SELF-DETERMINATION IN TRANSITIONING FIRST-YEAR COLLEGE STUDENTS
WITH AND WITHOUT DISABILITIES: USING MAP-WORKS FOR ASSESSMENT

A DISSERTATION
SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE
DOCTOR OF EDUCATION
IN ADULT, HIGHER, AND COMMUNITY EDUCATION

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ABSTRACT

DISSERTATION PROJECT: Self-Determination in Transitioning First-Year College Students with and without Disabilities: Using MAP-Works for Assessment

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This research project explored levels of self-determination in transitioning first-year college students using the MAP-Works Fall Transition Survey. Competency in self-determination skills has been called the most important element for students’ successful postsecondary experiences. The purpose of this research was to investigate whether there were statistically significant differences in levels of self-determined behavior between students with and without disabilities; and within the students with disabilities (SWD) grouping, whether there were meaningful differences in levels of self-determined behavior between students who had and had not registered with the Disability Services office and sought assistance. Comparisons of levels of self-determination were also made among students with varying demographic and student characteristics (i.e., gender, race, and GPA) as well as between SWD with visible and non-apparent disabilities. Gaining an understanding of how levels of self-determination differ among different incoming student groups can help success and retention strategists directly target interventions to students at risk and most likely to benefit. Recommendations for practice and future research are provided.
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CHAPTER 1 – INTRODUCTION

Historically, students with disabilities (SWD – see Appendix A for a list of commonly used abbreviations) were excluded from participation in postsecondary education. Before passage of the Rehabilitation Act of 1973 and the Education for All Handicapped Children Act in 1975, most students with disabilities were not adequately prepared for postsecondary work by their elementary and secondary school educations and did not participate in postsecondary educational programs (Murray, Goldstein, Nourse & Edgar, 2000). The Education for All Handicapped Children Act (1975) was the cornerstone of national special education legislation and mandated that elementary and secondary students with disabilities were provided a free and appropriate education in the least restrictive environment (Turnball & Turnball, 1998; Yell, 2011). Having undergone numerous reauthorizations with the latest revision being the Individuals with Disabilities Education Improvement Act (IDEIA, 2004), this act mandates full inclusion for students with disabilities from preschool through high school and requires outcome-oriented postschool transition programming for students with disabilities (Shaw & Dukes, 2013).

Government oversight of postsecondary instruction did not begin until the passage of the Higher Education Act of 1965 (HEA, 1965). In 2008, the HEA (1965) was reauthorized as the Higher Education Opportunity Act (HEOA, 2008). It was in the HEOA (2008) that the federal government first actively encouraged the recruitment and enrollment of students with disabilities in institutions of higher education (IHE) by distributing grant money to institutions that supported the success of students with disabilities. HEOA (2008) also expanded the definition of disability, thereby broadening eligibility for accommodations to greater numbers of SWD, and mandated that all IHE that receive federal funds be accessible, provide accommodations, and
prohibit discrimination against qualified SWD (Brinckerhoff, McGuire, & Shaw, 2002; Shaw, Scott, & McGuire, 2001).

The legal protections for postsecondary students with disabilities derive from two anti-discrimination laws: the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 (Keenan & Shaw, 2011). Both of these laws are civil rights laws that prohibit discrimination against a student whose “physical or mental disability substantially limits one or more major life activities, such as . . . learning.” Section 504 is designed to level the playing field for SWD by barring discrimination and providing equal access to all students.

Section 504 provides that:

> No otherwise qualified individual with a disability . . . shall, solely by reason of her or his disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Thus, Section 504 provides SWD a means to receive accommodations such that they can have access to all school programs and activities. In contrast to the prescriptive Individuals with Disabilities Education Improvement Act (2004) that applies to all SWD from preschool through high school, college students with disabilities are only guaranteed an equal educational opportunity when they are otherwise qualified (Shaw & Dukes, 2013).

The Americans with Disabilities Act (ADA) of 1990 was ratified nearly 25 years ago; the ADA mandated that all Americans be accorded equality in pursuing jobs, goods, services and other opportunities. The intent of the ADA was to prevent discrimination against persons with disabilities and allow them equal access to all elements of mainstream American life. Revisions that went into effect in 2009 under the Americans with Disabilities Act Amendments Act (ADAAA, 2008) furthered the possibilities for SWD to transition to postsecondary education.
(Shaw & Dukes, 2013). Despite these legislative efforts to provide equal access and opportunity, unemployment and underemployment rates for individuals with disabilities have remained extremely high. The employment rate of working-age Americans with disabilities in March 2012 was 14.5 percent – an all-time low since these statistics have been collected. For comparison, in 1990 when the ADA went into effect, the employment rate for working-age Americans with disabilities was 28.6 percent; and in March of 2007 prior to the Great Recession, the employment rate for Americans with disabilities was 18.7 percent (Burkhauser, 2013). Persons without disabilities are nearly four times more likely than persons with disabilities to be employed, and 33 percent of persons with a disability are employed part-time compared to 19 percent of persons without a disability (U.S. Bureau of Labor Statistics, 2012). Because youth with disabilities are only half as likely to go to college (National Center for Education Statistics, 2010), their lack of education compounds employment issues and contributes to the greater rates of poverty and dependence on public assistance among individuals with disabilities (Barnard-Brak, Davis, Tate, & Sulak, 2009; Sanford et al., 2011; She & Livermore, 2006).

Increasingly, a college education is critical for success in our global economy. Indeed, with economies having changed from a manufacturing base to that of information, technology, and services, the need for postsecondary education is greater than ever before (Arnett, in press). College degree attainment has been referred to as the “gold standard of increased opportunities in adulthood” (Anctil, Ishikawa, & Scott, 2008, p. 164). Kaye (2010) reported that the recession exacerbated already low employment levels for individuals with disabilities and made college attainment even more critical to job attainment and security. Persons with disabilities often hold lower status, less stable jobs – those most likely to be eliminated in periods of recession (Kaye,
According to the National Council on Disability (2011), the current economic crisis disproportionately affected employment opportunities for persons with disabilities. Postsecondary education is typically the first rung on the ladder toward realization of one’s employment and economic goals. Youth with disabilities have consistently been less likely than their peers to participate in postsecondary education (Fleming & Fairweather, 2012). A recipient of a bachelor’s degree will make approximately 65% more over the course of a lifetime than a high school graduate (College Board, 2013). In the fiercely competitive world of today, employment options increase with any amount of postsecondary education (Institute for Higher Education Policy, 2005), and some college experience has become a minimum qualification for most jobs that pay a reasonable wage (Shaw & Dukes, 2013). That said, pursuit of higher education is limited among students with disabilities (Fleming & Fairweather, 2012). While more than two-thirds of all high school graduates enroll in postsecondary institutions, less than one-quarter of students with disabilities participate (Snyder, Dillow, & Hoffman, 2009), and less than one-tenth of students with learning disabilities (LD) enroll in postsecondary institutions (Gregg, 2007).

Similarly, college graduation rates for SWD lag behind their peers without disabilities. Approximately 12% of SWD graduate with a college degree compared to 31% of students without disabilities (Erickson, Lee, & von Schrader, 2010). These low educational attainment rates of individuals with disabilities have adverse lifelong effects (Fleming & Fairweather, 2012). However, education brings forth greater chances to secure satisfying and gainful employment as well as financial independence (Shaw & Dukes, 2013). Educational attainment has been deemed to be the “most effective means for persons with disabilities to achieve financial independence and equality with their able-bodied peers” (Barnard-Brak & Lan, 2010, p.
SWD and students without disabilities who have successfully earned a Bachelor of Arts degree are equally likely to attain employment (College Board, 2010). Attainment of a bachelor degree is critical to adult success, however, SWD are unlikely to attend four-year institutions – only 15 percent of SWD enrolled at a four-year institution in 2007 compared to 37 percent of all students (Sanford et al., 2011).

**Federal Support for Transition to Postsecondary Education for Students with Disabilities**

To counteract the dismal educational and employment rates of youth with disabilities and the lack of effective transition planning (Will, 1983), the federal government has enacted legislation focused on improving postschool outcomes for SWD. The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004) mandates that postsecondary education be considered as a goal for all students (deFur, 2008; Shaw & Dukes, 2013), and 80% of secondary students with disabilities list postsecondary education as a primary goal (Newman, Wagner, Cameto, & Knokey, 2009). The transition from high school to postsecondary settings has been the focus of increased research in the recent past (King, Baldwin, Currie, & Evans, 2006). This transitional period is difficult for many students, and is often especially trying for students with disabilities (Gil-Kashiwabara, Hogansen, Geenen, Powers, & Powers, 2007). To foster improved transition and postsecondary outcomes, the National Secondary Transition Technical Assistance Center (NSTTAC, 2010) devised twenty indicators for improved postschool outcomes for SWD. State Performance Plan Indicator 13 related to transition services and stated that SWD aged 16 and older with an IEP must have measurable postsecondary goals. One of these stated postsecondary outcome goals was postsecondary education (NSTTAC, 2013). While compliance with Indicator 13 did not impact rates of college enrollment for SWD, secondary students with Indicator 13 compliant IEPs were found to be more likely to remain
enrolled and experience success in postsecondary education (Erickson, Noonan, Brussow, & Giplin, 2013). Erickson et al. (2013) posited that these gains may be the result of better preparation of students through self-determination (SD) strategies, thus highlighting the importance of SD skills to postsecondary success. SWD who are self-determined are more likely to successfully transition to college. College participation will substantially improve their chances to “lead personally fulfilling and socially meaningful lives” (Ludlow, 2010, p. 6).

**Importance of Self-Determination Skills for Transition to and Success in College**

Retention, persistence and successful completion of college hinge on student acquisition and development of self-determination skills (Garrison-Wade, 2012). Self-determined persons: Know how to choose – they know what they want and how to get it. From an awareness of personal needs, self-determined individuals choose goals, and then doggedly pursue them. This involves asserting an individual’s presence, making his or her needs known, evaluating progress toward meeting goals, adjusting performance, and creating unique approaches to solve problems. (Martin & Marshall, 1995, p. 147)

When students have the capacity to assume responsibility for the choices and decisions they make, when they are aware of their strengths and limitations, when they persevere in the face of problems, and when they advocate for their needs, they are self-determined and have greater potential to be successful in college. Self-determination skills are important for all students to develop; however, due to additional transitional barriers faced by SWD, self-determination is of even greater importance for SWD transitioning to IHE. SWD who are self-determined are more likely to experience academic success in postsecondary educational pursuits (Field & Hoffman, 2007; Parker, 2004), and self-determination has been positively correlated with higher GPA (grade point average) for college SWD (Sarver, 2000). Self-determination skills have been
named as some of the “most important skills young adults can bring with them to colleges and universities” (Kochhar-Bryant, Bassett, & Webb, 2009, p. 39). Self-determination “has become best practice in transition services” (Suk-Hyang, Wehmeyer, Palmer, Soukup, & Little, 2008, p. 92).

**Barriers to Postsecondary Education for Students with Disabilities**

Students with disabilities encounter many barriers to postsecondary enrollment and success. The transition to college can be a difficult adjustment for any student, but SWD have additional hurdles to overcome (Adams & Proctor, 2010; Barber, 2012; Barnard-Brak & Lan, 2010; Connor, 2012; Gil, 2007; Wolanin & Steele, 2004). These obstacles can be surmounted with effective transition planning, the use of accommodations, and well-developed self-determination on the part of the SWD (Fleming & Fairweather, 2012; Getzel & Thoma, 2008, Squire, 2008). Even with effective transitional planning and appropriate use of accommodations, SWD will likely flounder if they are not self-determined (Brinckerhoff et al., 2002). Despite the research documenting the importance of transition planning and self-determination for students transitioning to postsecondary institutions, lack of skills in self-determination continues to be identified as a major barrier in achieving academic success (Finn, Getzel, & McManus, 2008; Izzo & Lamb, 2002; Salmirs, 2011; Wehmeyer, Palmer, Shogren, Williams-Diehm, & Soukup, 2013).

Some of the barriers to postsecondary education access and attainment for SWD are directly related to components of self-determination, and others are not. It is important to acknowledge the barriers not specifically related to self-determination as they impact retention and graduation rates; however this study specifically addressed the importance of self-determination and focused on those barriers that have underpinnings of self-determination.
Some of the barriers not specifically related to self-determination that have been identified as negatively impacting retention for SWD include being underprepared academically for the rigors of college (Bangser, 2008; Connor, 2012; Gregg, 2007; Mellard, 2005) and a lack of effective transitional planning in high school (Brinckerhoff, 1994; Garrison-Wade, 2012; Gil, 2007; Kochhar-Bryant et al., 2009; Salmirs, 2011). The transition from high school to college has been referred to as a “transition cliff” for youth with disabilities (Kochhar-Bryant et al., 2009, p. 23). Squire (2008), himself a young adult with learning disability and ADHD, spoke of the bursting of his “bubble of support” that occurred when he transitioned to college and became responsible for making his own educational decisions and seeking disability-related services (p. 126).

There are also numerous informational barriers that impede SWD progress in meeting their college goals. These include inadequate knowledge on the part of the SWD of the differences in legislation and policy concerning the rights and responsibilities of SWD in the secondary and postsecondary environments (Beale, 2005; deBettencourt, 2002; Garrison-Wade, 2012; Lindstrom & Lindstrom, 2011; Madaus & Shaw, 2004, 2006; Skinner & Lindstrom, 2003). The Individuals with Disabilities Education Act (IDEA, 1990), which governs K-12 special education services, and Section 504/ADA, which secure access for college SWD, are conflicting federal statutes which create transition barriers (Keenan & Shaw, 2011; Lindstrom & Lindstrom, 2011; Shaw & Dukes, 2013). Other information barriers include a lack of knowledge of postsecondary academic expectations (DaDeppo, 2009; Kochhar-Bryant et al., 2009; Webb, Patterson, Syverud, & Seabrooks-Blackmore, 2008) and the documentation divide (Keenan & Shaw, 2011; Lindstrom & Lindstrom, 2011; Madaus & Shaw, 2004; Sitlington, 2003) where SWD find that they have inadequate documentation to support their accommodation requests in
the college sector (Gregg, 2007; Keenan & Shaw, 2011). SWD transitioning to college also frequently do not understand the differences in disability services and supports available to them at the postsecondary level (Getzel & McManus, 2005; Gil, 2007). College SWD frequently expected the same disability supports and services as they had received in high school and were uncertain how to access the supports available to them (Garrison-Wade, 2012).

Not related to self-determination, but nonetheless acting as a barrier to postsecondary success for SWD, is a lack of faculty knowledge of the laws regarding accommodations (Zhang et al., 2010). Two decades after implementation of Section 504 of the Rehabilitation Act of 1973, a study of faculty attitudes and practices indicated that 67% of faculty had no familiarity or very limited familiarity (14%) with Section 504 mandates. Forty percent of these faculty members were not familiar with ADA and 26% had only limited familiarity with this law (Leyser, Vogel, Wyland, & Brulle, 1998). The existence of negative faculty attitudes and faculty misperceptions toward disability and students with disabilities (Barnard-Brak & Lan, 2010; Cook, Hennessey, Cook, & Rumrill, 2007; Denhart, 2008; Hartman-Hall & Haaga, 2002; Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010; Vogel, Leyser, Wyland, & Brulle, 1999) also inhibit SWD from disclosing their disabilities and seeking the accommodations that could enhance their academic achievement (Cook, Rumrill, & Tankersley, 2009; Cowen, 1993; Garrison-Wade, 2012; Garrison-Wade & Lehmann, 2007; Mellard, 2005; Rao, 2004; Madaus & Shaw, 2006). SWD also have reported that some faculty show a lack of sensitivity to the needs of SWD that impedes performance in the classroom (Carney et al., 2007; Dowrick, Anderson, Heyer, & Acosta, 2005; Garrison-Wade & Lehmann, 2007; Garrison-Wade & Lehmann, 2009). Other faculty hold misperceptions about the abilities of SWD (Denhart, 2008; Kochhar-Bryant et al., 2009) and/or lack knowledge of disability and how to support SWD in their classrooms.
Rao (2004) indicated that faculty play a vital role in facilitating the assimilation of students with disabilities and can greatly impact the success or failure of students with disabilities in the postsecondary arena. When faculty held positive attitudes toward disability and persons with disabilities, students were more likely to be successful academically; when faculty held negative attitudes toward disability and persons with disabilities, students were less likely to use their self-advocacy skills and were therefore less likely to experience success academically. Humphrey et al. (2011) also cited a lack of faculty awareness of how to support the needs of SWD. Faculty in their study indicated an awareness of their legal obligations to provide reasonable accommodations to SWD, but they felt they needed increased exposure to SWD such that they could look beyond the differences and note the commonalities among all students. Many of the faculty in this study reported discomfort and lack of knowledge regarding the diverse needs of SWD and stated that they tended not to communicate with the disability services (DS) office in a proactive manner; instead they waited until issues arose before consulting DS staff for assistance. At this point, the situation had often become reactive and unnecessarily complicated, leading to misunderstanding between the faculty member, the SWD, and the DS staff. Humphrey et al. (2011) found a positive relationship between student success and perception of faculty support by SWD.

The focus of this study will be on those barriers to advanced education that directly relate to self-determination. These include a lack of self-awareness or incomplete understanding of how one’s disability impacts one’s learning; lack of self-advocacy skills which often results in failure to disclose one’s disability, register with the Disability Services (DS) office, and seek the accommodations that can facilitate one’s learning; and insufficient beliefs about one’s self-
efficacy manifested in failure to accept control over one’s life decisions and assume self-reliance and in failure to effectively plan and set goals for realizing one’s educational aspirations.

**Statement of the Problem**

Self-determination knowledge and skills are necessary for success in life (Field & Hoffman, 2007), and self-determination skills are critical for postsecondary success (Anctil et al., 2008; Garrison-Wade, 2012; Morningstar et al., 2010; Webster, 2004); yet lack of self-determination skills has been identified as a major barrier to students’ academic success in college (Finn et al., 2008). Supporting student development of self-determination (SD) has been found to be an effective strategy for helping students achieve educational goals; however, transition planning for SWD often lacks adequate training in development of SD skills (Izzo & Lamb, 2002; Squire, 2008; Wehmeyer, Agran, & Hughes, 2000) and some of the skills needed for SD are compromised by the nature of students’ disabilities (Layton & Lock, 2003). Students who are self-determined are more likely to be successful in college because they tend to be more aware of their strengths, weaknesses, preferences, interests, and needs; they self-advocate for their needs; and they tend to believe themselves to be more capable of achieving success in college. Students who are self-determined possess the ability to make appropriate choices and decisions, clearly state and advocate for their needs, and plan for their futures. These self-determined dispositions will situate all students, with and without disabilities, with the best potentials for postsecondary success.

**Purpose of the Study**

The purpose of the study was to see if statistically significant differences exist between self-reported levels of self-determination among incoming freshmen college students without disabilities and students with disabilities. Among the students with disabilities (SWD), there
were two student groupings – those students who had an IEP (individualized education plan) or 504 Plan in high school and had not registered with the Disability Services (DS) office, and those who had an IEP or 504 Plan in high school and who had registered with DS. A further purpose of the study was to see if statistically significant differences exist between self-reported levels of self-determination based on demographic variables, including disability type among SWD.

**Research Questions**

1) Do statistically significant differences in self-determination (SD) exist between students with and without disabilities?

2) Do statistically significant differences in SD exist between students self-reporting disability who are registered and those who are not registered with the office of Disability Services?

3) Do statistically significant differences exist in SD based upon disability type (i.e., physical/sensory disabilities, non-apparent disabilities)?

4) Do statistically significant differences exist in SD based upon other demographic variables (i.e., gender, race/ethnicity, high school GPA, first semester GPA, retention to spring semester)?

**Research Hypotheses**

1) It was hypothesized that statistically significant differences would exist between students with disabilities (SWD) and students without disabilities (SWoD), with SWD having lower levels of self-determination skills than students without disabilities. [t-test]
2) It was also hypothesized that those SWD who had registered with the Disability Services (DS) office on campus would have greater levels of SD competencies than those SWD who had not registered and sought services. [t-test]

3) It was hypothesized that students with non-apparent disabilities would have lower levels of SD than students with physical or sensory disabilities. [t-test]

4) It was hypothesized that there would be statistically significant differences between levels of SD and the demographic grouping variables (exploratory). [t-test and ANOVA]

**Significance of the Study to the Field**

Given the differences in opportunities and quality of life that college completion provides, students with disabilities must be supported in their pursuit of postsecondary education (Hamblet, 2011). While students with disabilities have increased participation in postsecondary education, successful postsecondary outcomes for adults with disabilities have not been realized. (Shaw & Dukes, 2013). By assessing self-determination skill sets required for college success, this study enhanced students’ opportunities to realize their postsecondary goals and increase lifelong earnings and opportunities. The first step toward achieving postsecondary educational success is acquisition of self-determination skills; and research suggests that there is a continued need to teach and study self-determination skills in college students (Garrison-Wade, 2012).

This study contributed to the professional literature on the importance of self-determination in students transitioning to institutions of higher education. Only a small body of research has focused on how self-determination affects postsecondary success for students with disabilities. Postschool outcomes for students with disabilities typically include employment, independent living, quality of life, and postsecondary education. Most of the previous research
has looked at quality of life and employment outcomes for youth exiting high school. Other transition research has focused on demographics, federal policy, and differences between secondary and postsecondary expectations (Shaw & Dukes, 2013). This study added to the body of knowledge indicating that higher levels of self-determination when exiting high school lead to improved postsecondary success and more positive adult outcomes for youth with disabilities.

The current body of research on the relationship between self-determination and postschool outcomes was promising, yet limitations such as small sample sizes had led to inconclusive results (Shogren, Wehmeyer, Palmer, Rifenbark, & Little, 2013). Also, most prior research on self-determination has focused on students with moderate to severe disabilities and has neglected the importance of self-determination in students with high incidence disabilities, such as learning disabilities and ADHD. Students with these milder disabilities are more likely to pursue postsecondary education.

Previous researchers stated that additional research on the role self-determination plays in facilitating success for postsecondary SWD was needed (Mamiseishvili & Koch, 2011). Furthermore, most research on postsecondary education for SWD had focused on certificate programs or two-year college degrees. This study looked at SWD enrolled in a four-year comprehensive university. Further, this study had sufficient sample size to allow for better generalization and more reliable conclusions regarding the impact of self-determination on postsecondary outcomes for SWD in the four-year college environment.

This study also made significant contributions to practice as direct application of the findings of this research could facilitate special education transition programming in secondary schools as well as provide direction to disability support services at the postsecondary level. The focus for SWD transitioning to college must be redirected from access to improvement of
postsecondary educational outcomes (Sharpe, Johnson, Izzo, & Murray, 2005; Shaw & Dukes, 2013). Jameson (2007) and Finn et al. (2008) stated research concerning the relationship of self-determination skills and academic success in college students remains largely unexamined. This study addressed the need for further research on the importance of self-determination skills to postsecondary academic success. Hong, Haefner, and Slekar (2011) found that more than two-thirds of college faculty viewed self-determination as a skill set necessary for academic success in college students, both with and without disabilities. The faculty agreed that all students, but especially those with disabilities, could benefit from the development of SD skills both during college and in their post-college lives. Faculty believed that the promotion of SD skills was most beneficial to freshmen students and that there was a positive relationship between the development of SD skills and increased retention and improved postsecondary outcomes.

Furthermore, most of the research on students with disabilities in the college setting is qualitative. There has not been much numerical data collected on SWD due to the decentralized aspect of postsecondary education and, in comparison to the K-12 sector, the much laxer recordkeeping required (Hamblet, 2011). This study took a quantitative approach to studying characteristics of self-determination in students early in their college journey. As declared by Levitz and Noel (1989), “The freshman’s most critical transition period occurs during the first two to six weeks” (p. 66).

Research on the importance of the first year of college is mature and comprehensive (Huntly & Donovan, 2009; Seidman, 2012; Woosley, 2003; Woosley & Shepler, 2011). Many researchers have found that most attrition occurs in the first year of college (McInnis, 2001; Tinto, 1993; Tuckman & Kennedy, 2011; Woosley & Shepler, 2011). Research has also found that if students can successfully make the transition to college life, there is little difference in
graduation rates between SWD and students without disabilities when they persist through the first two years of college (Horn, Berktold, & Bobbit, 1999). Importance of persistence through the second year was reiterated by Mamiseishvili and Koch (2011) who found that retention to the second year was critical for subsequent graduation and employment options. A study conducted in 2009 at the same institution as this study found no differences in graduation rates between students with and without disabilities once they had successfully completed one year of higher education (Wessel, Jones, Markle, & Westfall, 2009). Shepler and Woosley (2012) reported that the “greatest attrition of college students occurs in the first fall quarter after enrollment” and suggested that it was imperative to investigate the very early integration experiences of students, and especially students with disabilities who “may have unique predictors of persistence compared to students with no reported disabilities” (p. 38).

Whether males or females typically demonstrate higher levels of self-determined behavior has been studied by numerous researchers but no agreement has been reached. Wehmeyer (2003b) found no statistically significant gender differences on the overall, global measure of self-determination; however, females scored higher than males. Within the essential components of self-determined behavior, there were no significant differences by gender for the autonomy subdomain, although again females scored higher than their male counterparts. Females scored higher in independence and acting on the basis of their own preferences, interests, and abilities. No differences between the genders were found on the self-regulation or the self-realization components; however, for the psychological empowerment subdomain, females scored more positively than did males.

Shogren, Wehmeyer, Palmer, and Paek (2013) reported conflicting findings regarding whether males or females tend to develop greater self-determination skills. Shogren et al. (2007)
found that females in the U.S. exhibited greater SD skills; however, a 2007 study of Italian adolescents with disabilities found that males had higher levels of SD (Nota, Ferrari, Soresi, & Wehmeyer, 2007). In another study by Lee et al. (2012), there were no statistically significant differences in levels of SD between males and females. Hence, the influence of gender on development of SD skills was inconsistent and appeared to be in part determined by cultural environments. This study helped to fill in this gap in the current research on the complex link between gender and levels of self-determination.

The interaction of self-determination with different racial, ethnic, and cultural backgrounds has not yet been thoroughly studied (Shogren, Wehmeyer, Palmer, & Paek, 2013; Wood et al., 2005). Part of the limited research on how race may influence self-determination is due to the lack of data collected on race/ethnicity in previous studies of self-determination. Trainor (2005) hypothesized that cultural differences, including differing emphases on the importance of family or the collective, may influence how persons view and express self-determination. Francois and Overstreet (2010) also discussed how a sense of family connectedness (or familisimo) among African Americans is positively correlated with educational resilience and academic success. This study increased the number of research studies where the association of race with self-determined behavior has intentionally been studied.

This study advanced research concerning gender and racial differences in self-determination acquisition. Additionally, this study corroborated findings from earlier studies on early integration experiences of college students (Woosley, 2003; Woosley & Miller, 2009) and determined previous findings were still relevant and applicable. Shepler and Woosley (2012) stated that the transition experience of SWD was a research area that had not received much
attention and suggested that “there is still much to learn about the successful transition experiences of students with disabilities” (p. 39). Further research could help explain retention and persistence differences between students with and without disabilities. Additionally, Shepler and Woosley (2012) as well as Hindes and Mather (2007) suggested that future research should explore differences between students based on the type of disability (visible vs. non-apparent) as differences in disability type may affect perceptions and behaviors. Jensen, McCrary, Krampe, & Cooper (2004) found that faculty viewed students with learning disabilities differently than students with more visible disabilities and were more likely to question the legitimacy of the learning disability diagnosis. Adams and Proctor (2010) found that students with visible disabilities showed better adaptation to college than did students with non-visible disabilities; they suggested that this adaptation difference related to visibility of disability be investigated further. Woosley and Shepler (2011) posited that the earliest experiences of transitioning freshmen are significantly related to future student outcomes including academic performance, persistence, and ultimately graduation.

This study authenticated previous research on the importance of self-determination in enhancing students’ postsecondary outcomes. A 2013 study on cross-cultural comparisons of the self-determination construct indicated that Wehmeyer’s (1999, 2013) functional theory of self-determination is increasingly being applied to persons without disabilities (Ginerva et al., 2013). What was unique about this study was its use of the assessment instrument, Making Achievement Possible (MAP) Works Fall Transition Survey (MAP-Works), to collect self-reported data on incoming students’ levels of self-determination skills. MAP-Works could recognize deficits in acquisition of self-determination skills and could suggest strategies, interventions, and services that promote student success early—as early as the third week of the
student’s first semester. Direct application of this knowledge by academic advisors, residence life coordinators, and students themselves could enhance retention, persistence, and completion rates.

