

The Investigation of Self-Determination in Students  
Participating in Higher Education with an Invisible Disability

by

Joseph Daniel Bryant, II

A Dissertation submitted to the Education Faculty of Lindenwood University

in partial fulfillment of the requirements for the

degree of

Doctor of Education

School of Education

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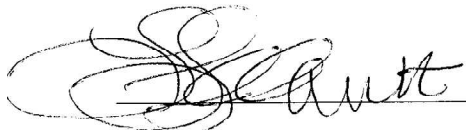
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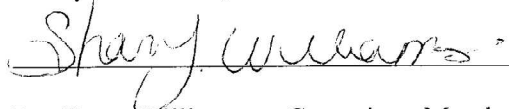
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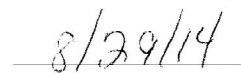
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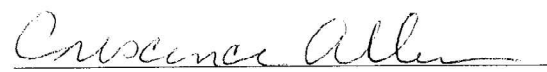
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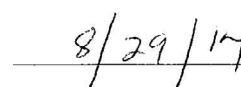
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Dr. Crescence Allen, Committee Member



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## Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Joseph Daniel Bryant, II.

Signature:  Date: 

## **Acknowledgements**

I would like to express my most sincere gratitude to several people who have helped me during this process. First and foremost, I am grateful to Drs. Lynda Leavitt, Shane Williamson, and Crescence Allen for agreeing to serve on my committee, and to Dr. Leavitt in particular for guiding me throughout this journey. She is a phenomenal mentor, always professional and personable, and a fountain of motivation. A special thank you goes to Dr. Wisdom for her numerous consultations as I worked to collect, analyze, and present the data obtained for this study.

I am grateful to Dr. Michael Hepner for serving as my district sponsor at the research site from which the participants for this study were recruited. I am grateful for the participants' efforts; without them, this study could not have been completed. I appreciate the leadership in various departments at the host district for agreeing to let me conduct this study and helping to spread the word about it.

I would like to express my gratitude to several of my classmates in Lindenwood's EdD program. Without their pearls of wisdom, patience, friendship, humor, and motivation, I could not have completed this study. I would also like to thank my family for their support and for believing in me all of these years. Finally, to my fiancée: thank you so very much for your continued encouragement, patience, love, and humor. While I authored the chapters contained in this work, I cannot wait to co-author the next several chapters of our lives together. Je t'aime!

## **Abstract**

The enrollment of students with invisible disabilities has continued to increase unabated in postsecondary environments. As a result of the applicable laws governing the provision of accommodations and/or modifications in higher education, the impetus and responsibility to succeed rests almost entirely with the individual student. Research showed for many students with invisible disabilities, the transition from a more passive role in the acquisition of education at the primary and secondary levels to a more active role in the acquisition of higher education at the post-secondary level was difficult, as evidenced by a large percentage of such students failing to complete their degrees (Barber, 2012, Hadley, 2006; 2011, Skinner, 2004). Nonetheless, some of the same research indicated some students with invisible disabilities succeeded and completed their degrees (Barber, 2012, Skinner, 2004). The literature suggested that certain characteristics, particularly self-determination, were at least in part responsible for the success of these students.

The purpose of this mixed methods study was to explore the level of self-determination in successful students with invisible disabilities who participated in higher education. Data were collected through the administration of an online, anonymous, and untimed survey that consisted of Wehmeyer and Kelchner's (1995) Arc Self-Determination Scale, as modified by Jameson (2007), as well as supplemental questions both adapted from Stage and Milne (1996) and created by the investigator. Levels of self-determination between successful students with invisible disabilities and their otherwise non-disabled peers were measured and analyzed for significant differences in means. The quantitative data revealed no significant difference in means on any domain score,

including the Self-Determination Total score between groups, as measured by the modified Arc. Subsequent content analyses of supplemental questions revealed identical emerging themes in both participant groups, which aligned with Wehmeyer's essential characteristics of self-determination.

## Table of Contents

Acknowledgements.....	i
Abstract.....	ii
Table of Contents.....	iv
List of Tables .....	viii
Chapter One: Introduction .....	1
Purpose of the Dissertation.....	5
Rationale .....	6
Research Question and Hypotheses .....	8
Limitations .....	9
Definition of Terms.....	11
Accommodations: .....	11
Arc Self-Determination Scale:.....	11
Attention-Deficit/Hyperactivity Disorder (ADHD):.....	11
Autonomy: .....	11
Disability:.....	11
Disability/Access Office: .....	12
External or Environmental Characteristics: .....	12
Individualized Education Plan (IEP): .....	12
Internal Characteristics: .....	12
Invisible Disability:.....	12
Learning Disability: .....	13
Modifications: .....	13



Psychological Empowerment: .....	13
Reasonable Accommodations:.....	13
Self-Determination:.....	14
Self-Determination Domains:.....	14
Self-Realization: .....	14
Self-Regulation: .....	14
Successful Student: .....	15
Visible Disability: .....	15
Summary.....	15
Chapter Two: Literature Review .....	17
Introduction.....	17
The Most Common Disabilities in Higher Education.....	18
Characteristics of Successful Students with Invisible Disabilities .....	23
Self-Determination and Successful Individuals with Invisible Disabilities .....	25
Working Theory of Self-Determination and Measurement Instrument.....	30
Assistance at the Primary, Secondary, and Post-Secondary Levels .....	34
Results of the Application of Law in Various Educational Environments.....	39
Provision of Accommodations/Modifications in Primary and Secondary Schools.....	41
Provision of Reasonable Accommodations at the Study Site Community College .....	52
Summary.....	58
Chapter Three: Methodology.....	60
Introduction.....	60
Research Site.....	61

Data Collection and Analysis Procedures.....	63
Confidentiality and Informed Consent.....	65
Research Question and Null Hypotheses.....	65
Quantitative Data.....	66
Qualitative Data.....	70
Instrumentation Employed and Scoring.....	71
Summary.....	75
Chapter Four: Results.....	76
Introduction.....	76
Quantitative Results.....	77
Qualitative Results: Emerging Themes.....	82
Summary.....	100
Chapter Five: Discussion.....	102
Overview.....	102
Alternate Hypothesis.....	103
Hypothesis 1a.....	103
Hypothesis 1b.....	103
Hypothesis 1c.....	104
Hypothesis 1d.....	104
Interpretation of Results.....	105
Implications.....	106
Recommendations for Future Research.....	107
Conclusion.....	108

References.....	110
Appendix A.....	120
Appendix B.....	127
Appendix C.....	135
Appendix D.....	137
Vitae.....	139

## List of Tables

Table 1. Definitions of Self-Determination: Hong, Haefner, and Slekar .....	27
Table 2. Components of Self-Determination: Denney and Daviso .....	28
Table 3. Elements of Self-Determination: Stoner et al. ....	29
Table 4. Individuals with Disabilities Education Act: Categories .....	39
Table 5. Self-Determination: Non-Disabled and Disabled Students .....	78
Table 6. Autonomy: Non-Disabled and Disabled Students .....	79
Table 7. Self-Regulation: Non-Disabled and Disabled Students .....	80
Table 8. Psychological Empowerment: Non-Disabled and Disabled Students .....	81
Table 9. Self-Realization: Non-Disabled and Disabled Students .....	82
Table 10. Invisible Disabilities: Themes vs. Wehmeyer’s Characteristics .....	83
Table 11. Without Disabilities: Themes vs. Wehmeyer’s Characteristics .....	96

## **Chapter One: Introduction**

At the time of this writing, various laws had been created in the past few decades to ensure that students with disabilities had access to all levels of education. Since the initial passage of the Education of All Handicapped Children (EAHC) Act of 1975, higher education in the United States underwent unprecedented growth, in some part due to the seemingly ever-growing population of students who self-identified as having a disability (Hadley, 2006; Hadley, 2007; Janiga & Costenbader, 2002; Levinson & Ohler, 1998; Skinner, 2004). EAHC was a landmark piece of legislation for students who required accommodations and/or modifications at the primary and secondary levels of education; in some form, this legislation continued through the early 21st century. EAHC was amended in 1990 and renamed the Individuals with Disabilities Education Act (IDEA). IDEA (Pub. L.101-476) underwent major amendments in 1991 and 1997; in 2004 the act was renamed once again as the Individuals with Disabilities Education Improvement Act (IDEIA, Pub. L. 108-446), though it was commonly referred to as IDEA. While IDEIA, in its various iterations, may possibly be the most well-known law that assured access to primary and secondary education for individuals with disabilities. Other laws that served a similar purpose include the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990.

The learning opportunities afforded by and the subsequent educational successes resulting from the operation of these laws may be partially responsible for many students with disabilities choosing to participate in higher education. Indeed, this result cannot be overlooked, as “students with disabilities are attending colleges and universities in growing numbers, with their rate of college participation doubling in the past twenty

years” (Hadley, 2011, p. 1). However, other results produced by the operation of these laws were also partially responsible for these same students ultimately not succeeding in the post-secondary environment. IDEIA was, in common parlance, the foundational law for special education, but as Hadley (2006) and Simon (2011) articulated, special education did not exist in the post-secondary educational environment, although the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 both operated there. Special education, one of the primary methods through which many individuals with disabilities received assistance, often for several years of their educational careers, was vitiated via the operation of law, leaving essentially only two laws to provide for accommodations in the post-secondary environment.

IDEIA specified that special education methods may and/or must be employed in primary and secondary education in order to assist students with disabilities in acquiring an education, while the laws governing post-secondary education included no such mandate (Hadley, 2006). Indeed, IDEIA generally did not apply to an individual’s education beyond primary or secondary schooling (Simon, 2011). Therefore, as a result of the ways in which these various laws operated, a disabled student who required assistance mitigated the effects of his or her disability in a post-secondary environment and relied entirely upon reasonable accommodations and his or her own self (Hadley, 2006; 2007) in order “to progress in his or her classes” (Hadley, 2007, p. 10).

While encouraging, the trend of increasingly more students with disabilities pursuing higher education raised further questions regarding whether more assistance could or should be provided in the post-secondary environment (Hadley, 2006). Formerly having received accommodations and/or modifications through special education, often

for most of their academic lives, these students reached the post-secondary level and found they no longer had access to the methods, processes, or modifications to their environment and/or curriculum that ensured some modicum of success. The literature indicated that these students were more likely to fail than their peers who do not have disabilities (Barber, 2012, Skinner, 2004). There seemed to be no legal obligation to do more than what was already being done, namely, providing “reasonable modifications, accommodations, or auxiliary aids” (Hadley, 2006, p. 10) to those students who, but for their disability(ies), were qualified students. For some students with disabilities, in the researcher’s experience as a special educator, the current reality regarding the availability, acquisition, and receipt of extra accommodations in the post-secondary environment was, at best, foreign, and in many instances, toxic.

While several types of disabilities existed in higher education, those that were invisible, meaning those that were all but unobservable by an average person, appeared to be the most commonly reported disability (Aron & Loprest, 2012; Belch, 2011; Joyce & Rossen, 2006). Examples of invisible disabilities included “Asperger’s syndrome; attention deficit/hyperactivity disorders, or ADHD; brain injury; learning disabilities; psychiatric conditions; seizure disorders; and Tourette’s syndrome” (University of Washington 2012, p. 1). Indeed, “despite their persisting academic difficulties, adults with learning disabilities enrolled in postsecondary education in increasing numbers” (Trainin & Swanson, 2005, p. 261). The fact that more individuals with learning disabilities were enrolled in higher education was an accomplishment in itself given the findings of other studies that reported “high school graduates with learning disabilities

were significantly less likely to attend a postsecondary institution” or to graduate from them (Abreu-Ellis, Ellis, & Hayes, 2009, p. 28).

Although research supported the assertion that the enrollment of individuals with invisible disabilities in higher education was increasing (Johnson, Zascavage, & Gerber, 2008; Stage & Milne, 1996; Taylor, 2004; Thomas, 2000; Trainin & Swanson, 2005), their enrollment did not guarantee graduation (Skinner, 2004), nor did their graduation guarantee future employment. Wehmeyer and Schwartz (1997) indicated “that students with disabilities were graduating to generally disappointing adult outcomes” (p. 245). Black and Leake (2011) agreed, writing, “it is well known that students with disabilities, as a group, achieve poorer employment, postsecondary education, and community living outcomes . . . compared to their peers without disabilities” (p. 147). Barber (2012) also agreed and indicated an employment rate of “89.9% (for college graduates without disabilities) and for college graduates with disabilities . . . 50.6%” (p. 1; as cited in Nicholas, Kauder, Krepcio, & Baker, 2011, p. 61).

Due to the apparent influx of disabled students to institutions of higher education, college and university disability/access offices received greater numbers of requests for and subsequent issuance of reasonable accommodations to help ameliorate the effects of these students’ disabilities in the higher education environment (Jameson, 2007). Despite the efforts of colleges and universities to provide reasonable accommodations for disabled students, many still did not complete their degrees (Janiga & Costenbader, 2002; Skinner, 2004). Indeed, although many disabled students did not complete their degrees, the fact remained; some did (Skinner, 2004).



