES (mean, range 1–5)	3.19	3.15
Parental Education		
High school or less	2,804 (42.1%)	3,175 (43.2%)
Associate degree	1,079 (16.2%)	1,184 (16.1%)
Bachelor's degree	1,523 (22.9%)	1,660 (22.6%)
Graduate degree	1,250 (18.8%)	1,338 (18.2%)
Missing	0	183 (2.4%)
High school program-built capital		
No programs	2,656 (39.9%)	2,863 (40.5%)
Only social programs	619 (9.3%)	659 (9.3%)
Only academic programs	2,608 (39.2%)	2,753 (38.9%)
Both program types	773 (11.6%)	801 (10.6%)
Missing	0	464 (6.2%)
High school experiences		
Advice from HS Counselor on college		
No	2,169 (32.6%)	2,667 (35.5%)
Yes, at least one	4,487 (67.4%)	4,840 (64.5%)
Missing	0	33 (0.4%)
Advice from HS Counselor on job/career		
No	1,817 (27.3%)	2,300 (30.6%)
Yes, at least one	4,839 (72.7%)	5,221 (69.4%)
Missing	0	19 (0.3%)
Individualized education plan		
No/missing	4,955 (74.4%)	5,471 (72.6%)
Yes	1,701 (25.6%)	2,069 (27.4%)
Overall GPA computed (mean, range 0.25–4.0)	2.62	2.57
Post-high school outcomes		
Public 4-yr	1,795 (27.0%)	1,898 (25.2%)
Private nonprofit 4-yr	762 (11.4%)	822 (10.9%)
Public 2-yr	1,664 (25.0%)	1,825 (24.2%)
Other PSE	308 (4.6%)	353 (4.7%)
PSE nonparticipants	1,749 (26.3%)	2,183 (29.0%)
Missing PSE info	378 (5.7%)	459 (6.1%)

According to data in Table 4.1 similar parental education distributions are obtained for both research and HSLS sample. The research sample data showed the following percentages: high school or less (42.1%), associate degree (16.2%), bachelor's degree (22.9%), graduate degree (18.8%) with almost 60% of the SWDs students having parents with less than a bachelor's degree. This is also of note, because students who have parents that have not obtained a bachelor's degree are designated as first-generation students, an underrepresented population in higher education (Redford & Hoyer, 2017). Most of the sample, 58.3% are first-generation students. At the same time, 57.9% of the sample had parents with some type of collegiate experience, which may play a significant role in influencing their children toward postsecondary participation (Ross, 2016). Overall, the SWDs research sample has a similar sociodemographic composition with the SWDs HSLS sample which is important in terms of generalizability of results. The missing sociodemographic information comparing the two samples is also minimal.

High School Program-Built Capital

High school program-built capital measure is based on a set of survey items used to identify students' participation in social (AVID, GEAR UP, MESA, TS, UB) and/or academic (AP, DC, AP) programs in their respective schools. As described in Chapter 3, the researcher proposed to combine their academic and social program participation and create a 4-category variable that measures the high school program-built capital. A small percentage of the SWDs research sample (9.3%) participated only in social programs, a much larger percent participated only in academic programs (39.2%), and 11.6% participated in both types of programs. However, almost 40% of the SWDs sample did not participate in any college preparation programs which means they did not acquire high school program-built capital. Overall, it is important to note half of the research sample acquired academic capital and about 20% acquired

social capital that may contribute to their college readiness. Although 6.2% of the HSLS sample is missing information on this variable, the two sample distributions are comparable.

High School Experiences

The following measures were included in Table 4.1 to capture the high school experiences of the SWDs population in the sample: counselor interactions both for college and career, Individualized Education Plan (IEP) (only reported in ninth grade), and grade point average (GPA). Most of the sample reported they had at least one counselor interaction regarding college (67.4%) and career/job (72.7%) information. This is important because counselor interactions, as Poynton and Lapan (2017) found in their research, represent an important support of getting students oriented toward the desired post-high-school pathways. The next factor relevant for SWDs is participation in an Individualized Education Plan (IEP). Surprisingly, only 25.6% of the sample reported an IEP in ninth grade. This is notable because only a quarter of the SWDs had access to institutional support in their first year of high school, although this may have changed during the following high school years. This missing information is certainly an important limitation of the study. Finally, the overall grade point average for the SWDs research sample was 2.62. Westrick et al. (2015) emphasized the importance of GPA to measure college-readiness. The 2.62 GPA corresponds to a C, which may suggest this group of students are less prepared for the rigors of college. Overall, the research and the HSLS samples are quite similar with respect to the high school experience variables.

Post-High School Outcomes

Lastly, Table 4.1 presents the frequency distributions for student outcomes that indicate postsecondary participation by age 22. Overall, there were no major differences between the research sample and the HSLS sample. The frequency distributions for sociodemographic

factors, high school program-built capital measure, high school experiences variables, and post-high school outcomes were comparable, which increases the generalizability of the results.

Research Question 2

What is the relative contribution of high school capital profiles to postsecondary participation by age 22, when controlling for sociodemographic characteristics (i.e., gender, race, SES, parental education) and high school experiences (i.e., achievement, academic support, IEP program)?

To answer the second research question, the researcher used a sequential binomial logistic regression analysis. The first regression model established the relationship between the high school capital variable and the postsecondary participation dichotomous dependent variable. The first regression model was statistically significant, $\chi^2(3) = 814.733$, $p < .001$; it explained 17.5% (Nagelkerke R^2) of the variance in the outcome and correctly classified 72.1% of cases. The second regression model included the sociodemographic factors and high school experiences, in addition to the high school capital typology. The model was also statistically significant, $\chi^2(17) = 2479.860$, $p < .001$; it explained 47% (Nagelkerke R^2) of the variance in the outcome and correctly classified 81.8% of the cases.

Table 4.2 contains the results of the binomial logistic regression that estimates the likelihood of student postsecondary participation (vs. being non-participant) when each category of the predictor is compared to the corresponding reference category. The table includes the regression coefficients and their standard errors, *p*-values to test the null hypothesis for each coefficient, and the corresponding odds ratios. Results in Table 4.2 are interpreted in terms of odds ratios which are calculated for each category against a selected reference category. First, the researcher focused on Model 1 by discussing only the statistically significant results (i.e., *p*-

values less than alpha =.05) for the high school capital categories. Then for Model 2, the researcher discussed the effect the additional independent variables have on post-secondary participation and to what extent they change the impact of the high school capital typology measure.