Additionally, the intent of this research project was that the data collected from this study would inform the development of a Survey Factor for self-determination within the MAP-Works Fall Transition Survey. By assessing incoming students’ self-determination skill sets, strengths and weaknesses in the components of self-determination, and attitudes, MAP-Works could generate a unique, customized report for each incoming student with recommendations and strategies for further development of self-determination skills that increase retention and postsecondary success. MAP-Works could provide direct help to all students navigating the transition from high school to college, serving as an early warning system for at-risk students and suggesting interventions to enhance their academic experiences. The development of a Survey Factor for self-determination could later be used to track students longitudinally to explore how levels of self-determination among incoming students influence their subsequent persistence and completion of college.

This study also compared levels of SD between SWD and students without disabilities. As research supports the importance of SD to college success, MAP-Works could be used as a diagnostic tool to identify students, with or without disabilities, who scored lower in SD. Effective intervention programs to increase SD skills and minimize attrition could target the identified students. Although findings may mirror what has been presented in previous research, this study authenticated the existing knowledge base on the importance of the acquisition and cultivation of SD skills for SWD transitioning to college. The results of this research hold
particular importance for four-year institutions seeking to improve the academic performance of first-year students and increase student likelihood of retention.

**Definition of Terms**

*504 Plan:* Section 504 is a civil rights law that prohibits discrimination against individuals with disabilities. A 504 Plan ensures students with disabilities have equal access to all educational activities. A 504 Plan often specifies accommodations and modifications that ensure access, however a 504 Plan provides fewer procedural safeguards than does an IEP. The 504 Plan derives from the Rehabilitation Act of 1973, Section 504.

*Acting in a Psychologically Empowered Manner:* One of the four components of self-determined behavior as delineated by the ARC’s Self-Determination Scale, adolescent version (Wehmeyer & Kelchner, 1995). Characteristics of psychological empowerment include: self-advocacy, believing in oneself as capable; self-efficacy; believing that one possesses the requisite skills to achieve desired outcomes; believing that identified, expected outcomes will result (outcome expectancy); having an internal locus of control; using metacognitive strategies; and using self-reinforcement strategies.

*Behavioral Autonomy:* One of the four components of self-determined behavior as delineated by the ARC’s Self-Determination Scale, adolescent version (Wehmeyer & Kelchner, 1995). Characteristics of behavioral autonomy include: acting according to one’s own preferences, interests and abilities; making choices and planning activities independently, free from undue external influence or interference; and acting in a self-directed manner, with a progression away from dependence on others, including making an emotional separation from one’s parents. College students with disabilities demonstrate behavioral autonomy when they
self-disclose their disability to their campus office of Disability Services and/or to their professors and advocate for their academic needs.

*Individual Education Program (IEP):* A written statement of the individual educational program designed to meet a student's special educational needs. Every K-12 student who receives special education services must have an IEP. Once a student with special needs reaches the age of 16, the IEP must include transition planning. The IEP derives from IDEA mandates.

*Institution of Higher Education (IHE):* Postsecondary education; includes the work of colleges, junior colleges, community colleges, two-year colleges, four-year colleges and universities, professional and technical schools, and other degree-granting institutions.

*Outcome Expectancy:* Refers to the belief that if a behavior is enacted, the outcome expected will occur. For example, if one attends and participates in class, does one’s homework, and studies for an exam, one will do well on the exam. Outcome expectancy is a component of acting in a psychologically-empowered manner.

*Resilience:* A flexible disposition that helps people handle acute or chronic hardships by buffering the adverse effects of minor annoyances and everyday hassles as well as major life events. Students who exhibit a strong disposition toward resilience are more adept at problem-solving and remaining confident in the face of setbacks or conflict. Resilient students are more likely to persist and be successful in their college endeavors.

*Self-Advocacy:* An individual's ability to effectively communicate, convey, and negotiate or assert his or her own interests, desires, needs, and rights. It involves making informed decisions and taking responsibility for those decisions (Van Reusen & Bos, 1994). Field (1996) defined self-advocacy as students taking action on their own behalf. Self-advocacy includes knowledge of oneself; knowledge of one’s legal rights; an ability to communicate one’s
needs and request accommodations; and assuming responsibility for one’s educational programming. Self-advocacy is a component skill indicating self-regulation and psychological empowerment.

**Self-Awareness:** An individual’s awareness of one’s strengths, preferences, interests, and needs and an understanding of how to leverage one’s strengths. When a person is self-aware, that person has a better understanding of him or herself and feels empowered to make changes to build on areas of strength as well as identify areas where improvements could be made. Self-awareness is often a first step to planning and setting goals. Self-awareness is a component skill of self-realization.

**Self-Determination (SD):** A consensus definition for Self-Determination adopted by the Division on Career Development and Transition reads:

Self-determination is a combination of skills, knowledge and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behavior. An understanding of one’s strengths and limitations together with a belief in oneself as capable and effective are essential to self-determination. (Field, Martin, Miller, Ward, & Wehmeyer, 1998, p. 115)

Self-determination takes into account one’s strengths, preferences, interests, and needs (Flexer & Baer, 2008). Self-determined individuals act autonomously; regulate their behavior; initiate and respond to events in psychologically empowering manners; and behave in ways that show self-realization (Wehmeyer, 2003a, 2005). Self-determined students with disabilities demonstrate awareness of their disability and realize how it impacts their learning; act autonomously in self-disclosing their disability to enable access to reasonable accommodations; self-regulate by
planning, setting, and achieving goals; self-advocate for their educational needs; persevere through challenges; and believe themselves capable of achieving academic success.

*Self-Efficacy:* One’s belief in one’s ability to succeed in an academic context. When confronted with a challenge, a person with strong self-efficacy will believe himself capable of performing well and will view the challenge as something to be mastered rather than avoided. Bandura (1977) defined self-efficacy as “the conviction that one can successfully execute the behavior required to produce a given outcome” (p. 193). Self-efficacy is a component skill of psychological empowerment.

*Self-Realization:* One of the four components of self-determined behavior as delineated by the ARC’s Self-Determination Scale, adolescent version (Wehmeyer & Kelchner, 1995). Characteristics of self-realization include: understanding one’s strengths and weaknesses and having the ability to capitalize on this knowledge; self-esteem/self-concept; self-awareness/self-knowledge/self-understanding; using the self-management strategies of self-monitoring, self-instruction, self-evaluation and self-reinforcement; using goal setting and attainment behaviors; and using problem-solving behaviors.

*Self-Regulated Behavior:* One of the four components of self-determined behavior as delineated by the ARC’s Self-Determination Scale, adolescent version (Wehmeyer & Kelchner, 1995). Characteristics of self-regulated behavior include planning; setting goals; the ability to problem-solve and cope with difficulties; and the ability to make decisions about how to act and then to evaluate and revise one’s plan of action.

*Student with Disability (SWD):* Under ADA, an individual with a "disability:"  

- has a physical or mental impairment that substantially limits one or more life activities;
• has a record of such an impairment; or
• is regarded as having such an impairment.

Major life activities include such functions as caring for oneself, walking, seeing, hearing, speaking, breathing, learning, and/or working.

**Summary and Organization of the Study**

While students with disabilities (SWD) are attending college in increasing numbers (Walker & Test, 2011), they are less likely to graduate than their non-disabled peers (Erickson et al., 2010; Newman et al., 2009; Wagner, Newman, Cameto, Garza, & Levine, 2005). Historically, SWD had little control over decisions affecting their educations and transitions into adulthood (Arndt, Konrad, & Test, 2000; Squire, 2008; Wood, Karvonen, Test, Browder, & Algozzine, 2004), and rates of college participation and retention for SWD were limited. One factor in the decreased college retention of SWD is lack of self-determination skills (Finn et al., 2008; Karvonen, Test, Wood, Browder, & Algozzine, 2004; Palmer & Roessler, 2000; Salmirs, 2011; Skinner, 2004). Self-determination includes multiple elements (e.g., behavioral autonomy, self-regulation, self-realization, psychological empowerment, internal locus of control, self-awareness and self-advocacy, positive attributes of efficacy and outcome expectancy) that can counteract some of the retention risks faced by SWD (Bandura, 1977; Karvonen et al., 2004; Lock & Layton, 2001; Thoma & Getzel, 2005; Wehmeyer & Field, 2007). SWD who have strong self-determination skills have been found to experience greater likelihoods of persistence and success in college (Morningstar et al., 2010; Salmirs, 2011). Numerous researchers have associated acceptance of disability to the development of self-determination and more positive outcomes (Ankeny & Lehmann, 2011; Belch, 2004; Gore, 2006; Hong, Ivy, Gonzalez, & Ehrensberger, 2007; Kochhar-Bryant et al., 2009; Thoma & Getzel, 2005).
This study investigated the importance of self-determination as a key factor in SWD successful transition to postsecondary education by assessing SD skill development using the transition survey Making Achievement Possible (MAP) Works. The interplay of self-awareness, self-advocacy, and self-efficacy as key components of the four essential characteristics of self-determination were studied to explore how self-determination competency relates to successful transition to and achievement in postsecondary education.

This project is organized into five chapters. Chapter one introduced the topic of the importance of self-determination in students making the transition to postsecondary education and set the stage for the review of literature that comprises chapter two. The purpose of chapter two is to describe the theoretical foundation upon which the study is based, the history of self-determination, and the four essential characteristics of self-determined behavior. Chapter two also chronicles and reports the research and findings of previous researchers who have studied self-determination in students transitioning to college. Chapter three details the methods used in this study and includes information on the design of the research project, the setting of the study, and the data collection and data analysis procedures. Chapter four presents the findings; and chapter five concludes the study with a discussion of the results. The references follow chapter five.
CHAPTER 2 – LITERATURE REVIEW

Life transitions are about change, and about movement, and about becoming something other than what you are at this very moment.

--Kochhlar-Bryant and Bassett, 2002, p. 1

Summary of the Project

Chapter one introduced the topic of self-determination as a critical element for students transitioning from secondary schools to postsecondary institutions. Self-determination is a competency demonstrated by persons who act autonomously, regulate their behavior by capitalizing on a realization of their strengths and weaknesses, and act in ways that are psychologically empowering. Historically, students with disabilities (SWD) had limited opportunities to develop or apply self-determination skills, and their participation in higher education was similarly restricted. Today, although increasing numbers of SWD are pursuing postsecondary education, their rates of completion have not equaled their participation. When students transition to college with well-developed self-determination skills, they are more likely to experience success. In addition to the transitional issues all students experience, SWD often encounter additional challenges brought about by the nature of their disability. Transition experts have designated the lack of self-determination to be the most prominent barrier to postsecondary success for SWD, and fostering self-determination is considered the most essential element of postsecondary programming for SWD.

Theoretical Framework

The theoretical basis of this study was M. L. Wehmeyer’s (1999) functional theory of self-determination. The functional theory of self-determination conceptualizes self-determination as a dispositional characteristic of an individual based upon the function or
purpose a behavior serves for the individual. Hence, a person is not self-determined based on what one does, but on the purpose or function of one’s action (Wehmeyer, 1999, 2007). If the function of the action is to take control over one’s life or to improve the quality of one’s life, the person has acted in a self-determined manner. People have the disposition of self-determination based on the functional purpose of their behaviors. Self-determination is defined as “acting as the primary causal agent in one’s life and making choices and decisions regarding one’s quality of life free from undue external influence or interference” (Wehmeyer, 1996, p. 24). The concept of causal agency is central to the functional theory of self-determination. Persons act with causal agency when their actions are purposeful, intentional, and performed to achieve an end. Self-determined persons act as causal agents in their lives, and their behavior is volitional, intentional and self-initiated (Wehmeyer, 1999, 2005, 2013). Self-determined behavior is not a function of luck, randomness, or happenstance; it is purposefully initiated with the express and conscious function of acting as a causal agent in one’s life (Wehmeyer, 2005).

According to Wehmeyer’s (1999, 2013) functional theory of self-determination, self-determined actions are volitional and are identified by four essential characteristics: (a) the person acts with behavioral autonomy, (b) the person self-regulates behavior, (c) the person initiates and responds to events in a psychologically empowered manner, and (d) the person acts in a self-realizing manner. Self-determined actions, performed with intention, allow a person to act as a causal agent in one’s life. A self-determined person’s actions must reflect elements of all four essential characteristics of self-determined behavior. Each essential characteristic must be present in self-determined actions; but none alone is sufficient to qualify one’s behavior as self-determined (Wehmeyer, 1999, 2003c). The functional theory of self-determination considers self-determination as a dispositional characteristic where the functional characteristics of
behavior define a person’s level of self-determination. To reiterate, the essential characteristics refer not to the actual behavior one demonstrates, but to the function the behavior serves for the individual (Wehmeyer, 2013).

The four essential characteristics that define self-determined behavior emerge through development of multiple, interrelated components (Wehmeyer, 2003c). These individual elements of self-determined behavior are acquired throughout the life span, beginning in early childhood, and are deemed to be especially important to the emergence of self-determination (Wehmeyer, 2003a, 2007). As shown in Table 1, the component elements of self-determination include: (a) choice-making, (b) decision-making, (c) problem-solving, (d) goal setting and attainment, (e) self-regulation – including self-monitoring, self-evaluation, self-instruction, and self-reinforcement skills, (f) self-advocacy and leadership skills, (g) internal locus of control, (h) perceptions of self-efficacy and positive outcome expectancies, and (i) self-awareness and self-knowledge (Field et al., 1998; Wehmeyer, 2007). Again, it is not demonstration itself of these behaviors that shows self-determination; when the function of the behavior is to take control over one’s life or to improve the quality of one’s life, the behavior is self-determined.

Based on the functional theory of self-determination, Wehmeyer and Kelchner (1995) developed the Arc’s Self-Determination Scale (SDS) to examine the relationship between self-determination and positive adult outcomes for all persons, with and without disabilities. This self-report assessment, the Arc’s Self-Determination Scale, operationalized the definitional framework of the functional theory of self-determination. The validity and reliability of the scale have been well-established (Wehmeyer, 2003b). The SDS was normed on 500 students from five states and included students with and without disabilities and students living in rural, urban and suburban school districts. The SDS has been found to have concurrent criterion-related
Table 1

*Self-Determination Essential Characteristics and Component Elements*

<table>
<thead>
<tr>
<th>Essential Characteristics</th>
<th>Component Elements</th>
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<tbody>
<tr>
<td>Behavioral Autonomy</td>
<td>Self-Direction; Self-Advocacy Skills</td>
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<tr>
<td></td>
<td>Progression Away from Dependence on Others</td>
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<tr>
<td></td>
<td>Choice-Making Skills; Problem-Solving Skills</td>
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<tr>
<td></td>
<td>Decision-Making Skills (e.g., decision to disclose disability)</td>
</tr>
<tr>
<td>Self-Regulation</td>
<td>Planning for One’s Future</td>
</tr>
<tr>
<td></td>
<td>Setting, Following Through, Evaluating, and Achieving Goals</td>
</tr>
<tr>
<td></td>
<td>Using Accommodations to Enhance Learning</td>
</tr>
<tr>
<td></td>
<td>Self-Monitoring; Self-Observation; Self-Evaluation</td>
</tr>
<tr>
<td></td>
<td>Assessing Time on Task</td>
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<tr>
<td></td>
<td>Problem-Solving Skills; Self-Advocacy Skills</td>
</tr>
<tr>
<td>Self-Realization</td>
<td>Self-Awareness</td>
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<tr>
<td></td>
<td>Self-Knowledge (e.g., knowledge of need to disclose disability)</td>
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<tr>
<td></td>
<td>Understanding of Strengths and Weaknesses</td>
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<tr>
<td>Psychological Empowerment</td>
<td>Self-Advocacy Skills; Leadership Skills</td>
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<td></td>
<td>Self-Efficacy; Outcomes Expectancy</td>
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<td></td>
<td>Possessing Internal Locus of Control</td>
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<td></td>
<td>Using Accommodations to Enhance Learning</td>
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<td></td>
<td>Task Engagement and Persistence on Challenging Tasks</td>
</tr>
</tbody>
</table>

*Note.* Table adapted from Field et al. (1998) and Wehmeyer (2007).
validity, construct validity, factorial and discriminative validity as well as internal consistency with a Cronbach’s alpha of .90 (Lee et al., 2012). Completion of the scale provided data on global measures of self-determination as well as data on each of the four essential elements of self-determined behavior – individual autonomy, self-regulation, psychological empowerment, and self-realization. The primary purpose of the scale has been to enable persons to self-assess their strengths and weaknesses in an effort to determine personal goals whose achievement, through self-directed actions, would enhance development of self-determination. The scale is available for free to any interested person or organization in an effort to fulfill the authors’ purpose of promoting self-determination in all persons, both with disability and without (Wehmeyer, 2003a).

**History of Self-Determination**

Self-determination is both a civil right and a civic responsibility (Fleischer, 2011). Both the Americans with Disabilities Act (ADA, 1990) and the Individuals with Disabilities Education Act (IDEA, 1990) include provisions that specifically address the importance of the development of self-determination skills for students with disabilities (Field et al., 1998). The construct of self-determination has only been recognized in federal policy for the past 20 years (Denney & Daviso, 2012). Nonetheless, promotion of self-determination has become a “pillar of disability policy” in the United States (Wehmeyer, Abery, Mithaug, & Stancliffe, 2003, p. vii). A guiding principle of disability policy and practice in the U.S. is that all disability policy and legislation should empower people with disabilities by stressing the importance of self-determination, choice making, and full participation in all aspects of society. That the construct of self-determination has become institutionalized “as a key component of disability policy” dictates self-determination theory will remain at the forefront of transition services for students with
disabilities, and “more and more, in the education of all students” (Wehmeyer et al., 2003, p. viii).

Since the 1990s, the federal government has provided funding to promote the development of self-determination skills as a critical element across the lifespan but particularly in the successful transition to work or postsecondary school for youth with disabilities (IDEA Regulations, 2006). Due to the federal government’s emphasis on the importance of self-determination and subsequent allocation of funding specifically dedicated to model programs to promote development of self-determination skills, numerous resources have been designed including assessment tools, curricular materials, instructional methods, position papers, and student-directed transition planning programs. Self-determination has been studied across the age span, from preschool (Erwin & Brown, 2003; Palmer et al, 2013; Shogren & Turnbull, 2006) to older adulthood (Ferrand, Nasarre, Hautier, & Bonnefoy, 2012), and across disability categories including intellectual disability (Carter, Owens, Trainor, Sun, & Swedeen, 2009), autism (Carter et al., 2013), and learning disability (Field, Sarver, Shaw, 2003; Klassen, 2002; Konrad, Fowler, Walker, Test, & Wood, 2007) to enhance the ability of persons with disabilities to become more self-determined individuals.

**Origin of Self-Determination**

According to the *Oxford English Dictionary*, the earliest known use of the term *self-determination* occurred in 1683 when it was defined as “the determination of one’s mind or will by itself toward an object” (Simpson & Weiner, 1989, p. 919). The *American Heritage Dictionary of the English Language* (2011) defined self-determination as the “determination of one’s own fate or course of action without compulsion; free will.” Hence, self-determination involves acting on one’s own accord with autonomy and without undue external influence.
Deriving from the normalization and self-advocacy movements of the 1970’s and early 1980’s, self-determination first appeared in federal legislation in the Fair Housing Amendments Act of 1988. It was not until passage of IDEA 1990 and its reauthorization in 1997 that self-determination was written into transition legislation (Wood et al., 2004).

The first use of the term *self-determination* in reference to disability was in a chapter written by Nirje (1972) entitled *The Right to Self-Determination*. This chapter appeared in a text on normalization by Wolfensberger (1972). Nirje (1972) identified many of the same personality and behavioral attributes currently seen in the literature on self-determination. He referenced the salient characteristics of personal self-determination including choice and decision making, problem-solving, self-knowledge, self-advocacy, self-efficacy, self-regulation and autonomy. Nirje linked self-determination to empowerment in that acting in a self-determined manner increases one’s ability to control one’s life. Specifically, Nirje (1972) stated:

> One major facet of the normalization principle is to create conditions through which a [handicapped] person experiences the normal respect to which any human being is entitled. Thus the choices wishes, desires and aspirations of a [handicapped] person have to be taken into consideration as much as possible in actions affecting him. Thus, the road to self-determination is indeed both difficult and all important for a person who is impaired. (p. 177)

The disability rights and advocacy community has unequivocally recognized self-determination as a form of empowerment that increases one’s opportunities to experience an enhanced quality of life (Rappaport, 1981; Wehmeyer & Schwartz, 1998). Wehmeyer and Schwartz (1998) found a positive relationship between self-determination and quality of life for adults with disabilities. Self-determination is an important construct for *all* persons to develop,
regardless of disability status. However, self-determination is often believed to be a more critical skill for persons with disabilities to develop as well as being a skill that is more difficult for persons with disabilities to develop due to historical discrimination and negative stereotypes about the capabilities of persons with disabilities (Ward, 1988). Legislation supports the belief that all persons should have the right to direct their own lives, and these rights aptly apply to students with disabilities (Field & Hoffman, 2002). Numerous studies support the notion that development of self-determination skills leads to increased attainment of transition goals and improved postsecondary educational outcomes (Parker, 2004; Sarver, 2000).

Self-determination has been described in various ways, but a consensus definition was adopted in 1998 by the Division on Career Development and Transition (a chapter of the Council for Exceptional Children). This consensus definition read:

Self-determination is a combination of skills, knowledge and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behavior. An understanding of one’s strengths and limitations together with a belief in oneself as capable and effective are essential to self-determination. When acting on the basis of these skills and attitudes, individuals have a greater ability to take control of their lives and assume the role of successful adults in our society. (Field et al., 1998, p. 115)

Subsumed under the four essential characteristics of self-determined behavior are several component elements of self-determination (Wehmeyer, 2003c). Wehmeyer and Schalock (2001) listed the component elements of self-determined behavior to include choice making, decision making, problem solving, goal setting and attainment, self-regulation, self-awareness, self-efficacy, and self-advocacy. Hamblet (2011) defined self-determination as “the ability to set goals and the skills to make a plan to meet them, execute the plan, and reflect on the plan’s
outcome” (p. 31). Each of the component skills of self-determined behavior is interrelated and multifaceted (Campbell-Whatley, 2008). The component skills often express behavioral attributes from more than one of the four essential characteristics of self-determination. For example, self-advocacy is a characteristic of behavioral autonomy, self-regulated behavior, as well as acting in a psychologically-empowering manner.

All behaviors that indicate self-determination are expressions of personal agency (Cobb, Lehmann, Newman-Gonchar, & Alwell, 2009). A person with personal agency understands his strengths, limitations, needs, and preferences to the extent that he is able to effectively evaluate options and goals and can envision a clear path for his future. Self-determined persons actively choose a direction for their lives and behave autonomously to achieve their personal goals. These goals are chosen based upon an assessment of one’s needs; and achievement of goals is accomplished through doggedly pursuing them. Self-determined persons make things happen in their lives that they want to see happen. They capitalize upon a realization of their personal needs to assertively advocate for those needs. Once preliminary action has been taken, they evaluate the progress they have made toward their goals, use their problem-solving and decision-making skills to re-adjust their goals or ways of attaining them as necessary, and enlist supports to help reach their goals. The construct of self-determination involves both internal, personal attitudes and characteristics (such as self-awareness and self-efficacy) and external behaviors (such as goal setting and problem-solving).

Wehmeyer (2005) reported in an article on self-determination subtitled “Re-examining Meanings and Misinterpretations” that there is considerable misinterpretation of the construct of self-determination. Too often self-determination is erroneously deemed to be synonymous with the notion of control; however, self-determination is more than simple control over one’s life.
Wehmeyer contributed his definition of self-determined behavior to be “volitional actions that enable one to act as the primary causal agent in one’s life and to maintain or improve one’s quality of life” (p. 177). Thus, a person acts in a self-determined manner when he acts autonomously, regulates his behavior, initiates and responds to events in a psychologically empowering manner, and behaves in a way that shows self-realization (Wehmeyer, 2003a, 2005). The self-determined person uses knowledge and understanding of his preferences, strengths and needs to set goals; make decisions; see possible options; speak up for his needs; and understand which supports are necessary for his success and effectively communicate those needs. The self-determined person knows how to evaluate outcomes, make adjustments, and persist in the face of challenges (Wehmeyer & Field, 2007).

**Importance of Self-Determination for Students with Disabilities Transitioning to Postsecondary Education**

Increasing numbers of students with disabilities (SWD) are entering institutions of higher education (Connor, 2012; Hadley, 2007; Kurth & Mellard, 2006; National Center for Education Statistics, 2003, 2011; National Council on Disability, 2011; Raue & Lewis, 2011; Walker & Test, 2011). Garrison-Wade (2012) reported that the rate of college attendance for students with disabilities has more than doubled in the past 20 years. Approximately 31% of students with disabilities pursue postsecondary educations after leaving high school (Morningstar et al., 2010). While high school graduation rates for students with disabilities are approaching those of students without disabilities, the same cannot be said at the postsecondary level (Wagner et al., 2005). Students with disabilities tend to struggle more academically (Salmirs, 2011) and continue to lag behind their peers without disabilities in college completion rates (Belch, 2004; Getzel & Thoma, 2008). Overall adjustment to college life, while demanding for any student, is
even more challenging for students with disabilities navigating the transition (Brinckerhoff et al., 2002; Finn et al., 2008).

A 2010 quantitative study by Morningstar et al. investigated the relationship between college SWD perceptions of their high school transition preparation and their self-reported levels of self-determination. The researchers found that those students who were better prepared in high school for the transition to college exhibited higher levels of self-determined behavior in college and had improved postsecondary outcomes.

Study participants were recruited using a convenience sampling procedure and included 76 students with disabilities from nine four-year colleges/universities and four community colleges who had had an IEP in high school and had graduated after the implementation of the Individuals with Disabilities Education Act of 1997 (IDEA, 1997), which had strengthened transition planning requirements. Of the 76 participants, 65% indicated that their disability was a learning disability. The participants ranged in age from 18 to 29, and 95% were undergraduate students. Each participant completed two online surveys that measured perceived levels of self-determination, hope, psychological empowerment, and locus of control as well as perceived quality of their high school transition preparation, including school-based and family-driven transition preparation (Morningstar et al., 2010).

Correlational statistics were conducted to analyze relationships between transition preparation and dimensions of postsecondary self-determination. Students who indicated they had been well-prepared for the transition from high school to college tended to exhibit higher personal levels of self-determination (psychological empowerment, internal locus of control, and hope). This study by Morningstar et al. corroborated many earlier studies (Cobb & Alwell, 2009; Martin et al., 2006; Test et al., 2004; Test et al., 2009) linking effective transition to higher
levels of self-determination in college students with disabilities (Kellems & Morningstar, 2010).

Promotion of self-determination for students with disabilities has been prominently recommended as an essential element of special education and transition services for increasing the numbers of SWD who pursue and succeed in postsecondary education (Barnard-Brak & Lechtenberger, 2010; Carter et al., 2013; Finn et al., 2008; Getzel & Thoma, 2008; Stodden, 2001; Stodden & Conway, 2003; Wehman, 2012). Fostering self-determination has been deemed the “sine qua non of postsecondary programming” (Brinckerhof et al., 2002, p. 487). Numerous researchers (Carter et al., 2013; Finn et al., 2008; Jameson, 2007; Ruban, McCoach, McGuire, & Reis, 2003; Wehman, 2012) documented lack of self-determination as “the one major barrier” to postsecondary retention and success for SWD (Campbell-Whatley, 2008, p. 176). For at least the past 20 years, the National Association for Higher Education and Disability has stressed that the development of SD skills was the clearest path toward ensuring that SWD persist in college (AHEAD, 2013). SWD with stronger self-determination dispositions perform better in school, exert greater control over their lives through setting and achievement of goals, and experience more favorable adult outcomes (Martin et al., 2003).

Self-determination is an essential tool in any student’s transition from high school into the college environment, and all students are at risk of dropping out and failing to complete their degrees. That said, the presence of disability further decreases the likelihood a student will successfully earn a degree (deFur, Getzel, & Trossi, 1996; Murray et al., 2000). Self-determination skill development is crucial to the successful transition of SWD into adulthood, and it is particularly salient to their success in attaining a degree in a postsecondary setting (Belch, 2004; Finn et al., 2008, Hamblet, 2011). Mazzotti, Rowe, Cameto, Test, & Morningstar
(2013) listed self-advocacy/self-determination as one of the evidence-based practices that predicts post-school success for SWD in areas of both education and employment.