Professionals in the field of higher education understood the term ‘reasonable accommodations’ as the provision of services that helped students with disabilities to access the curriculum or the environment (Simon, 2011). This concept of access often differed from what professionals working in primary and secondary education intended when they modified the curriculum for a student under the auspices of special education, which was typically accomplished through the creation and implementation of Individual Education Plans (IEPs) (Horn & Benerjee, 2009). Such curriculum modification was mandated at the primary and secondary levels as a result of IDEA and thus formed the basis of a student’s special education (Horn & Benerjee). In other words, where primary and secondary schooling provided a disabled student with accommodation and/or modification, colleges and universities only provided reasonable accommodations, and only if certain procedures and requirements were satisfied (Eckes & Ochoa, 2005). It is the researcher’s belief that many of the disabled students who were participating in higher education were identified as having disabilities before entering postsecondary study. Consequently, in many cases they received one or more years of special education before entering a post-secondary environment which, as explained in the next chapter, often provided significantly fewer accommodations.

### **Purpose of the Dissertation**

The purpose of this research was to identify and measure levels of self-determination in successful students with invisible disabilities participating in higher education. Using a mixed methods design, the investigator sought evidence of the existence and level of self-determination in such students who succeeded in higher education without the benefit of special education. The existing literature had posited

several external and internal characteristics that successful students with invisible disabilities possessed, including (a) general adjustment, (b) family support, (c) school support, (d) self-advocacy skills, (e) knowledge about the student's disability, and (f) self-determination (Hadley, 2006; 2007; 2011; Jameson, 2007; Skinner, 2004; Thoma & Getzel, 2005). A disabled student's level of self-determination was noted as the most critical characteristic to ensure success in higher education (Jameson; Skinner, 2004; Thoma & Getzel). This study aimed to provide further evidence that the self-determination characteristic was readily observed among successful students with invisible disabilities at a two-year community college.

### **Rationale**

While previous studies examined characteristics of younger students with invisible disabilities, the available literature lacked an adequate discussion of the internal and external characteristics of students with invisible disabilities who chose to participate in higher education (Cosden & McNamara, 1997). One study highlighted the need for research in the postsecondary disabilities area in general, as "it is only in recent years that the presence of disabled people in higher education and the barriers that they may encounter have received any sort of considered analysis" (Taylor, 2004, p. 40). While a handful of studies examined the characteristics of successful disabled students in higher education, including at two-year colleges and four-year institutions (Jameson, 2007; Skinner, 2004; Thoma & Getzel, 2005), none focused exclusively on students with only invisible disabilities. The aforementioned studies indicated that self-determination was important for the success of a disabled student, but little else. The principal investigator was unable to locate material that measured the self-determination of the specific

disabled population examined in the present study. Given that the enrollment of students with disabilities in higher education continued to increase (Hadley, 2006; Janiga & Costenbader, 2002; Johnson et al., 2008; Levinson & Ohler, 1998; Skinner, 2004) and that invisible disabilities at the time of this study were the most commonly reported disability in higher education (Thoma & Getzel; Troiano Liefeld, & Trachtenberg, 2010), the researcher believed it was critical for studies to address this specific and growing segment of the student population in higher education, as well as what appeared to be a fundamental characteristic for their success in higher education. Therefore, this study helped to address the current lack of knowledge through the examination of the levels of self-determination in the particular domains observed in Wehmeyer and Kelchner's (1995) Arc Self-Determination Scale, modified by Jameson (2007) in two groups of participants enrolled at a community college. One group consisted of successful students who self-identified as having an invisible disability, and the other group consisted of successful students who were non-disabled. The results from these two sample groups were analyzed and compared to observe what, if any, differences existed between the groups. Through content analysis, the participants' responses to selected supplemental questions designed to illicit emerging themes and qualitative information relevant to self-determination and participant experience in higher education was also examined.

During a review of the current literature the researcher learned that the various subdomains of the Arc Self-Determination Scale used in this study provided scores in four central characteristics that served as the basis of Wehmeyer's (1993; 1995) self-determination theory. The four characteristics are autonomy, self-regulation, psychological empowerment, and self-realization. When analyzed, these domain scores

also produced a Total Self-Determination Score. Therefore, in order to use the Arc Self-Determination Scale to investigate self-determination, and in consultation with his chair, the investigator drafted the following Research Question and Hypotheses.

### **Research Question and Hypotheses**

This investigation explored the following research question: How are the levels of self-determination of successful students with invisible disabilities participating in higher education different than those of nondisabled successful students at a two-year community college, as measured by the modified Arc Self-Determination Scale?

The hypotheses for this mixed methods study were as follows:

Alternate Hypothesis: There is a difference between the internal and external characteristics of self-determination between successful students with invisible disabilities and the characteristics of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

Hypothesis 1a: There is a difference between the levels of autonomy of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college as measured by the modified Arc Self-Determination Scale.

Hypothesis 1b: There is a difference between the levels of self-regulation of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

Hypothesis 1c: There is a difference between the levels of psychological empowerment of successful students with invisible disabilities and the levels of their

nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

Hypothesis 1d: There is a difference between the levels of self-realization of successful students with disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

### **Limitations**

The human subjects who participated in this research and produced the data used in this study were recruited exclusively from the student body of the Criminal Justice program at one campus of one of the largest community college districts in the United States (Midwest Community College, 2014). This community college was referred to herein as Midwest Community College to maintain the anonymity of the actual institution from which participants were recruited. One month was allotted for the participants to complete the online, untimed, anonymous survey used in this study.

The investigator had no relationship with the participants in this study that could have caused undue influence over the results; nonetheless, the possibility remained that the responses received in the qualitative phase of this study may have been skewed or in some way inaccurate for a number of reasons, including the personal nature of some of the questions asked. This possibility remained despite the anonymity afforded by the online survey, and despite the fact that the investigator did not solicit participants for this study. Additionally, while the survey did not ask for personally identifiable data, some participants provided such data, which was removed by a neutral third party who served as the district sponsor for the investigator, before the remaining non-personally

identifiable data were provided to the investigator for analysis. Nevertheless, the possibility remained that the participants who provided personally identifiable data may have not answered as they would have had they not provided such data.

It is not known when and under what circumstances all of the participants completed the survey. Neutral third parties, the district sponsor and instructors in the Criminal Justice program, who disseminated the link to potential participants reported that some participants completed the survey during class and at other locations, including the participants' homes, as well as at different times over the course of the month during which the link to the survey was active. As a result, it is conceivable that some of the participants' responses may have been influenced by different environmental or personal factors. The investigator contemplated such variations in survey administration and requested that the neutral third parties who disseminated the link explain that potential participants were free to look at the questions before answering them. This opportunity for initial review allowed the participants time to reflect and prepare responses with which they were most comfortable. This design methodology was based on the rationale proffered by an expert in the field of qualitative analysis (S. Sherblom, personal communication, June 18, 2012), who articulated the belief that participants were more likely to provide a more complete, thought out, and honest response when given this sort of preparation time. In order to fully participate in this study, a student had to self-identify as possessing either an invisible disability (defined below) or as not possessing a disability. Given the parameters of this study, data from students with visible disabilities, or invisible and visible disabilities, were excluded. Data from students who were not successful, whether disabled or not, were similarly excluded.

**Definition of Terms**

The following definitions reflect how the terms were used for the purposes of this study.

**Accommodations:** The Missouri Department of Elementary and Secondary Education (2014a) defined accommodations as “changes made to instruction and/or assessment intended to help students fully access the general education curriculum without changing the instructional content” (p. 1).

**Arc Self-Determination Scale:** This instrument was created by Wehmeyer and Kelchner in 1995 and then modified by Jameson in 2007. In this study, the modified Arc Self-Determination Scale was administered to all participants verbatim and in its entirety, along with supplemental questions adapted from Stage and Milne (1996) and the investigator.

**Attention-Deficit/Hyperactivity Disorder (ADHD):** The Mayo Clinic (2012) defined ADHD as a chronic condition affecting millions of children and persisting into adulthood with the following characteristics: difficulty sustaining attention, hyperactivity, and impulsive behavior. The Mayo Clinic indicated that children with ADHD also may struggle with low self-esteem, troubled relationships, and poor performance in school.

**Autonomy:** Behavior performed “according to [an individual’s] own preferences, interests and/or abilities . . . and independently, free from undue . . . influence or interference” (Wehmeyer, Kelchner, & Richards, 1996, p. 632). Autonomy is one of the essential characteristics in Wehmeyer’s theory of self-determination.

**Disability:** “A physical or mental impairment that substantially limits one or more major life activities of such individual; or an individual having a record of such an

impairment; or an individual being regarded as having such an impairment” (Americans with Disabilities Act of 1990, 42 U.S.C.A. § 12101 et seq.).

**Disability/Access Office:** The department and/or personnel in a department or office of a college or university responsible for providing reasonable accommodations to students who self-identified as having a disability.

**External or Environmental Characteristics:** The activities, behaviors, or qualities that an individual with a disability engages in or possesses with regard to his or her education that usually requires a certain degree of action from others. Skinner (2004), writing on learning disabilities (LD), provided examples: “(a) severity of the LD; (b) degree of support from family; (c) socioeconomic status; (d) completion of high school; (e) quality of education at elementary and secondary levels; and (f) quality of vocational and postsecondary experiences” (p. 92).

**Individualized Education Plan (IEP):** A written statement for each child with a disability; it is developed, reviewed, and revised before becoming the basis of a student’s special education (Government Printing Office, 2007).

**Internal Characteristics:** Activities, behaviors, or characteristics that an individual engages in or possesses that reasonably relate to the individual’s “autonomy, self-regulation, psychological empowerment, and self-realization” (Wehmeyer et al., 1996, p. 632) as they pertain to the individual’s education.

**Invisible Disability:** According to the Invisible Disabilities Association (2013), this term:

refers to symptoms such as debilitating pain, fatigue, dizziness, weakness, cognitive dysfunctions, learning differences and mental disorders, as well as



hearing and vision impairments. They are not always obvious to the onlooker, but can sometimes or always limit daily activities, ranging from mild challenges to severe limitations and vary from person to person. (p. 6)

**Learning Disability:** “A generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities” (Stage & Milne, 1996, p. 426). Learning disabilities “are intrinsic to the student, are presumed to be due to central nervous system dysfunction, and may occur across the life span” (Hadley, 2006, p. 10).

**Modifications:** The Missouri Department of Elementary and Secondary Education (2014b) defined modifications as “alterations made to instruction and/or assessment that change, lower, or reduce learning or assessment expectation” (p. 1).

**Psychological Empowerment:** “The various dimensions of perceived control which includes . . . personal efficacy . . . locus of control . . . and motivational domains” (Wehmeyer et al., 1996, p. 633). Psychological empowerment is one of the essential characteristics in Wehmeyer’s theory of self-determination.

**Reasonable Accommodations:** For the purpose of this study the researcher selected to use the following definition at Pepperdine University (2014):

In the context of higher education, it is easier to define what is not reasonable and assume that if the accommodation needed does not clearly fall under those guidelines, it is probably reasonable! There are three kinds of accommodations that are not considered reasonable: (1) It is not a reasonable accommodation if making the accommodation or allowing participation poses a direct threat to the health or safety of others; (2) It is not a reasonable accommodation if making the

accommodation means making a substantial change in an essential element of the curriculum (educational viewpoint) or a substantial alteration in the manner in which you provide your services; and (3) It is not a reasonable accommodation if it poses an undue financial or administrative burden. (p. 3)

**Self-Determination:** A person acting as the primary causal agent in his or her own life and making choices and decisions regarding quality of life free from undue external influence or interference (Wehmeyer, 1993). According to Wehmeyer (1995), an individual's behavior is self-determined when "the individual acts autonomously, the behaviors are self-regulated, the person initiates and responds to events(s) in a psychologically empowered manner, and the person acts in a self-realizing manner" (p. 7).

**Self-Determination Domains:** As used in the Arc, these domains measure essential characteristics of self-determination and contribute to various scores on the instrument. The self-determination domains include autonomy, self-regulation, psychological empowerment, and self-realization (Wehmeyer, 1995).

**Self-Realization:** An individual using "a comprehensive, and reasonably accurate knowledge (of an individual's self) and their strengths and limitations to act in such a manner as to capitalize on this knowledge in a beneficial way" (Wehmeyer et al., 1996, p. 633). Self-realization is one of the essential characteristics in Wehmeyer's theory of self-determination.

**Self-Regulation:** The behavior of individuals who "make decisions about what skills to use in a situation; examine the task at hand and their available repertoire; and formulate, enact, and evaluate a plan of action, with revisions when necessary"

(Wehmeyer et al., 1996, p. 633). Self-regulation is one of the essential characteristics in Wehmeyer's theory of self-determination.

**Successful Student:** The inclusion criteria for this study considered a successful student one who had completed at least one semester at the community college from which the data for this study was obtained, with a grade point average (GPA) of 2.0 or higher. Students with a GPA below 2.0 were deemed unsuccessful.

**Visible Disability:** A disability readily observed by an average person who interacts with an individual possessing such a disability. Examples include use of a wheelchair, certain vision and/or hearing impairments, and use of certain assistive technologies.