Table 4.2

Sequential Binomial Logistic Regression: Postsecondary Participation

Independent variable	B	Std. error	*p*	Odds ratio	B	Std. error	*P*	Odds ratio
	Model 1				Model 2			
HS capital typology (no ref)								
Only social programs	-0.151	0.093	0.105	0.860	-0.014	0.113	0.903	0.986
Only academic programs	1.711	0.074	0.001	5.534	0.711	0.088	0.001	2.037
Both program types	1.598	0.116	0.001	4.945	0.672	0.138	0.001	1.958
Advice from HS counselor on college (no ref)					0.957	0.076	0.001	2.604
Advice from HS counselor on job/career (no ref)					-0.01	0.083	0.900	0.990
IEP (no ref)					-0.803	0.077	0.001	0.448
Overall GPA					1.173	0.053	0.001	3.230
Gender (male = ref)								
Female					0.375	0.074	0.001	1.454
Race (White = ref)								
Indigenous					-0.161	0.277	0.561	0.851
Asian					1.171	0.246	0.001	3.224
Black					0.545	0.122	0.001	1.725
Hispanic					0.353	0.100	0.001	1.424
Multiracial					0.242	0.126	0.055	1.274
SES					0.209	0.041	0.001	1.232
Highest level of parental education (high school/less ref)								
Associate degree					0.218	0.109	0.047	1.243
Bachelor's degree					0.578	0.131	0.001	1.782
Graduate degree					0.752	0.163	0.001	2.122
Constant	0.267	0.04	0.001	1.306	0.951	0.028	0.001	2.589
Nagelkerke R^2		17.5%				47%		

Note. ref. = reference group.

Research Question 2: Model 1

The high school capital typology included a combination of social and academic programs that SWDs took part in high school. As reflected in Table 4.2 for Model 1, high school participation in academic programs had the biggest effect on the postsecondary participation of SWDs. In fact, SWDs who enrolled only in academic programs (i.e., advanced curriculum programs) were more than 5 times (5.534) more likely to be postsecondary participants than those who did not take any capital-building programs in high school. Participation in both academic and social capital-building programs (i.e., advanced curriculum and outreach) was also shown to be statistically significant, with an odds ratio of 4.945. Although not significant, taking only outreach programs designed to increase social capital had a slight negative effect on the likelihood of postsecondary participation.

In Model 1, the researcher hypothesized that high school program-built capital would increase the likelihood of postsecondary participation. Indeed, the participation in high school academic programs focused on advanced curriculum increased the likelihood of college attendance. However, participation in social programs does not appear to have a similar effect on postsecondary participation. Students in both social and academic programs are not as likely as those who took only academic programs to become postsecondary participants.

Research Question 2: Model 2

As shown in Table 4.2, Model 2 represents the full model with all study variables included. While the focus is still on the high school capital typology, the model includes sociodemographic and high school experiences as control variables. The sociodemographic independent variables were gender, race, SES, and parental education. The independent variables

measuring high school experiences included advice from counselors regarding college, advice from counselors regarding career, participation in an IEP, and overall GPA.

When including the controls, the effect of the high school typology categories decreased but maintained their statistical significance. For instance, the likelihood of postsecondary participation by SWDs with only academic capital decreased from an odds ratio of 5.534 to 2.037. This means that students in advanced academic programs during high schools were twice as likely to be postsecondary participants compared to those who did not take any college preparation programs. Furthermore, students who participated in both social and academic programs during high school were almost twice as likely to participate in postsecondary education although the odds ratio decreased from 4.945 (Model 1) to 1.958 (Model 2). Model 2 shows the same non-significant effect as Model 1 with respect to programs focused only on building social capital.

The effect of control variables was significant since Model 2 was much stronger with 47% of the variance in the outcome being explained by the predictors. First, the researcher discussed the effects of sociodemographic factors. As for gender, female SWDs were shown to be 1.454 times more likely to participate in postsecondary education than their male counterparts. Some racial groups also showed an increased likelihood of postsecondary participation when compared to the White students (reference group). For instance, Asian students had the highest likelihood of postsecondary participation and were 3.224 times more likely to participate than their White counterparts. Similarly, Black students were 1.725 times and Hispanic students were shown to be 1.424 times more likely to participate in postsecondary education than White students. All these effects were statistically significant at the .05 level.

SES was also statistically significant with one unit increase in SES increasing the likelihood of participating in postsecondary education by a factor 1.232 which confirms that SES is a predictor of postsecondary education participation for SWDs. This result coincides with Weis et al. (2014), who also found in their research. Students from higher SES families have access to information and are more likely to attend college.

Finally, students whose parents completed postsecondary degrees are at higher odds to pursue postsecondary education. For instance, the odds ratios were as high as 2.122 for SWDs with parents who had obtained a graduate degree, 1.782 for those whose parents had bachelor's degrees, and 1.243 for those coming from families where at least one parent obtained an associate degree. These results show that cultural and social capital transmitted from educated parents to their children has an impact on SWDs' postsecondary education participation.

This section describes the results of Model 2 regarding variables associated with SWDs high school experiences. First, taking counselor advice specifically regarding college was a significant predictor of college participation. SWDs who received advice from high school counselors were over 2.5 (2.604) times more likely to move to postsecondary education. There was no significant effect associated with students discussing job/career issues with counselors. In addition, students who participated in an IEP (as reported in ninth grade) were 0.448 times as likely to enroll in postsecondary education which could be either related to IEP being offered only to students with very serious issues unlikely to go into higher education or IEP students being less encouraged to go to college. This conveys the importance of SWDs being identified early in high school in order to receive the support they need through an IEP but providing them with encouragement and the necessary tools to develop college readiness skills. Finally, high school GPA was a significant predictor of postsecondary participation with one unit increase in

GPA increasing the likelihood of participation in postsecondary education by a factor 3.23 which confirms that academic achievement has a positive effect on postsecondary education participation.