While the transition from high school to college is daunting for many students, the additional challenges incurred by the SWD disabling status makes the journey indisputably more arduous (Field et al., 2003; Getzel & Thoma, 2008; Madaus, 2005; Madaus, Faggella-Luby, & Dukes, 2011; Trammell & Hathaway, 2007). Research has indicated that SWD lack adequate self-determination skills (Finn et al., 2008). Hong et al. (2007) directly stated that SWD “are not self-determined” and lack planning, goal setting, decision-making, and advocacy skills (p. 33). Rohlfer (2011) found in a study of college students that first-year students had the lowest levels of self-determination, reiterating that development of self-determination proceeds throughout the life course. Her finding that freshmen students had lesser developed self-determination skills than upperclassmen lent further credence to the lack of self-determination being a reason for the increased attrition of freshmen students. Finn et al. (2008) similarly emphasized the importance of self-determination skills in students entering their second year of college and beyond by stating that continuing to develop and refine self-determination skills once “students are in college appears to be equally critical to ensure that they remain equipped to meet the challenges that they will face and become able to complete their postsecondary education and so enter their chosen careers” (p. 91).

It is important that all students develop capacities in each of the four essential characteristics of self-determined behavior. As students with disabilities tend to have poorer academic outcomes than students without disabilities, development of self-determination skills are imperative to their successful postsecondary experiences. Students who are self-determined exert control over their lives and make decisions intentionally. Self-determined students with
disabilities possess an awareness of their strengths and limitations, understand the strategies that help their learning, realize the necessity (or not) of disclosing their disability, self-advocate for their needs, assume responsibility for making choices and decisions and living with the consequences, exhibit self-regulation by setting goals and evaluating progress toward their goals, and respond to events with autonomy, empowerment, and self-realization (Campbell-Whatley, 2008; Wehmeyer et al., 2000). Self-determined students’ behavior will reflect elements of individual autonomy, self-regulation, self-realization, and psychological empowerment.

Numerous studies support the notion that development of self-determination skills leads to improved postsecondary educational outcomes. For instance, Sarver (2000) found that college students with learning disabilities who scored higher on the Self-Determination Student Scale (Field, Hoffman, & Sawilowsky, 1996; Hoffman, Field, & Sawilowsky, 1996) achieved higher grade point averages (GPAs). Contrary to Sarver’s findings, Bae (2007) found no significant correlation between global or component elements of self-determination and postsecondary academic achievement in SWD as measured by GPA. Parker (2004) found results similar to Sarver (2000) in a study of university students with attention deficit/hyperactivity disorder (ADHD); his qualitative study found that college students with ADHD perceived self-determination to be an important factor in their academic success.

Much of the previous research suggested that many SWD transitioning to IHE lack necessary SD skills for a successful college experience; however, Barber (2012) conducted a study of SWD who had successfully graduated from college. The SWD in this study claimed that their personal characteristics of self-awareness, self-determination, and perseverance were critical to their successful completion of college. These successful completers indicated that self-understanding and self-advocacy skills improved their academic outcomes; and disability
support coordinators also considered self-understanding and self-advocacy to be especially critical for SWD during transition to college and throughout the first year of college, when most student departure occurs (Barber, 2012; Huntly & Donovan, 2009).

Thoma and Getzel (2005) conducted a qualitative study in which college SWD took part in focus group interviews where they discussed the importance of self-determination to their successful postsecondary experiences. Twelve core components of self-determined behavior were identified by these researchers: choice-making; decision-making; problem-solving; goal setting and attainment; independence, risk-taking and safety skills; self-observation, evaluation, and reinforcement skills; self-instruction; self-advocacy and leadership skills; internal locus of control; positive attributes of efficacy and outcome expectancy; self-awareness; and self-knowledge. The purpose of this qualitative study was to discover which of the core components of self-determination successful college students with disabilities felt had been the most instrumental in their educational success.

Thirty-four participants were purposively selected college students aged 18 to 48 who were receiving services and support from their disability office and who had been identified as possessing self-determination skills. The participants had disclosed their disability to their postsecondary institution so that they could receive disability-related supports and services. This self-disclosure on the part of the participants was indicative that they had at least basic levels of self-determination. Participants came from three community colleges and three colleges/universities in Virginia. The focus group process used a semi-structured interview protocol; and data in the form of transcriptions and scribed notes was analyzed for emergent themes across groups (Thoma & Getzel, 2005).
Self-determination clearly rang as an essential element in the participants’ success in college. The most-mentioned core skills necessary for these students were problem-solving skills, self-awareness, self-knowledge (understanding one’s disability and one’s strengths and weaknesses), goal setting, and self-regulation (especially time management). Students reported that they learned these skills primarily through trial and error, where they tried one way, failed at it, and tried another way until they achieved success. Participants also discussed the importance of peer support, mentoring relationships, and parent support, unless the parents were overbearing and did not let the SWD act on their own (Thoma & Getzel, 2005).

Garrison-Wade (2012) conducted a qualitative analysis using focus group discussions with 59 college SWD and in-depth interviews of six postsecondary disability coordinators to ascertain the factors which inhibit or enhance postsecondary outcomes for SWD. Three themes emerged from the data, the first being capitalizing on student self-determination skills. Students indicated that when they did not capitalize on their self-determination skills, their self-confidence and self-efficacy eroded, and they experienced feelings of self-doubt and marginalization, which inhibited their capacities for acting autonomously and using self-regulated learning strategies. The disability coordinators interviewed perceived that students’ poor academic preparation for the rigors of college-level coursework compounded by the students’ lack of self-awareness were the most significant deterrents to SWD academic success. The disability coordinators spoke of SWD who had no idea of the impact of their disability on their learning and no knowledge of the types of accommodations that might best meet their learning needs.

Similarly, Field et al. (2003) conducted a qualitative study where they sought to learn more about the college environment from the perspective of students with disabilities. In-depth interviews were conducted with four students with learning disabilities ranging in age from 21 to
42. Thematic analysis indicated that the participants perceived support for self-determination in the college setting to be strongly influenced by both environmental factors and personality markers.

Environmental factors that impacted postsecondary success included institutional infrastructure, in terms of dealing with bureaucratic offices, and unrealistic expectations about the rigor of college courses; information access and lack of assertive communication skills needed to self-advocate; availability of role models, social support systems, especially positive peer relationships; and accessibility and approachability of faculty, including large class sizes and remoteness of faculty contributing to a fragile sense of self. Participants perceived self-determination to be the personality factor most instrumental to their postsecondary success. Themes that emerged from the interviews were clustered into several components of self-determination including behavioral autonomy, problem solving, and persistence. All participants accepted responsibility for self-regulating their behavior by planning and carrying out their goals, and indicated competency in acting in a psychologically empowering manner by recognizing that their past successes had enabled their development of beliefs of self-efficacy and outcomes expectancy (Field et al., 2003).

The ability to effectively problem-solve and to think and act flexibly in the face of obstacles were factors in the students’ perceptions of what contributes to their postsecondary success. Participants also voiced their beliefs that persistence was essential to their academic success. They understood that they could not quit in the face of adversity but had to carry on, sometimes even changing majors or colleges to one that might better suit their strengths and needs (Field et al., 2003). These needed attributes demonstrated students’ abilities to act in psychologically-empowering ways and to self-regulate their behavior.
Overall, the students in the study by Field et al. (2003) perceived that self-determination needed to be a central organizing theme of programs that support students with disabilities in institutions of higher education. The participants agreed that success in college hinges on several dimensions of self-determination – the belief in themselves as the decision-makers in their lives (behavioral autonomy and psychological empowerment); an understanding of their preferences, strengths and needs (self-realization); having an ability to problem-solve, negotiate and be flexible; having the ability to plan for and persist until they attain their goals (self-regulation); and exhibiting an attitude of self-efficacy and outcomes expectancy (psychological empowerment).

At the college level, it is necessary for SWD to learn self-determination skills, and use them, in order to achieve at a level equal to their classmates without disabilities (Anctil et al., 2008). These essential skill areas incorporated under the umbrella of self-determination include development of individual autonomy, self-regulation, self-realization, and psychological empowerment.

**Individual Autonomy**

A well-addressed barrier to successful postsecondary experiences for SWD involves the shift in responsibility from parents/teachers to students themselves at the college level. Chickering (1967) listed the development of autonomy in college students as a process of disengagement from parents and an ability to act independently while recognizing one’s strengths and weaknesses. Chickering and Reisser’s (1993) seven vectors that guide student development included “the move through autonomy toward interdependence” (p. 115). During this vector, students learn to act volitionally, translate ideas into focused, intentional action, problem-solve, revise parent/child relationships, and respect the autonomy of others. Students
come to understand that they cannot operate in a vacuum and success relies on reciprocal, balanced, interdependent interactions. Renowned experts in college student development repeatedly name autonomy as an important developmental goal for college students (Boyer, 1987; Chickering & Reisser, 1993; Pascarella & Terenzini, 2005). Students themselves have listed the development of autonomous behavior as one of the most important non-academic, outside-of-the-classroom learning outcomes of college (Kuh, 1993).

Connor (2012) suggested that perhaps the most significant demand on transitioning SWD is the “shift from others leading their learning to students leading their own learning” (p. 17). Numerous researchers have noted that the K-12 educational system perpetuates a sense of dependency in SWD by allowing well-meaning parents and professionals to make educational decisions for students, even at the point of transition to college (Brinckerhoff, 1994; Madaus, 2005; Thoma, Baker, & Saddler, 2002). Finn et al. (2008) and Trainor (2005) discussed how an overprotective high school environment can hinder students’ capacity to assume greater responsibility in the college sector. Squire (2008) stated that high school students with disabilities are too dependent on others; they are falsely served by a “bubble of support” created by well-intentioned parents and educators who assume responsibility for making educational decisions for SWD. When SWD transition to college, their bubble bursts, regardless of whether the SWD is ready to take control. Lewis (2006), a Harvard University dean and professor, spoke about the failure of American institutions to fulfill their purpose of transforming young people into adults who will assume responsibility for our society’s future. Lewis (2006) claimed students are too often coddled and infantilized and lack autonomous behavior and decision-making skills. In the postsecondary realm, students are responsible for their own success, or failure. Students who lack the ability to make decisions autonomously and who resist assuming
responsibility for their actions will stumble in their negotiation of the complex demands of college (Hadley, 2007). Alternately, students with a strong sense of self-autonomy can actively determine what they need to do and why they need to take these steps to be successful students (Allsopp, Minskoff, & Bolt, 2005).

Transition specialists concurred that the most important participant in the transition process is the student; however, high school students with disabilities have often played a passive role in their transition planning (Sitlington, 2003; Sitlington, Neubert, Begun, Lombard, & Leconte, 2007; Trainor, 2005). For students to experience success in the postsecondary environment, a shift in responsibility for their learning must occur. To be successful in college, parents must relinquish responsibility and students must assume this responsibility. This transfer of responsibility has been cited as an obstacle for students who frequently have become too reliant on parents and teachers to prescribe their learning activities (Squire, 2008). In the American college system, students are responsible for what they learn, how they learn, and when they learn. SWD, used to others managing their disability and related accommodations, found college life demanding a level of self-advocacy and self-direction that was daunting and unfamiliar to them (McCarthy, 2007).

Other research validating self-determination competency supported the importance of students assuming control and parents relinquishing control (Madaus, 2005; Shepler & Woosley, 2012). Parents, while well-intentioned, often thwarted the development of independence and decision-making skills in SWD (McCarthy, 2007; Shepler & Woosley, 2012). Madaus (2005) called the shift in parental and student responsibility a “sharp reversal” and spoke about how parents tended to speak for the transitioning SWD and stifle development of self-determination skills (p. 32). Shepler and Woosley (2012) corroborated that when SWD are integrating into the
college environment, family members need to rethink how they offer support. Rather than advocating for and orchestrating accommodations for the SWD, the parents need to step back and encourage the student to be self-directed, independent and self-sufficient. This study also recommended the SWD develop good working relationships with disability support personnel and faculty that could assist them in integrating into and feeling connected to the campus community. Cullaty (2011) studied the increase in parental involvement in college students’ lives and found evidence that over-involvement puts parents at odds with the mission of the university of advancing teenagers into responsible, productive adults. The college years are designed to allow for individuation from parents, increased self-governance, and autonomous decision-making (Zarrett & Eccles, 2006). These non-academic learning outcomes are important aspects of college student development that can be impeded by too much parent involvement. The results of Cullaty’s (2011) qualitative study suggested that a supportive rather than an interfering relationship best fostered student development of autonomy. Furthermore, his thematic analysis found that students were best served by parents who established adult-to-adult relationships with their college-age children, relinquished unnecessary involvement in both minute daily decisions as well as larger term career goals, and allowed their adult children the freedom to make mistakes and assume responsibility for their decisions.

Friedman and Mandel (2012) conducted a study on freshmen students three weeks after the semester had begun. They were interested in determining predictors of college student academic achievement and retention. Specifically, they wanted to find if students’ needs for achievement, affiliation, autonomy, and dominance were reliable predictors of academic success beyond high school GPA and SAT scores. Their analysis revealed that only students’ needs for achievement (which is a component of SD under the psychological empowerment characteristic)
and behavioral autonomy at the beginning of their college career were significant predictors of GPA by the end of the freshmen year.

**Self-Regulation**

Self-regulation:

Enables individuals to examine their environments and their repertoires of responses for coping with those environments to make decisions about how to act, to act, to evaluate the desirability of the outcomes of the action, and to revise their plans as necessary.

(Whitman, 1990, p. 373)

Self-regulated people make realistic decisions about what skills to use under any given circumstance; examine the task in light of their resources at hand; and formulate, enact, and evaluate a plan of action, adjusting the original plan when necessary. Self-regulated persons are persistent in realizing their goals; they have the ability to consider multiple options and anticipate consequences of chosen actions, evaluate their course of action based on the outcomes of previous decisions, and revise plans through self-reflection and self-evaluation. Once an action has been taken, the self-regulated person assumes responsibility for his choices and decisions. The self-regulated individual monitors his progress toward goals and has the ability to self-reinforce through both positive and negative means (Field, 2003). Academic self-regulation indicates that students are self-directed, independent learners who plan, monitor, and evaluate their progress and use a variety of learning strategies to meet their specific academic goals (Zimmerman, 2008; Zimmerman & Schunk, 2008).

The transition to the more challenging university setting places increased demands on students to demonstrate autonomy, independence, and self-regulated behavior (Ruban et al., 2003; Tuckman & Kennedy, 2011). Meeting the demands of college can be difficult for any
student, but especially so for SWD. College learning requires more higher-order thinking and more independent learning than secondary academic tasks (Conley, 2005; Mackenzie, 2009). Learning how to learn and using strategic learning strategies are indicative of self-regulated learning, and all are positive predictors of college success (Bembenutty, 2008; Kitsantas, Winsler, & Huie, 2008). Hong et al. (2007) stated that SWD exhibit skill deficits in the self-regulation tasks of problem-solving, self-evaluation, self-monitoring, and communication; furthermore, these self-regulation skill insufficiencies increased SWD reliance on others and limited their autonomy.

“Self-regulated learning variables” have been found to be better predictors of first year success and GPA for first-generation students than are the students’ incoming ACT scores (Naumann, Bandalos, & Gutkin, 2003, p. 7). Zimmerman (2000) and Schunk (2001) highlighted the importance of self-regulation in successful college learning. When SWD used a repertoire of self-regulated learning strategies and compensation strategies, they were found to act more independently and showed improvement in their academic performance. Park, Edmondson, and Lee (2012) found that self-regulated behavior was predictive not only of academic performance but also of psychological adjustment in first year college students. Ruban et al. (2003) and Tuckman (2003) both found that the self-regulated behaviors predicative of academic achievement can effectively be taught to students, and academic self-regulation is an alterable variable. Students who self-regulate become independent learners by personalizing the strategies they use to meet their individual needs. These self-regulated strategies, once learned, carry over from the academic setting to all realms of life, including employment.
**Self-Realization**

Self-determination is a composite construct that includes a multitude of skills necessary for postsecondary success (Cobb et al., 2009). Research has established that the extent to which students are able to successfully transition from high school to adult life is predicated, at least in part, on performance of self-determination skills (Ankeny & Lehmann, 2011; Chambers et al., 2007; Kochhar-Bryant et al., 2009; Quick, Lehmann, & Deniston, 2003; Shogren et al, 2007; Wehmeyer et al., 2003). Students who attempt to navigate the transition from high school to postsecondary life without SD skills find themselves ill-prepared for the realities they encounter (Kochhar-Bryant et al., 2009). Perhaps the foremost necessity for development of self-determination skills for SWD is knowing yourself (Field & Hoffman, 1996) and having a thorough understanding of one’s disability and how it impacts one’s learning. It is not uncommon for college SWD to believe that they are no longer disabled and no longer need assistance in the academic realm (Barnard-Brak et al., 2009; Squire, 2008). Ankeny and Lehmann (2011) found in their research on self-determination skills in community college SWD that none of their participants could specify their disability. Half of students with learning disabilities in the National Longitudinal Transition Study – 2 (NLTS-2) who had received special education services while in high school reported that they did not consider themselves to have a disability by the time they enrolled in college (Barnard-Brak et al., 2009; Cameto, Knokey, & Sanford, 2011). Another 16 percent indicated that they considered themselves to have a disability but they chose not to inform their postsecondary institution of their disability. Only 28 percent of students with learning disabilities in NLTS-2 considered themselves to have a disability and had disclosed their disability to their IHE (Cameto et al., 2011).
Field and Hoffman (1996) suggested that self-awareness or self-understanding may be the most critical factor in one’s level of self-determination. In order for a student to be self-aware, he or she must accept his or her disability. Self-awareness also includes a knowledge of one’s preferences and areas of strengths and weaknesses (Wehmeyer, 2005).

Students who have well-developed self-determination skills set their goals based on an awareness of their interests, strengths, and limitations (Hong et al., 2011; Martin, Portley, & Graham, 2010). Many students with disabilities at the college level lack sufficient knowledge of the nature of their disability and how it impacts their learning (Hong et al., 2011). Without this self-realization of how their disability affects their learning, SWD are unlikely to disclose their disability or effectively communicate their needs for instructional or testing accommodations to their professors (Getzel & McManus, 2005).

At the college level, self-disclosure of one’s disability is a requirement to receive accommodations and/or other disability-related services. This is a radical difference from the K-12 public school system from which students have transitioned. In the K-12 educational system, IDEIA (2004) mandates that it is the responsibility of the school to find, identify, and provide accommodations and services to students with disabilities in an effort to ensure their academic success (Finn et al., 2008). This is a huge shift in responsibility, especially since in the collegiate sector, institutions are not allowed to seek information about a potential disability. Furthermore, achieving success is not a requirement of legislation governing the postsecondary system. At the college level, the only requirement is that a student is ensured access – not success. If a student desires to receive accommodations or services from his college, the student must self-disclose his disability, provide appropriate documentation of his disability, and speak with his professors to self-advocate for his needs (Eckes & Ochoa, 2005; Gil, 2007). Obviously, if a student is
unaware of how his disability affects his learning, his capacity to advocate for his needs will be compromised.

SWD who know themselves and their strengths and weaknesses tend to be better prepared to cope with challenging circumstances in a self-regulated and psychologically-empowering manner (Campbell-Whatley, 2008). College SWD who persist to graduation possess traits of resiliency, determination, and resourcefulness, and make better use of accommodations than SWD who lack awareness of their learning differences (Vogel, Hruby, & Adelman, 1993). It is not uncommon for students transitioning to college to have an incomplete understanding of the nature of their disability and how it affects their learning (Gil, 2007; Skinner & Lindstrom, 2003). Wagner et al. (2005) analyzed National Longitudinal Transition Study – II (NLTS–II) data and found that two-thirds of postsecondary students with disabilities were not receiving accommodations due to their failure to disclose their disability. This analysis revealed that half of these students no longer believed they had a disability even though they had been the recipients of special education services in high school. Another seven percent of students who had received special education services in high school made the decision not to disclose their disability to their college.

Disability is a life-long impairment and functional limitations in life’s essential activities (such as learning) do not go away with time (Skinner & Lindstrom, 2003). Shaywitz (2003) stressed that learning disabilities are chronic, persistent problems that are not outgrown with time. Lock and Layton (2001) found that college SWD are often “unaware of exactly what they need for success in higher education” (p. 66) and are unable to articulate the strategies that assist their academic performance. When SWD are self-aware, with knowledge of their strengths and
weaknesses and a full understanding of their learning process, they are more able to experience academic success in college coursework.

Getzel and McManus (2005) also found that many SWD did not have sufficient knowledge of their disability to effectively communicate their needs. Quinlan, Bates, and Angell (2012) stated that many students with learning disabilities were unsophisticated as communicators of their learning needs, especially in uncomfortable situations where lack of privacy and discrimination were inherent risks of disclosure. Other SWD did not disclose their disability due to their fear of the stigmatizing effects of self-identification (Corrigan & Matthews, 2003; Denhart, 2008; Egan & Giuliano, 2009; Izzo, Murray, & Novak, 2008; Scotch, 2001; Trammell, 2009a, 2009b). Wagner et al. (2005) found that some SWD had the erroneous belief that if they had successfully been accepted into college, their learning disabilities must have been cured such that they no longer needed accommodations and/or services. Disability support personnel, too, indicated lack of self-awareness skills by SWD as well as limited understanding of their disability and related needs were significant deterrents to SWD academic success. Finn et al. (2008) also reported that disability support service providers listed the lack of self-determination skills as a critical area of need in college students. Furthermore, disability services coordinators in the Getzel and McManus (2005) and Wagner et al. (2005) studies corroborated Garrison-Wade (2012) in pointing out that lack of self-awareness compromised SWD ability to ask for help and advocate for their learning needs.

Lack of self-awareness by SWD and corresponding incomplete understanding of one’s disability and how it impacts one’s learning have received much attention in the research on SWD (Garrison-Wade, 2012). Gabel (2010) stated that many SWD do not realize that their conditions impede their learning. It has been found that SWD who can reframe any negative
associations with the label “disabled” and accept their disability as an integral part of who they are will be better positioned to describe how their disability affects their learning and seek the accommodations that enhance successful outcomes (Armstrong, 2010, 2012; Connor, 2012; Mooney, 2008). Madaus (2005) and Squire (2008) documented that SWD typically arrive at college unable to describe their disability and unable to articulate their accommodation needs. Cowen (1993) and Crawford (2002) found that SWD, especially those with non-visible disabling conditions such as learning disabilities, feel uncomfortable in disclosing their disability or feel unable to adequately express how their disability affects their classroom participation and academic performance. College SWD who do not understand the nature of their disability and its impact on their learning will be poorly positioned to deal with the realities of the college environment (Beale, 2005; Cawthon & Cole, 2010). Self-determined students are self-aware, know what they do well in, and act on this knowledge about themselves to capitalize on their strengths. Squire (2008), asserting that self-determination skills are critical for success, declared “the ability to examine who and what you like (or dislike) and develop plans based on your own needs and goals are critical for educational and employment success and, most important, for achieving an inclusive and independent life” (p. 127).

One aspect of self-realized behavior is the recognition by SWD of their need to disclose their disability and register with their campus Disability Services office (Janiga & Costenbader, 2002). Students with disabilities must assume responsibility for their own educations. While students can choose not to disclose their disability at the college level, SWD who are aware of their strengths and limitations will assume responsibility for disclosing their disability to enable access to the accommodations and/or services for which they are eligible (Connor, 2012). Newman et al. (2009) found that only 37% of secondary students who had received special
education services while in high school had identified their disability at their postsecondary school; and of those SWD who had self-identified, only 24% actually used support services and/or accommodations at their college. When SWD fail to disclose their disability status, they effectively close the door to the available disability support services and academic accommodations that might enhance their postsecondary success. Many SWD postpone disclosing their disability and wait until they are in academic crisis before they seek disability services (Lightner, Kipps-Vaughan, Schulte, & Trice, 2012). SWD who proactively seek services earlier were found to perform better academically than those SWD who delay accessing services.

Webster (2004) also found that SWD who had successfully made the transition to college indicated that self-awareness of their unique learning needs had been essential to their success. The 22 students in this study stated they needed additional opportunities to develop the skills necessary for becoming self-determined adults. The students in this study wanted easier access to disability-related knowledge. They desired more emphasis to be put on person-centered planning for self-determination skill development. These SD skills would allow SWD to self-advocate for the kinds of educational opportunities and supports they felt necessary for their postsecondary success.

**Psychological Empowerment**

One aspect of feeling a sense of psychological empowerment is having well-developed self-advocacy skills. When students feel that they can effectively advocate for their needs, they feel empowered and in charge of their futures. Hamblet (2011) defined self-advocacy as “being able to communicate one’s needs and rights” (p. 35). Skinner (1998) put forth that self-advocacy is intricately related to self-determination and is integral to success at the college level. Self-
advocacy, according to Skinner (1998), is a three-pronged concept, with the three points being knowing one’s rights, understanding one’s disability, and communicating effectively.

Lack of self-advocacy skills among SWD has been prominently addressed in the research concerning college student success (Carney et al., 2007; Garner, 2008; Hadley, 2006; Lock & Layton, 2001; Quick et al., 2003; Test, Fowler, Wood, Brewer, & Eddy, 2005). The transition to college is typically the first time a SWD finds himself with sole responsibility for meeting his academic needs. In contrast to the K-12 educational system where the school is responsible for identifying and subsequently serving a student’s special needs; in the college system, the SWD must decide whether or not to self-identify and request disability supports and/or services. Self-advocacy requires the ability to recognize and meet the needs specific to one’s disability without compromising one’s dignity (Brinckerhoff, 1994). Three related skills comprise self-advocacy for college SWD – knowledge of what you want; knowledge of what you are legally entitled to; and the ability to effectively reach one’s academic goals. SWD who realistically assess their strengths and weaknesses, become informed of the nature of their disability and its impact on their learning, assume a willingness to take risks, disclose their disability, and request appropriate accommodations that compensate for their difficulties are well-versed in self-advocacy skills. SWD who exhibit these attributes and behaviors were more likely to succeed in their college experience.

Foley (2006) confirmed the importance of firmly developed self-advocacy skills for SWD transitioning to college and maintained that success or failure for SWD was in large part determined by ability to self-advocate. She indicated that college SWD may fumble when entering the less structured and more challenging higher education environment if they do not self-disclose their disability. By the time SWD realized that they were in academic trouble and
needed the academic assistance that accommodations provide, it was often “too little and too late” (p. 642). The prerequisite cognitive and academic skills that enable student success are the same for all students. However, in addition to these skills, SWD need nonacademic prerequisite skills that require confidence in self-advocating for one’s academic needs. SWD must self-advocate by self-identifying their disability status, describing how their disability affects their learning, suggesting appropriate accommodations, and communicating openly with disability support personnel and faculty about their diverse learning needs. When SWD possessed these additional nonacademic skills and attributes, especially those skills associated with self-advocacy, they were better equipped to act autonomously and achieve success in the more highly demanding IHE.

McCarthy (2007) contributed that “for students with disabilities, self-advocacy is not preferred; it is essential” (p. 16). As a former SWD and currently a disability educator, her article signaled the importance of self-advocacy in transitioning to and succeeding in college. McCarthy (2007) made mention of the lack of control over their lives experienced by many SWD prior to coming to college, where SWD had been the recipients rather than the authors of their educational accommodations. To be successful, SWD must find – and use – their voice to self-advocate for the accommodations that enhance their opportunities to succeed and make valuable contributions to society.

Anctil et al. (2008) put forth that receipt of accommodations was essential to the academic success of SWD and required competence in self-advocacy skills. SWD who have strong self-determination skills have also been found to experience greater likelihoods of persistence and success in college (Morningstar et al., 2010) and have a greater understanding of the factors that both facilitate and hinder their use of accommodations (Janiga & Costenbader,
 Conversely, when SWD lacked effective self-advocacy skills, they were unlikely to request the accommodations that could facilitate their educational success. Many SWD cited their lack of self-advocacy skills, resulting in their failure to request accommodations, as barriers to their success (Bolt, Decker, Lloyd, & Morlock, 2011). Bolt et al. (2011) also found that SWD acknowledged the role they personally played in hindering their successful use of accommodations. In Bolt et al.’s 2011 study, SWD were more likely to see their self as a *barrier* to accessing accommodations (19.4%) rather than as a *facilitator* in their access to accommodations (6.8%).