### **Summary**

This study provided further evidence of the existence of self-determination in successful students with invisible disabilities who chose to participate in higher education. The study accomplished this objective by exploring whether measurable differences existed in levels of self-determination between successful students with invisible disabilities and successful students without disabilities using a normed instrument based upon Wehmeyer's theory of self-determination. Furthermore, this study provided further evidence of the existence of self-determination via content analysis of responses elicited from the participants, from which themes emerged related to the four essential characteristics of Wehmeyer's theory of self-determination.

The literature review in Chapter Two addressed the most common disabilities reported among students in higher education, revealed the characteristics of successful students with disabilities in higher education, and investigated whether self-determination

appeared to be an important, if not paramount, characteristic among successful students with invisible disabilities who participated in higher education. The literature review also includes a discussion of a theory of self-determination, which served as the basis for the instrument administered to the participants in this study. Additionally, the literature review highlighted the laws pertaining to the provision of extra assistance to students at all levels of education, and how crucial rights and responsibilities of disabled students differ between the various educational levels and between schools. The next chapter also explained, through the review of somewhat limited literature and paraphrased interviews, how a qualifying student received additional assistance in various educational environments (K-12 vs. higher education).

Chapter Three addressed the methodology and procedures used to complete this study, including background information about the instrument completed by the participants and the research site from which the participants were selected. Chapter Four provided the results of the data obtained from this study. Chapter Five included a discussion of the findings, their implications, and recommendations for future research.

## **Chapter Two: Literature Review**

### **Introduction**

This literature review examined some of the major issues surrounding the pursuit of higher education by students who have disabilities, particularly invisible disabilities, in an attempt to suggest which factors enabled some of these students to succeed where others did not. The literature review included a discussion of the post-secondary environment in terms of how it addressed the needs of students with invisible disabilities and how this environment differed from the world of primary and secondary education. The most common types of disabilities observed in higher education were discussed, as were the characteristics frequently observed in successful students with invisible disabilities. Moreover, the literature review introduced a working theory behind a characteristic thought to be responsible for the success of students with disabilities, and in so doing provided justification for the instrument employed to collect quantitative data for this study.

In addition, the literature review addressed the history, purpose, and objectives of significant laws that legislated the provision of extra assistance to students with disabilities at all levels of education. An understanding of the laws extant in primary, secondary, and higher education, as well as a fundamental explanation of how they function in actuality, was crucial for comprehending the various educational worlds that students with invisible disabilities must navigate if they ultimately were to achieve success in a higher education environment. Accordingly, the literature review outlined how additional services were provided to students with disabilities participating in primary, secondary, and post-secondary education.

The relevant body of literature was full of overly general writings that provided cursory descriptions of the provision of extra services to students with disabilities. To allow a deeper investigation into the realities of such provisions within the educational system, the scholarly writings were supplemented with paraphrased interviews with seasoned practitioners from two local primary and secondary school districts, as well as from one of the campuses of the community college district from which study participants were recruited.

### **The Most Common Disabilities in Higher Education**

Several articles that examined the frequency of disabilities in postsecondary institutions revealed that the most commonly reported disabilities were a group of specific conditions called learning disabilities (Abreu-Ellis et al., 2009; Aron & Loprest, 2012; Joyce & Rossen, 2006; Thoma & Getzel, 2005; Skinner, 2004; Troiano et al., 2010) or learning disorders (American Psychiatric Association, 2013). It was the researcher's opinion that many lay people had difficulty understanding what learning disabilities were and how they presented in an individual. Indeed, many outside of the field of education might be surprised to learn that despite having significant difficulty with certain aspects of learning, individuals with learning disabilities usually possessed average or above average intelligence (LDOnline, 2011; Stage & Milne, 1996). While exact definitions varied, many researchers believed learning disabilities had their genesis in an individual's physiological make up and were lifelong conditions (Hadley, 2006; Skinner, 2004; Stage & Milne, 1996).

Stage and Milne (1996) defined learning disabilities as "a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the

acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities” (p. 426). Hadley (2006) reported that learning disabilities were “intrinsic to the individual and presumed to be due to central nervous system dysfunction” (p. 10).

Butterbaugh et al. (2004), when writing about the lateralization of temporal lobe epilepsy and learning disabilities, defined a specific learning disability as “skills that fall below the average peer’s skills” (p. 966), and also reported a biological basis for learning disorders. Hadley similarly posited a biological basis for the existence of a learning disability that may not lend itself to treatment. LDOnline (2011) largely agreed with these ideas but also suggested that learning disabilities can be managed through appropriate academic and/or behavioral interventions, teaching, and support. Klassen (2010) essentially agreed with Stage and Milne and Hadley, and noted that “practitioners providing services to adolescents with LD need to focus not only remediating and compensating for academic deficits, but also on building students’ confidence to manage their own learning” (p. 29).

Stage and Milne (1996) categorized learning disabilities as invisible, explaining that, like other so-called invisible disabilities, they often go unnoticed, and it was not immediately apparent that an individual with a learning disability had additional difficulties performing a task. Stage and Milne also reported that learning disabilities existed only in academic settings. This limited manifestation made it very difficult to readily identify a person with a learning disability.

According to the literature reviewed for this study, learning disabilities were the most prevalent disability in postsecondary education, and the number of students who participated in higher education with at least one learning disability continued to rise. For example, according to Joyce and Rossen (2006), in 1998, approximately 16% of the

disabled student population possessed at least one learning disability, and this percentage increased to approximately 40% twelve years later (p. 1). Other studies largely agreed with these findings but placed the percentage closer to 20% (Thoma & Getzel, 2005, p. 236), 38% (Aron & Loprest, 2012, p. 101), or even greater (Thomas, 2000). Parker and Boutelle (2009) posited an even larger percentage, and wrote that “individuals with learning disabilities (LD) have constituted nearly half of the reported number of postsecondary students with disabilities . . . for several decades” (p. 204).

One study estimated that only approximately one fourth to one half of all students with disabilities identified themselves to their respective disability/access offices and asked for accommodations. This same study suggested that the failure of students to self-identify and ask for accommodations may be one reason why the exact percentage of students with learning disabilities remained unknown (Johnson et al., 2008). Irrespective of the exact percentage of students with learning disabilities, one trend remained clear in the literature reviewed -- in a relatively short period of time, the number of students who possessed a documented disability and participated in higher education increased substantially (Joyce & Rossen, 2006; Skinner, 2004; Thoma & Getzel, 2005; Thomas, 2000; Troiano et al., 2010).

While learning disabilities were the most common disability found in students in the post-secondary environment, other invisible disabilities existed that were more common than visible disabilities. Attention-Deficit/Hyperactivity Disorder (ADD / ADHD) was found to be the next most common disability (Parker & Boutelle, 2009; Thoma & Getzel, 2005). Thoma and Getzel (2005) indicated that approximately 15% of the disabled student population had ADHD (p. 236). Kavakci et al. (2012) estimated the



prevalence of ADHD on one college campus to be closer to 6%, though actual percentage rates differed throughout the country, and ranged from 2% to 8% (p. 112). In the investigator's opinion, one reason for the varied prevalence reported for this disorder may have been that researchers seemingly continued to modify the definition of ADHD.

Kavakci et al. (2012) indicated that ADHD "is characterized by an inability to sustain attention, impulsivity, and hyperactivity" (p.108), and a formal diagnosis usually occurred during an individual's childhood. Parker, Hoffman, Sawilowsky, and Rolands (2011) reported that ADHD was regarded "as a disorder of executive function skills" (pp. 115-116). Parker et al. further defined executive functioning as "an umbrella construct reflecting self-regulatory mechanisms that organize, direct, and manage other cognitive activities, emotional responses and overt behaviors" (p. 116). Given that this impairment impacted such major cognitive abilities, it was not a surprise to the researcher to find literature that indicated people with ADHD reported difficulties in several areas, including educational, occupational, social, and adaptive functioning (Kavakci et al., 2012; Parker et al., 2011). ADHD remained similar to a learning disability in that individuals could not be readily identified as having this disorder; and as a result, they "are often accused of faking or imagining their disabilities" (Disabled World, n.d.), playing around, and/or not trying hard enough (University of Washington, 2012). Wilgosh et al. (2008) agreed, and wrote ". . . an invisible disability creates awkward situations" (p. 208). Indeed, as one online author indicated, "I firmly believe that ADHD is difficult for others to accept and tolerate because it is invisible" (Konigsberg, 2011., p. 1). Irrespective of definitions and rates of prevalence, invisible disabilities such as learning disabilities and ADHD were accepted and appeared in diagnostic manuals such

as the American Psychiatric Association's (2013) *Diagnostic and Statistical Manual of Mental Disorders*.

Other invisible disabilities, including certain vision and hearing impairments, dyslexia and dysgraphia, multiple health issues, and other psychiatric-based disabilities, such as anxiety and bipolar depression, existed at the postsecondary level, and each was thought to represent 6% or less of the student population (Thoma & Getzel, 2005). Little was known about the success of students in postsecondary environments who possessed some of these other invisible disabilities, especially those with a psychiatric origin. Belch (2011) indicated that conditions such as bipolar disorder, borderline personality disorders, and anxiety disorders were "some of the fastest-growing categories of disability in the college student population" (p. 73). Belch's assertion was supported by the observation that "[currently there are] more than 33,000 students with mental illnesses . . . in college and universities [and] that appears to be increasing over time" (Salzer, Wick, & Rogers, 2008, p. 370). Belch astutely observed that despite the growing prevalence of these psychiatric-based disorders, "these disabilities are the least understood and least academically supported on campus" (p. 74).

While ample evidence supported the assertion that more students with disabilities, particularly invisible disabilities, participated in higher education, limited research had been conducted to investigate why many of these disabled students did not graduate. Fortunately, a number of students with invisible disabilities did succeed in postsecondary settings and ultimately graduated (Barber, 2012; Skinner, 2004). Despite researchers issuing calls to examine what factors were responsible for the success of disabled students (Taylor, 2004), to date only a handful of studies explored this topic. Thus, while

the body of literature on this subject largely has yet to be written, a number of researchers suggested that there were several characteristics of successful students with disabilities who participated in higher education (Barber, 2012; Hadley, 2006; Hong, Haefner, & Slekar, 2011; Johnson et al., 2008; Skinner, 2004; Thoma & Getzel, 2005).

### **Characteristics of Successful Students with Invisible Disabilities**

The literature reviewed noted several characteristics of successful students with invisible disabilities who participated in post-secondary education. Skinner (2004) indicated that the most common characteristics of this group included knowledge of the disability and related accommodations, receipt of an explanation of that individual's psychoeducation evaluation (and understanding the same), knowledge of disability law, self-advocacy, accommodations and alternative courses, support systems, perseverance, and goal-setting, as well as adjustment in general and adjustment to postsecondary settings in particular. Thoma and Getzel (2005) posited similar characteristics that included problem-solving, understanding one's disability, goal-setting, and self-management. Hadley (2006; 2007) believed that successful individuals with disabilities also possessed good self-advocacy and spent time developing their sense of autonomy. Moreover, Hadley (2006) argued that for students with certain invisible disabilities to achieve success in post-secondary education, such skills were essential.

Johnson et al. (2008) essentially agreed with Hadley (2006) when they wrote "(a) lack of self-advocacy may also be the key to another potential pitfall for students with learning disabilities in the postsecondary school setting" (p. 1164). Barber (2012) had similar thoughts and found that successful students with disabilities who participated in higher education "had observable personal qualities (i.e., self-awareness, perseverance,

focus, and interpersonal skills) that allowed them to pursue, develop, and maintain positive, long-term relationships with mentors, either on campus or within their natural social circle” (p. 5), as well as “universally high . . . insight about their disabilities and their ability to self-advocate” (p. 5). Akinsola (2010) wrote in a similar fashion about the importance of self-esteem in many areas, including academic achievement, and that good self-esteem boosted academic success.

Other researchers suggested additional characteristics of successful students with learning disabilities and some other invisible disabilities that included factors such as possessing a moderate as opposed to a severe learning disability and a higher verbal intelligence quotient (Skinner, 2004). Stage and Milne (1996) opined that this latter factor may have served as an important predictor of college success because most postsecondary classes were centered around activities that required verbal skills, such as reading, listening to lectures, and completing writing assignments.

In one study, factors that colleges and universities typically employed to predict success in postsecondary environments, such as a student earning an above-average ACT score, proved ineffective at predicting the success of students with learning disabilities (Johnson et al., 2008). The reason for this finding was not definitive; however, the study indicated that students with learning disabilities who received intensive special education, i.e., services in a self-contained setting, might also have a lesser chance of success in postsecondary education due to their previous existence within “a protective environment which may have diminished the need for self-advocacy” (p. 1164). This suggestion largely agreed with Hadley's (2006; 2007) observations that some students with learning disabilities who participated in higher education became accustomed to a more passive

environment while in primary and secondary schools and had not adjusted to become more “active regarding their learning disabilities” (2006, p. 10), and appeared “exceptionally dependent upon the support services they had grown accustomed to while in high school” (2007, p. 12).