In summary, the effect of high school-built capital continued to be significant in the full model. However, its impact was decreased when sociodemographic and high school experience variables were included. The decreasing relevance of high school typology, particularly the importance of academic capital could be associated with some effect being taken over by the GPA effect. Certainly, students involved in advanced curriculum have higher GPA although there was no collinearity between the two variables. Not surprisingly, parental education and family income were also key contributing factors to the outcome. Furthermore, the counselor interaction regarding college planning was shown to influence college-going decisions as well. The negative effect of IEP participation (as reported in ninth grade) is definitely a result that requires further discussion.

Research Question 3

For SWDs who enroll in either 4-year public/private or 2-year public institutions by age 22, what is the relative contribution of high school capital profiles to college choice, when controlling for sociodemographic characteristics (i.e., gender, race, SES, parental education) and high school experiences (i.e., achievement, academic support, IEP program)?

To answer the third research question, the researcher also used a sequential binomial logistic regression analysis. First, the binomial logistic regression model established the relationship between the high school capital variable and the choice of a 4-year (public or private) college as opposed to a 2-year college. As explained in Chapter 3, preliminary analyses

showed that differences between choice of public or private 4-year college were not significant, so the decision was made to differentiate college choice only by level of education. The first regression model was statistically significant, χ^2 (3) = 234.662, $p < .001$; it explained 7.3% (Nagelkerke R^2) of the variance in the outcome and correctly classified 64% of cases. The second logistic regression model included the sociodemographic factors and high school experiences, in addition to the high school capital typology. The model was also statistically significant, χ^2 (17) = 990.929, $p < .001$; it explained 28.3% (Nagelkerke R^2) of the variance in the outcome and correctly classified 71.8% of the cases.

Table 4.3 shows the results of the binomial logistic regression models that estimate the likelihood of 4-year college choice (vs. 2-year college) for each category of the predictors compared to the corresponding reference categories. First, the table includes the regression coefficients and their standard errors, followed by the *p*-values to test the null hypothesis for each coefficient, and the corresponding odds ratios. As for the previous analysis, results in Table 4.3 are interpreted in terms of odds ratios which are calculated for each category against a reference category. The researcher focused on Model 1 by discussing only the statistically significant results (i.e., *p*-values less than alpha = .05) for the high school capital categories. For the second model, the researcher discussed the effect additional independent variables have on choice of a 4-year college and the extent to which the control variables included in Model 2 changed the impact of the high school capital typology measure on the study outcome.

Research Question 3: Model 1

As a reminder, the high school capital typology included a combination of social and academic programs students taken in high school. Results are very similar to those obtained in predicting postsecondary participation and show that high school participation in academic

programs had the most significant effect on the choice of a 4-year college. Although odds ratios are not as high as those obtained in the participation model, Table 4.3 shows that SWDs enrolled only in academic programs (i.e., advanced curriculum programs) were almost 3 times (2.722) more likely to choose a 4-year college rather than a 2-year college compared to SWDs who did not take any capital-building programs in high school. Participation in both academic and social capital-building programs (i.e., advanced curriculum and outreach) was also statistically significant, with a slightly lower odds ratio of 2.370. Same as in the participation model, taking only outreach program designed to increase social capital had a negative effect on the likelihood of choosing a 4-year college (although the effect was not significant) which is mostly related to other characteristics of students enrolled in these programs.

Table 4.3

Sequential Binomial Logistic Regression: Choice of 4-Year College

Independent variable	B	Std. error	*p*	Odds ratio	B	Std. error	*P*	Odds ratio
	Model 1				Model 2			
HS capital typology (no ref)								
Only social programs	-0.169	0.139	0.224	0.845	0.092	0.156	0.556	1.096
Only academic programs	1.001	0.074	0.001	2.722	0.400	0.084	0.001	1.492
Both program types	0.863	0.104	0.001	2.370	0.297	0.119	0.012	1.346
Advice from HS counselor on college (no ref)					0.346	0.088	0.001	1.413
Advice from HS counselor on job/career (no ref)					-0.018	0.085	0.827	0.982
IEP (no ref)					0.379	0.095	0.001	0.685
Overall GPA					1.256	0.066	0.001	3.511
Gender (male = ref)								
Female					-0.114	0.073	0.122	0.892

Table 4.3 (continued)

Independent variable	B	Std. error	*p*	Odds ratio	B	Std. error	*P*	Odds ratio
		Model 1				Model 2		
Race (White = ref)								
Indigenous					0.175	0.337	0.603	1.191
Asian					0.059	0.139	0.669	1.061
Black					0.545	0.129	0.001	1.724
Hispanic					-0.118	0.107	0.274	0.889
Multiracial					-0.054	0.127	0.672	0.948
SES					0.229	0.044	0.001	1.258
Highest level of parental education (High school/less = ref)								
Associate degree					-0.207	0.119	0.082	0.813
Bachelor's degree					0.005	0.130	0.972	1.005
Graduate degree					0.259	0.152	0.089	1.295
Constant	-0.162	0.057	0.004	0.850	-4.430	0.232	0.001	0.012
Nagelkerke R^2		7.3%				28.3%		

Note. ref. = reference group.

To summarize, Model 1 shows the importance of students participating in academic programs based on advanced curriculum while in high school. These programs increased the academic rigor for high school students and fostered a college-going culture. Students in academic programs appeared to be more prepared for college and thus are more oriented toward 4-year institutions.

Research Question 3: Model 2

Model 2 included all study variables hypothesized as influencing SWDs choice of a 4-year college. The focus was still on the role of the high school capital typology, when controlling for sociodemographic and high school experiences variables. As a reminder, the sociodemographic independent variables were gender, race, SES, and parental education, and the

variables measuring high school experiences included advice from counselors regarding college, advice from counselors regarding career/job, IEP participation and overall GPA.

When control variables were included, the effect of the high school typology categories slightly decreased but their statistical significance was preserved. For instance, the likelihood of choosing a 4-year college when students possess academic capital only (by taking advanced courses in high school) decreased from an odds ratio of 2.722 to 1.492, but still had a significant effect. This means that students in advanced academic programs were about 1.5 more likely to enroll in a 4-year college rather than 2-year college compared to students who did not take any academic or social capital building programs in high school. Also, students who participated in both social and academic programs during high school the likelihood of enrollment in a 4-year college was 1.346 decreased from 2.370 (Model 1). Model 2 maintained the non-significant effect with respect to participating only in social capital building programs.