While Wehmeyer (2005) considered goal attainment as the most important component of self-determined behavior, the Office for Civil Rights has stated that “attitude [i.e., self-efficacy] and self-advocacy may be two of the most important factors in determining their [students with disabilities] success or failure in postsecondary education” (U.S. Department of Education, 2007, n.p.). Goal attainment, self-advocacy and self-efficacy are intricately linked, regardless of which of the three is deemed the most important component of self-determined behavior. Previous success in attaining one’s goals is likely a prerequisite for the development of beliefs of self-efficacy; and the ability to self-advocate for one’s needs is a factor in the SWD successful attainment of goals.

Academic achievement relies not only on academic proficiency, but depends also on a student’s attitude and belief that one is capable of achieving academic success (Baird, Scott, Dearing, & Hamill, 2009). Self-efficacy refers to a person’s belief as to his ability to meet task requirements under specific conditions (Bandura, 1977). Academic self-efficacy is the belief that you are capable of successfully completing future academic tasks in a specified context (Bandura, 1997). Bean and Eaton (2002) also promoted the importance of academic self-
efficacy as an indicator of student integration and persistence. Students’ decisions to stay in college were predicated on believing that they are capable, taking a proactive approach to problems rather than avoiding them, and seeing themselves as the primary force in their successes and failures (having an internal locus of control). Davidson and Beck (2007) defined academic self-efficacy as “the belief in one’s ability to master academic tasks and assignments and attain one’s academic goals” (p. 298). They found that academic self-efficacy was a significant predictor of re-enrollment decisions of college freshmen, and students with low levels of self-efficacy and high levels of academic apathy were more likely to drop out of school. Similarly, students in better academic standing were found to exhibit higher levels of academic self-efficacy and showed better use of the self-regulation goal-setting skills of developing, demonstrating, and improving academic abilities (Hsieh, Sullivan, & Guerra, 2007). Hsieh et al. found that students who had faith in their ability to complete academic tasks and students who were motivated to complete tasks for mastery and/or improved performance were more likely to achieve academically and to stay enrolled in college. Students who lacked self-efficacy and students who demonstrated performance-avoidance goals (motivation to avoid academic tasks as a means of hiding their lack of ability) were less likely to be successful academically and were more likely to drop out of college.

Bandura (1997) stressed that self-efficacy is multi-faceted, varies across domains, and focuses on beliefs about one’s future performance. Academic self-efficacy is task-dependent – academic self-efficacy looks at a student’s belief in his ability to master a specific academic task and is not an indicator of a student’s belief in his generalized performance. Self-efficacy is a malleable psychological trait, and as such, there are strategies that raise levels of self-efficacy. Typically, one has an inclination to engage in tasks in which one feels capable and to disengage
from tasks that seem too difficult. However, Bandura (1986) found that witnessing someone else who seems similar to oneself succeed at a task raises one’s perception of one’s ability to personally succeed at said task. Additionally, setting realistic and progressive (proximal to distal) goals as well as verbal persuasion increase one’s sense of self-efficacy. When students meet a proximal goal, their feelings of competence increase, thus motivating them to tackle more distal goals. Numerous researchers have found that academic self-efficacy is positively correlated with academic performance and predicts academic achievement better than other motivational constructs (Chemers, Hu, & Garcia, 2001; Robbins et al., 2004). Out of nine predictors of GPA and retention, Robbins et al. (2004) found in a meta-analysis study that academic self-efficacy was the strongest predictor of GPA. In a study of nontraditional college freshmen, academic self-efficacy was similarly found to be a more robust and consistent indicator of success in college academics than was stress (Zajacova, Lynch, & Espenshade, 2005).

Previous success in academic tasks will influence one’s level of self-efficacy. One’s perceptions of their level of self-efficacy will influence “choice of activity, task perseverance, level of effort expended, and ultimately, degree of success achieved” (Klassen, 2002, p. 88). Other researchers have reiterated that a well-developed sense of self-efficacy leads students to choose to participate in activities that enhance performance both inside and outside the classroom, thus contributing to improved academic success (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007). Exhibiting independence in choosing to participate in an activity is indicative of self-determination as a self-determined individual will choose goals that match his interests and skills (Martin et al., 2010). Self-efficacy, including holding an expectation for success, has been found to more important to predicting first year success measured by GPA than ACT scores for
first-generation students (Naumann et al., 2003). Students who believed themselves to be capable were more likely to practice effective learning strategies, experience success, and have a better sense of self-worth.

Gore (2006) found that self-efficacy explains between 11% and 14% of the variance in academic performance and persistence for students with disabilities. Among other things, self-efficacy is an indicator of how long an individual will persist in the face of adversity. College students with disabilities have the typical adjustments to college to make as all students; but in addition to the normal social and academic adjustments, SWD must account for the differences their disability brings to the new environment (Getzel & McManus, 2005; Getzel & Thoma, 2008; Gil, 2007). Gore (2006) claimed self-efficacy is positively related to improved college performance, increased college persistence and completion, and enhanced range of perceived career options.

Students who are self-determined will plan how they are going to achieve their educational goals, will evaluate the progress they are making toward their goals, will make any needed adjustments, and will experience higher levels of academic achievement (Madaus et al., 2011; Martin et al., 2010). Students with learning disabilities have been found to exhibit lower levels of self-efficacy and to view themselves as less academically competent than their normally achieving peers (Gore, 2006; Salman, 2009; Sleman & Shafrir, 1997). Procrastination works alongside low levels of self-efficacy in playing a role in the underachievement of college students with disabilities (Hen & Goroshit, 2012; Klassen, Krawchuk, Lynch, & Rajani, 2008). Procrastination by students implies a lack of goal attainment and a failure to successfully plan one’s behavior to meet goals previously identified as necessary in creating a successful learning experience (Klassen et al., 2008; Martin et al., 2010). Self-determination in students, on the
other hand, typically reflects a greater volitional involvement in one’s education, an increased
degree of motivation for excelling in academics, and a resultant higher academic achievement
(Deci, Vallerand, Pelletier, & Ryan, 1991; Komarraju & Nadler, 2013)

Friedman and Mandel (2009) found that the application of outcomes expectancy skills at
the beginning of a student’s college career was significantly related to cumulative GPA at the
end of the freshman year. Both expectancy theory and goal-setting theory were found to be
positive predictors of college student performance and retention. Expectancy theory refers to the
belief that increased effort will result in improved performance, and better performance will
result in certain expected and desired outcomes. These expectations hinge on past experiences in
similar situations, where past successes with increased effort led to increased outcomes
expectancy and past failures led to decreased outcomes expectancy. These researchers found
evidence, too, of the importance of self-regulatory goal-setting skills in successful college
students. Students who set specific, relevant, and measurable goals for events that were under
their control were found to be more academically successful than students who did not set goals.
Students who set academic goals had an outcomes expectation that goal-setting and goal-
attainment would enhance their academic performance. These researchers found that students
who had positive outcomes expectations that increased effort would be rewarded with better
grades and who set attainable academic goals had higher GPAs at the end of their freshman year.

There is tremendous interplay and overlap among the components of self-determined
behavior. Self-awareness, self-advocacy, and self-efficacy are inherently linked elements of self-
determination. Awareness of one’s strengths, preferences, interests, and needs is necessary for a
student to be able to advocate for those needs (Anctil et al., 2008; Eckes & Ochoa, 2005;
McCarthy, 2007). Lack of self-awareness by students with disabilities inhibits their progress in
college by reducing the likelihood that they will advocate for their needs (Eckes & Ochoa, 2005).

Self-advocacy is considered to be an indispensable component of self-determination (Field, 1996; Field et al., 1998; Test, Fowler, Brewer, & Wood, 2005). Students who are aware of their disability can disclose their disability and self-advocate for the accommodations that can enable them to experience success in their postsecondary educations (Lindstrom, 2007). Previous successful academic experiences lead to development of feelings of self-efficacy and outcomes expectancy. When SWD lack self-awareness, they are unlikely to self-advocate by disclosing their disability and seeking accommodations. If they cannot manage the rigor of college courses without accommodation, development of feelings of self-efficacy will be impaired. In short, without each of these component skills, students will not be self-determined. Without the dispositional characteristics of self-determination, any student’s chance for a successful college experience will be compromised.

**Summary**

Self-determination skills are a prerequisite for lifelong success. Fortunately, self-determination competencies can effectively be taught to students with disabilities (Campbell-Whatley, 2008), and most special educators believe that it is extremely important to include instruction on self-determination in both undergraduate and graduate level university courses (Thoma, Nathanson, Baker, & Tamura, 2002). Clearly, the promotion and development of self-determination skills is not something that should be relegated only to the K-12 system (Palmer, 2010). Squire (2008) stressed that self-determination skills do not merely appear at a given age but are learned through experience. The acquisition of self-determination skills occurs throughout the life course and is a “lifelong liaison between the individual and society” (Ankeny & Lehmann, 2011, p. 282). Teaching self-determination is “one of the key practices in
facilitating transition” to postsecondary education and adult employment for SWD (Thoma & Getzel, 2005, p. 234).

Research supports a strong relationship between student development of self-determination skills, academic achievement, and post-school outcomes (Field & Hoffman, 2012; Konrad et al., 2007; Madaus et al., 2011; Martin et al., 2010; Wehman, 2012). More than half of college SWD are at risk of failure due to lack of the self-empowerment skills needed for postsecondary success (Hong et al., 2007). Many SWD enter college without sufficient self-awareness of their strengths and weaknesses and without the self-advocacy skills to communicate their needs (Izzo & Lamb, 2002). Belch (2004) stated that success in college for SWD is more likely to occur in the presence of self-determination and self-esteem. Lack of self-determination skills impedes access to, participation in, and completion of college (Mamiseishvili & Koch, 2011). College is the perfect time for students to develop and practice the behaviors of choice making, decision making, goal setting and attainment; problem solving; self-management and self-regulation; self-advocacy and leadership; and self-awareness and self-knowledge that indicate self-determined behavior.

When SWD have a clear understanding of their disability and can effectively articulate how it impacts their learning, they are self-aware. This self-realization component enhances their ability to act autonomously, disclose their disability, advocate for their needs, and request the accommodations and supports that level the educational playing field for SWD (Martin et al., 2010). Success in the self-regulatory skills of setting and achieving goals, evaluating one’s learning, and advocating for one’s needs leads to greater levels of self-efficacy and increased outcomes expectations. SWD who exhibit self-efficacy respond to events in psychologically empowering ways; show resilience in the face of academic pressures, challenges or setbacks; and
have an internal locus of control. These components of self-determined behavior have been found to positively correlate with improved educational outcomes for students with disabilities – indeed all students -- attending institutions of higher education (Carter et al., 2013; Izzo & Lamb, 2002; Lee et al., 2012).
CHAPTER 3 -- METHOD

Summary of the Study

Students who have strong self-determination skills have been found to experience greater likelihoods of persistence and success in college. Self-determination skills are especially important for postsecondary success in students with disabilities (Morningstar et al., 2010). Numerous researchers have associated acceptance of disability to the development of self-determination and more positive outcomes (Ankeny & Lehmann, 2011; Belch, 2004; Gore, 2006; Hong et al., 2007; Kochhar-Bryant et al., 2009; Thoma & Getzel, 2005).

This study investigated the importance of self-determination as a key factor in successful transition to postsecondary education by assessing SD skill development using MAP-Works. The interplay of self-awareness, self-advocacy, and self-efficacy as key components of the four essential characteristics of self-determination were studied to explore how self-determination competency relates to successful transition to and achievement in postsecondary education.

Design of the Study

Because acquisition and implementation of self-determination skills are so critical for postsecondary success, it was logical to conduct a thorough examination of the variables that indicate self-determination in transitioning first-year college students. While the construct of self-determination has been extensively researched at the secondary level, there is scarce research at the postsecondary level. Further, an aim of this study was to compare levels of self-determination among students with and without disabilities; and also to determine if those students with disabilities who had registered with their campus disability services office had greater levels of self-determination than SWD who had not registered and/or sought services. By using the MAP-Works assessment to identify students who self-reported low levels of self-
determined behavior, retention interventions and success strategies could be targeted to these students, with or without disabilities, early in the semester before they begin to flounder with the demands of college life or lose their sense of self-efficacy. As SWD tend to have decreased retention, persistence, and completion rates compared to students without disabilities (SWoD), and as well-developed self-determination skills are indicative of improved college success for all students, this study was designed to explore levels of self-determination in an effort to increase our knowledge base on the influence of self-determination on college success.

**Purpose Statement**

The purpose of the study was to see if statistically significant differences exist between self-reported levels of self-determination among incoming first-year college students without disabilities and students with disabilities. Among the students with disabilities (SWD), there were two student groupings – those students who had an IEP (individualized education plan) or 504 Plan in high school and had not registered with the Disability Services (DS) office, and those who had an IEP or 504 Plan in high school and who had registered with DS. A further purpose of the study was to see if statistically significant differences exist between self-reported levels of self-determination based on demographic variables, including disability type among SWD.

**Research Questions**

1) Do statistically significant differences in self-determination (SD) exist between students with and without disabilities?

2) Do statistically significant differences in SD exist between students self-reporting disability who are registered and those who are not registered with the office of Disability Services?
3) Do statistically significant differences exist in SD based upon disability type (i.e., physical/sensory disabilities, non-apparent disabilities)?

4) Do statistically significant differences exist in SD based upon other demographic variables (i.e., gender, race/ethnicity, high school GPA, first semester GPA, retention to spring semester)?

**Research Hypotheses**

1) It was hypothesized that statistically significant differences would exist between students with disabilities (SWD) and students without disabilities (SWoD), with SWD having lower levels of self-determination skills than students without disabilities [t-test].

2) It was also hypothesized that those SWD who had registered with the Disability Services (DS) office on campus would have greater levels of SD competencies than those SWD who had not registered and sought services [t-test].

3) It was hypothesized that students with non-apparent disabilities would have lower levels of SD than students with physical or sensory disabilities [t-test].

4) It was hypothesized that there would be statistically significant differences between levels of SD and the demographic grouping variables (exploratory) [t-test and ANOVA].

**Research Method and Research Approach**

Quantitative research was used to produce findings arrived at through statistical analysis of quantifiable, numerical data. With quantitative research, examining the relationships between and among variables is critical for answering questions and testing theories (Creswell, 2014). The research approach employed was the deductive reasoning approach, framed by the theory of
functional self-determination developed by Wehmeyer (1999). The intent of the research was to examine differences between student groupings and to generalize the findings of this study to the larger body of incoming first-year students across the nation. This study used both descriptive and inferential statistical analysis to explore variables that indicate levels of self-determination in students transitioning to college (Creswell, 2014). As the data had already been collected by the university’s Office of Institutional Effectiveness (OIE), it was considered archival data (Elder, Pavalko, & Clipp, 1993).

Research Technique

Survey methodology (Fowler, 2009) was the research technique used for this study. Participants answered survey questions administered online (Sue & Ritter, 2012) through Educational Benchmarking’s (EBI) MAP-Works 2013 Fall Transition Survey, an assessment of self-reported student strengths and weaknesses designed to identify areas for further student growth and development.

Setting of the Study

Ball State University is a public, mid-sized, doctoral-granting, primarily residential, Midwestern university situated in Muncie, Indiana. Founded in 1918, Ball State University enrolls approximately 21,000 undergraduate and graduate students each year in seven academic colleges and awards about 5,000 degrees annually. Each year, approximately 3,500 freshmen students matriculate at Ball State University.

Population

The population was all incoming first-year students matriculating to Ball State University in the fall semester of 2013. There was no sample selection as this was a population sample. The sample size was 3,241 first-year students. During the third week of the fall semester 2013,
all matriculating students received an online survey through their campus email and were asked to participate in the transition study. Of the 3,660 first-time freshmen students, 3,241 returned useable survey responses. The overall response rate was 89 percent.

**Data Collection Procedures**

The data were gathered in September 2013 by the Ball State University Office of Institutional Effectiveness (OIE) through the Making Achievement Possible (MAP) Works 2013 Fall Transition Survey. The research instrument used, Making Achievement Possible (MAP-Works), is a web-based assessment system designed to reveal student strengths and talents as well as to identify areas for further student development. The survey takes approximately 15 minutes to complete and the annual transition survey was given to all enrolled, first-time, first-year, and transfer students during the third week of their first fall semester as a Ball State University student. Incoming students received an email invitation to participate in the online survey. Reminders were emailed twice to non-responders.

MAP-Works is a comprehensive, integrated measurement of student retention and success that allows for early identification of at-risk students by campus professionals (Woosley, & Jones, 2012; Woosley & Whitaker, 2004). MAP-Works is a national survey administered at over 130 institutions in the United States. For incoming students, MAP-Works assists in recognizing individual strengths and weaknesses, developing self-awareness, analyzing discrepancies between behaviors and expected outcomes, and assessing behaviors and dispositions that impact social and academic success (EBI MAP-Works, 2012). Students are provided an individualized feedback report with information about campus resources that may assist them in improving academic achievement as well as increasing their social integration.
Data collected from this assessment are used by campus officials to inform planning and strategy efforts.

**Instrumentation**

The research instrument used for this study, Making Achievement Possible (MAP-Works), is an assessment system designed to reveal student strengths and talents as well as to identify areas for further student development. The survey is given to all incoming first-year and transfer students during the first few weeks of their first semester as a Ball State University student. Many of the questions asked on the MAP-Works Fall Transition Survey closely align with scientifically validated indicators of self-determination. Thirty-four existing items from MAP-Works that addressed components of self-determination were analyzed to gather self-reported data on SD. These 34 existing MAP-Work questions were complemented by the 11 institution-specific items which were added to the MAP-Works 2013 Fall Transition Survey administered at Ball State University. Additionally, 10 items were added to the instrument at Ball State University as part of a MAP-Works pilot test for a new grit/resilience factor. These 10 grit/resilience items were included in the analysis for this project. As a high percentage of incoming students complete the MAP-Works Fall Transition instrument, with response rates approximating 75%, already captured data was used. Furthermore, the MAP-Works instrument has well-established validity and reliability (EBI MAP-Works, 2012). Additionally, to guard against survey fatigue, students were not asked to complete an additional survey for the collection of data on self-determination. Only 11 questions were added to the MAP-Works instrument for the purpose of this study, thus relieving students of the request to complete yet another survey.
Thus, a total of 50 Likert-scale items, including 34 pre-existing MAP-Works questions, the 10 resilience factor items, and six questions added at the institutional level, were categorized into the four essential characteristics of SD as delineated by the ARC’s Self-Determination Scale, Adolescent version (Wehmeyer & Kelchner, 1995). These four broad categories of self-determination are behavioral autonomy, self-regulated behavior, self-realization, and acting in a psychologically empowered manner. The ARC’s Self-Determination Scale can be found at http://www.ou.edu/content/dam/Education/documents/miscellaneous/the-arc-self-determination-scale.pdf.

Question Development

Eleven questions were developed and added to the MAP-Works 2013 Fall Transition Survey at the institutional level. Each of the questions was evaluated and justified as adding explicitly needed information to the data set (Leedy & Ormrod, 2012). Two of the eleven questions were categorical items that were developed to allow for comparisons between student groupings. One of these categorical items inquired whether the student had an IEP or 504 Plan in high school as the result of a documented disability. That question served as a filter for the next four questions which were answered only by students who answered that, as a result of a documented disability, they had received accommodations and/or services through an IEP or 504 Plan in high school. One of the four disability-specific questions asked the respondent to specify whether their disability was a physical or sensory disability (such as visual or hearing impairment or wheelchair user) or a non-apparent disability (such as ADHD or a learning disability). The other three disability-specific questions addressed how well the students were able to describe why they had received services and/or accommodations in high school, how
their disability impacted their learning, and how familiar they were with the different disability services provided at the high school and college levels.

Six questions were added to the instrument to round out the four essential characteristics of SD where existing MAP-Works questions did not completely address the essential characteristics (Appendix B). These six questions were to be answered by all respondents. Other than the two categorical variables (did the student have an IEP or 504 Plan in high school, and type of disability), the questions were all treated as continuous variables and were answered using a 7-point Likert scale, with 1 defined as “Not at All,” 4 defined as “Moderately,” and 7 defined as “Completely.” The 7-point Likert scale was used for the added questions to maintain consistency with the 7-point Likert scale used throughout MAP-Works.

An ethical justification for the 11 questions added to the MAP-Works 2013 Fall Transition Survey was that the research conducted was significant and relevant to the success of the participants. If this research leads to the development of a Survey Factor for Self-Determination within MAP-Works potentially thousands of students could benefit. The purpose of the research is ultimately to improve rates of student success and to contribute to the growing body of research on how self-determination skills impact retention, persistence and graduation rates. Improving college completion rates is imperative for the strengthening of our nation in the global economy and in improving employment of individuals in economically fulfilling and personally meaningful jobs.

**Seek Validation through Panel of Experts**

The 11 questions that were developed and added to the Ball State administration of the MAP-Works 2013 Fall Transition Survey were peer reviewed by a panel of experts. The six individuals on the review panel included two expert practitioners in the field of disability support
in higher education settings, the original developer of the MAP-Works assessment instrument, a
director of Institutional Effectiveness who administers the MAP-Works assessment annually, an
expert in the field of special education and transition, and an educational researcher in the field
of higher education, retention, and students with disabilities. The questions were sent out to each
panel member who reviewed the questions for clarity, readability, effectiveness, accuracy,
efficiency, and relevance (Davis, 1992). The questions went through several cycles of revision
until there were no further improvements to be made.

**Pilot Test for Clarity**

A group of six undergraduate students pilot tested the 11 institutional questions. These
students were specifically asked to indicate if the directions and the response scale were clear
and if they understood what was being asked by each question. They were questioned to ensure
that all participants understood the questions to mean the same thing. One further revision to the
questions was made after the pilot test of the questions.

**Test for Reliability**

The questions were pre-tested by 20 undergraduate students, both with disabilities and
without disabilities (excluding freshmen), attending Ball State in the first week of fall semester
2013. One week later, the same undergraduate students were administered the same questions,
which served as a post-test for reliability. The 11 questions took participants less than five
minutes to complete. The rate of reliability was .83, indicating that the questions exceeded the
minimum threshold for reliability (Cronbach & Meele, 1955; Iacobucci & Duhachek, 2003;
Nunnally & Bernstein, 1994). The final questions were then forward to the OIE for inclusion in
the MAP-Works 2013 Fall Transition Survey.
**Data Analysis Procedures**

All data were analyzed using IBM Statistical Package for Social Sciences, version 21 [IBM-SPSS]. Analysis included descriptive statistics for independent variables including frequencies/percentages for categorical variables and means and standard deviations for continuous variables. These descriptive statistics were also performed on the independent grouping variables, which included whether the student did or did not have a disability (SWD or SWoD); and if a SWD, whether the SWD had registered with Disability Services or not (SWDR or SWDNR).

Independent demographic variables included:

- Gender.
- Caucasian/non-Caucasian.
- Student with disability or student without disability (SWD or SWoD).
- Student with disability registered or student with disability not registered (SWDR or SWDNR) with the disability services office.

Independent academic variables included:

- High school GPA.
- First semester GPA.
- Retention to spring semester.

Exploratory Factor Analysis (EFA) was conducted to develop a scale to measure the latent construct of self-determination (Tabachnick & Fidell, 2013). Fifty variables were entered into the equation from which 35 variables factored into three scales.

Inferential statistics including independent samples t-tests were conducted to determine significance and to ascertain whether the results from this population of Ball State students could
be generalized to the larger student body of incoming college freshmen nationwide. The significance level calculated informed the probability that the results of the analysis in the population studied could have occurred by chance alone when there were no differences at all between the variables studied.

Analysis of variance (ANOVA) was used to determine whether the means of two or more groups were significantly different from one another on one dependent variable (Tabachnick & Fidell, 2013). ANOVA was performed to analyze statistically significant differences between students’ high school grade point average (GPA) and each of the scales supported by the EFA. ANOVA was also used to analyze mean differences between students’ first semester GPA and each of the scales.

**Plan for Data Presentation**

Data are presented in Chapter 4 in both narrative and numerical representation in table formats. Descriptive statistics for demographic variables are displayed first. Results of the EFA are presented next as they show how the variables grouped into scales. Descriptive statistics for each of the scale items are then presented. Finally, inferential statistics including t-test and analysis of variance are presented. The presentation of the data follows the order of the research questions.

**Summary**

Chapter three presented information regarding the methods used in this research project. The purpose of the study, the setting, and the research questions were presented as well as data collection procedures. Information regarding instrumentation was described; and question development was explained, addressing the validation, clarity, and reliability of questions. A plan for statistical analysis and presentation of the data collected was given.
CHAPTER 4 -- RESULTS

Summary of the Study

The development and application of self-determination skills by students transitioning from high school to college have been well-documented as fundamental for postsecondary success. This chapter presents the findings from statistical analysis of data collected through the MAP-Works 2013 Fall Transition Survey at Ball State University. Demographic and population characteristics will be presented, followed by results of the exploratory factor analysis. Next, the research questions will be addressed. Differences in self-determined behavior by students with and without disabilities will be examined, as well as differences in self-determined behaviors by SWD who have and have not registered with the Disability Services Office and among SWD with visible and non-apparent disabilities. Differences in self-determination by gender, race, high school and first semester GPAs, and retention to spring semester will be analyzed.

Population Characteristics

This study included 3,241 first-year students at Ball State University. Table 2 presents descriptive statistics for all first-year transitioning students including gender, disability status, registration with disability services, disability type, race/ethnicity, high school and first semester GPA, and retention to spring semester. Missing data are not included in the statistical analysis of data. Therefore, because all students did not answer every question, the numbers do not always total the entire sample (or subsample) size. Sixty-three percent of students \((n = 2,053)\) were female, and 37\% \((n = 1,188)\) were male. Ninety-five percent of students \((n = 2,749)\) did not report a documented disability; five percent \((n = 142)\) were students with disabilities (defined SWD by having had an IEP or 504 Plan in high school). Of the SWD, 24\% reported a visible disability \((n = 33)\), and 76\% reported that their disability was non-apparent \((n = 106)\). Of the 142
first-year transitioning students with disabilities, only 38% \((n = 54)\) self-reported that they had registered with the Disability Services Office.

Caucasian students \((n = 2,661)\) made up 82% of the first-year students, with non-Caucasian students comprising 18% \((n = 580)\). Regarding high school GPA, 84% \((n = 2,711)\) of incoming students reported that they had made mostly As and Bs in high school. Sixteen percent \((n = 522)\) reported making mostly Bs and Cs in high school.

After one semester of college coursework, first semester GPAs were lower than high school GPAs, with only 54% \((n = 1,710)\) of students making mostly As and Bs and 32% \((n = 1,021)\) of students making mostly Bs and Cs. After one semester of college courses, one in seven students \((n = 462)\) had GPAs under 2.0 (lower than a C average). There were more students with first semester GPAs less than C average \((n = 462)\) than students with first semester GPAs of Mostly Cs \((n = 360)\). Of the 3,241 first-time, first-year students who began fall semester, 95% \((n = 3,073)\) were retained to spring semester, with 5% \((n = 168)\) not returning to Ball State for their second semester.

**Organization of Factors**

Through the use of exploratory factor analysis (EFA), the data supported the development of three scales, or factors, as measures of the construct of self-determination. In an ideal world, data will play out exactly as the researcher intends. While it had been hypothesized that four scales would emerge to correspond with the four essential components of self-determined behavior delineated by Wehmeyer (1999, 2013), the analysis of data instead supported a structure of three statistically significant and conceptually meaningful factors that supported the theoretical framework. When four factors were extracted, the way the variables loaded into the factors did not appear to make theoretical sense. A three-factor extraction, which
### TABLE 2

**First-Year Transitioning Students Demographics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total First-Year Transitioning Students</strong></td>
<td>3,241</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,188</td>
<td>36.7</td>
</tr>
<tr>
<td>Female</td>
<td>2,053</td>
<td>63.3</td>
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<tr>
<td><strong>Disability Status</strong></td>
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<td></td>
</tr>
<tr>
<td>Student Without Disability (SWoD)</td>
<td>2,749</td>
<td>95.1</td>
</tr>
<tr>
<td>Student With Disability (SWD)</td>
<td>142</td>
<td>4.9</td>
</tr>
<tr>
<td><strong>Registration with Disability Services Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWD Registered</td>
<td>54</td>
<td>38.0</td>
</tr>
<tr>
<td>SWD Not Registered</td>
<td>88</td>
<td>62.0</td>
</tr>
<tr>
<td><strong>Disability Type</strong></td>
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<td></td>
</tr>
<tr>
<td>Visible</td>
<td>33</td>
<td>23.7</td>
</tr>
<tr>
<td>Non-Apparent</td>
<td>106</td>
<td>76.3</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
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<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>2,661</td>
<td>82.1</td>
</tr>
<tr>
<td>Non-Caucasian</td>
<td>580</td>
<td>17.9</td>
</tr>
<tr>
<td><strong>High School GPA</strong></td>
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<td></td>
</tr>
<tr>
<td>3.5 to highest (Mostly As)</td>
<td>1,424</td>
<td>44.0</td>
</tr>
<tr>
<td>3.0 to 3.49 (Mostly Bs)</td>
<td>1,287</td>
<td>39.8</td>
</tr>
<tr>
<td>2.5 to 2.99 (Some Bs &amp; Cs)</td>
<td>519</td>
<td>16.1</td>
</tr>
<tr>
<td>2.0 to 2.49 (Mostly Cs)</td>
<td>3</td>
<td>0.1</td>
</tr>
<tr>
<td>Lowest to 1.99 (Less than C Average)</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

*Note. Student Without Disability (SWoD)=Student either Did Not Have IEP/504 Plan in High School or Did Not Know. SWD=Student Had IEP/504 Plan in High School. SWD Registered=Students with IEP/504 Plan in High School and Self-Reported Registered with Disability Services. SWD Not Registered=Student with IEP/504 Plan in High School and Self-Reported Not Registered with Disability Services. GPA=grade point average.*
TABLE 2, cont.