As noted previously, Skinner (2004) and Stage and Milne (1996) presented specific characteristics apparently responsible, to some extent, for the success of an individual with a disability in the postsecondary setting that were largely based on an individual’s cognitive abilities. Hong et al. (2011) went a step further and merged these characteristics into a synergistic concept. They advanced the idea that successful college students, both with and without disabilities, “are those who know who they are, what they want, what are their strengths and limitations, and how to achieve their goals. They are self-determined” (p. 175). Other researchers, such as Denney and Daviso (2012), undoubtedly agreed with Hong et al., and wrote “studies show that increased self-determination skills lead to better outcomes for youths with disabilities” (p. 49). The characteristic of self-determination was mentioned frequently within the relevant literature.

### **Self-Determination and Successful Individuals with Invisible Disabilities**

Several articles indicated that self-determination, and to a lesser extent, other related characteristics, was an important characteristic of successful students with disabilities in postsecondary education (Jameson, 2007; Skinner, 2004; Thoma & Getzel, 2005). The literature reviewed for this study presented myriad definitions for the concept of self-determination. Skinner (2004) opined that self-determination acted as an umbrella

term that covered other characteristics, such as self-advocacy. Jameson (2007) similarly articulated that a good level of self-determination could lead to successful outcomes.

Citing several other researchers, Stoner, Angell, House, and Goins (2006) noted the elements of self-determination as “the attitudes, abilities, and skills that lead people to identify their goals for themselves and take the initiative to reach those goals” (p. 22). Definitions of self-determination also encompassed “choice-making . . . self-awareness and self-knowledge,” as well as “having the ability to set goals, persevere, and attain goals” (p. 22). Reeve, Nix, and Hamm (2003) expounded on these tenets of self-determination, and defined self-determination as:

the capacity to determine one’s actions as they emerge from an internally located and volitional causality, rather than from an externally located causality (e.g., reinforcement contingencies) or from an internally located but nonvolitional causality (e.g., drives, intrapsychic pressures). When self-determined, one acts out of an internally located, volitional causality based on an awareness of one’s organismic needs and a flexible interpretation of external events. (p. 388)

Other researchers posited perhaps less academic definitions of self-determination that nonetheless aided in the understanding of this nebulous construct. For example, in their work, Hong et al. (2011) provided a list of respondent definitions of self-determination, which was reproduced in Table 1. These definitions suggested that the concept of self-determination encompassed various other elements.

Table 1.

*Definitions of Self-Determination: Hong, Haefner, and Slekar***Participant Definitions**


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The capability of deciding and acting on one's future plans
Choices made based on free will without interference
Proactively solve problems
Taking responsibility for oneself
The ability to direct one's own life
The ability to know one's strengths and weaknesses
Ability to make decisions, be disciplined, and solve problems
Self-confidence to act with responsibility
Accurate self-assessment of strengths
Engaging in self-reflection, goal-setting, and problem-solving
The ability to set your own goals and then accomplish them
Someone who has vision, short and long term goals, and a plan and the motivation to achieve these
Figuring out yourself, who and what you are, and make decisions on your own
The belief that achievements are under their control and they are willing to exert efforts to attain it

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*Note.* (Hong et. al., 2011).

Other researchers studying self-determination created not only definitions, but entire theories. Deci, Vallerand, Pelletier, and Ryan (1991) argued that being self-determined equated with possessing internal motivation, regulatory processes, and internalized values. Their Self-Determination Theory (SDT) stemmed from motivation and advanced the thought that “when behavior is self-determined, the regulatory process is a choice” (p. 327). Deci et al.’s work had a strong impact on other researchers, including Wehmeyer and Kelchner (1995), who used parts of their work as a basis for subsequent self-determination study. Through such study, Wehmeyer and Schwartz (1998) developed the following definition: “self-determination refers to 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” (p. 4). Wehmeyer’s (1993; 1995) writings appeared to contain elements of human personality and motivation theory, such as those explained by Deci et al. However, as these ideas were not specifically germane to this study, a discussion of the specific psychological theories of human personality and motivation was omitted from this literature review.

Denney and Daviso (2012) did not directly borrow Wehmeyer’s (1995) definition of self-determination, however they included 12 specific components of self-determination that Wehmeyer’s (1998) prior work essentially foreshadowed. These components are included in Table 2.

Table 2.

*Components of Self-Determination: Denney and Daviso*

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Component

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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

Self-knowledge

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*Note:* (Deeney & Daviso, 2012).

While Wehmeyer (1998) recognized components of Deci and Ryan’s (1991) work, several other researchers cited Wehmeyer’s (1993; 1995) work regarding



self-determination. These researchers included Wehmeyer's (1993; 1995) belief that self-determination equated to the individual taking charge of his or her life and acting as the causal agent of change; in this capacity, the individual autonomously made choices and decisions that impacted his or her own life (Jameson, 2007; Thoma & Getzel, 2005).

Stoner et al. (2006) also cited Wehmeyer and Schwartz's (1998) work and explained that three factors "influence the emergence of self-determination: (a) individual capacity or what a person is capable of doing, (b) the opportunities available to an individual, and (c) the supports and accommodations available to an individual" (p. 4). Stoner et al. created a list of elements they believed comprised self-determination, as reproduced in Table 3.

Table 3.

*Elements of Self-Determination: Stoner et al.*

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Elements

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Understanding one's strengths and limitations together with a belief in oneself as capable and effective

Awareness of personal preferences, interests, strengths, and limitations

Anticipating consequences for decisions

Initiating and taking action when needed

Setting and working toward goals

Using communication skills such as negotiation, compromise, and persuasion to reach goals

Striving for independence while recognizing interdependence with others

Persistence

Self-confidence

Pride

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*Note:* (Stoner et al., 2006).

While some researchers considered various pieces of Wehmeyer's (1995) extensive theory of self-determination as they furthered their own work in this growing

area, the literature reviewed provided no universal consensus for the definition of self-determination or how it developed. Indeed, “self-determination cannot be defined simply through a list of behaviors or non-behaviors, since essentially any behavior or action could be considered within the realm of self-determination” (Stoner et al., 2006, p. 4). Nevertheless, as indicated, many researchers posited similar traits that constituted self-determination and offered explanation of its genesis that suggested that self-determination was a collection of thoughts and beliefs that ultimately manifested in an individual’s behavior (Denney & Daviso, 2012; Stoner et al., 2006; Wehmeyer, 1993).

### **Working Theory of Self-Determination and Measurement Instrument**

For the purposes of conducting this study, the investigator selected one theory of self-determination and collected and analyzed data through the use of an instrument based on that theory. The goal of this approach was to observe what, if any, differences existed between the populations that participated in this study.

Wehmeyer (1993) notably proffered that self-determination was not a characteristic of an individual per se, but rather was “best conceptualized as an outcome and described by essential component elements which define self-determination in terms or processes” (p. 4). He further noted that “becoming self-determined is a complex process” (p. 6) that was “characterized by gradual changes leading to a particular result or a series of actions or operations conducive to an end” (p. 4) and that consisted of “interacting factors endogenous and exogenous to the individual” (p. 6). Wehmeyer (1993) explained that these interacting factors included “opportunities to explore, take risks and learn from their consequences . . . participating in decisions and making choices and experiencing control” (p. 6). Thus, an individual became more self-determined

through the gradual acquisition of these various traits and subsequent engagement in these positive behaviors (Wehmeyer et al., 1996).

Wehmeyer and Schwartz (1998) reported that there were “eleven component elements that appear particularly important to self-determined behavior” (p. 5); these “interrelated” elements included (a) choice-making skills, (b) decision-making skills, (c) problem-solving skills, (d) goal-setting and attainment skills, (e) self-management skills, (f) self-advocacy skills, (g) leadership skills, (h) internal locus of control, (i) positive attributions of efficacy and outcome expectancy, (j) self-awareness, and (k) self-knowledge (p. 5). For Wehmeyer and Schwartz, “the development and acquisition” of these component elements resulted in an individual who displayed four essential characteristics “that define self-determined behavior” (p. 5). These characteristics included autonomy, self-regulation, psychological empowerment, and self-realization (Wehmeyer et al., 1996).

Wehmeyer et al. (1996) considered behavior to be autonomous “if the person acts (a) according to his or her own preferences, interests, and/or abilities and (b) independently, free from undue external influence or interference” (p. 632). Wehmeyer et al. (1996) explained that autonomy included an element of interdependence, as “most people are not completely autonomous or independent” (p. 632) because most people interacted with others, as well as their environment, on a daily basis.

Self-regulation, the second characteristic posited by Wehmeyer et al. (1996), involved making “decisions about what skills to use in a situation” based on an individual’s skill set and ability to create and execute a “plan of action” (p. 633). Contained within the characteristic of self-regulation were the concepts of self-

monitoring, self-evaluation, and self-reinforcement. Self-monitoring involved the “observation of one’s social and physical environment and one’s actions in those environments” (p. 633). Self-evaluation referred to an individual’s ability to make decisions about his or her behavior in regard to what he or she did in relation to what he or she should do. Self-reinforcement was “the self-administration of consequences contingent on the occurrence of target behaviors” (p. 633). Accordingly, an individual whose behavior included these concepts demonstrated his or her ability to self-regulate (p. 633).

The third essential characteristic posited by Wehmeyer et al. (1996), psychological empowerment, comprised multiple areas of “perceived control” (p. 633). This control included aspects of an individual’s personality, cognition, and motivation. Wehmeyer et al. (1996) explained that individuals who were psychologically empowered were “people who are self-determined [and] act based on their beliefs that (a) they have the capacity to perform behaviors needed to influence outcomes in their environment and (b) if they perform such behaviors, anticipated outcomes will result” (p. 633).

Self-realization, the fourth essential characteristic of self-determination posited by Wehmeyer et al. (1996), referred to an individual’s ability to be aware of his or her abilities and limitations. Armed with this knowledge, these individuals acted in such a way to maximize their abilities for their benefit. Wehmeyer et al. described this awareness of one’s abilities and limitations as “self-knowledge,” which “forms through experience with and interpretation of one’s environment and is influenced by evaluations of others, reinforcements, and attributions of one’s own behavior” (p. 633).

Based on these ideas about the origin and development of self-determination, Wehmeyer and Kelchner (1995) designed the Arc Self-Determination Scale in 1995. This scale provided a quantitative measurement of an individual's level of self-determination. Upon the completion of an Arc assessment, the respondent received a series of scores that indicated how he or she compared to the normed population with regard to the four essential characteristics of self-determination (called subdomains), as well as a total self-determination score. Theoretically, higher subdomain scores and a higher total self-determination score equated to higher levels of self-determined behavior and self-determination.

In constructing the Arc Self-Determination Scale, Wehmeyer and Kelchner (1995) "followed a dual process" (p. 56). The first process involved the researchers observing "the characteristics of adults with cognitive disabilities who were identified as self-determined and those who were not self-determined were examined and those characteristics that supported self-determined behavior were isolated" (p. 56) and selected for inclusion in the scale. The second process included identification and inclusion of items on "the Scale which mirrored the characteristics indicated in the research process" (p. 56). When it was not possible to adapt questions from existing instruments to measure the four essential characteristics, Wehmeyer and Kelchner created new questions.

Using various statistical operations, the Arc instrument was first normed on a sample of approximately 400 individuals with cognitive disabilities (Wehmeyer, 1995). After completing the initial instrument, Wehmeyer and Kelchner (1995) conducted a pilot test with 261 "secondary-age students with cognitive disabilities" who served as

participants (p. 71). Wehmeyer and Kelchner then performed a factor analysis. They verified the results, and conducted further testing with approximately 500 more children with cognitive disabilities. Further analysis was completed on these results, and “based on these analyses it was concluded that The Arc’s Self-Determination Scale has adequate construct validity” (p. 75).

While Wehmeyer and Kelchner’s 1995 instrument was designed to measure levels of self-determination in younger individuals with cognitive disabilities, Jameson (2007) designed her adapted version to measure levels of self-determination in individuals more representative of the general population, including individuals who participated in higher education. Wehmeyer validated Jameson’s design modification, and Jameson subsequently used the adapted version in a study that involved post-secondary students (Jameson). Therefore, the investigator believed that administering Jameson’s version of the Arc Self-Determination Scale for the present study was appropriate. Before administering this scale, the investigator received permission from both Wehmeyer and Jameson. Further discussion of the instrumentation employed in this study appears in Chapter Three.

### **Assistance at the Primary, Secondary, and Post-Secondary Levels**

Keogh (2007) wrote that “the notion of equal educational opportunity for all students, including those with disabilities, is now part of our national culture” (p. 66). However, the researcher opined that statement as a relatively recent reality. Indeed, Aron and Loprest (2012) and Keogh (2007) emphasized that the equal educational opportunities evident today for all students were the result of several decades of evolving public policy, which involved substantial political and societal turmoil. Keogh (2007)

explained, “It is important to remember that many of these changes in educational policies and practices came about because students with disabilities and their parents exercised their civil rights” (p. 66). Aron and Loprest essentially echoed Keogh’s writing, and reported “the nation’s current approach to educating children with disabilities is the product of dramatic shifts in disability law and public policy . . . before the 1970s no major federal laws specifically protected the civil or constitutional rights of Americans with disabilities” (p. 99).