As compared to the participation model (RQ2), the effect of control variables was less important. For instance, few sociodemographic factors showed statistical significance. First, there was no significant difference in choice of a 4-year institution between males and females. Second, the only racial group more likely to choose a 4-year college were Black SWDs who are 1.724 more likely than White SWDs to choose a 4-year college rather than a 2-year college. SES was a statistically significant predictor of college choice with one unit increase in SES increasing the likelihood of choosing 4-year college by a factor 1.258 which confirms again that SES is a strong determinant for SWDs post-high school choices. Finally, college choice does not appear to be significantly affected by parental education.

Next, the researcher described the results of Model 2 with respect to the study variables associated with SWDs' high school experiences. First, discussing with the high school counselor

about college was a significant predictor of college choice. SWDs who received advice from high school counselors were 1.413 times more likely to choose a 4-year institution rather than a 2-year institution compared to those who did not have such conversations with the counselor. There was no significant effect associated with students discussing job/career issues with counselors. Similar to the participation model (RQ 2), students who participated in an IEP (as reported in ninth grade) were 0.685 times as likely to choose a 4-year college. Finally, high school GPA was a significant predictor of college choice with one unit increase in GPA leading to an increase of 3.511 in the likelihood of choosing a 4-year rather than a 2-year college. Maintaining a high GPA in high school is an important requirement for university admission.

In summary, Model 2 identified several key factors that contribute to the choice of a 4-year over a 2-year institution. For one, SWDs participating in academic programs was a key factor for students choosing to attend a 4-year college. Black students in the sample had an increased likelihood of attending a 4-year institution. Not surprisingly, SES had a positive impact on choosing 4-year colleges that are usually associated with higher tuitions. The interaction with a high school counselor specifically for discussing college aspects was an important influencing factor. Further discussion is needed regarding the negative effect of IEP participation in high school and the choice of a 4-year institution. The decreasing relevance of the high school typology, when controls were included in Model 2 can be associated with the effect of SES as an economic factor affecting college choice, as well as the large GPA effect on choice that may be controlled by admission requirements.

Summary of Key Study Findings

In Chapter 4 the findings were presented to answer the three research questions. This was done to test the main assumption of the study that high school program-built capital influenced

both postsecondary participation and college choice. The following sections list the most significant findings.

High School Program-Built Capital Effect

- SWDs who participated in academic programs such as AP, DC, and IB during high school were more likely to attend college and choose 4-year institutions.
- Participation in high school social programs (only) did not have an impact on either postsecondary participation or college choice which could be associated with the composition of students in these programs.

High School Experiences Effect

- SWDs who received advice from high school counselors regarding college are more likely to attend college and choose a 4-year institution, however advice from counselors regarding career had no significant impact on outcomes.
- SWDs who reported an IEP in ninth grade were less likely to go to college and choose a 4-year institution.
- SWDs with higher GPA were more likely to pursue postsecondary education and attend a 4-year institution.

Student Characteristics Effects

- Female SWDs were more likely to participate in postsecondary education than males, but there was no significant gender difference regarding college choice.
- Asian students were the most likely group to participate in postsecondary education, with Hispanic, Black, and multiracial students showing a higher likelihood of attending college than White students.

- Only Black SWDs showed higher likelihood of choosing a 4-year institution over a 2-year college compared to White SWDs students.
- SWDs from higher SES were more likely to attend college and choose 4-year institutions.
- SWDs with parents who earned a postsecondary degree were most likely to attend college, although parental education had no significant impact on college choice.

CHAPTER 5

DISCUSSION

In Chapter 5 the researcher provides a summary of the study and overview of the researcher's findings. Study findings are then compared to the current body of knowledge related to students with disabilities (SWDs) preparation and participation in postsecondary education. SWDs. The study's limitations and significance of the study are further included. Implications for policy and practice and recommendations for future research conclude this chapter.

Overview of the Study

In this study, the researcher examined to what extent specific high school factors contributed to postsecondary participation and college choice among a nationally representative sample of SWDs. The study's assumption was that the type of capital obtained during high school (e.g., academic, social) that builds college readiness and SWDs' high school experiences (i.e., achievement, counselor advice, and IEP support) would have an impact on students' post-high school choices. This study sought to illuminate how high school program-built capital impacted SWDs' post high school outcomes (Bourdieu & Passeron, 1977). While structural factors (e.g., sociodemographic characteristics) affected students' pathways, the study particularly focused on the contribution high school factors (i.e., college readiness and experiences) have on paving the way to college for the SWDs population.

Bourdieu's (1986) theory of forms of capital was used as the theoretical framework of this study to guide the introduction of the high school program-built capital (i.e., academic and social) and the main study assumptions. According to Bourdieu (1977), family, educational institutions, and workplace are networks within society to provide access to required resources (capital) present in fields of practice. Bourdieu emphasized that a person's decisions are largely

based on their available capital. SWDs are a unique high school population, with different experiences than other student populations. Therefore, with high school being an important field of practice in preparation for higher education and future careers, it was important to examine the ways SWDs acquire academic and social capital during high school years. Then, explore in what ways the high school program-built capital translates into SWDs successful transition from high school to college.

For this study, the research sample was selected from the HSLS:09. The SWDs sample the researcher derived was based on reporting of some type of student disability by high school students or parents during the surveys, or students' one-time reporting of having an IEP in ninth grade. This study was based on secondary analysis of data and revealed the relationships between students' high school academic and social capital acquired through participation in high school programs, and their postsecondary participation and college choice, when controlling for sociodemographic factors and high school experiences. Descriptive statistics and multivariate analyses (binomial logistic regression models) were used to examine the effects of the independent variables on postsecondary participation and choice of 4-year colleges.

Study findings showed that social and academic capital were major factors affecting postsecondary participation and college choice for SWDs. For instance, students participate in academic programs designed to increase academic capital by adding collegiate rigor to the high school curriculum such as AP, DC, and IB (Barnett & Kim, 2014). Likewise, the high school counselor appeared to be one of the greatest resources in high schools to build students' social capital and advance a college-going culture within high schools (Bryan et al., 2011). Therefore, in order to maximize the effects of capital acquisition in high schools, SWDs should be encouraged to meet with counselors for college planning and participate in academic programs.