*First-Year Transitioning Students Demographics*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester GPA</td>
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<td></td>
</tr>
<tr>
<td>3.5 to highest (Mostly As)</td>
<td>866</td>
<td>27.6</td>
</tr>
<tr>
<td>3.0 to 3.49 (Mostly Bs)</td>
<td>844</td>
<td>26.3</td>
</tr>
<tr>
<td>2.5 to 2.99 (Some Bs &amp; Cs)</td>
<td>661</td>
<td>20.6</td>
</tr>
<tr>
<td>2.0 to 2.49 (Mostly Cs)</td>
<td>360</td>
<td>11.2</td>
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<tr>
<td>Lowest to 1.99 (Less than C Average)</td>
<td>462</td>
<td>14.4</td>
</tr>
<tr>
<td>Retention to Spring Semester 2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained</td>
<td>3,073</td>
<td>94.8</td>
</tr>
<tr>
<td>Not Retained</td>
<td>168</td>
<td>5.2</td>
</tr>
</tbody>
</table>

*Note.* Student Without Disability (SWoD) = Student either Did Not Have IEP/504 Plan in High School or Did Not Know. SWD = Student Had IEP/504 Plan in High School. SWD Registered = Students with IEP/504 Plan in High School and Self-Reported Registered with Disability Services. SWD Not Registered = Student with IEP/504 Plan in High School and Self-Reported Not Registered with Disability Services. GPA = grade point average.
necessarily discarded some of the more trivial factors/variables, led to more meaningful and substantive interpretation of the data. Factor extraction in exploratory factor analysis is not an exact science with clear cut rules. The intent of EFA is to discover common variance between variables and reduce variables into the most meaningful factors. This data supported three factors, or scales, as indicators of self-determined behavior. The MAP-Works instrument had previously been validated for 20 factors. Variables of interest to this study came from five of the established factors including self-assessment of self-discipline, basic academic behaviors, advanced study skills, academic self-efficacy, and test anxiety.

Exploratory factor analysis of this data did not precisely support Wehmeyer’s (1999, 2003a, 2013) construct which delineated four essential components of self-determination, but the data upheld two of Wehmeyer’s four previously established components. Other researchers have also studied the construct of self-determination using fewer than the four originally validated subscales. For example, Shogren, Kennedy, Dowsett, and Little (2014) used three of the four subscales of self-determined behavior in their analysis of NLTS-2 data. The data from the current study represented two of the original components and also suggested an additional indicator, resilience, which is closely related to and in many ways overlaps with self-determination. Hence, for this study, three scales were supported. These scales were Self-Regulation and Psychological Empowerment, which corroborated the original framework, as well as Resilience. Ten survey items had been pilot-tested at this university as a potential resilience survey factor. The Resilience Factor in this study is not specifically compatible with any of the four essential components previously validated by Wehmeyer and Kelchner (1995). However, since the construct of resilience has been so closely associated with elements of self-determined behavior by previous researchers, it seemed appropriate to consider resilience an
equally important indicator in the current study. Therefore, for the purposes of this research project, three key indicators of self-determined behavior are discussed. These include Self-Regulation, Psychological Empowerment, and Resilience.

To derive the scales, a principal component analysis (PCA) was conducted on 35 items with oblique rotation (Promax). Both measures of the appropriateness of exploratory factor analysis were met with high marks. Bartlett’s Test of Sphericity was significant at \( p < .001 \) with 1,225 degrees of freedom. This indicated that there are correlations in the data set appropriate for factor analysis. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy requirement was also met at .934, indicating correlations between pairs of variables can be explained by the other variables. With the KMO approaching one (1.0), this requirement of appropriateness of factor analysis was met. An initial analysis was run specifying that four factors be extracted from the data. As shown in Table 3 (see Appendix C for tables) the fourth factor was comprised of only three items. To find the best fit both theoretically as well as mathematically, a three-factor solution was extracted. Shown in Table 4, the three factor analysis included the constructs of Resilience, Self-Regulation, and Psychological Empowerment. Combined, these three retained factors explained 48% of the variance. Items which cross-loaded on more than one factor were retained within the factor where they best fit conceptually. Table 5 shows the Cronbach’s alpha coefficient for internal consistency reliability for each scale as well as for the overall scale. Each scale has high internal consistency. Each retained factor is briefly discussed below.

- Component #1: Resilience. The Resilience Factor was comprised of 14 items. These questions included six of the institutional Likert-style items added to the instrument
as well as eight questions being piloted by MAP-Works as a new resiliency/gray factor.

- Component #2: Self-Regulation. The Self-Regulation Factor was comprised of 14 items which inquired about students’ self-discipline, follow-through, punctuality, and dependability. Also included in the Self-Regulation Factor were questions regarding students’ academic behaviors, such as study habits, taking notes, and turning in homework, and students’ ability to balance their time among their various commitments.

- Component #3: Psychological Empowerment. The Psychological Empowerment Factor was comprised of seven items. Two of the questions asked students to rate their levels of being responsible for themselves and motivating themselves to get their work done. Three items inquired about students’ beliefs in their abilities and levels of academic self-efficacy. These items asked students how certain they were about being able to do well on all tasks and assignments, do well in their hardest course, and persevere when challenged. Two items assessed students’ test anxiety levels and beliefs that expected outcomes would result from given behaviors.

**Descriptive Data Presentation of Survey Items**

The next section describes the individual survey items that factored into each of the three scales. For each survey item asked, descriptive data including percentages, means, standard deviations, and number of respondents are presented. All tables for presentation of numerical data can be found in Appendix C.
Resilience Scale

Table 6 shows the survey items that factored into the Resilience scale, as well as the percentages, means, standard deviations, and number of respondents for each of the survey items. Nearly 50% of students reported always completing their assignments. Most scores on the 14 measures of resilience were towards the higher end of the 7-point rating scale. After completing class assignments, the next highest mean scores were for the items concerning being a hard worker in my classes and working harder when one gets a poor grade. The lowest reported means for measures of resilience were for being able to advocate for one’s needs in academic settings and setting academic goals at the beginning of the semester that do not change as the semester progresses.

Self-Regulation Scale

Table 7 shows the survey items that factored into the Self-Regulation scale, as well as the percentages, means, standard deviations, and number of respondents for each of the survey items. Students reported the highest mean scores on turning in homework, followed by being the kind of person who is dependable and who shows up on time. The mean scores for turning in homework, being dependable, and showing up on time are the highest mean scores for any of the items discussed. All mean scores in the Self-Regulation domain were towards the upper level of the rating scale indicating greater self-regulation skills, with more than 90% of students reporting to a greater than moderate degree that they are the kind of person who follows through with what they say they are going to, and 84% reporting to the same degree that they are self-disciplined. The overwhelming majority of students (92%) reported nearly always turning in homework. Students reported lower means on the measures of making to do lists and working in advance on long projects. The lowest mean scores were reported for studying on a regular schedule.
Psychological Empowerment Scale

Tables 8 through 10 show the survey items that factored into the Psychological Empowerment scale, as well as the percentages, means, standard deviations, and number of respondents for each of the survey items. The Psychological Empowerment component contained seven survey items inquiring into students’ beliefs in their abilities, how much stress they experienced in being responsible for and motivating themselves, and their levels of test anxiety and beliefs in positive outcomes expectancy. These seven items are reported in three different tables as the response categories for the various subsets of items differed somewhat. For example, the questions that addressed students’ beliefs in their academic abilities (i.e., their academic self-efficacy), had response categories that were coded such that 1 stood for “not at all certain,” to 4 standing for “moderately certain,” to 7 standing for “absolutely certain.” However, the items that assessed stress levels and test anxiety were each reverse coded and had different question bases than the items assessing academic self-efficacy. Hence, it was necessary to display the results of the psychological empowerment scale in three separate tables.

Zimmerman (1990) proposed that the construct of psychological empowerment is comprised of three elements of perceived control -- self-efficacy, locus of control, and motivation to control. According to Zimmerman, persons’ beliefs in themselves coupled with perceived control over their lives help persons to cope with stress and solve life problems. Thus, a perception of psychological empowerment allows one to believe in oneself, handle stress, and achieve desired outcomes.

Self-efficacy was also identified by Wehmeyer (1997) as one of the components of psychological empowerment. As shown in Table 8, which assesses academic self-efficacy, a large majority of students (83%) reported that they were more than moderately certain that they
could persevere on class projects even when there are challenges; and a similar majority (81%) stated that they could do well on all problems and tasks assigned. Students reported the least certainty with their ability to do well in their hardest course.

Wehmeyer (1999), as well as Zimmerman (1990), stressed the importance of personal control over one’s life as elements of self-determination. Feeling in control allows persons to deal with stress. On the psychological empowerment items which assessed stress related to being responsible for oneself and motivating oneself to get one’s work done (shown in Table 9), higher mean scores represented less stress related to the skill being assessed. These items were reverse coded such that 1 was coded as “extremely,” 4 was coded as “moderately,” and 7 was coded as “not at all.” Students reported feeling stressed to a slightly less than moderate degree in terms of being responsible for themselves. With respect to feeling stressed concerning motivating themselves to get their work done, the students’ reported stress level was also at a slightly lower than moderate level.

Positive outcomes expectancy is another component element of psychological empowerment (Wehmeyer, 1999). When persons have positive outcomes expectancy, they believe that acting with intent will result in achieving a desired outcome. Hence, if a student with positive outcomes expectancy is adequately prepared for an exam, the student should worry less and experience decreased test anxiety. Two items on the psychological empowerment scale assessed test anxiety. The items assessing test anxiety (shown in Table 10) were reverse coded such that 1 was coded as “extremely,” 4 was coded as “moderately,” and 7 was coded as “not at all.” The two questions assessing test anxiety scale were reverse coded since the question base asked to what degree students felt anxious or worried. Hence, higher mean scores indicated less anxiety or worry.
Table 10 shows the degree to which students reported feeling anxious about exams even when they are prepared and the degree that they performed worse on exams due to worrying that they would do poorly. Students reported feeling anxious about exams to a greater degree than they reported doing worse on exams because they worried that they would do poorly. Overall, approximately 60% of students reported to at least a moderate degree that they felt anxious about exams even when they are prepared; and roughly 50% reported performing worse on exams due to worry at a moderate or higher degree.

**Questions Asked Only of Students with Disabilities**

Table 11 shows the percentages, means, standard deviations, and number of respondents for the questions answered only by students with disabilities. A student was defined to be a student with a disability (SWD) if they had had an IEP or 504 Plan in high school. Responses for these questions are reported only for SWD. Students reported the least degree of understanding of the differences between the disability services provided at the high school and college levels, with 17% reporting no understanding at all of these differences. Students reported the greatest mean scores for understanding why they had received the accommodations and/or services on their IEP/504 Plan.

**Self-Determination of Students With and Without Disabilities (RQ1)**

Table 12 (see Appendix C) shows the results of the independent samples t-test analysis of mean differences between students with and without disabilities for each scale. Only one scale found significant differences between students with and without disabilities. This was the Self-Regulation scale. Mean differences between students with disabilities and students without disabilities were statistically significant, with students with disabilities scoring higher mean scores than students without disabilities, $t (2,672) = -2.576, p = .010, 95\% CI [-4.617, -.626], d =$
The Bonferroni correction is a method of controlling for the familywise error rate since the error rate is inflated when one does multiple comparisons. With the Bonferroni correction for repeated tests, the self-regulation scale is significant at $p \leq .05$. The effect size for the self-regulation scale is small in strength.

The self-regulation scale inquired about students’ study habits including working in advance on long projects, studying on a regular schedule, studying in a place with fewer distractions, taking good notes, recording assignments in a calendar, and spending sufficient time studying. Also included on this scale were items that assessed the degree to which students showed up on time, followed through with what they said they were going to do, were dependable, and were self-disciplined. Students with disabilities scored significantly higher in self-regulation skill areas than did students without disabilities. Table 12 corresponds to Research Question #1 which inquires whether statistically significant differences in levels of self-determined behavior exist between students with and without disabilities.

**Self-Determination of Students with Disabilities Registered with Disability Services or Not (RQ2)**

Table 13 (see Appendix C) shows the results of the independent samples t-test analysis of mean differences among students with disabilities who had and had not registered with the disability services office and sought services and/or accommodations. The Resilience scale found significant differences between SWD who had and had not registered. For the measures of resilience, SWD who had registered with the disability services office scored significantly higher than did SWD who had not registered. For the Resilience factor, mean differences between SWD who had registered and SWD who had not registered were statistically significant, $t (124.42) = -2.273, p = .025$, 95% CI [-11.354, -.785], $d = .396$. The Resilience Scale is not
significant at p≤.05 with the Bonferroni correction applied. The effect size (.396) for the Resilience Scale is small-medium in strength. Reporting results using the Bonferroni correction gives more accurate and more conservative levels of significance. However, due to the nature of this being exploratory research, this study also reports as significant those findings where p values were significant prior to the Bonferroni correction to emphasize where differences between groups exist and to encourage further exploration of these differences. The small-medium effect size is another indicator that differences exist in levels of SD between these student groupings. Table 13 corresponds to Research Question #2 which inquires if statistically significant differences in levels of self-determined behavior exist between SWD who have and have not registered with the disability services office.

**Questions Asked Only of Students with Disabilities**

Table 14 shows the results of a t-test analysis comparing group means of SWD who had registered with the disability services office (SWDR) and SWD who had not registered (SWDNR) for the three institution-specific variables asked only of students defined as SWD by having had an IEP or 504 Plan in high school. For all three questions, students with disabilities who had registered had significantly higher mean scores than did students with disabilities who had not registered and sought services.

For the question inquiring how well SWD understood the accommodations and services on their high school IEP or 504 Plan, SWD who had registered scored significantly higher mean scores than SWD who had not registered, $t(130) = -5.325$, $p < .001$, 95% CI [-2.004, -.918], $d = .879$. This difference is significant at $p \leq .01$ with the Bonferroni correction applied. Cohen’s $d$ effect size strengths are $d = 0.2$ for a small effect; $d = 0.5$ for a medium effect; $d = 0.8$ for a large effect. Hence, the effect size for this comparison is large.
For the question inquiring how well SWD were able to communicate how their disability impacts their learning, SWD who had registered scored significantly higher mean scores than SWD who had not registered, \( t (135) = -4.394, p < .001, 95\% CI [-1.850, -0.918], d = .738 \). This difference is significant at the \( p \leq .01 \) with the Bonferroni correction applied. This indicates a medium to large effect size.

For the question inquiring how well SWD understood the differences between the disability services provided at the high school and college levels, SWD who had registered scored significantly higher mean scores than SWD who had not registered, \( t (136) = -5.139, p < .001, 95\% CI [-2.389, -1.061], d = .908 \). This difference is significant at \( p \leq .01 \) with the Bonferroni correction applied. The Cohen’s \( d \) of .908 indicates a large effect size.

**Self-Determination of Students with Disabilities by Disability Type (RQ3)**

Table 15 shows the results of the t-test analysis of mean differences among students with disabilities by disability type (visible or non-apparent). The results of the t-test analysis found no statistically significant differences in levels of self-determined behavior by disability type. This table corresponds to Research Question #3 which inquired whether there were differences in levels of self-determined behavior among SWD who had visible vs. non-apparent disability.

**Self-Determination by Student Characteristics (RQ4)**

Students transitioning to college bring with them a multitude of student characteristics that may influence the development and execution of self-determined behavior. This research project explored whether there were statistically significant differences in self-determination between the genders, by race, by high school and first semester GPAs, and by retention to spring semester.
Self-Determination by Gender

Table 16 shows the results of the t-test analysis of mean differences by gender. Each of the scales showed statistically significant differences between male and female students, with females scoring higher than males on both the resilience and the self-regulation factors. Males scored higher levels of self-determined behavior on the psychological empowerment factor.

For the Resilience factor, mean differences between females and males were statistically significant, \( t(1,902.77) = -5.380, p \leq .001, 95\% \ CI \ [-3.602, -1.677], d = .215 \). With the Bonferroni correction applied, the resilience factor is significant at \( p \leq .01 \). The Cohen’s \( d \) represents a small effect size. For the Self-Regulation factor, mean differences between females and males were also statistically significant, \( t(2,088.52) = -17.065, p \leq .001, 95\% \ CI \ [-8.005, -6.355], d = .658 \). The self-regulation factor is significant at \( p \leq .01 \) with the Bonferroni correction applied. The effect size for this comparison is medium large. On each of these two scales, females scored higher means on measures of self-determination than did males.

For the Psychological Empowerment factor, mean differences between females and males were likewise statistically significant, with males scoring higher means than females, \( t(3,017) = 6.559, p \leq .001, 95\% \ CI \ [1.217, 2.256], d = .250 \). With the Bonferroni correction applied, the psychological empowerment factor is significant at \( p \leq .01 \). The Cohen’s \( d \) for this comparison represents a small effect size.

Overall, each of the scales showed significantly different mean scores between the genders, with females scoring higher on two factors, resilience and self-regulation and males scoring higher on one scale, psychological empowerment. Males reported more confidence in their academic abilities (academic self-efficacy), less stress over assuming responsibility for and
motivating themselves, and less test anxiety than did females. Females reported higher skill levels in the areas of resilience and self-regulation.

**Self-Determination by Race**

Table 17 shows the results of the t-test analysis of mean differences by race. Race was recoded as a dummy variable, with 0 being non-Caucasian, and 1 being Caucasian. Only the Resilience factor showed statistically significant differences between non-Caucasian and Caucasian students, with non-Caucasian students scoring higher in measures of resilience than Caucasian students, \( t(2,789) = 2.215, p = .027, 95\% CI [.154, 2.522], d = .109 \). The resilience scale is not significant at \( p \leq .05 \) with the Bonferroni correction applied. However, due to this being an exploratory study, it is important to recognize these differences in Resilience between Caucasian and non-Caucasian students so that future researchers will focus further investigation on these differences. The effect size for the resilience scale, \( d = .109 \), is very small in strength.

**Self-Determination by High School GPA**

An independent one-way between-subjects ANOVA test was conducted to evaluate mean differences between students’ high school GPAs on each factor. Tables 18 and 19 show the results of the ANOVA analysis of mean differences by students’ high school GPA. High school GPA was recoded into three categories for this analysis. The original high school GPA collapsed groupings had been coded into five groups (shown on Table 2), such that students reporting high school GPAs of 3.5 to highest were coded 0 (Mostly As); GPAs of 3.0 to 3.49 were coded 1 (Mostly Bs); GPAs of 2.5 to 2.99 were coded 2 (Mostly Bs & Cs); GPAs of 2.0 to 2.49 were coded 3 (Mostly Cs); and GPAs under 2.0 were coded 4 (Less than C Average). For the purposes of this ANOVA analysis, since only three students reported a high school GPA of 2.0 to 2.49, this group was collapsed with the Some Bs & Cs group (GPAs of 2.5 to 2.99) to
comprise a group of students with GPAs from 2.0 to 2.99. This high school GPA grouping was labeled Bs & Cs. There were no students who reported a high school GPA of 1.99 or below. Therefore, there were three high school GPA groups (Mostly As; Mostly Bs; and Bs & Cs) analyzed by the independent, one-way ANOVA. Once data were recoded as indicated there were 1,424 students (44%) in the Mostly As group; 1,287 students (40%) in the Mostly Bs group; and 522 students (16%) in the Bs & Cs group.

All of the factors showed statistically significant differences between groupings by high school GPA. For each scale, the higher the GPA, the higher the mean score for that component. For scales where homogeneity of variance was assumed, the F statistic was reported and post hoc tests were conducted using Tukey’s HSD (honestly significant difference) test to determine which GPA groupings differed from each other. All Tukey’s HSD post hoc analyses were reported at the p < .05 level. The Psychological Empowerment scale met the homogeneity of variance assumption, and findings from this scale are shown in Table 18.

When equal variance between the groups could not be assumed, the Welch F statistic was reported and post hoc tests were conducted using Tamhane’s T2 test. The Welch F statistic adjusts F and the residual degrees of freedom to correct issues concerning violations of the homogeneity of variance assumption. When equal variance could not be assumed, Tamhane’s T2 test was conducted for post hoc comparisons. Tamhane's T2 is a conservative pairwise comparisons test based on a t-test; it is appropriately used when the equal variance assumption is violated. All Tamhane’s T2 post hoc analyses were reported at the p < .05 level. All findings from scales where equal variance between the groups could not be assumed were reported in Table 19. The two scales with unequal variance are the Resilience and the Self-Regulation scales.
For the Psychological Empowerment factor, students with higher GPAs scored significantly higher in the assessment of skills associated with psychological empowerment than did students with lower GPAs. Post hoc comparisons using the Tukey HSD test indicated that the mean psychological empowerment score for students with Mostly As was significantly different than the mean psychological empowerment score for students with Mostly Bs. There was also a significant difference in mean psychological empowerment scores between students with high school GPAs of Mostly As and high school GPAs of Bs & Cs; however, there were no significant differences in psychological empowerment between students with high school GPAs of Mostly Bs and high school GPAs of Bs & Cs. The eta squared measure of variance indicated that 1.9% of the total variation in average students’ high school GPAs was attributable to differences in levels of psychological empowerment competencies.

For the Self-Regulation factor, students with higher GPAs scored significantly higher in self-regulation skills. Since the assumption of homogeneity of variance was not met for this data, the Welch F statistic was reported. Post hoc comparisons using the Tamhane’s T2 test indicated that the mean self-regulation score for students with high school GPAs of Mostly As was significantly different than the mean self-regulation score for students with Mostly Bs. There was also a significant difference in mean self-regulation scores between students with high school GPAs of Mostly As and high school GPAs of Bs & Cs. There were also significant differences in self-regulation between the high school GPA groupings of Mostly Bs and Bs & Cs. The eta squared measure of variance indicated that 5% of the total variation in students’ high school GPAs could be attributed to differences in self-regulation skills.

For the Resilience factor, students with higher GPAs scored significantly higher in resilience skills. Since Levene’s statistic had indicated that unequal variances existed between
the groupings, the Welch $F$ statistic was reported, and post hoc comparisons were made with Tamhane’s T2 test. Post hoc comparisons using the Tamhane’s T2 test indicated that the mean resilience score for students with Mostly As was significantly different than the mean resilience score for students with Mostly Bs. There was also a significant difference in mean resilience scores between students with high school GPAs of Mostly As and high school GPAs of Bs & Cs; however, there were no significant differences in resilience between students with other high school GPA groupings. The eta squared measure of variance indicated that 5.4% of the variation in high school GPAs was accounted for by differences in levels of resilience.

Tables 18 and 19 correspond to Research Question #4 which inquires if statistically significant differences in levels of self-determined behavior exist among students with differing high school GPAs. The findings indicated that students’ high school GPAs were higher for students with greater scores on measures of self-determination.

**Self-Determination by First Semester GPA**

An independent one-way between-subjects ANOVA test was conducted to evaluate mean differences between students’ first semester GPAs on each of the three factors. Tables 20 and 21 show the results of the ANOVA analysis of mean differences by students’ first semester GPA. First semester GPA was recoded into five categories for this analysis such that students reporting first semester GPAs of 3.5 to highest were coded 0 (Mostly As); GPAs of 3.0 to 3.49 were coded 1 (Mostly Bs); GPAs of 2.5 to 2.99 were coded 2 (Some Bs & Cs); GPAs of 2.0 to 2.49 were coded 3 (Mostly Cs); and GPAs under 2.0 were coded 4 (Less than C Average). As shown on Table 2, students’ GPAs went down substantially after one semester of college coursework. While students’ high school GPAs were self-reported, the data for first semester GPA are institutional data (not student provided). Since students’ high school GPAs were reported by the
students themselves, it is possible that some students inflated their high school GPAs. First semester GPA does not contain any such inflation.

All of the factors showed statistically significant differences by first semester GPA. For each scale, the higher the students’ first semester GPA, the higher the mean score for that component of self-determined behavior. On one scale, the measure of psychological empowerment, homogeneity of variance could be assumed. For the Psychological Empowerment scale, the $F$ statistic was reported and post hoc tests were conducted using Tukey’s HSD (honestly significant difference) test to determine which first semester GPA groupings differed from each other. The Tukey’s HSD post hoc analyses were reported at the $p < .05$ level. The findings from the Psychological Empowerment scale with equal variance are shown in Table 20.

When equal variance between the groups could not be assumed, the Welch $F$ statistic was reported and post hoc tests were conducted using Tamhane’s T2 test. The Welch $F$ statistic adjusts $F$ and the residual degrees of freedom to correct issues concerning violations of the homogeneity of variance assumption. When equal variance could not be assumed, Tamhane’s T2 test was conducted for post hoc comparisons. Tamhane's T2 is a conservative pairwise comparisons test based on a $t$-test; it is appropriately used when the equal variance assumption is violated. All Tamhane’s T2 post hoc analyses were reported at the $p < .05$ level. All findings from the Resilience and Self-Regulation scales, where equal variance between the groups could not be assumed, were reported in Table 21.

For the Psychological Empowerment factor, students with higher first semester GPAs scored significantly higher on measures of psychological empowerment (see Table 20). Post hoc comparisons using the Tukey HSD test indicated that the mean psychological empowerment
score for students with Mostly As was significantly different than the mean psychological empowerment score for students with all other first semester GPA groupings. Hence, there were significant difference between students with Mostly As and students with Mostly Bs, Some Bs and Cs, Mostly Cs, and Less than C Average first semester GPAs. There were no statistically significant differences in psychological empowerment between other first semester GPA groupings. The eta squared statistic indicated that 3.5% of the total variation on first semester GPA could be attributed to psychological empowerment competencies.

On the Resilience factor, students with higher first semester GPAs scored significantly higher in resilience skills (see Table 21). Since Levene’s statistic indicated that unequal variances existed between the groupings, the Welch $F$ statistic was reported, and post hoc comparisons were made with Tamhane’s T2 test. Post hoc comparisons using the Tamhane’s T2 test indicated that the mean resilience score for students with Mostly As was significantly different than the mean resilience score for students with all other first semester GPAs. There were also significantly different mean scores in resilience skills for students with first semester GPAs of Mostly Bs and students with first semester GPAs of Some Bs and Cs, Mostly Cs, and Less than C Average. According to the eta squared statistic, 7% of the total variation in first semester GPAs could be accounted for by skills measured by the Resilience Factor.

For the Self-Regulation factor, students with higher first semester GPAs scored significantly higher in self-regulation skills (see Table 21). Since Levene’s statistic indicated that unequal variances existed between the groupings, the Welch $F$ statistic was reported, and post hoc comparisons were made with Tamhane’s T2 test. Post hoc comparisons using the Tamhane’s T2 test indicated that the mean self-regulation score for students with Mostly As was significantly different than the mean self-regulation score for students with all other first
semester GPAs. There were also statistically significant differences in mean self-regulation scores among students with first semester GPAs of Mostly Bs and all other first semester GPAs including students with first semester GPAs of Some Bs and Cs, Mostly Cs, and Less than C Average. In addition, students with first semester GPAs of Some Bs and Cs scored significantly different in self-regulation skills than students with first semester GPAs that were Less than C Average. The eta square statistic indicated that 9.9% of the total variation in first semester GPA could be accounted for by differences in self-regulation skills.