The literature reviewed for the present study revealed three significant laws that provided the legal foundation for the provision of extra assistance to students with disabilities who participated in primary, secondary, and post-secondary education (McVey, n.d.). Two of the three laws had their origins in the Civil Rights Movement of the 1960s, with the subsequent codification of these laws in the early and mid-1970s (Keogh, 2007). The third law was codified in 1990 (Americans with Disabilities Act, 2009).

The first significant law that provided some protection for individuals with disabilities who participated in education was the Rehabilitation Act of 1973, particularly Section 504 (Aron & Loprest, 2012). The second such law, originally called the Education for All Handicapped Children Act of 1975, and sometimes more informally, PL 94-142 (Keogh, 2007), served as the progenitor of today’s Individuals with Disabilities Education Improvement Act. Through its various iterations, this law became the cornerstone of special education in the United States (Aron & Loprest, 2012; Keogh, 2007). The third law, the Americans with Disabilities Act (2009), technically applied to primary and secondary education as well but primarily provided protection for disabled

students participating in post-secondary education (S. Jones, personal communication, November 4, 2013).

Section 504 of the Rehabilitation Act of 1973 and the Education for All Handicapped Children Act of 1975 both encapsulated the concept of access to education for all students with disabilities (Aron & Loprest, 2012; Keogh, 2007). With regard to the Rehabilitation Act, Aron and Loprest (2012) wrote, “for the first time, a federal law stated that excluding or segregating an individual with a disability constituted discrimination” (p. 99). Keogh (2007) indicated, “PL 94-142 was landmark legislation as it assured *access* to public education for all children, without regard for disabling condition” (p. 67). Keogh further explained why these civil rights-based laws, especially PL 94-142, were important when she wrote, “in prior times children who did not ‘fit’ schools were often excluded; the effect of the 94-142 legislation was to turn it around so that schools were mandated to ‘fit’ the needs and abilities of the child” (p. 67).

Aron and Loprest (2012) explained key elements of Section 504 of the Rehabilitation Act of 1975 and the Education for All Handicapped Children Act of 1975. Specifically, Section 504 applied to all public schools that received federal funds and further expounded that

the law entitles children to a public education comparable to that provided to children who do not have disabilities, with disability broadly defined to include any person who has a physical or mental impairment that substantially limits one or more major life activities, has a record of such an impairment, or is regarded as having such an impairment. (Aron & Loprest, p. 99)



In contrast to the more general nondiscriminatory aims of Section 504 of the Rehabilitation Act of 1973, Aron and Loprest (2012) noted the more circumscribed and specific objectives of the Education for All Handicapped Children Act, which in 1990 was renamed the Individuals with Disabilities Education Act, and explained that “[the] IDEA established the right of children with disabilities to attend public schools, to receive services designed to meet their needs free of charge, and, to the greatest extent possible, to receive instruction in regular education classrooms alongside nondisabled children” (p. 99). Indeed, Aron and Loprest (2012) emphasized the key distinction between the Rehabilitation Act and the IDEA:

While Section 504 helped to establish greater access to an education by removing intentional and unintentional barriers . . . [the IDEA was] a more proactive law [that] protect[ed] the educational rights of children” and “established the right of children with disabilities to attend public schools, to receive services designed to meet their needs free of charge, and, to the greatest extent possible, to receive instruction in regular education classrooms alongside nondisabled children. (p. 99)

Keogh (2007) preceded Aron and Loprest (2012) and wrote, “PL 94-142 contained specific language guaranteeing many things we now take for granted: A free and public education, due process, nondiscriminatory assessment, and an Individual Educational Plan (IEP) for every child [who receives special education]” (p. 67). Regarding the passage of PL 94-142, Keogh wrote, “access to school is now a given for all students with disabilities. Assessment and identification procedures have been changed to minimize discrimination” (p. 67). Finally, Keogh emphasized the importance

of these changes: “these advances are to be valued and maintained as they provided the legal and ethical bases for special education practices” (p. 67).

The literature reviewed impressed upon the investigator that Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act were civil rights laws (Vickers, 2010). They were anti-discrimination laws that guaranteed access to education for students with disabilities who were otherwise qualified students (Aron & Loprest, 2012; Keogh, 2007; Rehabilitation Act of 1973), at any level of education. In contrast, IDEA was much more specific, and applied only to students in the primary and secondary educational environments (Aron & Loprest, 2012; McVey, n.d.); it is an “educational statute” (Vickers, 2010, p. 7) as opposed to a civil rights statute.

Aron and Loprest (2012) explained this contrast by focusing on what it meant to be disabled and thus eligible for assistance under these laws. To be eligible for assistance under the Rehabilitation Act, a student must possess an impairment (physical or mental) that “substantially limits one or more major life activities” (p. 99). For a student to be eligible for assistance under the IDEA, he or she must meet more restrictive criteria in order to have satisfied a “two-pronged eligibility standard” (p. 99), that mandated that the student possessed at least one of 14 specific impairments (Table 4) and required special education as a result.

To summarize this important distinction, services provided under the auspices of the Rehabilitation Act required an impairment that substantially limited one or more major life activities, while services provided under the Individuals with Disabilities Education Act (IDEA) required a student to possess one or more of 14 specific

impairments that, in the absence of some form of special education, compromised the student's learning.

Table 4.

*Individuals with Disabilities Education Act: Categories of Disabilities*

Category
Intellectual Disability (formerly mental retardation)
Hearing impairments, including deafness
Speech or language impairments
Visual impairments, including blindness
Serious emotional disturbance
Orthopedic impairments
Autism
Traumatic brain injury
Other health impairments
Specific learning disabilities
Deaf-blindness
Multiple disabilities requiring special education and related services

*Note:* (Individuals with Disabilities Act)

This requirement that the impairment must have compromised the individual's learning meant that "unlike Section 504, IDEA does not cover all children with disabilities" (Aron & Loprest, 2012, p. 99). While a substantial limitation in any major life activity potentially triggered Section 504 protections, only a limitation in the arena of education potentially triggered IDEA protections.

### **Results of the Application of Law in Various Educational Environments**

In 2011, Hadley wrote, "the college environment for students with disabilities, however, does not include the same extent of support that is required in high school settings" (p. 77). To this end, Sahlen and Lehmann (2006) reported that "postsecondary institutions have an obligation to level the playing field for students with disabilities" (p.

28). In discussing learning disabilities, Hadley (2007) articulated the operant legal standard and outcome from the operation of law regarding the provision of reasonable accommodations for students with disabilities:

Institutions of higher education are required to provide “reasonable” services so that qualified students with learning disabilities will have equal access to academic programs. After equal access is provided, it is the student’s responsibility to progress in his or her classes. (p. 10)

A summary created by McVey (n.d.), Faculty Development Specialist, Project Connect at Henderson State University, succinctly compared and contrasted the real-world impact of these laws. Her work importantly included a comparison of the differences between the primary and secondary environments and the post-secondary environment in terms of the applicability of these laws. This comparison indicated that in the primary and secondary educational environments, the IDEA, Americans with Disabilities Act, and Section 504 of the Rehabilitation Act applied, while in the post-secondary environment, only the Americans with Disabilities Act and Section 504 of the Rehabilitation Act applied. The IDEA, by definition, only applied to students until they turned 21 or graduate from high school (Individuals with Disabilities Education Act of 1990). As a result, there was no special education in higher education (Hadley, 2006). The reason for this was straightforward.

In both primary and secondary schooling, a legal duty existed for the educational institution to seek out and subsequently assure that qualified disabled students received, if necessary, educational modifications and/or accommodations; however, in the postsecondary environment, no legal duty existed (Hadley, 2006; IDEIA, 2004; McVey,

n.d.). Accordingly, in order to receive some reasonable accommodations in higher education, the student must have voluntarily self-identified to his or her respective educational institution as possessing a disability and he or she must have requested reasonable accommodations (Field, Sarver, & Shaw, 2003; Hadley, 2006; 2007; 2011; Janiga & Costenbader, 2002; McVey, n.d.; Johnson et al., 2008). The student then must have complied with his or her institution's policies for the provision of reasonable accommodations, as well as virtually the entire "burden of responsibility for obtaining services shifts" (Sahlen & Lehmann, 2006, p. 28) to the student.

This shifting of the burden from the school (at the primary and secondary levels) to the student (at the post-secondary level) regarding aspects of the provision of accommodations made Hadley's (2006) outward manifestations of self-determination, namely, self-advocacy and autonomy, all the more critical. Students in higher education who had disabilities must have exhibited these characteristics to even begin the process of receipt of reasonable accommodations. Indeed, according to McVey (n.d.), "students must be able to communicate what their disability is, their strengths, weaknesses, how the disability impacts and functionally limits major life activities. They must be able to identify and justify any requested accommodations" (p. 6).

### **Provision of Accommodations/Modifications in Primary and Secondary Schools**

While school districts may differ somewhat with regard to how they provided accommodations and/or modifications for a student, the general philosophy behind these provisions centered primarily around the three laws with which all primary and secondary schools were bound to comply, namely, IDEIA, Section 504 of the Rehabilitation Act of 1975, and the Americans with Disabilities Amendments Act (ADAA). IDEIA was most

commonly regarded as the law that governs special education, while Section 504 of the Rehabilitation Act of 1975 and the ADA governed other reasonable accommodations that allowed a student to receive extra assistance at school. A student who required and was found to be eligible for assistance could receive such assistance through a combination of two or more of these laws, but for the purposes of this literature review, these laws and how students received assistance under them were discussed separately.

The National Dissemination Center for Children with Disabilities (NICHCY) website (2011) presented a process that consisted of 10 basic steps required for a child to receive special education. The first step involved identifying a child who possibly required special education and/or related services. One way this identification occurred was through 'Child Find', which referred to the processes school districts used to locate students who might need special education. The other way was through a referral or a request for an evaluation.

According to NICHCY (2011), the second of the ten steps consisted of an evaluation. Additionally, consent from the child's parent/guardian must have been obtained prior to the evaluation, and strict timelines must have been maintained throughout the evaluation process. The evaluation must have been conducted by a qualified professional who examined areas that related to the suspected IDEA disability.

The third step continued; after conducting an evaluation, eligibility for special education services was determined. Fourth, according to the NICHCY (2011) website, eligibility ultimately was determined by a team of professionals, and if the parent/guardian disagreed with the determination, then he or she may challenge it. If the child was not found eligible for special education, then the special education

identification process ended at this point. Fifth, if the child was found eligible, an Individualized Education Plan (IEP) meeting was scheduled. Sixth, at this meeting, the specific needs of the student, with particular emphasis on his or her educational needs, were discussed, an IEP created, and consent from the parent/guardian to implement the plan obtained.

The seventh step consisted of the student's receipt of the specialized education contained in the IEP. Step eight involved measurement of the student's progress toward his/her goals and report of this progress to the parent/guardian. During step nine, the educational team reviewed the IEP and ascertained whether adequate progress was made; and if necessary, the IEP goals were modified. Step ten involved conducting a periodic reevaluation to determine whether the child continued to be considered as having a disability (NICHCY, 2011).

To clarify this process and obtain additional information about the operative laws extant in the primary and secondary educational environments and how they manifested in an actual classroom, the investigator interviewed a special educator (T. Deering, personal communication, October 6, 2013). Deering was asked about how primary and secondary schools fulfilled their legal duty to provide support to students who required accommodations and modifications. She readily agreed with the information presented by the NICHCY and indicated the existence of two primary paths through which students who required accommodations and/or modifications received assistance. The most common path was through special education by way of an IEP, and the second path was through services delivered via an Individual Accommodation Plan (IAP). Deering pointed out that IEPs were governed by provisions of the IDEIA, while IAPs (commonly

referred to as 504s) were governed by Section 504 of the Rehabilitation Act of 1975 and, to some extent, the ADA. Additionally, she noted that several of her students' parents believed that IAPs were special education. She explained that while some accommodations found in an IAP appeared similar to those found in some IEPs, in actuality, only IEPs were considered special education (and thus under the auspices of the IDEIA).

Deering then was asked to explain how the special education process worked in typical primary and secondary schools. She responded that there were two main activities involved in making special education work: (1) identifying a student with a disability and (2) providing special education services to a student with a disability. With regard to the first activity, Deering explained that there are two types of students involved in the special education process: (1) students who have been identified with one or more of the disabilities defined by the IDEIA and (2) students who were suspected of having one or more of the disabilities defined by the IDEIA (T. Deering, personal communication, October 6, 2013).

The process of formally identifying students suspected of having a disability was relatively straightforward, though in Deering's opinion, often time consuming (T. Deering, personal communication, October 6, 2013). The formal identification process began with either a parent/guardian request or a school-based referral. After reviewing the existing data (information that led one or more individuals to suspect an IDEIA disability) and obtaining parent/guardian authorization, the student received an evaluation by a qualified examiner (such as a school psychologist, psychological examiner, and/or speech/language pathologist) to determine whether that student met eligibility criteria for



an educational diagnosis or identification. Deering reported that technically, students who received special education services must have been ‘identified’ as having a disability (as defined by the IDEIA), though in everyday parlance, a student was ‘diagnosed’ as having a disability.) Within the school, the terms were used synonymously, according to Deering (T. Deering, personal communication, October 6, 2013). If the multidisciplinary team (comprised of the parent/guardian, examiner(s), teacher(s), school administrator(s), etc.) found that the student met the criteria, then the student was eligible for special education.