Discussion of Key Findings

The SWDs population may benefit from academic programs and college-planning with high school counselors according to the findings of this study. The more SWDs are oriented toward postsecondary pathways early on in high school, especially when it comes to enhancing their academic and social experiences, the better are their successful transitions to college prospects. In this section, I will cover the key findings of the study related to high school factors (i.e., program-built capital and high school experiences) that affect SWDs' post-high school pathways, and further discuss the effect of student characteristics. Study findings are discussed in relation to existing research literature.

High School Program-Built Capital

Previous research by Barnett and Kim (2014) showed that advanced academic programs promoted a college-going culture within high schools. Through advanced programs, students were exposed to the challenge of collegiate work while receiving the support system of high school teachers. Academic capital is not only built through these programs, but also transferred when students are exposed to collegiate faculty and peers who are also college minded. Likewise, Hemelt et al. (2020) found that Advanced Placement (AP) courses promoted the rigor required for college while still in high school. Meanwhile Sadler et al. (2016) asserted the importance of students preparing for AP exams as an important training exercise for college. Troutman et al. (2018) confirmed that students who participated in advanced academic programs in high school had higher grade point averages and increased graduation rates. High school graduation and high GPAs were the currency (high school-built academic capital) needed for successful postsecondary participation.

Therefore, it is not surprising that the enrollment in high school advanced academic programs had one of the largest effects on SWDs' postsecondary participation and college choice in this study. The students who acquired high school academic capital were most likely to attend college and choose a four-year institution. These results reinforce the benefits of building academic capital necessary to move between two fields of practice: high school and higher education (Bourdieu, 1986). In addition, the academic capital effect is consistent with the study finding that students with high GPAs are the most likely postsecondary education participants who attend universities (Westrick et al., 2015).

On another note, Toutkoushian et al. (2018) affirmed the importance of the expansion of social programs to reach traditionally underrepresented populations within higher education to help them build the social capital necessary to make informed postsecondary education decisions. According to Avery et al. (2014), many low-income students enrolled in high school social programs received mentoring and coaching that helped them build social capital needed for navigating the transition to postsecondary education. Such help consists in assisting students with college visits, locating scholarships and completing the financial aid process. Morley et al. (2021) also cited the important benefit of helping students complete the college admissions process. In other research, social programs like MESA are specifically geared toward encouraging underrepresented groups toward STEM careers by exposing them to STEM related experts and experiences (Greenberg & Singh, 2016). These enriching experiences allow for students to build social capital (Verdín & Godwin, 2018) that consists of resources, information, and guidance.

Although social programs are expected to expand opportunities for students who are not traditionally represented in academia, these programs did not impact postsecondary participation

or college choice of SWDs in this study unless they were combined with academic programs. Given that these specific high school social programs target populations of students who are the least oriented toward college, this result may not be surprising. Students enrolled in high school social programs must also be encouraged to participate in academic programs to become more oriented toward collegiate pursuits.

High School Experiences

The student/counselor dynamic has proven to be an important resource in building social capital and orienting students toward postsecondary participation (Bryan et al., 2011). Similarly, Avery et al. (2014) found the student/counselor relationship was an important equalizer for students from low SES backgrounds. Poynton and Lapan's (2017) longitudinal study of high school students' experiences that lead to college attendance also keyed in on student to counselor interactions. This was particularly true when interactions were related to college planning and occurred as early as tenth grade. Engberg and Gilbert (2014) associated counselor interactions with students with a higher likelihood of choosing a four-year institution.

Unsurprisingly, the counselor interactions with SWDs were an important contributing factor to postsecondary participation and college choice in this study. Specifically, students who reported meeting with counselors regarding college planning, were more likely to be postsecondary participants and chose four-year institutions. College planning with counselors allowed for the acquisition of social capital through contacts to the most important social networks in high school (Bourdieu, 1986). Counselors also provided students with access to the necessary resources (college admissions, scholarships, college entrance exams) for successful transition to postsecondary education (Poynton & Lapan, 2017).

Another important high school experience for SWDs is having their disabilities identified as early as possible and having a developed Individualized Education Plan (IEP) (IDEA, 2004). Along with the IEP comes the support of the IEP team of professionals to help the student navigate the challenges of high school. This IEP support team includes parents who may contribute their social and cultural capital resources needed in order to successfully advocate for their children's success (Trainor, 2010). Doren et al. (2013) asserted that the IEP cannot be just a formality. Therefore, a positive impact occurred when IEP team members were committed to professional development and were able to provide more robust support. De Boer et al. (2018) linked the expectations the team had for the SWDs to their achievement. Higher levels of confidence in the student's capabilities translated into higher rates of success and better high school experiences for SWDs.

Undoubtedly the IEP, and IEP team are important for SWDs. However, as the literature suggests, there are factors that can impact the success of these plans and may not always lead to long term academic success. Study findings indicate the students on an IEP were less likely to be postsecondary participants. Since only one-fourth of the SWDs research sample reported being on an IEP in ninth grade, and it is unknown if additional students were on IEPs after ninth grade, it is possible the IEP measure was not well-defined for the study. However, it is also possible IEP students have not received sufficient encouragement for postsecondary participation.

Student achievement was a key factor linked to post-secondary participation. Westrick et al. (2015) emphasized the importance of high school grade point average (GPA) as a key indicator of college readiness. Ngo and Kwon (2015) studied high school GPA as it relates to student achievement in college math courses. They found higher GPAs in high school translated to better success rates in collegiate-level mathematics. Some states like California and Texas

offer college entrance benefits to students with high GPAs (Black et al., 2016; Papay et al., 2022). In this study, SWDs with high GPAs were the most likely postsecondary participants and chose four-year institutions. Since high GPA students are more likely to possess more academic capital through academically enriching high school experiences, these students are the most academically oriented to pursue higher education (Bourdieu, 1986).

Student Characteristics

Demographic factors have an impact on postsecondary participation and college choice. Female students participate at higher rates than their male counterparts (NCES, 2022a), but only at slightly higher rates among SWDs (NCES, 2016). Ma and Baum (2016) found that Hispanic and Black students were more concentrated at two-year colleges, while Asian students were most likely to attend universities. In fact, Asian and White students make up the largest groups represented within colleges and universities, with Hispanic, Black, and Native American attending in lower per capita rates (NCES, 2022a).