**Self-Determination by Retention to Spring Semester**

Table 22 shows the results of the t-test analysis of mean differences by retention to spring semester. Two of the three scales showed statistically significant differences between students who were and were not retained to spring semester, with students who were retained scoring higher mean scores than students who were not retained. For the Resilience factor, students who were retained to spring semester scored significantly higher on measures of resilience skills than did students who were not retained, $t (2,789) = -2.791, p = .005, 95\% CI [-5.089, -.889], d = .232$. This difference is significant at $p \leq .05$ with the Bonferroni correction applied. The effect size for this comparison is small (Cohen’s $d = .232$). Students who were retained to spring semester reported higher mean scores on the Psychological Empowerment scale than did students who were not retained, $t (3,017) = -4.338, p \leq .001, 95\% CI [-3.652, -1.378], d = .348$. This difference on the psychological empowerment scale is significant at $p \leq .01$ with the Bonferroni correction applied, and the effect size for this comparison is small to medium in magnitude.
Summary

Chapter 4 presented the findings from statistical analysis of data collected through the MAP-Works 2013 Fall Transition Survey at Ball State University. Student demographics and population characteristics were presented, followed by results of the exploratory factor analysis. Three factors were supported by the data. The research questions were addressed, in turn, by looking at differences in self-determined behavior by students with and without disabilities. Within the SWD group, differences in self-determined behavior were examined for SWD who had and had not registered with the Disability Services office as well as differences in self-determined behavior for SWD with visible and non-apparent disabilities. Differences in self-determination by gender, race, high school and first semester GPAs, and retention to spring semester were analyzed. Data were presented in both narrative and numerical representation in table formats.
CHAPTER 5 – DISCUSSION

Summary of the Research Project

This research project examined levels of self-determination in transitioning first-year college students. Competency in self-determination skills has been called the most important element for students’ successful postsecondary experiences. The intent of this research was to investigate whether there were statistically significant differences in levels of self-determined behavior between students with and without disabilities; and within the students with disabilities (SWD) grouping, whether there were meaningful differences in levels of self-determined behavior between students who had and had not registered with the Disability Services office and sought assistance. Comparisons of levels of self-determination were also made among students with varying demographic and student characteristics (i.e., gender, race, and GPA) as well as in different types of disability among SWD (visible or non-apparent). Gaining an understanding of how levels of self-determination differ among different incoming student groups can help success and retention strategists to directly target interventions to students at risk and most likely to benefit. This chapter presents a discussion of the findings as they relate to the research questions. Recommendations for future research conclude the chapter.

Resilience

In addition to psychological empowerment and self-regulation, resilience is another personal characteristic that successful college students demonstrate. Since resilience was not one of the original four components of self-determination in the framework proposed by Wehmeyer and Kelchner (1995), the literature on resilience was not introduced in chapter two. This section provides a review of the literature as it relates to resilience. Specifically this discussion focuses
on how resilience overlaps with and shares commonalities with self-determination as well as how resilience contributes to academic success.

Resilience refers to a flexible combination of attitudes that persons use to help them successfully negotiate and cope with hard times (Benard, 2004; Neenan, 2009). A person who is resilient is like “a twig with a fresh, green living core. When twisted out of shape, such a twig bends, but it does not break; instead, it springs back and continues growing” (Vaillant, 2002, p. 285). Greater resilience improves students’ stress management and ability to adapt to and bounce back from adversity.

A well-developed resilience disposition in first-year students mitigates against any adverse life events and provides a psychological buffer against stress caused by everyday trials and tribulations. As students make the transition to college, they typically encounter unfamiliar environments coupled with additional academic demands and personal responsibilities (DeRosier, Frank, Schwartz, & Leary, 2013). Modern college life is full of stressors. First-year students experience greater levels of stress and anxiety than upperclassmen (Martin & Marsh, 2008). Those students who are able to use multiple and flexible coping strategies have been found to be more resilient (Galatzer-Levy, Burton, & Bonanno, 2012). First-year students who reported possessing attributes of resiliency were found to be better at handling stress, had higher levels of self-esteem, and engaged in more behaviors that promoted positive mental and emotional well-being. The first year of college is an opportunity for students to make tremendous personal and academic advances; but it can also be a time of extreme distress due to rapidly expanding and conflicting student responsibilities (Klibert et al., 2014) in addition to the unavoidable change in identity from that of a high school student to a college student (Clauss-Ehlers & Wibrowski, 2007).
Previous researchers have found that low levels of resilience in college students are predictive of greater anxiety and stress as well as being correlated with low self-esteem, depression, and neuroticism. College students who lack effective resilience skills were found to have greater difficulty using effective problem-solving strategies to resolve stressful situations (Campbell-Sills, Cohan, & Stein, 2006; Wilks & Spivey, 2010). Hartley (2012, 2013) found that the growing segment of college students with mental health issues, who now comprise approximately one-third of the college population, consistently showed poor levels of resilience skills and high drop-out rates. Students dealing with mental health issues often experienced compromised abilities to self-regulate and maintain focus on academic tasks. Other research on resilience has looked at students with learning disabilities (Meltzer, 2004; Miller, 2002; Werner, 1993). Miller identified seven elements of resilience that assisted college SWD in beating the odds by achieving in their postsecondary pursuits. One of the characteristics of resilience reported by students in Miller’s study was self-determination.

Students who approach life struggles with resilient attitudes tend to cope more effectively with ordinary stressors and have increased likelihoods of persisting in college (Hartley, 2010, 2011, 2013; Weston & Parkin, 2010). Much of the early research on resilience focused on the extraordinariness and remarkableness of disadvantaged children who appeared to have a protective bubble of inner strength, invulnerability, invincibility, and resiliency that allowed them to carry on through extreme threats and challenges (Garmezy, 1981; Werner & Smith, 1982). However, more recent research has concluded that resilience is not something extraordinary or rare (Masten, 2001). Resilience is a remarkably ordinary and common phenomenon of normal adaptation that most persons exhibit in response to the ups and downs of everyday life. Resilience provides a protective layer that enables students to bounce back from
encounters with adversity and maintain positive affects (Steinhardt & Dolbier, 2008). Students who exhibit resiliency are hardy; they are better able to cope with the new demands they encounter as they adapt to the transition to college.

Resilient students take a proactive approach to dealing with everyday hassles and pressures by capitalizing on their strengths (Martin & Marsh, 2008). Some researchers have differentiated between resilience and academic buoyancy, suggesting that academic buoyancy is more relevant to the full range of students as they encounter typical stress related to academics, such as dips in motivation, getting a poor grade, receiving negative feedback on an assignment, dealing with competing deadlines, or experiencing periods of low confidence and lack of engagement (Martin, Colmar, Davey, & Marsh, 2010; Martin & Marsh, 2006, 2008). In the traditional research, resilience has referred primarily to the relatively small number of persons undergoing acute or chronic adversities that are experienced as quite extreme assaults (Anthony, 1974; Garmezy, 1974, 1981; Murphy & Moriarty, 1976; Rutter, 1979; Werner & Smith, 1982). The concept of academic buoyancy, however, is applicable to the multitudes of students who experience less extreme yet ongoing and problematic everyday stressors, challenges, and setbacks. Martin and Marsh (2008) concluded that “resilient students are likely to also be buoyant” (p. 55).

The construct of resilience is very closely related to the competencies of self-determination. In a similar vein to how the phenomenon of self-determination has been increasingly studied in persons without disabilities (Ginerva et al., 2013), the construct of resilience has been broadened and employed in reference to all persons and their everyday stressors and strains (Martin & March, 2008). Miller (2002) interviewed students with learning disabilities and recounted that his participants revealed self-determination to be one of the facets
of resilience. Resilience is intricately related to behavioral autonomy, self-realization, self-regulation, and psychological empowerment (Weston & Parkin, 2010). Resilient students exhibit behavioral autonomy in taking responsibility for their actions. Students who are resilient are most likely to possess high levels of self-realization and self-efficacy. Resilient students do not shy away from challenging tasks but exert even more effort, use more effective strategies, and approach difficult tasks with persistence. Resilient students self-regulate by planning for and setting academic goals and monitoring their progress toward these goals. Students who exhibit self-realization are aware of their strengths and abilities, reflect upon their past successes with challenging events, develop self-efficacious beliefs in their abilities, and demonstrate greater capacities for responding to future events with resilience. Students demonstrate psychological empowerment when they adapt to the demands of new environments, assume an internal locus of control, and believe themselves capable of achieving their academic goals.

A study of undergraduate nursing students found a strong association between psychological empowerment and resilience (Pines et al., 2012). Students who felt powerless and experienced psychological distress had less resilience, poorer defense mechanisms, and were more likely to drop out of nursing programs. When students had weak resiliency and psychological empowerment skills, they were less likely to believe in their abilities or feel that they had a voice. They were less likely to use effective problem-solving strategies to navigate challenges, were less skilled at conflict negotiation, and were more likely to focus on their deficiencies than students with strong resilience and psychological empowerment competencies. However, research has shown that behavioral skills that mitigate stress and empower students to act with greater resiliency can effectively be taught (Steinhardt & Dolbier, 2008). Young (2009) found that undergraduate students who participated in an intervention to increase resiliency and
empowerment experienced greater academic success. Beauvais, Stewart, DeNisco, and Beauvais (2013) found very similar conclusions from studying the interaction between psychological empowerment, resilience, spiritual well-being, and academic success. Their study of undergraduate and graduate nursing students corroborated previous literature that these factors play a positive role in student persistence and in students’ ability to deal with educational challenges. Specifically, they found positive relationships between resilience and academic success and between psychological empowerment and academic success. Psychological empowerment and resiliency interact to create a line of defense against stress; in combination, they strengthen the individual’s capacity to set and attain goals, to cope flexibly with daily stressors, and to persist and experience academic success (Pines et al., 2012, Young, 2009).

The bond between psychological empowerment, resilience, and self-determination has been noted by numerous scholars. Spreitzer (1995) stated that psychological empowerment consists of four dimensions, one of which is self-determination. Spreitzer further stated that persons who are empowered demonstrate greater resilience. Empowered students display “power, control, ability, competence, self-efficacy, autonomy, knowledge, development, self-determination” (Uner & Turan, 2010, p. 1). Lee et al. (2013) found that self-efficacy (an element of psychological empowerment) had a strongly positive relationship to resilience. Field et al. (2003) found that the ability to effectively problem-solve (a self-regulatory behavior) and to think and act flexibly in the face of obstacles (a resilient behavior) were factors that contributed to students’ postsecondary success. Students’ abilities to act in psychologically-empowering ways, to self-regulate their behavior, and to demonstrate resilience lead to greater academic achievement.
Researchers hold inconsistent notions of the connections between autonomy, psychological empowerment, self-regulation, self-realization, and resilience. For example, some have posited that psychological empowerment is a trait of self-determination (Wehmeyer, 1997), and others have expressed that self-determination is a component of psychological empowerment (Spreitzer, 1995; Uner & Turan, 2010). What is clear is that each of these behavioral and dispositional traits is positively correlated to increased academic outcomes and retention and their development should be supported.

Just as data on how gender may influence self-determination has been contradictory, previous research has found conflicting results on how gender interplays with resilience. Some researchers have found that females exhibit greater resilience than males (Davidson et al., 2005; DuMont, Widom, & Czaja, 2007; McGoin & Widom, 2001); others have found that males are more resilient than females (Campbell-Sills, Forde, & Stein, 2009; Martin & Marsh, 2006; Stein, Campbell-Sills, & Gelernter, 2009).

Race, ethnicity, and cultural diversity also play a role in the level of educational resilience students demonstrate and in how students cope with new experiences and demands during transitional periods. DuMont et al. (2007), studying adolescents and young adults who had been abused or neglected as children, found that White, non-Hispanic persons demonstrated less resilience during adolescence but not during young adulthood. For young adults, stressful life events, as well as a supportive partner, were associated with increases in resilience. Weaver (2009) conducted a study of high school students and found that having a strong cultural/ethnic identity was positively correlated with resilience; he also reported that resilience was predictive of academic success measured by GPA. His research, however, did not find statistically significant differences in resilience between Caucasians and non-Caucasians.
A 2008 study investigating relationships between stress and resilience in college women of diverse backgrounds also stressed the importance of considering cultural factors when studying resilience (Clauss-Ehlers, 2008). One significant take-away from this study on resilience that is also important to the study of self-determination is the acknowledgment that cultural norms in the United States may be quite different from those in other cultures. For example, the notion of autonomy and individual control is a predominantly Western ideal. Persons from societies where there is more emphasis on the collective or familial, rather than on the individual, may not perceive individual autonomy as a desirable skill to foster. Some societies define resilience differently and interpret its manifestation in different ways. The emergence, stability, and presentation of resilience are affected, both positively and negatively, by ecological and cultural factors (Clauss-Ehlers, 2008; DuMont et al., 2007). Resilience, and self-determination in general, needs to be assessed in ways that take into account the diversity of cultural norms, values, and ideals.

The findings of resilience researchers have suggested that achievement of difficult academic and college-related goals results not only from dispositional characteristics of self-determined behavior, but also from the sustained and focused application of the personal quality of resilience. Academic achievement hinges on successful implementation of the four components of self-determined behavior (Field et al., 1998; Wehmeyer, 2007) as well as on effective application of resilience attributes (Weston & Parkin, 2010). A resilient personality paired with the traits of self-determined behavior best prepares first-year students to adapt to new environments and to the increases in personal responsibility and academic pressures they encounter. Students who capably demonstrate self-determined behaviors and resilience consistently work toward achieving their challenging goals without losing interest or lessening
their effort despite hitting a plateau or experiencing outright failure on their first attempt. Students with resilience and self-determination maintain stamina in pursuit of their academic goals and stay the course rather than changing trajectories when confronted with obstacles. Like the components of self-determination (Ruban et al., 2003; Tuckman, 2003), resilience is a quality that can be learned, oftentimes develops with experience and developmental growth, and contributes positively to academic accomplishment. Educational resilience is not a static trait but is dynamic and can be fostered or squelched by both environmental and contextual factors (DuMont et al., 2007; Francois & Overstreet, 2010; Lee et al., 2013; Roberts & Masten, 2005; Southwick & Charney, 2012). Transitioning first-year students with well-developed traits of self-determination and resilience have the greatest potentials for succeeding in their educational endeavors.

**Key Findings**

This discussion first presents findings regarding each of the scales and then addresses each of the research questions and highlights where significant differences were found in the self-reported characteristics of self-determined behavior among differing student populations. In brief, on the Self-Regulation Factor, students with and without disabilities reported statistically significant differences in skill competencies related to self-regulation. Students with disabilities (SWD) scored higher group means on the Self-Regulation Scale than did students without disabilities. Students with disabilities who had registered with the Disability Services office had higher mean scores on the Resilience Factor than students with disabilities who had not registered and sought services and/or accommodations. There were no statistically significant differences in levels of self-determined behavior among SWD by disability type. Females scored higher self-reported levels of self-determined behavior than did males on the Resilience and Self-
Regulation Scales; and males scored higher means than females on the Psychological Empowerment Scale. Non-Caucasians scored higher means on the Resilience Scale than did Caucasians. Students who reported higher high school and first semester GPAs scored higher mean scores on measures of self-determined behavior than did students with lower GPAs. Similarly, students who were retained to spring semester scored higher in measures of self-determined behavior than students who were not retained.

**Discussion of Descriptive Data**

The results of this study confirmed two of the four essential components of self-determined behavior as established by Wehmeyer (1999, 2013). The two previously validated components that this study supported were Self-Regulation and Psychological Empowerment. This study also found that Resilience, which has previously been linked with self-determination, was a factor positively associated with transition and first-year student success. The Resilience factor came about through the exploratory factor analysis as another indicator to consider in self-determined behavior. Hence, this study found three factors of self-determined behavior, including Self-Regulation, Psychological Empowerment, and Resilience, that assist first year students in making the transition from high school to college. The following discussion highlights main discoveries from each component.

**Psychological Empowerment Items**

Seven survey items comprised the Psychological Empowerment scale. Two of these items asked students to indicate the degree to which they were experiencing stress regarding being responsible for themselves and motivating themselves to get their work done. The means for both of these items showed that students were slightly less than moderately stressed regarding these indicators of psychological empowerment. On a scale of 1 to 7, with 1 being “extremely
stressed,” 4 being “moderately stressed,” and 7 being “not at all stressed,” mean scores were 4.79 for stress regarding being responsible for oneself and 4.61 for stress regarding motivating oneself to get one’s work done. Overall, these mean scores indicate that students, at this very early (third to sixth week) stage in their first college semester, are not feeling overly stressed concerning their need to develop independence and acquire the skills of being responsible for themselves and motivating themselves to get their work done on time. That said, roughly 25% of students selected stress ratings at a moderate or higher degree on these items. These findings support Connor’s (2012) assertion that perhaps the most significant demand on transitioning SWD is the “shift from others leading their learning to students leading their own learning” (p. 17). The results of this study are also similar to those found by McCarthy (2007) and Squire (2008) whose research indicated that the college transition period can be daunting and unfamiliar as students, often for the first time, assume direction for their lives.

Future research should inquire whether levels of reported stress regarding being responsible for and motivating oneself increase or decrease as the semester and/or year progresses for first-year students. Students in this study had not yet taken midterm exams and may not be fully aware of the increased demands and rigors of college courses and/or the differences in course design, delivery, and assessment between high school and college classes. Perhaps students were overly confident and will face a rude wake-up call as the semester progresses. Or perhaps this one-quarter of transitioning students who indicated greater than moderate levels of difficulty in assuming responsibility will learn to rely more fully on themselves and will assume greater independence and self-responsibility as they gain more college experience.
Another line of research should explore how students adapt to the reversal of parent and student responsibility roles as students learn to lead their own learning, assume responsibility for managing how they spend their time and motivating themselves to complete academic tasks, and integrate into the college environment. Numerous experts in the field of college student development assert the importance of autonomy and self-direction as essential developmental goals for college students (Boyer, 1987; Chickering & Reisser, 1993; Pascarella & Terenzini, 2005). Students, too, stress that the acquisition of personal responsibility is one of the most important non-academic, outside-of-the-classroom learning outcomes of college (Kuh, 1993).

Most attrition occurs in the first semester after enrollment (Shepler & Woosley, 2012), and first-year students have the lowest levels of self-determination (Rohlfer, 2011). All attrition cannot be accounted for by lack of self-determination skill competencies; however, lack of ability to assume responsibility over one’s life and motivate oneself to complete necessary academic tasks certainly plays a role in student attrition. Students who indicate high levels of stress regarding being responsible for themselves should be made aware of on-campus outreach programs emphasizing stress management, development of autonomy, time management, and other similar skill areas.

Other items that factored into the Psychological Empowerment scale, in addition to the two items assessing stress related to self-responsibility, concerned levels of test anxiety and perceptions of academic self-efficacy. Academic self-efficacy was assessed according to students’ self-reported certainty that they could do well on all tasks assigned, could do well in their hardest course, and could persevere when challenged. Test Anxiety was assessed by two items inquiring into students’ levels of anxiety and worry concerning exams.
The Psychological Empowerment factor indicated that statistically significant differences existed in levels of psychological empowerment measures of self-determination between males and females and for the academic variables of high school and first semester GPAs and retention to spring semester. Students who reported higher GPAs in both high school and in their first semester of college stated they experienced lesser degrees of stress regarding indicators of assuming self-responsibility, less test anxiety, and greater perceptions of academic self-efficacy. In a similar vein, students who were retained to spring semester reported experiencing lower levels of stress regarding being responsible for themselves and motivating themselves to get their work done on time, less test anxiety, and a greater sense of academic self-efficacy. Males reported greater mean scores on measures of Psychological Empowerment than did females. These differences included males scoring lower levels of stress related to assuming self-responsibility, lesser degrees of test anxiety, and higher means on measures of academic self-efficacy than those scored by females. No statistically significant differences in reported psychological empowerment skills were found between students with or without disabilities, within disability groupings, or between the races.

**Self-Regulation Items**

Fourteen survey items factored into the Self-Regulation scale. These questions asked students to what degree they were the type of person who was dependable, was self-disciplined, followed through with what they said they were going to do, and showed up on time. The majority of students reported that they were dependable and showed up on time, with mean scores of 6.26 and 6.20, respectively, on a 7-point scale from one “not at all” to seven “extremely.” Students also reported to a much stronger than moderate degree that they were self-disciplined and followed through with what they said they were going to do. Other items on
the self-regulation factor concerned planning and balancing one’s time, study skills, and academic behaviors. Most scores on measures of self-regulation competencies were at a greater than moderate level. These high means on measure of self-regulation are encouraging and indicate that students feel that they are demonstrating competency in self-regulating their behavior.

Significant differences were found in self-regulation competencies between students with disabilities (SWD) and students without disabilities (SWoD), with SWD scoring significantly higher means than SWoD. In light of Hong et al. (2007) directly stating that SWD “are not self-determined” (p. 33) and lack planning, goal setting, decision-making, and advocacy skills, the results of the current study are promising and indicate that transitioning SWD at this particular university have better self-regulation capacities than students without disabilities.

When comparing self-regulation skills between males and females, female students scored significantly higher on measures of self-regulation than did male students. Female students reported that they were more self-disciplined, more dependable, more likely to utilize good study habits, and more likely to plan out their time. Students who had higher high school and first semester GPAs reported significantly higher scores on measures of self-regulation than students with lower GPAs.

**Resilience Items**

Fourteen items factored into the Resilience scale. Students reported the weakest Resilience domain skills in their abilities to speak up for what they need and to set academic goals that do not change over the semester. The ability to self-advocate and make one’s needs known is an essential characteristic of self-determined behavior (Martin & Marshall, 1995). The ability to speak up for what one needs is a valuable competency all students should develop; but
for students with disabilities, effective self-advocacy skills are a must. That students in this study reported the weakest mean scores in self-advocating for their needs supports the findings of Field et al. (2003) and Hong et al (2007). College SWD are required to proactively seek assistance to compensate for their disabilities. SWD in the university setting must request the accommodations and/or services necessary to support their learning. Students who can successfully self-advocate have greater potentials for positive college experiences and meaningful, productive lives once college is completed. The relative lack of self-advocacy skills reported by students in the current study corroborates many previous research studies addressing college student success (Carney et al., 2007; Garner, 2008; Hadley, 2006; Lock & Layton, 2001; Quick et al., 2003; Test, Fowler, Brewer et al., 2005; Test, Fowler, Wood et al., 2005). The lack of effective self-advocacy skills reported by students in this study is cause for concern as Mazzotti et al. (2013) listed competency in self-advocacy as predictive of post-school success for SWD in areas of both education and employment.

This study found no statistically significant differences between students with disabilities and students without disabilities or between SWD by type of disability (visible or non-apparent) on the Resilience scale. These results conflicted with the Adams and Proctor (2010) study. While not specifically investigating resilience, they found that students with visible disabilities were better adapted to college than students with non-visible disabilities. Students who can adapt to change are generally more resilient than those who have difficulty adapting to new environments and demands.

When looking at differences in resilience between students with disabilities who had and had not registered with the disability services office, students who had registered scored significantly higher on measures of Resilience than did SWD who had not registered. These
findings support earlier research which stated that college SWD who persist to graduation possess traits of resiliency, determination, and resourcefulness, and make better use of accommodations than SWD who lack awareness of their learning differences (Vogel et al., 1993). Also, non-Caucasian students scored higher means on measures of resilience than did Caucasian students. Perhaps resulting from previous experiences in school or family life where resilience skills were honed, it may be that non-Caucasian students have a greater understanding of the importance of putting in extra effort in difficult classes, working harder when they receive poor grades, overcoming barriers, and staying motivated through setbacks than non-Caucasian students. Additionally, the importance of family and community connectedness prevalent among many minority groups may contribute positively to resiliency in non-Caucasian students (Francois & Overstreet, 2010).

Another significant difference was found in resilience skill competencies between males and females. Female students scored higher means scores on measures of resilience than did male students. These findings regarding gender contradict those of many other researchers who found that males were more academically resilient (Campbell-Sills et al., 2009; Martin & Marsh, 2006; Stein et al., 2009). Students with higher GPAs and students who were retained to spring semester also scored higher in measures of resilience. This finding supports that of Hartley (2011). Regardless of differences in resilience skills by differing student characteristics, it is somewhat troubling that students as a whole indicated the greatest relative weakness on the Resilience scale to be in their ability to self-advocate. Gaining competence in advocating for one’s needs will serve students well as they progress throughout their educational, family, and work lives.
The ability to set goals and persist until the goal is attained is another important characteristic of self-determined behavior. Students in the current study reported relatively weak abilities to set academic goals that did not change over the course of the semester. Martin et al. (2003) found that students who were successful at setting and achieving goals realized greater self-determination in their lives; however, successful goal setting and attainment was a skill weakness for many students that inhibited their academic success. Hong et al. (2007), studying students with disabilities, found that SWD lack necessary self-advocacy skills. The results of this study support earlier findings by Martin et al. (2003) and Hong et al. (2007).

**Discussion of Differences in Self-Determination**

This study sought to investigate levels of self-determination among transitioning first-year college students as well as examine differences in acquisition and demonstration of self-determined behavior between students with and without disabilities and among varying student characteristics. Self-determination has been hailed as one of the most important traits for making progress toward postsecondary goals. While self-determination is a preferred dispositional quality for all transitioning students, having well-developed self-determination skills is imperative for students with disabilities.

**Differences between Students With and Without Disabilities**

The first research question that guided this study inquired whether there were statistically significant differences in levels of self-determination between incoming first-year college students with and without disabilities. The only significant difference found was on the self-regulation factor. That SWD scored higher in self-regulation than SWoD may suggest that SWD realize their need to implement these regulatory skills in order to compensate for any limitations
they may experience due to their disabling conditions. These findings contradict those by Hong et al. (2007) who found that SWD exhibit skill deficits in self-regulation tasks.

Perhaps part of the reason there did not appear to be greater differences in levels of self-determination between students with and without disabilities stems from the lack of college readiness soft-skills in the majority of students making the transition to college (and also in students’ transition to the workplace). Even students who are academically well prepared for college may be poorly prepared in non-academic ways to make the adjustment to college. Students may experience difficulties in goal setting, problem-solving, time management, and study skills and habits – all indicators of self-regulation and essential skills needed for postsecondary success. When many students, with or without disabilities, have trouble with self-regulatory competencies, there is less likely to be found any statistically significant differences between student groupings.

**Differences among SWD by Registration Status and Disability Type**

This study found significant differences in self-determination among students with disabilities who had registered and those who had not registered on the Resilience scale. No previous research investigating differences in self-determination between SWD by registration with disability services status could be located. It was assumed that SWD who had registered would exhibit greater self-determination than those who had not registered and sought accommodations and/or support services. As relatively few SWD who had IEP or 504 Plans in high school register with their disability services office once they reach college, it bodes well that registration does not appear to radically affect self-determination levels in SWD.

Three questions in this study were asked only of students defined as SWD by having had an IEP or 504 Plan in high school. For all three questions, SWD who had registered had
significantly higher mean scores than did SWD who had not registered and sought services. These questions were not included in the factor analysis as the factors were built upon responses by the entire sample of students whereas these three questions were asked only of SWD. That SWD who had registered scored higher than SWD who had not registered confirmed the hypothesis that those SWD who register have greater self-realization, autonomy, self-regulation, and psychological empowerment. They had better understanding of their disability and need for accommodations and were better able to communicate how their disability affects their learning. The SWD who had registered also had greater understanding of the differences in disability services at the high school and college levels compared to SWD who had not registered. The SWD who had registered had either been provided greater resources by teachers or parents, or they had proactively advocated for their needs and sought knowledge regarding these differences. It is too often the case that transitioning SWD do not fully understand the differences in services and supports available at the college level and/or have inaccurate expectations (Garrison-Wade, 2012; Getzel & McManus, 2005; Gil, 2007). Although previous research has not inquired into differences in self-determination among SWD by registration status, this study does support earlier research on SWD regarding the importance of awareness of disability and how one’s disability affects learning as well as the importance of self-disclosing disability and advocating for necessary supports (Getzel & McManus, 2005; Gil, 2007; Hong et al., 2011; Skinner & Lindstrom, 2003; Wagner et al., 2005).

This study found no differences in self-determination among SWD by disability type. These results conflict with those of Adams and Proctor (2010) who found students with visible disabilities were better adapted to college than those with non-visible disabilities. As suggested by Hindes & Matthews (2007), additional research is needed that explores differences by
disability type as these differences may affect perceptions and manifestations of self-determined behavior.

**Differences by Student Characteristics**

**Gender.** Determining that females, overall, reported greater levels of self-determined behavior than males is much easier than establishing why gender proved to be so powerful in this study. Previous research exploring the relationship of gender to self-determination has been mixed (Lee et al., 2012; Martin & Marsh, 2006; Nota et al., 2007; Pines et al., 2012; Shogren et al., 2007; Shogren, Wehmeyer, Palmer, & Paek, 2013; Wehmeyer, 2003b). In the current study, statistically significant differences in mean scores by gender were found on each of the three scales, with females scoring higher means than males on two indicators of self-determined behavior. Female students scored significantly higher means on the factors of Self-Regulation and Resilience; males scored higher levels of self-determined behavior on the measures of Psychological Empowerment.