Deering explained that the eligibility criteria for the categories of disabilities were located within various regulations promulgated by her state’s Department of Elementary and Secondary Education and were based upon rules and policies that emanated from the IDEIA. She indicated that a discrepancy model was used to identify many of the more common disabilities that she encountered in her day-to-day work, such as specific learning disabilities and intellectual disabilities (formerly, mental retardation). A discrepancy model, as described by Deering, was a model for special education identification and eligibility in which nationally normed tests of intelligence and achievement were individually administered to the student, and the student’s actual performance was compared against his or her predicted performance. The difference between the actual and predicted performance was regarded as the discrepancy. Should the discrepancy be great enough (as defined by the regulations), which meant that the student performed significantly below his or her predicted performance, the student could be found eligible for special education (T. Deering, personal communication, October 6, 2013).

Deering provided an example of the discrepancy model with regard to the identification of a student with a learning disability in math. She explained that a theoretically average student possessed an intelligence quotient of 100. She explained that 100 was the exact average intelligence score on every intelligence test with which she was familiar, though she admitted that there was an average range of scores several points above and below 100. Deering further explained that while the more well-regarded intelligence tests purported to measure various cognitive abilities (i.e., verbal and nonverbal), no differences existed between any of these measured cognitive abilities; and as a result, a theoretically average student possessed a score of 100 in every measured facet of an intelligence test. Similarly, the same theoretically average student should score 100 on every math achievement test. Therefore, in her example, a student who scored 100 on an intelligence test and 78 on an achievement test in the area of math had a discrepancy of 22 and based upon state criteria for a discrepancy between actual and predicted performance, could possibly have been identified as learning disabled in the area of mathematics and eligible for special education (T. Deering, personal communication, October 6, 2013).

Deering explained that in addition to this discrepancy model, there was a growing movement toward alternative methods used to identify students for special education. Response to Intervention (RTI) was a system whereby students who experienced academic and/or behavioral challenges received progressively more intense, data-driven interventions that addressed their difficulties. Although RTI models varied between districts, most districts who used such a system adopted a three-tier approach. In the first tier, all students received common instruction and support with regard to both academics

and behavior. Should a student have difficulty with common instruction and support in either area, he or she moved to the second tier for additional instruction and/or support. Should the second tier of more intensive interventions not prove successful, the student moved to the third tier for even more support. Deering explained that in many RTI models, continued difficulty at the third tier lead to a referral for a special education evaluation. In other RTI models, the third tier was special education. Deering indicated that RTI flourished in some areas of the country, while in other areas it was not used (T. Deering, personal communication, October 6, 2013).

With regard to students who possessed at least one disability as indicated by the IDEIA, the identification process was also relatively straightforward, and occurred in one of two ways. First, the student was required to be reevaluated periodically to determine whether he or she continued to meet eligibility standards for special education with his or her current identification, and/or determined whether he or she met eligibility criteria for another disability. Second, for a student who transferred from another district or from out of state, a team of qualified professionals determined whether he or she met the state's eligibility criteria for having a disability and was eligible to receive special education services (T. Deering, personal communication, October 6, 2013).

Deering explained that once a student was found eligible for special education through one or more of the methods previously described, the multidisciplinary team of professionals convened an IEP meeting. Deering described an IEP as a legal document that provided the free and appropriate education that a student with an IDEIA disability required. In consideration of the strengths, weaknesses, and abilities of the special education student, it provided a specifically designed education plan and contained

educational objectives and goals. The team reviewed the IEP annually and ensured that the student was progressing toward his or her goals. If changes to the goals, instructional methods, or provision of the special education services were needed, the team revised the IEP accordingly. Moreover, most children were reevaluated periodically and the team determined whether they still had a disability as defined by the IDEIA. Deering indicated that most schools with which she was familiar followed this type of procedure. She further opined that special education was the most common way in which students who required assistance in the form of accommodations or modifications received the same (T. Deering, personal communication, October 6, 2013).

While IEPs appeared more common to Deering than other options, IAPs served as another avenue through which many students received accommodations. IAPs usually were referred to as 504 Plans in primary and secondary schooling (R. Kozuszek, personal communication, October 5, 2013) because they were the result of a school implementing provisions of Section 504 of the Rehabilitation Act of 1975 which, among other provisions, specified accommodations for students with disabilities that substantially impacted a major life activity (United States Department of Education, 2014). As with IEPs, schools that received public monies were required, when applicable, to create and implement IAPs in order to provide for the free and appropriate education of their students (R. Kozuszek, personal communication, October 5, 2013).

School districts varied with regard to how 504 Plans were created, implemented, evaluated, and reviewed. To gain insight into how school districts followed provisions of Section 504 of the Rehabilitation Act of 1975, the investigator interviewed Kozuszek (R. Kozuszek, personal communication, October 5, 2013). Kozuszek created, implemented,

reviewed, and evaluated 504 Plans in her role as a school psychologist at a primary and secondary school district.

Kozuszek, who also identified students under the auspices of the IDEIA, explained that a 504 Plan provided reasonable accommodations for a student with a disability that substantially limited a major life activity. Kozusek reported that what qualified as a major life activity was vague by legislative design; but it included activities such as: breathing, walking, taking care of one's personal needs, writing, learning, eating, and focusing. Kozuszek indicated that the key distinction between an IEP and an IAP was that the latter, through reasonable accommodations, sought to "level the playing field and guarantee access" (R. Kozuszek, personal communication, October 5, 2013) for a student with a disability that substantially limited a major life activity; whereas the former created a specialized plan of instruction that may or may not contain accommodations and/or modifications due to the effects of a specific disability (Table 4) that impacted a student's learning. Kozuszek elaborated on what she meant by "leveling the playing field" and explained that the end result of both an IEP and an IAP was that a student who required assistance received help; but the objective of a 504 Plan was to negate the effects of a disability, through reasonable accommodations, and in so doing, remove the barriers, caused by the disability, to the student's access of his or her education. Kozuszek confirmed that, Section 504 of the Rehabilitation Act of 1975 was a law that forbids discrimination against individuals who, but for their disability, otherwise were able to participate in their environment or activity. Kozuszek indicated that there was some interplay with the ADAA in this regard as well, but for the most part, aspects of the

IAP/504 process with which she was familiar stemmed from Section 504 of the Rehabilitation Act of 1975 (R. Kozuszek, personal communication, October 5, 2013).

Kozuszek explained that the process through which a student received assistance via a 504 Plan took many forms, depending on the district. She reported in some primary and secondary school districts, nurses created 504 Plans. In point of fact, the investigator consulted with another school psychologist who worked in a different district from Kozuszek, and this school psychologist confirmed that in both her current district and the district in which she worked immediately prior, nurses wrote the 504 Plans (M. Ahrens, personal communication, October 7, 2013). Kozuszek explained that the reason for this was that the overwhelming majority of disabilities that became an issue for students who sought a 504 were diagnosed by a physician or other medical provider and were the result of some sort of a medical disorder. However, she also pointed out that other disabilities, including invisible disabilities, such as intellectual disabilities and learning disabilities, did not require a medical diagnosis and were considered capable of substantially limiting a major life activity. In these cases, diagnoses originated from other professionals, such as psychologists, licensed professional counselors, licensed clinical social workers, and certain types of nurses. Kozuszek explained that in her district, before she was hired to create, evaluate, and monitor students' 504 Plans, the school counselors were responsible for all aspects of these plans (R. Kozuszek, personal communication, October 5, 2013).

Asked to explain the process her district used to create a 504 Plan for a student who required assistance because of a disability, Kozuszek responded that the process began sometimes with the school, but usually with the student's parent or guardian by way of a referral or request. Shortly after the referral or request was made, Kozuszek met

with the school counselor and reviewed the data submitted and considered whether more information was needed to determine: (1) if the student had a disability and (2) whether the disability substantially impacted a major life activity. If the information was insufficient to make this determination, Kozuszek informed the parent/guardian and requested written permission to conduct an evaluation (R. Kozuszek, personal communication, October 5, 2013).

Kozuszek explained that upon the completion of her evaluation, she met with the student's parent/guardian, school counselor, and the student's teacher(s) and formally determined whether the student had a disability that substantially impacted a major life activity. If the student was found to have such a disability, Kozuszek indicated that she then, in consultation with the student's parent/guardian, school counselor, and teacher(s), wrote a 504 Plan. If the student did not have such a disability, he or she was deemed ineligible for a 504 Plan. Once the student had a 504 Plan, Kozuszek's district required her to meet annually with the student's parent/guardian, teacher(s), and school counselor and together they evaluated the efficacy of the plan. If changes to any aspects of the plan were required, or if the student no longer required a 504 Plan, decisions were made during this annual meeting (R. Kozuszek, personal communication, October 5, 2013).

Kozuszek indicated two other noteworthy points about the 504 evaluation process. First, she explained that she was required to periodically reevaluate students who have 504 Plans. In her district, these reevaluations were completed at the end of the year for students transitioning from 6th to 7th grade and from 8th grade to high school, as well as for students graduating from high school. Second, she explained that students who transferred into her district from other districts and who received 504 services in the prior

district, also were required to receive an evaluation to determine whether they had a disability that substantially impacted a major life activity (R. Kozuszek, personal communication, October 5, 2013).

### **Provision of Reasonable Accommodations at the Study Site Community College**

The laws extant in post-secondary environments operated somewhat differently than those at the primary and secondary levels. Hadley (2006) undoubtedly would have argued that the ‘leveling of the playing field’ was the result of the operant laws that provided for reasonable accommodations to students with disabilities who participated in higher education; and that no other obligation existed for postsecondary institutions to actively seek out and provide additional assistance to these students. Laws governing post-secondary education assured educational access only; they did not mandate the creation of specialized educational programming, as the laws governing primary and secondary education did.

The literature lacked sufficient specific guidance regarding the processes that post-secondary institutions employed to fulfill their legal obligations regarding the provision of reasonable accommodations to students with disabilities. Vickers (2010) reported that these processes varied between post-secondary institutions. (Field et al., 2003; Hadley; 2006; 2007; 2011; Janiga & Costenbader, 2002; Johnson et al., 2008; McVey, n.d). Common across post-secondary institutions, though, was the fact that the burden of requesting reasonable accommodations remained with the student, who must have voluntarily self-identified as possessing a disability to the institution’s access/disability office, and requested reasonable accommodations, and when required provided documentation deemed adequate by the institution regarding the disability.



Additionally, Vickers (2010) noted that at some institutions, a single person was responsible for deciding what accommodations were reasonable for a disabled student, while at other institutions, a committee made this decision. Vickers' (2010) work highlighted the fact that "some campuses appear more willing to grant accommodations than others" (p. 8) and that no uniformity existed regarding the provision of reasonable accommodations.

Vickers (2010) referenced a 2007 report from the National Joint Committee on Learning Disabilities (NJCLD), which stated that there was a "disconnect" between the nature and extent of disability documentation generated during a student's public school career and the documentation required to access services at the postsecondary education level" (p. 1). Indeed, this disconnect may have been the result of the operation of different laws that affected the provision of extra services in different educational environments. The report explained:

as they (students with disabilities) transition, students find themselves moving from documentation for eligibility, instruction, and intervention needed at the secondary level to documentation for eligibility, access, and accommodations needed at the postsecondary level. Documentation developed for the purposes of the secondary school often does not meet the needs or requirements of the postsecondary institution. This gap in the different purposes and types of documentation continues to widen as educational reforms under the No Child Left Behind Act (NCLB) and the Individuals with Disabilities Education Improvement Act (IDEA 2004) require more instructional and intervention information regarding students' educational outcomes. (NJCLD, 2007, pp. 1-2)

Vickers' (2010) work highlighted the current struggle that many students with disabilities faced when seeking reasonable accommodations in higher education, namely, the different standards and requirements regarding the provision of reasonable accommodations in a post-secondary educational environment in general, and differences between specific post-secondary institutions. Vickers' work also indicated that some organizations, including NJCLD, were aware of the apparent disconnect, and suggested that something must be done about this problem.

To learn how some post-secondary institutions provided accommodations for their students with disabilities and how these institutions and students navigated the apparent disconnect regarding documentation between secondary and post-secondary environments, the investigator interviewed Jones (false name used to maintain anonymity) on November 4, 2013. Jones served as the Manager of the Access Office at one of the campuses from which participants were solicited for this study. She confirmed much of the information previously discussed, including the laws under which she and her team functioned, namely, ADA and the Rehabilitation Act of 1973, Section 504, provided the foundation for reasonable accommodations to students with disabilities that substantially limited a major life activity. She also confirmed what researchers such as Vickers (2010), Sahlen and Lehmann (2006), and Hadley (2006) reported regarding the provision of accommodations in the post-secondary environment. Indeed, the general responsibility for the receipt of reasonable accommodations shifted from the educational institution at the primary and secondary level to the individual student at the post-secondary level (S. Jones, personal communication, November 4, 2013) in that the

student must have initiated the request for accommodations and participated in the institution's process for the provision of the same. Jones also confirmed that the majority of the students who visited her office and sought reasonable accommodations had some form of special education prior to their enrollment in the post-secondary institution.