The current study showed mixed results on demographic factors for SWDs. In the study, the female SWDs population were more likely to attend college than males. This finding differed from the literature, as female SWDs have only slightly higher postsecondary participation rates when compared to their male peers (NCES, 2016). Also, in this study, Black SWDs were the most likely to attend a four-year institution. Again, the finding of four-year institutional choice was not consistent with previous research (Ma & Baum, 2016). One demographic area that was consistent with the literature was Asian SWDs were the most likely to be postsecondary participants (Ma & Baum, 2016; NCES, 2022a).

Socioeconomic status (SES) and parental education were both important factors related to postsecondary participation and college choice. Bryant (2015) found that low SES and first-

generation status created major obstacles for student success in college. Conversely, Weis et al. (2014) found that students who come from families with the most financial resources fared much better in college. They had more economic capital to help them navigate academia. Z. W. Taylor and Bicak (2020) asserted that students with less financial resources have the greatest difficulties transitioning to higher education.

Similarly, the effect of SES on post-high-school pathways was a key finding of this study. The students from the most financially advantaged backgrounds were the most likely postsecondary education participants. Students of means were also more inclined to choose to attend four-year institutions. In addition, SWDs with parents who had obtained a bachelor's or master's degree were the most likely to attend college. This is consistent with Redford and Hoyer's (2017) findings that continuing generation students are the most likely to be postsecondary participants and choose four-year institutions. The result also supports the social reproduction in education thesis (Bourdieu & Passeron, 1977) that schools are not institutions of equal opportunity but instruments for perpetuating social inequalities.

Limitations and Delimitations

There were a few limitations for this study. First, the selection of the SWDs' sample was based on self-reported information from students and parents, so there could be some inaccuracies in answers due to self-reporting. Additional self-reported data on IEP as an indicator of disability was used to select the SWDs sample. Since only one-fourth of SWDs had received IEP support in Grade 9, there was only partial overlap between student and parent self-reported information of disability and the IEP information. Also, the IEP reporting was done only in Grade 9, and it was unknown if additional students had IEPs in tenth through twelfth grade which may have limited the selected sample and provided a less accurate measure for IEP.

Therefore, it is possible that the SWD sample did not include all students with disabilities from the HSLS representative sample.

Second, although the HSLS:09 SWDs sample of 7,540 students would be representative for the SWDs population, the actual SWDs research sample was to some extent reduced due to missing information, which may affect the generalizability of results. During the analysis, the researcher compared student sociodemographic characteristics of the actual research samples with the HSLS:09 SWDs representative sample and showed they had comparable student compositions. Still, since missing information is in general associated with students from more disadvantaged backgrounds, study findings would likely describe a best-case scenario of postsecondary participation and college choice for the SWDs population.

Third, HSLS:2009 included some information on the type of disability. However, the survey data was not reliable enough to include this factor in the analysis. Thus, another limitation of the study consisted of not disaggregating the sample by specific disability type.

A delimitation for this study was focusing exclusively on SWDs. Specifically, this study examined how high school impacted the post-secondary participation and college choice of the SWDs population. Comparisons to students without disabilities may have further illuminated the disparities between the SWDs and non-SWDs groups which future researchers may consider.

Significance

This study explored how high school experiences contributed to building the social and academic capital necessary to become postsecondary participants and aiding students with disabilities in their choice of a two-year or four-year college. This research will benefit key stakeholders in having a greater understanding of the pursuit of postsecondary education for SWDs, a population of students who have not been a common topic of research in K-12 or

higher education. With a growing emphasis on improving equity in outcomes within academia, SWDs are an important population to research. This study adds to the literature on SWDs high school experiences and the importance of academic and social capitals that lead to postsecondary participation and influence college choice (Bourdieu, 1986). Practitioners, policymakers, and researchers may find the results of this study helpful when it comes to understanding and improving high school programs, support, and transition to postsecondary education for SWDs.

Recommendations for Practice

There are important high school experiences that SWDs can be integrated in early on to increase the chances postsecondary participation. For one, if they are encouraged to participate in academic programs geared toward collegiate preparation that may increase their likelihood of postsecondary participation. Another benefit of academic programs is that it may better prepare SWDs for admittance and rigors of four-year college attendance. Academic programs fostered high school achievement and gave students the academic capital needed to earn and maintain high GPAs. Participation in advanced curriculum in high school could provide SWDs in their acquisition of the needed academic capital for successful collegiate endeavors.

Furthermore, it is important that SWDs are afforded more opportunities to meet with high school counselors specifically regarding college planning early on in high school. IDEA (2004) requires transitional plans to be created for SWDs with the end of high school in mind. However, high school counselors are not always part of IEP teams depending on the school district and state policies. Given the benefits of the high school student/counselor relationship in growing a college-going culture (Bryan et al., 2017), would be important for high school counselors to take part in transitional planning, especially when the students goals involve postsecondary participation.

In addition, there are further practices recommended by the researcher that were not part of the study findings but emerged in the literature. As Theobald et al., (2019) asserted, the more SWDs can be incorporated in general classrooms the better the outcomes. Therefore, training faculty how to best accomplish the learning outcomes with students who may learn differently in general classrooms is important. Moreover, a pedagogical framework that has shown benefit not only for SWDs, but for all students, is Universal Design for Learning (UDL) (Fowler et al., 2014). Though UDL has been shown to improve successful outcomes, it is not commonly incorporated into professional development opportunities and pedagogical practice.

Implications and Recommendations for Policy

There are key changes that can be made in local and federal policy to improve SWDs preparation for college and the transition from high school. Federal laws prescribe how they should be served in both secondary and postsecondary education (ADA, 1990; IDEA, 2004; Section 504, 1973). However, a few areas of improvement that could relieve obstacles for SWDs in their transition from high school to college are recommended. Some areas of change are related to the study findings that revealed the key role of high school counselors and the ambiguous effect of IEP.