This study found statistically significant differences by gender on the Psychological Empowerment factor, with males outperforming females on this measure; however, the Wehmeyer study referenced above found that females scored significantly higher than males on the psychological empowerment component. The Wehmeyer study also found no differences between the genders on the self-regulation component, which conflicts with the findings of this study. This study found that females scored higher means than males on the self-regulation component. Furthermore, this study found that females indicated significantly greater levels of resilience (which was not assessed by Wehmeyer) than did males. Resilience differences by gender have been mixed in previous research studies (Campbell-Sills et al., 2009; Davidson et al., 2005; McGloin & Widom, 2001; Pines et al., 2012; Stein et al., 2009). The finding of this
research that females exhibit greater resilience supports previous scholarly research by Davidson et al. (2005) and McGloin and Widom (2001).

In this study, males reported significantly higher means than females on the Psychological Empowerment measure, where higher mean scores for males symbolized lesser test anxiety, less stress over personal responsibility, and greater feelings of academic self-efficacy. Martin and Marsh (2008) also found that females experienced greater test anxiety, especially in math-oriented subjects, than males. They posited that it may be more socially acceptable for females to admit weakness and report higher levels of test anxiety. Differences in test anxiety measures may thus be somewhat skewed due to different societal expectations of males and females. The results of the current study could indicate that males experience stronger beliefs in positive outcomes expectancy than females. On the other hand, the lower test anxiety and stress levels felt by males may be due to over-estimation of their level of preparation or knowledge and concurrent hesitance to acknowledge weakness. While previous research has found inconsistent and contradictory findings on the influence of gender on development of self-determination skills, this study added yet another piece to the puzzle of the complex relationship between gender and levels of self-determination.

Race. Earlier research has suggested that race can influence the expression of self-determination and that persons from varying cultural backgrounds may perceive and experience self-determination differently; however, the intersection of race and self-determination has not been thoroughly studied (Shogren, Wehmeyer, Palmer, & Paek, 2013; Trainor, 2005). This study did not find significant differences between Caucasian and non-Caucasian students on measures of self-regulation or psychological empowerment, but it did find that non-Caucasians scored significantly higher than Caucasians in resilience skills. This finding supports the
hypotheses by Francois and Overstreet (2010) that the sense of connectedness, along with strong family unity and loyalty common in the African American community, leads to greater educational resilience. This study does not support the findings of Weaver (2009) or Pines et al. (2012), who found that ethnicity had no significant relationship to resilience or psychological empowerment. That non-Caucasians scored higher on measures of resilience in the current study also lends credence to the idea that demonstration of self-determined behavior must be assessed in an ecological context, and not merely as an individual trait (Clauss-Ehlers, 2008). If persons from diverse cultural backgrounds perceive manifestation of self-determination in differing ways, an assessment coming strictly from a Western vantage point may not be a valid indicator. Any interpretations or recommendations based upon of the findings of this exploration of self-determination and race must acknowledge the role cultural variations may play.

**Grade point average.** In this study, both high school GPA and first semester GPA were significantly related to measures of self-determined behavior, with increases in self-determination positively related to higher GPAs. This was true for every scale assessed for both high school and first semester GPAs. These results support previous research by Sarver (2000) and Parker (2004) who found that college students scoring higher in self-determination achieved higher GPAs but contradict Bae (2007) who found no significant correlation between self-determination and race must acknowledge the role cultural variations may play. Friedman and Mandel (2009, 2012) also found that students who held positive outcomes expectations that increased effort would be rewarded with better grades and who set attainable academic goals (both traits associated with self-determination) had higher GPAs at the end of their freshman year. The findings regarding the differences between GPA and self-determination from the current study corroborate those found by Friedman and Mandel. Weaver (2009) also
found that resiliency in students is predictive of higher GPA. This study supports those earlier claims.

**Retention to spring semester.** Retention to spring semester was significantly impacted by students’ self-reported Resilience and Psychological Empowerment skills. This study confirms findings by Beauvais et al. (2013) and Pines et al. (2012) that psychological empowerment and resilience are positively related to student persistence. It is logical that resilient students and students who feel empowered would have greater success and increased likelihood of coming back for their second semester of college than students who do not feel resilient or empowered. This study supports findings by Garrison-Wade (2012) as well as Field & Hoffman (2007) that self-determination skills are critical for improving retention and postsecondary success. While it is important to note the scales where significant differences existed between students who were and were not retained to spring semester, it is important to also acknowledge that the self-regulatory skill areas did not appear to be significantly related to whether students were or were not retained. Of course, there are many possible reasons that some students fail to return for their second semester. Some of these reasons are purely non-academic and are not due to a lack of skill competencies. They can be financial or family-related. However, analysis of this data indicated that differences in self-reported self-regulation skills, many of which addressed academic skills and behaviors, had no impact on retention to spring semester. One might assume that differences in perceived self-regulation would impact retention, but this data did not support that assumption.
Limitations of the Study

Unique Characteristics of Ball State University

Ball State University is known as a campus that goes above and beyond the mandates of the ADA and Section 504 in providing exemplary support services to SWD and in having a welcoming campus environment for SWD. Due to the university’s commitment to embracing SWD and providing a campus that is both physically hospitable and emits a campus atmosphere that is warm and friendly towards the diverse learning needs of SWD, generalization to other campuses without the same level of services and acceptance for SWD may be hampered. Any time data are gathered from one singular institution, generalization of the findings should proceed with caution. Readers should understand that findings from this study may not apply to other colleges or universities. Due to the proactive nature of the Disability Services (DS) office, most SWD disclose their disability and send appropriate documentation of their disability to the DS office prior to the official statistics day. However, SWD can disclose their disability and begin receiving accommodations and/or services at any point. Those SWD who did not have their disability verified prior to the official statistics day were not included in this study. Additionally, the study was conducted at a university with a well-developed first year experience program which teaches components of self-determined behavior. Principles of Universal Design for Learning (UDL) infused throughout both campus and classroom environments may also serve to make this university more accessible than its peers.

Limitations of the Research Technique

A limitation of any self-reported survey of attitudes and behaviors is that the participants may not answer truthfully and/or the participants may perceive their abilities to be greater or lesser than they really are (Northrup, 1997). However, Nisbett and Wilson’s (1977) seminal
article on the validity of self-report acknowledged that humans are highly capable of validly answering questions about a variety of constructs such as attitudes, perceptions, beliefs, plans and behavioral outcomes. Nisbett and Wilson stated:

The individual knows a host of personal historical facts; he knows the focus of his attention at any given point in time; he knows what his current sensations are and has . . . knowledge at least quantitatively superior to that of observers concerning his emotions, evaluations, and plans. (p. 255)

The potential problems faced in obtaining accurate information from surveys are the same problems faced in any instance of everyday communication (Northrup, 1997). However, the structure of the survey is designed to encourage honesty by incorporating voluntary participation, by telling respondents that they have valuable contributions to make and that their views matter; and in the case of the MAP-Works instrument, the participants receive recommendations for increasing student success that are tailored to the specific strengths and weaknesses they indicated on the survey. Further, when the questions asked in a survey are not of a sensitive nature and have little perceived threat, misreporting and/or dishonesty of response is very limited.

Haeffel and Howard (2010) stated that the self-report is a valuable and valid measurement tool for assessing plans, attitudes, beliefs and behaviors. Even in cases where respondents misrepresent attitudes and behaviors, the predictive power of the self-report can be more important than its validity. If the self-report, however inaccurate, can predict important measurable outcomes, validity may not matter. A person’s inaccurate perception may be a more robust predictor of future outcomes than an objective reality. Added that self-report
measures are cost-effective and easy to administer, the self-report is a measurement strategy with many merits.

To counteract any potential concerns regarding the validity and scientific rigor of self-report measures, the construct validity and fidelity of the added questions was ensured by putting the questions through a review by a panel of experts. Additionally, pre- and post-testing of the added questions by students had a reliability rate of .83, exceeding the .70 threshold for reliability (Nunnally & Bernstein, 1994). Cronbach and Meehl (1955) stated that measures are merely tools that test theories. Science is distinguished by its falsification (Popper, 1959) – if a theory is falsifiable, it is scientific. Science is characterized by its theories and not by its measurement tools; ergo, science does not depend upon a certain measurement strategy but only upon having falsifiable theories (Haefel & Howard, 2010).

The defense of the self-report measure lies in the fact that measurement decisions must be theory-driven. Theories define the constructs to be measured and describe how those constructs behave. The best measurement tool is the one that best fits the theory, and dozens of studies have found that the construct validity coefficients of self-report measures were nearly always superior to behavioral observations, thus indicating the strength of self-report as a valid measure of behavioral outcomes (Haefel & Howard, 2010).

An ethical justification for the 11 questions added to the MAP-Works 2013 Fall Transition Survey was that the research conducted was significant and relevant to the success of the participants. If this research leads to the development of a Survey Factor for Self-Determination within MAP-Works, potentially thousands of students can benefit. The purpose of the research is ultimately to improve rates of student success and to contribute to the growing body of research on how self-determination skills impact retention, persistence and graduation.
rates. Improving college completion rates is imperative for the strengthening of our nation in the global economy and in improving employment of individuals in economically fulfilling and personally meaningful jobs.

Another limitation of this study is that causal inferences cannot be made. One cannot conclude that higher levels of self-determination will result in better student outcomes, but this study can help detect students who may need additional assistance to further develop their self-determination skills. Longitudinal studies could better track the importance of self-determination to college completion. Too, this is the first time that MAP-Works has been used as an indicator of the self-determination skills necessary for successful transition to and success in college. Replication of this study using MAP-Works will be necessary to confirm the importance of self-determination skills.

**Recommendations for Practice and Future Research**

During both the high school and college years (and indeed throughout the life course), there is a need for more frequent use of effective methods and strategies for helping students acquire, implement, practice, and benefit from self-determination skills. College faculty have repeatedly indicated a lack of self-determination in their students, and especially in first-year students and students with disabilities (Hong et al., 2011; Rohlfer, 2011). As first-year students are known to experience the greatest stress and weakest self-determination skills, institutions of higher education should directly address self-determination promotion and stress reduction in transitioning students. To date, little research on self-determination has been conducted in the postsecondary sector, and most of this has focused on the community college. The majority of research on self-determination has involved persons with lower cognitive ability and more severe disabilities than the disabilities represented by most SWD who attend four-year comprehensive
colleges. Future research should investigate the most effective strategies for building self-determination in college students so that IHE can make informed decisions regarding implementation of evidence-based approaches most applicable for their student body. These strategies should build on student strengths and should emphasize proactive rather than reactive approaches to addressing challenges experienced during transition. Additionally, assessments of self-determination competencies, while notably important during transition and the first year, should continue through graduation. Development of self-determination is a lifelong endeavor.

So that the findings of this study can be used in the most actionable ways, the importance of self-determination promotion in optimizing student success must be transmitted down the pipeline. At all levels – from the overall institution, through the college, to the specific department, to each particular course and its curricular requirements, to the individual faculty working directly with students – greater collaboration in promotion of self-determination competencies can improve student outcomes and increase institutional effectiveness. Centers of Teaching and Learning can offer professional development workshops to faculty, who are in the front-line position, to share how student acquisition and practice of self-determination skills can be facilitated in the classroom through instructional strategies, curricular decisions, and assessment of student learning.

There is also a need for additional research on self-determination in college students using quantitative methods that can be generalized to the greater body of college students. Most previous research has been qualitative in nature and lacks generalizability. As more research is done in this area, meta-analyses can extrapolate best practices. Longitudinal studies should also be conducted to investigate the long-term impact of self-determination on retention and completion. If a survey factor for self-determination can be developed within the MAP-Works
Fall Transition survey, retention strategists could use the data to more accurately detect students at-risk, better identify points of early intervention, and significantly improve retention and completion rates. MAP-Works is currently used by over 130 institutions of higher education. The potential value of a survey factor for self-determination is clear; it could lead to exponential growth in student success thereby putting our nation in a more competitive position in the global economy.

Another area where further research is warranted deals with the increasingly multicultural and interconnected society and our habitual use of culturally-insensitive measures of self-determination. The greater number of persons with diverse cultural patterns demands that constructs be aligned to accommodate different cultural preferences, values, and norms for behavior. A one-size-fits-all model of self-determination will not suffice. Instruments that can be interpreted in light of diverse cultures must be developed to effectively assess self-determination. It could very well be that a student from an Eastern culture would report low levels of self-determined behaviors as evaluated by Western standards. But that individual may in fact, in terms of his/her own culture, demonstrate remarkable self-determination. Development of measures of self-determination that are valid, reliable, and informative for divergent cultures is needed.

Fostering development of self-determination is crucial; it cannot be left to any one educational sector, and it certainly cannot be postponed until the transitional years. At all educational levels, beginning in early childhood, continuing throughout secondary school, and all the way through the college years, students need to be supported in developing the self-determination competencies that will benefit them for the duration of their lives. Improved P-20 collaborative relationships are needed to ensure that students are prepared for college and
careers. Maximum synchronization and coordination must occur between secondary schools and colleges to prepare students prior to transition for the decreased support and changes in instruction and assessment experienced at the postsecondary level. College preparatory classes, time-management workshops, and focused study training courses can assist students in their transition. Academic readiness coupled with strong self-determination skills will facilitate a more seamless transition from high school to college.

Parents, too, can help by gradually reducing direct involvement in their adolescent’s daily life throughout high school so that by entrance to college it is reasonable to expect students to assume personal responsibility, take greater initiative, talk for themselves and communicate directly with faculty, staff, and service personnel, and practice their self-determination skills. Supportive parents are not meticulous managers but allow their young adult children to be the primary operators of their lives. While parents may wish to protect their children from failure or disappointment, they instead need to encourage independence, self-regulation, and self-efficacy that will empower their children to capitalize on their strengths and develop into autonomous and self-determined students capable of college and post-school success.

Research has consistently found that self-determination strategies can effectively be taught, and students who participate in these interventions experience less attrition and improved academic performance. Too few institutions address this need. Institutions of higher education who desire to increase retention and completion rates are well-advised to implement programs that nurture development of self-determination skills. These interventions should not be directly solely to students with disabilities or to those at-risk but should be used with the entire student population. All students, from those transitioning to college through those ready to graduate and transition to the workforce, can benefit from programs that can assist them in bettering their self-
determination capacities. More evidence-based approaches for increasing self-determination skills in postsecondary settings need to be developed and implemented. Additionally, more research exploring resilience in postsecondary students is needed. The study of both resilience and self-determination in college students is scarce.

Institutions should incorporate disability awareness into orientation for faculty and staff. The importance of self-determination to successful student outcomes should also be shared with student affairs professionals whose work prioritizes student success. Purposeful use of the evidence-based assessment findings of this study can strengthen enrollment management planning and inform decision making by program directors in academic advising, learning support and supplemental instruction, disability services, and the compendium of First-Year Experience, Freshman Seminar, Summer Bridge, and other transition and orientation-to-college programs. First Year Experience (FYE) programs are one perfect place to promote self-determination skill development in incoming students. All students must be made aware of the array of support services available to them including college and career counseling, psychiatric counseling, and disability support services. Students in this study reported low levels of self-advocacy. This is an area of weakness that needs to be addressed through assertiveness training skills workshops offered by counseling centers. Offering these workshops in the students’ residences may help alleviate any potential reluctance to visit the counseling center.

Retention strategists must realize that students most in need of focused intervention may be the least likely to seek help. Assessment allows for early identification of students with weak self-determination skills. Flags raised on at-risk students enable retention strategists to focus intervention efforts on students most in need and likely to benefit. The MAP-Works assessment
provides immediate and personalized feedback to students who may not be fully aware of the discrepancies between their actual behaviors and expectations for success.

Transition is a part of life, and the transition to college can be an especially stressful time for some students as they learn to assume increased personal and academic responsibilities. The transition to college can be even more difficult to navigate for students with disabilities who are accountable for managing their educational accommodations and supports in addition to handling the increase in responsibilities all college students face. Students with greater self-determination are more likely to achieve their postsecondary goals. The practical significance of the current research lies in the functional application of this information. The MAP-Works Fall Transition survey can be used to assess self-determination competencies in incoming first-year students. It is firmly established that targeted self-determination education improves student success. Greater numbers of institutions of higher education need to assess levels of self-determination and directly support student acquisition and practice of self-determination skills. Forward thinking institutions intent on increasing persistence and college completion will see value in funding educational programs that provide resources to explicitly help students build self-determination competencies. Institutions can expect a high return on investment as self-determination education works and positively impacts student achievement and success.

Self-determination as a key element of successful first-year transition, persistence, and college completion cannot be understated. Greater collaboration across institutional units to make student development of self-determination a priority is needed. Buy-in from a network of academic and student service resources, including faculty, central administration, academic support and advising, disability support, counseling services, athletics, recreational services, admissions and enrollment, and residence life, to name a few, will bring about optimal student
success. All students, with or without disabilities, need to be supported in developing the self-determination skills that will improve college success as well as contribute to a more meaningful and economically prosperous life after college.
REFERENCES


IBM Statistical Package for the Social Sciences (Version 21.0) [computer software]. Armonk, NY: IBM.


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APPENDIX A – FREQUENTLY USED ABBREVIATIONS

ADA: Americans with Disabilities Act

ARC: Association for Retarded Citizens (now known as The ARC for people with intellectual and developmental disabilities)

DS: Disability Services

GPA: Grade Point Average

HEA: Higher Education Act

HEOA: Higher Education Opportunity Act

IDEIA: Individuals with Disabilities Education Improvement Act

IEP: Individual Education Program

IHE: Institution of Higher Education

MAP-Works: Making Achievement Possible-Works

SD: Self-Determination

SES: Socioeconomic Status

SWD: Student(s) with Disability(ies)

SWoD: Student(s) without Disability(ies)

SWDR: Student(s) with Disability(ies) Registered (with DS)

SWDNR: Student(s) with Disability(ies) Not Registered (with DS)
APPENDIX B – QUESTIONS ADDED TO MAP-WORKS 2013 FALL TRANSITION SURVEY

1. To what degree are you able to advocate (or speak up) for what you need in academic settings? [Scale for Questions 1-6 & 9-11 is a 7 point Likert scale coded (1) Not at All; (4) Moderately; (7) Completely]

2. To what degree are you confident in your abilities to meet your academic goals?

3. To what degree do you act independently, without pressure or influence from others, when working on academic tasks?

4. To what degree do you know how you learn best?

5. To what degree do you know how to compensate for any limitations you may have in the classroom and on assignments?

6. To what degree can you overcome barriers to your academic goals so that you can be successful?

7. As a result of a documented disability, did you have an Individual Education Program (IEP) or 504 Plan in high school? [Yes, No, I Don’t Know]

8. (if Yes to #7) Was your disability in high school a physical or sensory disability (such as visual or hearing impairment or wheelchair user) or a non-apparent disability (such as ADHD or a learning disability)? [Physical/Sensory or Non-Apparent]

9. (if Yes to #7) To what degree do you understand why you received the accommodations and/or services listed on your IEP or 504 Plan?

10. (if Yes to #7) To what degree are you able to communicate how your disability impacts your learning?
11. (if Yes to #7) To what degree do you understand the differences between the disability services provided at the high school and college levels?
APPENDIX C – TABLES
## TABLE 3

*Factor Loadings for Exploratory Factor Analysis with Promax Rotation and 4 Factor Extraction*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Worker In Classes</td>
<td>.723</td>
<td>.589</td>
<td>.227</td>
<td>.500</td>
</tr>
<tr>
<td>Extra Effort In Difficult Course</td>
<td>.720</td>
<td>.523</td>
<td>.219</td>
<td>.391</td>
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<tr>
<td>Work Harder When Grades Poor</td>
<td>.708</td>
<td>.390</td>
<td>.232</td>
<td>.345</td>
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<tr>
<td>Confident In Abilities</td>
<td>.702</td>
<td>.347</td>
<td>.500</td>
<td>.355</td>
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<tr>
<td>Do Everything To Meet Goals</td>
<td>.701</td>
<td>.517</td>
<td>.249</td>
<td>.390</td>
</tr>
<tr>
<td>Overcome Barriers</td>
<td>.697</td>
<td>.351</td>
<td>.444</td>
<td>.356</td>
</tr>
<tr>
<td>Stay Motivated Through Setbacks</td>
<td>.670</td>
<td>.341</td>
<td>.408</td>
<td>.291</td>
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<tr>
<td>Use Negative Feedback To Improve</td>
<td>.630</td>
<td>.298</td>
<td>.326</td>
<td>.277</td>
</tr>
<tr>
<td>Act Independently</td>
<td>.630</td>
<td>.345</td>
<td>.314</td>
<td>.363</td>
</tr>
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<td>Completes Class Assignments</td>
<td>.627</td>
<td>.469</td>
<td>.201</td>
<td>.443</td>
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<tr>
<td>Know How Learn Best</td>
<td>.615</td>
<td>.369</td>
<td>.396</td>
<td>.346</td>
</tr>
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<td>Compensate For Limitations</td>
<td>.613</td>
<td>.353</td>
<td>.448</td>
<td>.351</td>
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<td>Sets Goals That Do Not Change</td>
<td>.606</td>
<td>.422</td>
<td>.269</td>
<td>.299</td>
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<tr>
<td>Advocates For Needs</td>
<td>.557</td>
<td>.286</td>
<td>.361</td>
<td>.197</td>
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<td>Studies On Regular Schedule</td>
<td>.434</td>
<td>.759</td>
<td>.252</td>
<td>.350</td>
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<td>Spends Sufficient Study Time</td>
<td>.476</td>
<td>.757</td>
<td>.293</td>
<td>.419</td>
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<tr>
<td>Works In Advance</td>
<td>.426</td>
<td>.673</td>
<td>.278</td>
<td>.428</td>
</tr>
<tr>
<td>Balances Time</td>
<td>.447</td>
<td>.654</td>
<td>.332</td>
<td>.623</td>
</tr>
<tr>
<td>Plans Out Time</td>
<td>.366</td>
<td>.653</td>
<td>.177</td>
<td>.625</td>
</tr>
<tr>
<td>Studies Where Avoid Distraction</td>
<td>.390</td>
<td>.643</td>
<td>.221</td>
<td>.336</td>
</tr>
<tr>
<td>Is Motivated To Complete Work</td>
<td>.534</td>
<td>.614</td>
<td>.383</td>
<td>.417</td>
</tr>
<tr>
<td>Records Assignments</td>
<td>.303</td>
<td>.601</td>
<td>.097</td>
<td>.304</td>
</tr>
<tr>
<td>Makes To Do Lists</td>
<td>.254</td>
<td>.598</td>
<td>.056</td>
<td>.405</td>
</tr>
<tr>
<td>Turns In Homework</td>
<td>.429</td>
<td>.562</td>
<td>.154</td>
<td>.546</td>
</tr>
<tr>
<td>Takes Good Notes</td>
<td>.352</td>
<td>.538</td>
<td>.177</td>
<td>.393</td>
</tr>
</tbody>
</table>

*Note. Factor loadings > .50 are in boldface.*
**TABLE 3, cont.**

*Factor Loadings for Exploratory Factor Analysis with Promax Rotation and 4 Factor Extraction*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do Well On All Tasks</td>
<td>.439</td>
<td>.385</td>
<td><strong>.656</strong></td>
<td>.409</td>
</tr>
<tr>
<td>Do Well In Hardest Course</td>
<td>.427</td>
<td>.351</td>
<td><strong>.618</strong></td>
<td>.295</td>
</tr>
<tr>
<td>Motivating Self To Do Work</td>
<td>.310</td>
<td>.356</td>
<td><strong>.582</strong></td>
<td>.228</td>
</tr>
<tr>
<td>Being Responsible For Self</td>
<td>.262</td>
<td>.235</td>
<td><strong>.579</strong></td>
<td>.190</td>
</tr>
<tr>
<td>Persevere When Challenged</td>
<td><strong>.511</strong></td>
<td>.446</td>
<td><strong>.566</strong></td>
<td>.434</td>
</tr>
<tr>
<td>Know How To Allocate Time</td>
<td>.428</td>
<td><strong>.506</strong></td>
<td><strong>.565</strong></td>
<td>.404</td>
</tr>
<tr>
<td>Do Worse Due To Worry</td>
<td>.106</td>
<td>-.081</td>
<td><strong>.564</strong></td>
<td>-.025</td>
</tr>
<tr>
<td>Balance Life Commitments</td>
<td>.317</td>
<td>.291</td>
<td><strong>.528</strong></td>
<td>.230</td>
</tr>
<tr>
<td>Feel Anxious About Exams</td>
<td>.006</td>
<td>-.135</td>
<td><strong>.522</strong></td>
<td>-.091</td>
</tr>
<tr>
<td>Know Expectations For Success</td>
<td>.425</td>
<td>.432</td>
<td>.455</td>
<td>.361</td>
</tr>
<tr>
<td>Follows Through</td>
<td>.422</td>
<td>.484</td>
<td>.312</td>
<td><strong>.731</strong></td>
</tr>
<tr>
<td>Is Dependable</td>
<td>.376</td>
<td>.430</td>
<td>.225</td>
<td><strong>.729</strong></td>
</tr>
<tr>
<td>Shows Up On Time</td>
<td>.290</td>
<td>.409</td>
<td>.172</td>
<td><strong>.654</strong></td>
</tr>
</tbody>
</table>

*Note.* Factor loadings > .50 are in boldface.
<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Resilience)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard Worker In Classes</td>
<td>.746</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overcome Barriers</td>
<td>.742</td>
<td>.411</td>
<td>.414</td>
</tr>
<tr>
<td>Extra Effort In Difficult Course</td>
<td>.727</td>
<td></td>
<td>.519</td>
</tr>
<tr>
<td>Confident In Abilities</td>
<td>.716</td>
<td></td>
<td>.449</td>
</tr>
<tr>
<td>Work Harder When Grades Poor</td>
<td>.710</td>
<td>.421</td>
<td></td>
</tr>
<tr>
<td>Stay Motivated Through Setbacks</td>
<td>.706</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do Everything To Meet Goals</td>
<td>.694</td>
<td>.511</td>
<td></td>
</tr>
<tr>
<td>Compensate For Limitations</td>
<td>.672</td>
<td></td>
<td>.451</td>
</tr>
<tr>
<td>Know How Learn Best</td>
<td>.652</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use Negative Feedback To Improve</td>
<td>.650</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act Independently</td>
<td>.646</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completes Class Assignments</td>
<td>.614</td>
<td>.471</td>
<td></td>
</tr>
<tr>
<td>Sets Goals That Do Not Change</td>
<td>.575</td>
<td>.415</td>
<td></td>
</tr>
<tr>
<td>Advocates For Needs</td>
<td>.553</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plans Out Time</td>
<td></td>
<td>.720</td>
<td></td>
</tr>
<tr>
<td>Spends Sufficient Study Time</td>
<td>.514</td>
<td>.707</td>
<td></td>
</tr>
<tr>
<td>Balances Time</td>
<td>.442</td>
<td>.705</td>
<td></td>
</tr>
<tr>
<td>Studies On Regular Schedule</td>
<td>.425</td>
<td>.661</td>
<td></td>
</tr>
<tr>
<td>Is Self-Disciplined</td>
<td>.437</td>
<td>.646</td>
<td></td>
</tr>
<tr>
<td>Works In Advance</td>
<td>.434</td>
<td>.641</td>
<td></td>
</tr>
<tr>
<td>Makes To Do Lists</td>
<td></td>
<td>.601</td>
<td></td>
</tr>
<tr>
<td>Follows Through</td>
<td>.413</td>
<td>.596</td>
<td></td>
</tr>
<tr>
<td>Studies Where Avoid Distractions</td>
<td></td>
<td>.589</td>
<td></td>
</tr>
<tr>
<td>Turns In Homework</td>
<td>.419</td>
<td>.582</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Factor loadings > .50 are in boldface.
TABLE 4, cont.