During the interview, Jones explained the process her institution used to provide reasonable accommodations to its students. She indicated that the process changed slightly in the past year or two with regard to how she and her team collected and evaluated the data required to establish and document a disability. This change reflected new guidance issued by the Association on Higher Education and Disability (AHEAD, 2012). She reported that the new AHEAD guidance was largely the result of the disconnect illustrated by Vickers (2010) and the NJCLD (2007) report (S. Jones, personal communication, November 4, 2013). Jones opined that for many years, the processes post-secondary institutions employed to provide reasonable accommodations to students with disabilities were burdensome to the student and relied on varying (across different institutions) and often rigid criteria. She cited examples of students required to submit recent cognitive and/or academic achievement testing and other documentation that demonstrated their respective disabilities. She indicated that in many cases, when students could not produce certain documentation, they were required to obtain them, and at their own expense (S. Jones, personal communication, November 4, 2013). Jones acknowledged that colleges correctly required documentation to support requests for reasonable accommodations; but believed the guidance from AHEAD balanced an institution's requirement for determination of and documentation of a disability with the student's ability to provide the same while offering a basis of uniformity between post-

secondary institutions. Jones indicated that the new guidance was still “catching on” (S. Jones, personal communication, November 4, 2013) among her colleagues at other institutions, but she believed it ultimately helped relieve the student of some of the burden caused by prior processes.

The AHEAD (2012) guidance specified a three tier process to support documentation requests. According to Jones each tier received more weight by the post-secondary evaluator than the following tier (S. Jones, personal communication, November 4, 2013). The first tier was the student’s self-report. The guidance indicated “a student’s narrative of his or her experience of disability . . . is an important tool which, when structured by interview or questionnaire and interpreted, may be sufficient for establishing disability and a need for accommodation” (p. 2). The second tier was observation and interaction between the student and the evaluator. The guidance stated “experienced disability professionals should feel comfortable using their observations of students’ language, performance, and strategies as an appropriate tool in validating student narrative and self-report” (p. 2). The third tier was information from external parties. The guidance offered examples that included: health care professional assessments, IEPs, and teacher observations.

Despite incorporating the AHEAD guidance, Jones indicated that the process for the receipt of reasonable accommodations remained generally straightforward (S. Jones, personal communication, November 4, 2013). The first step required the student to formally self-identify as having a disability and that he or she sought accommodations. The student accomplished the formal self-identification process by attending an initial appointment with Jones and/or a staff member. During this appointment, Jones and/or her

staff engaged the student in a conversation about the sorts of accommodations he or she received in the past, and what sorts of accommodations he or she requested now to be successful at the post-secondary institution. Jones explained this appointment was important as the student and the staff member engaged in conversation that fulfilled the first two and sometimes all three of the AHEAD tiers. Additionally during this appointment or after the appointment, the student provided Jones and/or her staff with any third tier documentation regarding the disability (S. Jones, personal communication, November 4, 2013). After the appointment Jones or any another individual who talked with the student met as a committee and discussed each student and his or her requests. At this meeting the committee evaluated information obtained from the three tiers and determined disability as well as which accommodations were approved or not approved for each student. Jones pointed out that the committee followed the AHEAD guidance and used a common sense standard to establish disability and evaluated each student individually and that the process employed was non-burdensome for the student. After the committee established disability, the remaining steps of the process were largely as before the inclusion of the guidance. To wit: the Access Office issued a letter to the student's instructors informing them of the accommodations that the student received (S. Jones, personal communication, November 4, 2013). Jones indicated that when a request for accommodations was denied, the Access Office issued a letter that explained why the requested accommodations were refused, or that indicated what accommodations were approved instead of the accommodations requested by the student. A student who received accommodations was required to submit a new request for the same every semester; however, Jones indicated that as long as the accommodations requested were

the same as those requested in the previous semester, the process was very simple, and the Access Office simply continued to provide the requested accommodations (S. Jones, personal communication, November 4, 2013).

### **Summary**

The literature review described the most common disabilities reported in higher education, as well as the most common internal and external characteristics of successful students who participated in higher education. The literature suggested that the level of self-determination of a student with an invisible disability appeared to be an important, if not crucial, characteristic for success in higher education. The literature revealed that the concept of equal access to primary and secondary education for all students, regardless of ability, was a relatively new phenomenon, and had its origins in the Civil Rights Movement (Aron & Loprest, 2012; Keogh, 2007). As indicated, there were three primary laws at the forefront of the provision of extra services to students with disabilities in the primary and secondary educational environment. One of the laws, the IDEIA, did not operate in higher education; therefore, students with disabilities who relied upon this law to be successful in primary and secondary educational environments were left to seek protection, on their own initiative, from the remaining laws that operated in higher education (Hadley, 2006; 2011; Johnson et al., 2008).

Given the general nature of the literature located and reviewed that outlined the special education process in primary and secondary educational environments and the provision of reasonable accommodations in higher education, paraphrased interviews with seasoned practitioners were included in the literature review and provided concrete examples of how the core provisions of the three relevant laws manifested and differed in

everyday practice at the primary, secondary, and post-secondary levels. These interviews were included to add depth and understanding not only for individuals who worked in the student services areas of primary, secondary, and post-secondary education, but for all educational leaders.

The information contained in this literature review added value to the present study largely because it helped to illustrate that students with disabilities, particularly invisible disabilities, continued to participate in higher education in significantly greater numbers than in the past. The available literature highlighted the fact that much work remained to be conducted to study the specific needs of this growing population of individuals in higher education.

The next chapter outlined the methodology employed to investigate whether self-determination was a characteristic among successful students with invisible disabilities who participated in higher education.

### **Chapter Three: Methodology**

#### **Introduction**

The purpose of this mixed methods study examined how levels of self-determination among successful students with invisible disabilities who participated in higher education differed from those of successful students without disabilities at a two-year community college, as measured by the Arc Self-Determination Scale modified by Jameson (2007). A student was considered successful if he or she had completed at least one semester at the community college from which data for this study was obtained, Midwest Community College, with a GPA of 2.0 or higher. Students with a GPA below 2.0 were deemed unsuccessful for the purposes of this study.

Jameson's (2007) modified Arc (Appendix A) was presented to participants verbatim in an anonymous, online survey that also included a qualitative component consisting of questions added by Stage and Milne (1996) and the investigator (Appendix C). These additional questions were included in order to garner more qualitative insight into the participants' experiences in higher education, as well as additional information regarding the participants' views of self-determination. The investigator obtained written permission from Wehmeyer, Jameson, and Stage and Milne to use the modified Arc Self-Determination Scale (Jameson, 2007; Wehmeyer, 1995), and additional questions (Stage & Milne, 1996). Qualitative responses were included in a content analysis that suggested various emerging themes that aligned with the four essential characteristics of self-determination posited by Wehmeyer (1995): autonomy, self-regulation, psychological empowerment, and self-realization.



The study participants consisted of community college students recruited exclusively from the Criminal Justice program at one campus of the Midwest Community College district. According to the investigator's community college district sponsor, a total of 377 students in 16 classes were invited to take part in the study for extra credit (M. Hepner, personal communication, February 20, 2014). A total of 121 students completed the survey, which resulted in a response rate of approximately 32.1%. Of the 121 students who completed the survey, 77 self-identified as having no disability, while 44 self-identified as having at least one invisible disability. Responses from participants with invisible disabilities and without disabilities were included in the data analysis. Responses obtained from participants who had less than a 2.0 cumulative GPA (3 with no disability, 8 with an invisible disability) were excluded from the analysis, because for the purposes of this study, a successful student was defined as one having a cumulative GPA of 2.0 or greater. The investigator implemented this exclusion whether or not the respondent possessed a disability.

### **Research Site**

Before recruiting participants from the Midwest Community College, the investigator made several unsuccessful attempts to secure the participation of students at a four-year university in the Midwest. Over the period of two 16-week semesters, approximately 10 individuals participated in the study and completed paper versions of the modified Arc Self-Determination Scale. Due to the lack of participation at this university, the investigator, in consultation with his dissertation chair, sought approval to recruit participants from another site. The investigator obtained permission to conduct the

study at the Midwest Community College discussed herein and from the investigator's Institutional Review Board.

According to the Midwest Community College website (Midwest Community College, 2014), the institution was one of the largest community college districts in the United States, and the largest community college district in the state in which it was located. Its enrollment in the Fall 2013 semester was over 20,000 credit students. When counting credit students, continuing education students, and individuals in workforce development programs, the community college district served over 80,000 students annually (Midwest Community College, 2014, p. 1). Service to students was accomplished by way of over 3,000 full and part-time employees, including over 400 full-time faculty (Midwest Community College, 2014, p. 1). Midwest Community College was accredited by the North Central Association of Colleges and Schools. The district had an open admissions policy but required certain standards for admissions and retention.

In addition to offering online courses, the Midwest Community College district operated 10 physical sites at which education and training regularly occurred (Midwest Community College, 2014, p. 1). The geographical services area of the district consisted of over 700 square miles. The 2013-2014 fiscal budget was reported to exceed \$200,000,000. The average age of a student attending the district was 28 (p. 1). Moreover, 60% of the student body was female, 54% of the student body was Caucasian, and 35% was African-American. Approximately 67% of the student body lived in a Midwest county and 22% in Midwest City. Approximately 58% of the students attended part time, and approximately 42% attended full time (p. 1).

### **Data Collection and Analysis Procedures**

The literature reviewed suggested that there were a number of both internal and external characteristics responsible for the success of students who participated in higher education (Jameson, 2007; Skinner, 2004; Thoma & Getzel, 2005). Through an examination of participants' responses to both quantitative and qualitative statements and questions, the present study sought to reveal whether certain characteristics, such as self-determination, existed in both successful students with invisible disabilities and their non-disabled peers. Additionally, this study sought to garner further evidence of whether self-determination was a paramount characteristic of successful students with invisible disabilities and their non-disabled peers, as measured by the modified Arc Self-Determination Scale. Responses to questions adapted from Stage and Milne's (1996) work and those created by the investigator underwent a content analysis and provided deeper qualitative awareness of the participants' experiences in higher education, as well as additional information regarding their views of self-determination.

In order to recruit participants, and after securing permission to conduct the study at the host site from both the investigator's university and the host district, the investigator contacted the Program Director of the Criminal Justice program at one of the district's campuses, as well as the managers of the district's access offices. The investigator explained the study and provided these individuals with the necessary paperwork from the host district that indicated approval to conduct the study. The investigator also provided these individuals with the link to the online, untimed, anonymous survey. The Criminal Justice Program Director, as well as one of the Access Office managers, readily agreed to mention the study to students and act as neutral third

parties, if and when necessary, between the investigator and any participant to ensure the complete anonymity of participants in the study. The investigator attended a department meeting that consisted of administrators and faculty from the host district's Criminal Justice, Paralegal Studies, and Accounting divisions, where he explained relevant portions of the study and provided the faculty with a link to the survey. Several faculty indicated their willingness to share the link to the online survey with their students. The district sponsor and the Access Office manager who agreed to mention the study subsequently revealed to the investigator that only students in the Criminal Justice program participated in the study.

The investigator was an adjunct instructor in the Criminal Justice program from which participants were recruited. However, he did not contact or have any known interaction or communication regarding this study with any participant. Given that students in the Criminal Justice program frequently completed more than one class at a time over the course of an academic semester and were taught by different faculty, it was possible that some of the investigator's students completed the survey. However, any such student learned about the study and participated in it as a result of an invitation from other instructors.

The anonymous nature of the survey precluded the investigator from knowing whether any of his students participated in the research. Moreover the investigator did not receive personally identifiable information from or about any participant. The district sponsor, who also served as the Criminal Justice Program Director and the investigator's immediate supervisor, reported some participants included personally identifiable information, such as contact information, even though the survey did not ask for any such

information. The district sponsor removed personally identifiable information before he turned results over to the investigator for subsequent analysis.

### **Confidentiality and Informed Consent**

Participants received information about confidentiality and informed consent via the neutral third parties who agreed to mention the study to potential participants, as well as through the consent form for the online survey. In order to complete any question on the survey, the participant acknowledged that he or she read the consent form, had the opportunity to ask questions, voluntarily consented to participate in the study, and understood that he or she could make a copy of the form for his or her records. The consent form included details regarding how confidentiality was maintained and who would see the participants' responses. The consent form included contact information for the investigator and his dissertation chair, as well as for the Provost of the investigator's university and its Institutional Review Board. It also included wording that indicated participation in the study was voluntary, that there were no anticipated risks associated with completing the survey, and that participants were free to stop answering questions at any time and/or withdraw consent. The consent form specifically requested that participants not provide personally identifiable information.

### **Research Question and Null Hypotheses**

This investigation explored the following research question: How are the levels of self-determination of successful students with invisible disabilities participating in higher education different than those of nondisabled successful students at a two-year community college, as measured by the modified Arc Self-Determination Scale?