One important aspect to helping SWDs become postsecondary participants is related to improving transitional services for SWDs. Students on an Individualized Education Plan (IEP) are guaranteed transitional services that can begin as early as eighth grade (IDEA, 2004). However, including higher education personnel on the IEP team for transitional planning is optional. Much like students having the ability to meet with high school counselors for college planning, meeting with college representatives could have an important impact on making the transition from high school to college more seamless for SWDs. As Lyman et al. (2016) found

there are students who show up to colleges and universities unaware of the support personnel and resources designated for their benefit. The sooner SWDs are able to make connections with the people tasked with providing support within the institution and classroom the better (Osborne, 2018)

Another option would be to expand IDEA (2004) to cover students through their first semester or year of college as they complete their transition process. The law already covers high school students up to age 21. It would be a simple modification to allow it to continue into higher education if SWDs have not aged out of the system. This would aid students who need to obtain documentation of their disability from high schools or who may require updated diagnoses. Under IDEA (2004), K-12 schools provide diagnosticians who assist with testing and diagnosis to create disability documentation for students. However, in higher education, the students must pay to be reexamined if their high school documentation has expired. In addition, if the requirements of IDEA (2004) could cover students through postsecondary education, it would provide more than access: it would give students the support needed to be successful. SWDs arrive on campuses each year and remain hidden in classrooms because they may not know that there are support personnel and resources available to them (Lyman et al., 2016).

The researcher has other policy recommendations that were not part of the findings in this study, but emerged in the literature. A simple shift that would be helpful is allowing students the option of disclosing their disability status on college and university applications. According to research on transition from high school to college, one of the primary obstacles of serving SWD as they move in to higher education is identifying them (Grimes et al., 2017). Even a simple question where they had the choice of answering that they used an IEP or received accommodations in high school, could aid them in the disclosure process and help the higher

education institution identify needs and ways to support SWDs. Currently, as soon as high school students graduate, they are on their own to navigate the new educational environment and find support resources on their own. However, if higher education personnel who are charged with serving SWDs on college campuses were notified in advance, then these personnel could take a proactive approach (Lyman et al., 2016). Then, if SWDs have access to the best information, know who the designated personnel are, they could the necessary accommodations could be set up before their college classes begin.

Recommendations for Future Research

Future research related to this population is imperative to inform policy and practice how to better support the SWDs population. One important facet of that is to examine how to improve their transition from high school to higher education. The more that is understood, the better this population can be served.

Delving further into the IEP process would be a worthwhile research endeavor related to the requirement in IDEA (2004) of providing transitional services. There are several research facets including students, parents, and the members who compose the IEP team. Important questions to explore are what type of IEP plans are being developed and how do students benefit. Grigal et al. (2011) found disparities in IEP planning and team make up based on type of disability. While Doren et al. (2013) made a distinction between completing paperwork to meet the IDEA (2004) law requirements and having meaningful plans. They found that professional development can be an important orienting task for IEP teams. This would be an important area to research. In addition, as demonstrated by this study and the existing literature, not all parents are appropriately equipped with the resources necessary to successfully promote the interests of their SWDs children. Trainor (2010) suggests that there are disparities in the advocacy for SWDs

depending on the parental background. This would be another important area to study in relation to putting in place a resourceful IEP team.

Transition between high school and college is not well understood for SWDs (Test et al., 2015), so it would be useful to explore in further depth the specific phenomena occurring with students during that transition. This would require both quantitative and qualitative research, as well as examining what is happening with students at both institutional and individual levels. Some literature indicates that there is an avoidance of formal disclosure in postsecondary education because students do not believe they need accommodations or that the transitional process leaves them lacking the knowledge and skill to adapt to the new environment (Grimes et al., 2017; Lyman et al., 2016). Understanding the experiences of SWDs in both high school and college would be illuminating in uncovering barriers and providing support. It is far more challenging to adequately serve a population of students who choose to remain hidden.

One area that had received little attention was SWDs participation in academic programs as a collegiate pathway. There is a lot of research to suggest academic programs like AP, DC, and IB have a positive impact on postsecondary participation (Dickson et al., 2018; Hemelt et al., 2020; Barnett & Kim, 2014). However, examining the benefits of academic programs for SWDs is not a topic addressed in the literature. Along with exploring the benefits, understanding SWDs experiences in academic programs may also prove useful.

Conclusion

The purpose of this study was to explore the effect of high school program-built capital on SWDs' postsecondary participation and college choice. Access to academic programs and college planning with high school counselors were key elements found in the results of this study. They had positive effects on SWDs postsecondary prospects, which is an important

message to consider by high school educators and IEP teams. This study contributes to the research literature related to SWDs and their transition from high school to college. The researcher's goal was to illuminate what is happening in high schools that help SWDs build the necessary social and academic capital to become successful postsecondary participants. This study has just skimmed the surface on what can be done to improve collegiate pathways, but hopefully, it will amplify the ways educators can support SWDs through the transition from high school to college. Though laws were enacted to protect SWDs from discrimination and to place parameters on how best to support them to achieve success, merely following the letter of the law is not enough. Work with SWDs, much like any other underrepresented student population in education, must be informed by research and intentional in practice.

In the same vein, it is also important that researchers seek to understand what systemic barriers SWDs face in transitioning from high school to college beyond the challenges of their disabilities. Key stakeholders must be committed to examining and improving equity for all students within the educational system. As indicated by researchers, SWDs are an overlooked part of the student population. As evidenced by the disparities in postsecondary participation and graduation rates, SWDs improvements can be made in how SWDs are served. This means that K-12 and higher education administrators, faculty, and staff must step up to the challenge and seek better solutions for these students. Moreover, there is much to be done to increase positive outcomes, improve support, and implement strategies for SWDs' success. As a final note, if education is truly for all students, and higher education is meant to be the great equalizer in our society, then continued research and policy development on the ways to improve postsecondary participation and college choice outcomes for SWDs is a worthwhile endeavor.

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APPENDIX A

HSLS:09 STUDY

Appendix A provides more information about the HSLS:09 data (NCES, 2011). For the base year, the student survey included demographic and language background, academic experiences and mathematics self-efficacy, and postsecondary and future career plans among others. The parent questionnaire included demographic factors, use of languages in the home, parental involvement in student's education, student's academic history, and questions about parental educational background. The school administrator's survey includes information about background, vision for the school, views on teachers, offerings of courses, and student population. Finally, the counselor questionnaires were related to the transition to high school, program and course assignments for students, and all of the various counseling activities that were conducted with students. Counselors were also asked questions about caseload and how students are assigned to them.