Factor Loadings for Exploratory Factor Analysis with Promax Rotation and 3 Factor Extraction

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Factor 1 (Resilience)</th>
<th>Factor 2 (Self-Regulation)</th>
<th>Factor 3 (Psych. Empowerment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takes Good Notes</td>
<td>.562</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is Dependable</td>
<td>.559</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records Assignments</td>
<td>.541</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shows Up On Time</td>
<td>.511</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do Worse Due To Worry</td>
<td></td>
<td>.642</td>
<td></td>
</tr>
<tr>
<td>Responsible For Self</td>
<td></td>
<td>.623</td>
<td></td>
</tr>
<tr>
<td>Motivating Self To Do Work</td>
<td></td>
<td>.619</td>
<td></td>
</tr>
<tr>
<td>Feel Anxious About Exams</td>
<td></td>
<td>.598</td>
<td></td>
</tr>
<tr>
<td>Do Well On All Tasks</td>
<td>.496</td>
<td>.450</td>
<td>.589</td>
</tr>
<tr>
<td>Do Well In Hardest Course</td>
<td>.511</td>
<td>.415</td>
<td>.583</td>
</tr>
<tr>
<td>Persevere When Challenged</td>
<td>.549</td>
<td>.499</td>
<td>.534</td>
</tr>
</tbody>
</table>

*Note.* Factor loadings > .50 are in boldface.
Table 5

*Reliability of Scales Retained from Exploratory Factor Analysis*

<table>
<thead>
<tr>
<th>Scale Name</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Scale</td>
<td>.689</td>
</tr>
<tr>
<td>Resilience Scale</td>
<td>.916</td>
</tr>
<tr>
<td>Self-Regulation Scale</td>
<td>.887</td>
</tr>
<tr>
<td>Psychological Empowerment Scale</td>
<td>.786</td>
</tr>
</tbody>
</table>

*Note.* KMO Measure of Sampling Adequacy=.934. Bartlett’s Test of Sphericity=sig. at $p<.001$ with 1,225 df.
Table 6

Percentages for Survey Items on Resilience Scale

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Not at All (1)</th>
<th>Not at All (2)</th>
<th>Moderately (3)</th>
<th>Moderately (4)</th>
<th>Completely (5)</th>
<th>Completely (6)</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Complete Class Assignments</td>
<td>0.6</td>
<td>0.3</td>
<td>0.9</td>
<td>6.4</td>
<td>10.6</td>
<td>33.8</td>
<td>47.4</td>
<td>6.17</td>
<td>3,124</td>
</tr>
<tr>
<td>2) Set Academic Goals that Do Not Change</td>
<td>4.3</td>
<td>1.9</td>
<td>5.9</td>
<td>26.0</td>
<td>22.5</td>
<td>21.6</td>
<td>17.8</td>
<td>4.96</td>
<td>3,131</td>
</tr>
<tr>
<td>3) Do Everything to Meet Goals</td>
<td>1.7</td>
<td>1.5</td>
<td>3.2</td>
<td>17.6</td>
<td>22.9</td>
<td>27.8</td>
<td>25.3</td>
<td>5.43</td>
<td>3,122</td>
</tr>
<tr>
<td>4) Hard Worker in Classes</td>
<td>0.4</td>
<td>0.7</td>
<td>1.3</td>
<td>11.2</td>
<td>22.8</td>
<td>33.6</td>
<td>30.0</td>
<td>5.76</td>
<td>3,119</td>
</tr>
<tr>
<td>5) Extra Effort In Difficult Course</td>
<td>0.9</td>
<td>0.7</td>
<td>2.0</td>
<td>15.7</td>
<td>23.5</td>
<td>29.4</td>
<td>27.7</td>
<td>5.59</td>
<td>3,112</td>
</tr>
<tr>
<td>6) Stay Motivated Through Setbacks</td>
<td>1.6</td>
<td>1.4</td>
<td>5.1</td>
<td>25.9</td>
<td>28.7</td>
<td>23.2</td>
<td>14.1</td>
<td>5.05</td>
<td>3,110</td>
</tr>
<tr>
<td>7) Use Negative Feedback</td>
<td>1.3</td>
<td>2.0</td>
<td>3.8</td>
<td>22.0</td>
<td>26.2</td>
<td>25.4</td>
<td>19.4</td>
<td>5.23</td>
<td>3,111</td>
</tr>
<tr>
<td>8) Work Harder If Poor Grades</td>
<td>0.7</td>
<td>0.6</td>
<td>2.3</td>
<td>13.1</td>
<td>19.5</td>
<td>29.9</td>
<td>33.9</td>
<td>5.75</td>
<td>3,100</td>
</tr>
<tr>
<td>9) Advocate for Needs</td>
<td>2.6</td>
<td>4.5</td>
<td>7.7</td>
<td>34.3</td>
<td>21.0</td>
<td>15.0</td>
<td>14.9</td>
<td>4.71</td>
<td>3,116</td>
</tr>
<tr>
<td>10) Confident in Abilities</td>
<td>0.6</td>
<td>0.7</td>
<td>2.4</td>
<td>17.8</td>
<td>23.3</td>
<td>31.4</td>
<td>23.8</td>
<td>5.52</td>
<td>3,118</td>
</tr>
<tr>
<td>11) Act Independently</td>
<td>0.6</td>
<td>0.6</td>
<td>1.7</td>
<td>16.6</td>
<td>19.9</td>
<td>31.3</td>
<td>29.3</td>
<td>5.65</td>
<td>3,113</td>
</tr>
<tr>
<td>12) Know How I Learn Best</td>
<td>1.1</td>
<td>0.7</td>
<td>1.9</td>
<td>20.5</td>
<td>25.1</td>
<td>28.4</td>
<td>22.4</td>
<td>5.43</td>
<td>3,113</td>
</tr>
<tr>
<td>13) Compensate for Limitations</td>
<td>1.3</td>
<td>1.1</td>
<td>4.1</td>
<td>30.8</td>
<td>25.9</td>
<td>21.3</td>
<td>15.5</td>
<td>5.05</td>
<td>3,110</td>
</tr>
<tr>
<td>14) Overcome Barriers</td>
<td>0.6</td>
<td>0.5</td>
<td>2.7</td>
<td>22.1</td>
<td>27.4</td>
<td>29.2</td>
<td>17.5</td>
<td>5.33</td>
<td>3,104</td>
</tr>
</tbody>
</table>

Note: Excludes respondents who selected N/A.
Table 7

*Percentages for Survey Items on Self-Regulation Scale*

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Not at All (1)</th>
<th>(2)</th>
<th>Moderately (3)</th>
<th>(4)</th>
<th>(5)</th>
<th>Extremely (6)</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what degree are you the kind of person who:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Is Self-Disciplined</td>
<td>0.2</td>
<td>0.7</td>
<td>2.1</td>
<td>13.1</td>
<td>22.1</td>
<td>32.8</td>
<td>29.0</td>
<td>5.70</td>
<td>3,233</td>
</tr>
<tr>
<td>2) Follows Through</td>
<td>0.0</td>
<td>0.1</td>
<td>1.3</td>
<td>7.4</td>
<td>17.6</td>
<td>42.3</td>
<td>31.4</td>
<td>5.95</td>
<td>3,217</td>
</tr>
<tr>
<td>1) Is Dependable</td>
<td>0.0</td>
<td>0.3</td>
<td>0.6</td>
<td>4.4</td>
<td>10.3</td>
<td>35.9</td>
<td>48.5</td>
<td>6.26</td>
<td>3,215</td>
</tr>
<tr>
<td>2) Shows Up On Time</td>
<td>0.0</td>
<td>0.3</td>
<td>1.3</td>
<td>6.8</td>
<td>11.0</td>
<td>31.3</td>
<td>49.3</td>
<td>6.20</td>
<td>3,206</td>
</tr>
<tr>
<td>3) Plans Out Your Time</td>
<td>0.5</td>
<td>1.7</td>
<td>5.0</td>
<td>15.6</td>
<td>20.4</td>
<td>27.5</td>
<td>29.2</td>
<td>5.53</td>
<td>3,202</td>
</tr>
<tr>
<td>4) Makes To Do Lists</td>
<td>5.1</td>
<td>6.0</td>
<td>9.9</td>
<td>15.8</td>
<td>14.9</td>
<td>18.5</td>
<td>29.7</td>
<td>5.04</td>
<td>3,187</td>
</tr>
<tr>
<td>5) Balances Time</td>
<td>0.3</td>
<td>0.8</td>
<td>3.2</td>
<td>13.2</td>
<td>21.6</td>
<td>33.3</td>
<td>27.6</td>
<td>5.65</td>
<td>3,218</td>
</tr>
<tr>
<td>6) Turns in Homework</td>
<td>0.0</td>
<td>0.1</td>
<td>0.3</td>
<td>1.4</td>
<td>5.9</td>
<td>22.9</td>
<td>69.5</td>
<td>6.59</td>
<td>3,206</td>
</tr>
<tr>
<td>7) Takes Good Notes</td>
<td>0.3</td>
<td>0.3</td>
<td>0.9</td>
<td>4.9</td>
<td>14.8</td>
<td>35.6</td>
<td>43.2</td>
<td>6.13</td>
<td>3,214</td>
</tr>
<tr>
<td>8) Spends Sufficient Study Time</td>
<td>0.2</td>
<td>0.7</td>
<td>3.1</td>
<td>11.7</td>
<td>24.0</td>
<td>33.9</td>
<td>26.2</td>
<td>5.65</td>
<td>3,208</td>
</tr>
<tr>
<td>9) Works in Advance On Long Projects</td>
<td>0.9</td>
<td>3.0</td>
<td>6.4</td>
<td>17.8</td>
<td>22.8</td>
<td>26.5</td>
<td>22.7</td>
<td>5.29</td>
<td>3,203</td>
</tr>
<tr>
<td>10) Records Assignments in Calendar</td>
<td>6.1</td>
<td>4.3</td>
<td>5.0</td>
<td>13.4</td>
<td>13.7</td>
<td>19.2</td>
<td>38.3</td>
<td>5.35</td>
<td>3,208</td>
</tr>
<tr>
<td>11) Studies Where Avoid Distractions</td>
<td>1.7</td>
<td>2.5</td>
<td>5.5</td>
<td>17.5</td>
<td>21.5</td>
<td>26.4</td>
<td>25.1</td>
<td>5.34</td>
<td>3,210</td>
</tr>
<tr>
<td>12) Studies on Regular Schedule</td>
<td>3.0</td>
<td>4.5</td>
<td>9.9</td>
<td>23.8</td>
<td>21.3</td>
<td>20.2</td>
<td>17.3</td>
<td>4.86</td>
<td>3,179</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A.
Table 8

*Percentages for Survey Items on Psychological Empowerment Scale – Items Assessing Academic Self-Efficacy*

<table>
<thead>
<tr>
<th>Scale Name and Survey Items</th>
<th>Not at All Certain (1)</th>
<th>Moderately Certain (3)</th>
<th>Absolutely Certain (6)</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Empowerment (Academic Self-Efficacy)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what degree are you certain that you can:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Do Well On All Tasks Assigned</td>
<td>0.2</td>
<td>2.0</td>
<td>15.6</td>
<td>38.4</td>
<td>15.9</td>
<td>5.47</td>
</tr>
<tr>
<td>2) Do Well in Hardest Course</td>
<td>0.8</td>
<td>6.7</td>
<td>23.4</td>
<td>26.1</td>
<td>11.4</td>
<td>5.04</td>
</tr>
<tr>
<td>3) Persevere When Challenged</td>
<td>0.3</td>
<td>1.7</td>
<td>14.5</td>
<td>36.9</td>
<td>20.8</td>
<td>5.58</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A.
Table 9

*Percentages for Survey Items on Psychological Empowerment Scale – Items Assessing Stress*

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Extremely (1)</th>
<th>(2)</th>
<th>Moderately (3)</th>
<th>(4)</th>
<th>(5)</th>
<th>Not at All (6)</th>
<th>(7)</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Empowerment (Stress)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what degree are you experiencing stress regarding:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Being Responsible for Yourself</td>
<td>5.4</td>
<td>6.2</td>
<td>9.9</td>
<td>20.8</td>
<td>16.4</td>
<td>22.4</td>
<td>18.8</td>
<td>4.79</td>
<td>1.72</td>
<td>3,168</td>
</tr>
<tr>
<td>2) Motivating Self to Get Work Done</td>
<td>5.9</td>
<td>7.7</td>
<td>10.9</td>
<td>20.4</td>
<td>18.6</td>
<td>23.7</td>
<td>12.9</td>
<td>4.61</td>
<td>1.70</td>
<td>3,152</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A.
Table 10

*Percentages for Survey Items on Psychological Empowerment Scale—Items Assessing Test Anxiety*

<table>
<thead>
<tr>
<th>Scale Name &amp; Survey Items</th>
<th>Extremely (1)</th>
<th>Moderately (3)</th>
<th>Not at All (6)</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Empowerment (Test Anxiety)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When you have a test, to what degree do you:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Feel Anxious About Exams</td>
<td>12.3</td>
<td>12.3</td>
<td>14.3</td>
<td>14.8</td>
<td>14.0</td>
<td>9.3</td>
</tr>
<tr>
<td>2) Do Worse Because of Worry</td>
<td>8.8</td>
<td>8.7</td>
<td>10.8</td>
<td>14.5</td>
<td>19.4</td>
<td>16.0</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A.
Table 11

*Percentages for Items Asked Only of Students with IEP/504 Plan in High School*

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Not At All</th>
<th>Moderately</th>
<th>Completely</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what degree do you understand why you received the accommodations and/or services on your IEP/504 Plan?</td>
<td>8.1</td>
<td>5.2</td>
<td>14.1</td>
<td>5.9</td>
<td>10.4</td>
<td>56.3</td>
</tr>
<tr>
<td>To what degree are you able to communicate how your disability impacts your learning?</td>
<td>8.8</td>
<td>2.2</td>
<td>3.6</td>
<td>19.0</td>
<td>13.1</td>
<td>13.1</td>
</tr>
<tr>
<td>To what degree do you understand the differences between the disability services provided at the high school and college levels?</td>
<td>16.7</td>
<td>3.6</td>
<td>8.0</td>
<td>27.5</td>
<td>6.5</td>
<td>13.0</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A.
Table 12  

*Differences between Students with Disabilities and Students without Disabilities (Research Question #1)*

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability (SWD)</td>
<td>128</td>
<td>75.07</td>
<td>16.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student without Disability (SWoD)</td>
<td>2,453</td>
<td>75.57</td>
<td>11.99</td>
<td>.348</td>
<td>134.38</td>
<td>.728</td>
<td>.035</td>
</tr>
<tr>
<td>Self-Regulation Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability (SWD)</td>
<td>127</td>
<td>82.35</td>
<td>11.05</td>
<td></td>
<td></td>
<td>.010*</td>
<td>-.235</td>
</tr>
<tr>
<td>Student without Disability (SWoD)</td>
<td>2,547</td>
<td>79.73</td>
<td>11.20</td>
<td>2.576</td>
<td>2,672</td>
<td>.240</td>
<td>.103</td>
</tr>
<tr>
<td>Psychological Empowerment Scale</td>
<td>130</td>
<td>33.26</td>
<td>7.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability (SWD)</td>
<td>2,608</td>
<td>34.00</td>
<td>7.01</td>
<td>1.176</td>
<td>2,736</td>
<td>.240</td>
<td>.103</td>
</tr>
</tbody>
</table>

*Note. Excludes respondents who selected N/A. SWD=Student had IEP or 504 Plan in High School.*p≤.05. Self-Regulation Scale is significant at p≤.05 with Bonferroni correction applied. Self-Regulation Scale is significant at p≤.01 level without Bonferroni correction applied. Effect size for Self-Regulation Scale is small in strength.
Table 13

*Differences by Students with Disabilities who Have or Have Not Registered with Disability Services (Research Question #2)*

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Registered</td>
<td>49</td>
<td>78.82</td>
<td>12.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Not Registered</td>
<td>79</td>
<td>72.75</td>
<td>17.83</td>
<td>-2.273</td>
<td>124.42</td>
<td>.025</td>
<td>.396</td>
</tr>
<tr>
<td>Self-Regulation Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Registered</td>
<td>48</td>
<td>84.25</td>
<td>10.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Not Registered</td>
<td>79</td>
<td>81.20</td>
<td>11.30</td>
<td>-1.515</td>
<td>125</td>
<td>.132</td>
<td>.280</td>
</tr>
<tr>
<td>Psychological Empowerment Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Registered</td>
<td>51</td>
<td>33.04</td>
<td>6.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Not Registered</td>
<td>79</td>
<td>33.41</td>
<td>7.77</td>
<td>.276</td>
<td>128</td>
<td>.783</td>
<td>.051</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A. SWD= Student had IEP or 504 Plan in High School. Registered=self-reported registered with Disability Services Office. Resilience Scale is not significant at p≤.05 with Bonferroni correction applied; Resilience Scale is significant at p≤.05 without Bonferroni correction applied. Effect size for Resilience Scale is small-medium in strength.
### Table 14

*SWD-Specific Questions by Registered with Disability Services or Not*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what degree do you understand why you received the accommodations and/or services on your IEP/504 Plan?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Registered</td>
<td>52</td>
<td>6.56</td>
<td>1.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Not Registered</td>
<td>83</td>
<td>5.10</td>
<td>2.07</td>
<td>-5.325</td>
<td>130</td>
<td>.001**</td>
<td>.879</td>
</tr>
<tr>
<td>To what degree are you able to communicate how your disability impacts your learning?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Registered</td>
<td>53</td>
<td>6.04</td>
<td>1.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Not Registered</td>
<td>84</td>
<td>4.76</td>
<td>2.04</td>
<td>-4.394</td>
<td>135</td>
<td>.001**</td>
<td>.738</td>
</tr>
<tr>
<td>To what degree do you understand the differences between the disability services provided at the high school and college levels?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Registered</td>
<td>54</td>
<td>5.46</td>
<td>1.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with Disability Not Registered</td>
<td>84</td>
<td>3.74</td>
<td>2.03</td>
<td>-5.139</td>
<td>136</td>
<td>.001**</td>
<td>.908</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A. SWD= Student had IEP or 504 Plan in High School. Registered=self-reported registered with Disability Services Office. **p≤.01. Differences are significant at p≤.01 with Bonferroni correction applied. Differences are significant at p≤.001 without Bonferroni correction applied. Cohen’s d effect size strengths are d=0.2, small effect; d=0.5, medium effect; d=0.8, large effect.
Table 15

Differences by Disability Type for SWD (Research Question #3)

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visible Disability</td>
<td>29</td>
<td>70.97</td>
<td>20.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Apparent Disability</td>
<td>97</td>
<td>76.22</td>
<td>14.70</td>
<td>-1.531</td>
<td>124</td>
<td>.128</td>
</tr>
<tr>
<td>Self-Regulation Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visible Disability</td>
<td>32</td>
<td>81.69</td>
<td>11.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Apparent Disability</td>
<td>92</td>
<td>82.34</td>
<td>11.07</td>
<td>-.284</td>
<td>122</td>
<td>.777</td>
</tr>
<tr>
<td>Psychological Empowerment Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visible Disability</td>
<td>30</td>
<td>34.13</td>
<td>6.91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Apparent Disability</td>
<td>97</td>
<td>33.14</td>
<td>7.56</td>
<td>.639</td>
<td>125</td>
<td>.524</td>
</tr>
</tbody>
</table>

Note. Excludes respondents who selected N/A. Visible Disability=Physical/Sensory Disability (such as visual or hearing impairment or wheelchair user). Non-apparent Disability=Non-Apparent Disability (such as ADHD or a learning disability).
Table 16

*Differences by Gender (Research Question #4)*

<table>
<thead>
<tr>
<th>Scale</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>t</td>
<td>df</td>
<td>p</td>
<td>Cohen’s d</td>
</tr>
<tr>
<td>Resilience Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,000</td>
<td>73.88</td>
<td>12.85</td>
<td>-5.380</td>
<td>1,902.77</td>
<td>.001**</td>
<td>.215</td>
</tr>
<tr>
<td>Female</td>
<td>1,791</td>
<td>76.52</td>
<td>11.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Regulation Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,088</td>
<td>75.16</td>
<td>11.44</td>
<td>-17.065</td>
<td>2,088.52</td>
<td>.001**</td>
<td>.658</td>
</tr>
<tr>
<td>Female</td>
<td>1,888</td>
<td>82.34</td>
<td>10.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological Empowerment Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,102</td>
<td>35.06</td>
<td>6.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1,917</td>
<td>33.32</td>
<td>7.14</td>
<td>6.559</td>
<td>3,017</td>
<td>.001**</td>
<td>.250</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A. **p ≤ .01. Differences are significant at p ≤ .01 with Bonferroni correction applied. Differences are significant at p ≤ .001 without Bonferroni correction applied. Cohen’s d effect size strengths are d=0.2, small effect; d=0.5, medium effect; d=0.8, large effect.
Table 17

*Differences by Race (Research Question #4)*

<table>
<thead>
<tr>
<th>Scale</th>
<th></th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Caucasian</td>
<td>491</td>
<td>76.68</td>
<td>12.42</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>2,300</td>
<td>75.34</td>
<td>12.09</td>
<td>2.215</td>
<td>2,789</td>
<td>.027</td>
<td>.109</td>
</tr>
<tr>
<td>Self-Regulation Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Caucasian</td>
<td>518</td>
<td>79.01</td>
<td>11.48</td>
<td>-1.564</td>
<td>2,974</td>
<td>.960</td>
<td>-.076</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2,458</td>
<td>79.87</td>
<td>11.26</td>
<td>-1.564</td>
<td>2,974</td>
<td>.960</td>
<td>-.076</td>
</tr>
<tr>
<td>Psychological Empowerment Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Caucasian</td>
<td>530</td>
<td>34.06</td>
<td>7.06</td>
<td>.377</td>
<td>3,017</td>
<td>.706</td>
<td>.018</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2,489</td>
<td>33.93</td>
<td>7.05</td>
<td>.377</td>
<td>3,017</td>
<td>.706</td>
<td>.018</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A. Resilience Scale is not significant at $p \leq .05$ with Bonferroni correction applied; Resilience Scale is significant at $p \leq .05$ without Bonferroni correction applied. Effect size for Resilience Scale is very small in strength.
Table 18

ANOVA Equal Variance for Psychological Empowerment Scale by High School GPA (Research Question #4)

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>df1</th>
<th>df2</th>
<th>F</th>
<th>p</th>
<th>Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mostly As</td>
<td>1,327</td>
<td>34.77</td>
<td>6.81</td>
<td>6</td>
<td></td>
<td>6.8</td>
<td>.001**</td>
<td>.019</td>
</tr>
<tr>
<td>Mostly Bs</td>
<td>1,199</td>
<td>33.21</td>
<td>7.17</td>
<td>2</td>
<td>3,008</td>
<td>16.832</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bs &amp; Cs</td>
<td>485</td>
<td>33.49</td>
<td>7.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Excludes respondents who selected N/A. **p<.01. Psychological Empowerment Scale is significant at p≤.01 with Bonferroni correction applied. Psychological Empowerment Scale is significant at p≤.001 without Bonferroni correction applied. Psychological Empowerment explains 1.9% of the variance in High School GPA.
Table 19

ANOVA Unequal Variance for Resilience and Self-Regulation Scales by High School GPA (Research Question #4)

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>df1</th>
<th>df2</th>
<th>Welch F</th>
<th>p</th>
<th>Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mostly As</td>
<td>1,261</td>
<td>77.92</td>
<td>11.03</td>
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<tr>
<td>Mostly Bs</td>
<td>1,078</td>
<td>74.04</td>
<td>12.33</td>
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<td>1,160.60</td>
<td>49.993</td>
<td>.001**</td>
<td>.054</td>
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<tr>
<td>Bs &amp; Cs</td>
<td>445</td>
<td>72.69</td>
<td>13.44</td>
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</tr>
<tr>
<td>Self-Regulation Scale</td>
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<tr>
<td>Mostly As</td>
<td>1,320</td>
<td>81.60</td>
<td>10.50</td>
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<tr>
<td>Mostly Bs</td>
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<td>78.86</td>
<td>11.62</td>
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<td>1,269.30</td>
<td>40.175</td>
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<td>.050</td>
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<tr>
<td>Bs &amp; Cs</td>
<td>472</td>
<td>76.64</td>
<td>11.72</td>
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</tbody>
</table>

Note. Excludes respondents who selected N/A. **p<.01. Differences are significant at p<.01 with Bonferroni correction applied. Differences are significant at p≤.001 without Bonferroni correction applied. Resilience explains 5.4% of the variance in First Semester GPA, and Self-Regulation explains 5.0% of the variation in High School GPA.
Table 20

ANOVA Equal Variance for Psychological Empowerment Scale by First Semester GPA (Research Question #4)

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>df1</th>
<th>df2</th>
<th>F</th>
<th>p</th>
<th>Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mostly As</td>
<td>840</td>
<td>35.73</td>
<td>6.86</td>
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<tr>
<td>Mostly Bs</td>
<td>792</td>
<td>33.64</td>
<td>6.70</td>
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</tr>
<tr>
<td>Some Bs &amp; Cs</td>
<td>602</td>
<td>33.15</td>
<td>6.93</td>
<td>4</td>
<td>2,989</td>
<td>20.696</td>
<td>.001**</td>
<td>.035</td>
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<td>Mostly Cs</td>
<td>336</td>
<td>33.05</td>
<td>7.21</td>
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<tr>
<td>Less than Cs</td>
<td>424</td>
<td>32.75</td>
<td>7.43</td>
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</table>

Note. Excludes respondents who selected N/A. **p<.01. Psychological Empowerment Scale is significant at p≤.01 with Bonferroni correction applied. Psychological Empowerment Scale is significant at p≤.001 without Bonferroni correction applied. Psychological Empowerment explains 3.5% of the variance in First Semester GPA.
Table 21

ANOVA Unequal Variance for Resilience and Self-Regulation Scales by First Semester GPA (Research Question #4)

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>df1</th>
<th>df2</th>
<th>Welch F</th>
<th>p</th>
<th>Eta Squared</th>
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<tbody>
<tr>
<td><strong>Resilience Scale</strong></td>
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<tr>
<td>Mostly As</td>
<td>784</td>
<td>79.32</td>
<td>10.91</td>
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<td>75.98</td>
<td>11.85</td>
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<tr>
<td>Some Bs &amp; Cs</td>
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<td>73.52</td>
<td>11.93</td>
<td>4</td>
<td>1,111.06</td>
<td>37.597</td>
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<td>.070</td>
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<td>Mostly Cs</td>
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<td>72.44</td>
<td>12.93</td>
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<td>Less than Cs</td>
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<td>72.35</td>
<td>12.75</td>
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<tr>
<td><strong>Self-Regulation Scale</strong></td>
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<td></td>
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<td>Mostly As</td>
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<td>83.26</td>
<td>9.92</td>
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<td>Mostly Bs</td>
<td>775</td>
<td>81.39</td>
<td>10.17</td>
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<tr>
<td>Some Bs &amp; Cs</td>
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<td>11.53</td>
<td>4</td>
<td>1,185.36</td>
<td>57.870</td>
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<td>.099</td>
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<td>76.16</td>
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<tr>
<td>Less than Cs</td>
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<td>74.72</td>
<td>12.72</td>
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</tbody>
</table>

Note. Excludes respondents who selected N/A. **p<.01. Differences are significant at p≤.01 with Bonferroni correction applied. Differences are significant at p≤.001 without Bonferroni correction applied. Resilience explains 7.0% of the variance in First Semester GPA, and Self-Regulation explains 9.9% of the variation in First Semester GPA.
Table 22

*Differences by Retention to Spring Semester (Research Question #4)*

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>Cohen's d</th>
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<tbody>
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<td>Resilience Scale</td>
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<tr>
<td>Retained</td>
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<td>75.72</td>
<td>12.05</td>
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<tr>
<td>Not Retained</td>
<td>135</td>
<td>72.73</td>
<td>13.70</td>
<td>-2.719</td>
<td>2,789</td>
<td>.005*</td>
<td>.232</td>
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<td>Self-Regulation Scale</td>
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<tr>
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<td>79.80</td>
<td>11.29</td>
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<td>Not Retained</td>
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<td>11.41</td>
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<td>2,974</td>
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<tr>
<td>Scale</td>
<td>Retained</td>
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<td>7.01</td>
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<td>Not Retained</td>
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<td>7.39</td>
<td>-4.338</td>
<td>3,017</td>
<td>.001**</td>
</tr>
</tbody>
</table>

*Note.* Excludes respondents who selected N/A. *p<.05. **p<.01. Resilience Scale is significant at p≤.05 with Bonferroni correction applied. Resilience scale is significant at p≤.01 without Bonferroni correction. Psychological Empowerment Scale is significant at p≤.01 with Bonferroni correction applied. Psychological Empowerment Scale is significant at p≤.001 without Bonferroni correction applied. Cohen’s d effect size strengths are d=0.2, small effect; d=0.5, medium effect; d=0.8, large effect.