In addition, the HSLS database includes two follow-ups in 2012 and 2016. For the first follow-up, the majority of the sample were in eleventh grade in Spring of 2012 (NCES, 2013). Contextual factors were incorporated in this follow-up survey derived from the base-year data that included parents, school admin, and counselors. The second and final follow-up was conducted in 2016 which was approximately three years after most students in the sample had graduated high school (NCES, 2018). The scope of this follow-up was to inform on student persistence through high school, transition after high school, workforce and postsecondary experiences, and family support. In 2016, students have been in postsecondary education for only 4 years, so most were still in the process of completing their degrees.

APPENDIX B

STUDY VARIABLES

Appendix B includes details from the HSLS:09 survey about the survey items used to derive the variables for the study. To extract a sample of students with disabilities (SWDs), the researcher combined disability data reported by students and parents, and reporting of student participation in an IEP. As noted in the study, the IEP information was only provided by students in the ninth grade. Sociodemographic characteristics included: gender, race/ethnicity, SES quintiles, and parental education. High school-built capital typology was based on information regarding participation in academic programs (AP, DC, and IB) and social programs (AVID, GEARUP, MESA, TS, and UB). High school experiences included high school achievement as measured by high school grade point average (GPA), IEP participation, advice from counselors regarding college and advice from counselors regarding career. Then finally, student outcomes included information regarding postsecondary participation and college choice by age 22.

Table B.1

Variable Information: High School Longitudinal Study of 2009 (& 2012, 2013/14, 2016)

Variable name	Variable description
	Sample Selection
Disability reported	
Student	
X4DISABLED	X4 Ever had disability or special need
S4DIFCONC	S4 D38 Ever had difficulty concentrating/remembering/deciding
S4MHDISBL	S4 D39 Difficulty concentrating/remembering/deciding due to mental health
S4ADHD	S4 D40 Ever diagnosed with ADHD or ADD by health or education professional
S4LEARNDISBL	S4 D41 Ever had learning disability
S4DEAF	S4 D42A Ever had deafness/serious hearing difficulty
S4BLIND	S4 D42B Ever had blindness/serious difficulty seeing
S4OTHDISBL	S4 D43 Ever had any other disability or special need not already listed
S4ILLDIS	S4 D47C Respondent became seriously ill or disabled between HS and Feb 2016

Table B.1 (continued)

Variable name	Variable description
	Sample Selection
Parent	
P1SLD	P1 D03A Doctor/school has told parent 9th grader has learning disability
P1DD	P1 D03B Doctor/school has told parent 9th grader has developmental delay
P1AUTISM	P1 D03C Doctor/school has told parent 9th grader has some form of autism
P1ADHD	P1 D03G Doctor/school has told parent 9th grader has ADD or ADHD
P1EAREYE	P1 D03D Doctor/school has told parent 9th grader has hearing/vision problem
P1JOINT	P1 D03E Doctor/school has told parent 9th grader has bone/joint/muscle problem
P1INTELLEC	P1 D03F Doctor/school has told parent 9th grader has intellectual disability
IEP	
X1IEPFLAG	X1 Individualized Education Plan
	Sociodemographic Characteristics
Gender	
X2SEX	X2 Student's sex
Race/Ethnicity	
X2RACE	X2 Student's race/ethnicity-composite
SES Quintiles	
X1SESQ5	X1 Quintile coding of X1SES composite
X2SESQ5	X2 Quintile coding of X2SES composite
X4X2SESQ5	X4 Revised X2 Quintile coding of X2SES composite
Parental Education	
X1PAREDU	X1 Parents'/guardians' highest level of education
X2PAREDU	X2 Parents'/guardians' highest level of education
	High School-Built Capital
Academic	
S2ANYAP	S2 D04 Has taken advanced placement (AP) course(s)
S2ANYIB	S2 D06 Has taken International Baccalaureate (IB) course(s)
S2ANYDUAL	S2 D08 Has taken dual enrollment course(s)
S3AP	S3 A13A Has taken AP course(s)
S3IB	S3 A13B Has taken IB course(s)
S3DUAL	S3 A13C Has taken dual enrollment course(s) while in high school
S3ANYCLGCRED	S3 A12 Has taken course for college credit while in high school
Social	
S2EVERTALENT	S2 F03A Teen has ever participated in Talent Search
S2EVERUPWARD	S2 F03B Teen has ever participated in Upward Bound

Table B.1 (continued)

Variable name	Variable description
	Sample Selection
S2EVERGEARUP	S2 F03C Teen has ever participated in Gear Up
S2EVERAVID	S2 F03D Teen has ever participated in AVID
S2EVERMESA	S2 F03E Teen has ever participated in MESA
S1TALENTSRCH	S1 E16A 9th grader is participating in Talent Search
S1UPWARDBND	S1 E16B 9th grader is participating in Upward Bound
S1GEARUP	S1 E16C 9th grader is participating in Gear Up
S1AVID	S1 E16D 9th grader is participating in AVID
S1MESA	S1 E16E 9th grader is participating in MESA
	High School Experiences
Academic Achievement	
X3TGPATOT	X3 Overall GPA computed
IEP	
X1IEPFLAG	X1 Individualized Education Plan
HS Counselor Advice regarding college	
S1CNSLTLKCLG	S1 E09E 9th grader talked to school counselor about going to college
S2TALKCLGCNSL	S2 C01H Talked about options w/ counselor hired to prepare for college admission
S3CNSLCLG	S3 A17A Has met with high school counselor about college admissions in 2012-2013 year
S3CNSLAID	S3 A17B Has met with high school counselor about financial aid in 2012-2013 year
HS Counselor Advice regarding job/career	
S1CNSLTLKJOB	S1 E10E 9th grader talked to school counselor about adult jobs/careers
S1PLANCNSL	S1 F08A 9th grader's counselor helped put together education/career plan
S2TALKHSCNSL	S2 C01G Talked w/ high school counselor about options for after high school
S3CNSLJOB	S3 A17C Has met with high school counselor year about finding job in 2012-2013 year
Postsecondary Participation and College choice	
X5PS1SEC	Postsecondary Transcript: Sector of institution that awarded highest known degree as of June 2016
X4PS1SECTOR	X4 First postsecondary institution sector