The null hypotheses for this mixed methods study were as follows:

Null Hypothesis: There is no difference between the internal and external characteristics of self-determination of successful students with invisible disabilities and the characteristics of their nondisabled peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

Null Hypothesis 1a: There is no difference between the levels of autonomy of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

Null Hypothesis 1b: There is no difference between the levels of self-regulation of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

Null Hypothesis 1c: There is no difference between the levels of psychological empowerment of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

Null Hypothesis 1d: There is no difference between the levels of self-realization of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

### **Quantitative Data**

The quantitative aspect of this study utilized data gathered by an online, untimed, anonymous survey that asked each participant to provide normative data including (a)

age, (b) gender, (c) student status, full-time or part-time, (d) GPA, (e) how many semesters completed, (f) whether he or she possessed an invisible disability (defined for this study in Chapter One), (g) specification of the invisible disability, if possessed, (h) whether he or she possessed another disability, (i) specification of that disability, if possessed, (j) whether he or she had an IEP and/or an IAP before entering higher education, and (k) whether he or she received special services before attending the community college. The survey did not ask for personally identifying information, such as student's name, address, email, social security number, or phone number. The survey also included verbatim the items of the modified Arc Self-Determination Scale created by Wehmeyer and Kelchner (1995) (Appendix B) and adapted for use in a more general population by Jameson (2007) (Appendix A). The survey also contained nine supplemental items adapted from Stage and Milne (1996) and created by the investigator. These items allowed the participants to provide qualitative data to augment the quantitative data obtained from the modified Arc. The investigator obtained permission to use the Arc Self-Determination Scale instrument from both Wehmeyer and Jameson via email, and from Stage and Milne to use and/or adapt the questions, before constructing and administering the online survey.

The survey was available by way of a leading, well-regarded, online site used by researchers in academia and elsewhere to administer surveys. As indicated previously, the investigator did not mention this study to potential participants at the community college. Students were invited to participate in the study by their instructors and offered extra credit for their time. The survey remained open for one month. In order to assure complete anonymity, the investigator's district sponsor reviewed all participant

submissions and, when necessary, removed personally identifiable information before placing the responses in a spreadsheet for subsequent analysis by the investigator.

In consultation with Dr. Wisdom, professor of educational statistics, who opined that a convenience sample of this size was adequate (S. Wisdom, personal communication, February 17, 2014), the researcher stopped collecting data for this study after 121 participants completed the survey. Given the number of individuals who completed the survey for this study, the subject matter of the study, and the amount of time involved in recruiting participants for this study, the investigator and his dissertation chair agreed that a convenience sample was indeed appropriate (L. Leavitt, personal communication, February 17, 2014), and that, in this situation, other methods of sampling (Fraenkel, Wallen, & Hyun, 2012) were difficult.

The investigator and Wisdom determined that a random sample of 30 successful students who self-identified as having no disability and completed the survey, and 20 successful students who self-identified as having an invisible disability and completed the survey, was adequate for quantitative statistical analysis (S. Wisdom, personal communication, April 3, 2014).

The investigator initially accomplished randomization by creating two additional spreadsheets. The first additional spreadsheet contained all information, including normative data and responses to all other questions, from all participants who self-identified as not having a disability. The second additional spreadsheet contained all information, including normative data and responses to all other questions, from all participants who self-identified as having an invisible disability. An examination of the first spreadsheet revealed that of the 77 participants who completed the survey and self-



identified as having no disability, three did not have a GPA of 2.0 or greater and were removed from further analysis. Thus, a total of 74 participants who completed the survey self-identified as having no disability met the study's requirements for success.

Similarly, out of 44 individuals who completed the survey and self-identified as having an invisible disability, eight did not have a GPA of 2.0 or greater and were removed from further analysis. Therefore, a total of 36 participants who completed the survey self-identified as having an invisible disability and met the study's requirements for success.

Next, the investigator assigned each student who self-identified as not having a disability a number from 1 to 74 on a small, individual piece of paper, then placed the 74 small pieces of paper into a hat, and subsequently pulled 30 of them from the hat, and in turn wrote down the selected numbers on a sheet of loose leaf paper. The investigator completed the same process and randomly selected 20 of the 36 respondents who had self-identified as having an invisible disability.

As a result of randomization, a total of 50 survey administrations from successful students, 30 from individuals with no disability, and 20 from individuals with an invisible disability, were obtained for statistical analysis. The investigator transcribed each of the selected responses into an individual modified Arc, and scored each administration using Wehmeyer's (1995) *Procedural Guidelines* manual.

In consultation with Wisdom, the results of the various administrations were subsequently categorized, reported, and analyzed for statistical significance and comparison by way of z-tests for difference in means between the two participant populations for each of the scales produced by the modified Arc. The investigator

conducted  $z$ -tests and determined whether to reject or fail to reject any, some, or all of the study hypotheses. In defining a  $z$ -test for difference in the mean of a population, Bluman (2010) wrote, “the  $z$ -test is a statistical test for the mean of a population. It can be used when  $n$  [is equal to or greater than] 30” (p. 411). Bluman continued, “many hypotheses are tested using a statistical test based on the following general formula: test value = [(observed value) – (expected value)] / standard error” (p. 411). Bluman explained the formula and indicated

The observed value is the statistic (such as the mean) that is computed from the sample data. The expected value is the parameter (such as the mean) that you would expect to obtain if the null hypothesis were true – in other words, the hypothesized value. The denominator is the standard error of the statistic being tested, in this case the standard error of the mean. (p. 411)

The results of the  $z$ -tests performed were presented in Chapter Four.

### **Qualitative Data**

Excluding certain general normative questions, such as age, gender, GPA, and receipt of special education or additional services, the qualitative aspect of this study consisted of the examination of nine questions designed to provide an opportunity for the participants to write about (a) self-determination, (b) additional services available in college, (c) receipt of additional services, (d) difficulties learning, and (e) their experiences with an invisible disability, if applicable. Every survey administered contained these questions, and it was entirely up to each participant to decide which of the questions, if any, he or she desired to address.

Sherblom, of Lindenwood University articulated that when conducting a qualitative analysis that included interviewing participants, participants sometimes found it easier to talk about themselves if they knew in advance what will be asked (S. Sherblom, personal communication, June 18, 2012). In an effort, then, to assuage possible difficulties involved with answering personal questions and revealing sensitive information, the investigator reminded the neutral third parties to inform the participants that they could read the survey in advance and take their time in responding. The qualitative questions were open-ended in nature and designed for the participants to share their thoughts about self-determination, as well as their experiences at the community college and at other points in their lives. A content analysis of these responses revealed several emerging themes that aligned with Wehmeyer's (1995) essential characteristics of self-determination. The results of the content analysis were presented in Chapter Four.

### **Instrumentation Employed and Scoring**

Wehmeyer and Kelchner's (1995) Arc Self-Determination Scale consisted of 72 items that corresponded to the four domains that Wehmeyer (1995), and Wehmeyer and Schwartz (1998) posited to contribute to an individual's level of self-determination. Jameson (2007) later modified this scale, and the modified version was the instrument used in this study. These instruments were virtually identical (Appendices A and B). The key differences between them were slight changes in some of the questions (#7, #21, #33, #38, #42) and the front cover. Jameson (2007) made these changes to reflect a more diverse participant population, as the original instrument was designed for adolescents, not for college students or adults. Wehmeyer indicated that Jameson's changes did not affect the validity or reliability of the Arc Self-Determination Scale (as cited in Jameson,

2007). As a result of Jameson's changes that reflected a more diverse participant population and the use of the modified version in a prior study that involved participants in higher education, the investigator employed the modified version rather than the original in the present study. Given that Jameson (2007) made only minor changes to the Arc Self-Determination Scale, the instrument remained a 72-item self-report scale with 148 possible points within the four self-determination domains. The instrument provided the respondent with a score that indicated where he or she ranked among other respondents. The instrument was normed on 500 students "with and without cognitive disabilities in rural, urban, and suburban school districts in five states" (Wehmeyer, 1995, p.117) The instrument's "concurrent criterion-related validity was established by showing relationships between [it] and conceptually related measures. It had adequate construct validity established by factor analysis and discriminative validity, as well as adequate internal consistency" (Jameson, 2007, pp. 29-30).

Most of the items within the first domain, Autonomy, required a response denoting how much or how little the participant believed a specific item represented his or her position. Autonomy was divided into subdomains, that included (a) independence with regard to ordinary personal care, (b) independence with regard to an individual's interaction with others in his or her environment, (c) activities engaged in during an individual's recreation and leisure time, (d) an individual's involvement in his or her community, (e) activities engaged in after an individual has completed schooling, and (f) aspects of an individual's personal expression (Wehmeyer, 1995).

For these six Autonomy subdomains, participants indicated their respective beliefs on most items via a Likert-type scale with the following four options: 'I do not

even if I have the chance', 'I do sometimes when I have the chance', 'I do most of the time I have the chance', or 'I do every time I have the chance'. These responses were assigned 0, 1, 2, or 3 points, respectively, which meant that choosing 'I do not even if I have the chance' yields 0 points, and so on. There was a maximum of 96 points for this domain. Wehmeyer's (1995) *Procedural Guidelines* reported that higher scores in this domain equated to higher levels of autonomy, while lower scores indicated lower levels of autonomy.

Wehmeyer's second Self-Determination domain, Self-Regulation, contained two subdomains, the first of which involved "story-based items where the student [participant] identifies what he or she considers the best solution to a problem;" thereafter, the "responses are scored on a scale of 0 to 2 points, depending on the effectiveness of the solution to resolve the problem" (Wehmeyer, 1995, p. 99). This subdomain had a possible maximum of 12 points, with higher scores that equated to "more effective interpersonal cognitive problem-solving" (Wehmeyer, 1995, p. 100).

In the second Self-Regulation subdomain, participants indicated their goals "in several life areas and identify steps they need to achieve these goals" (Wehmeyer, 1995, p.100). An individual earned 0 to 3 points for each of these goals based on the clarity of the goal and the steps needed to reach it. The *Procedural Guidelines* indicated that when scoring this section, the focus should not rest on the probability of reaching the goal, "but simply the presence or absence" (Wehmeyer, 1995, p. 100) of the goal. This subdomain was worth a total of 9 points, "with higher scores representing more effective goal-setting and task attainment skills" (Wehmeyer, 2005, p. 111). Wehmeyer's (1995) *Procedural*

*Guidelines* reported that higher scores in this domain equated to higher levels of self-regulation, and vice versa.

Wehmeyer's third domain, Psychological Empowerment, was represented on Jameson's modified Arc by 16 questions, each of which was granted 0 or 1 point(s). Wehmeyer (1995) noted, "Answers that reflect psychological empowerment (e.g., beliefs in ability, perceptions of control, and expectations of success) are scored with a 1" (p. 112), while responses that did not demonstrate this empowerment received 0 points. Accordingly, higher scores "indicate that students are more psychologically empowered" (p. 112). The *Procedural Guidelines* reported that higher scores in this domain equated to higher levels of Psychological Empowerment, and vice versa.

Wehmeyer's fourth and final Self-Determination domain was Self-Realization. On the Arc, this domain consisted of 15 items scored with either 0 points or 1 point, depending on the participant's agreement or disagreement with the item. According to the *Procedural Guidelines*, "answers reflecting a positive self-awareness and self-knowledge are scored with a 1 and answers that do not are scored with a 0" (Wehmeyer, 1995, p. 113); higher scores in this domain suggested a greater level of self-realization.

After adding all of the points for each section on each protocol, the investigator converted the raw points into percentiles using the conversion tables located in the *Procedural Guidelines*. These conversion tables provided percentile scores based on the norming samples, as well as the positive scores. The investigator obtained total Self-Determination scores for all participants. As with each subdomain, higher total Self-Determination scores indicated higher levels of self-determined behavior, and vice versa. Chapter Four presented the results and pertinent discussion.

**Summary**

Chapter Three presented the framework of the methodology and research design format used for this study, as well as a discussion of the instrumentation employed for the quantitative portion of this study, and included an explanation of its origin and scoring guidelines. In order to address the research question and hypotheses, the investigator conducted a mixed methods study that, in the quantitative stage, was measured via statistical analysis of the differences in means by way of z-tests between the two participant populations on each Arc domain. The subsequent qualitative stage involved an examination of participants' responses to open-ended questions designed to elicit further insight regarding emerging themes pertinent to characteristics of self-determination, services available for students with disabilities, and participants' experiences with invisible disabilities and difficulties with learning.

The results of the surveys, including the supplemental questions, were presented in Chapter Four. Subsequently, Chapter Five summarized the results of the study, and discussed conclusions based upon the data. Chapter Five also provided recommendations for future research on this subject.

## **Chapter Four: Results**

### **Introduction**

This study explored the following research question: How are the levels of self-determination of successful students with invisible disabilities participating in higher education different than those of nondisabled successful students at a two-year community college, as measured by the modified Arc Self-Determination Scale? In order to address this research question, the investigator, in consultation with his dissertation chair, developed the hypotheses articulated earlier and reprinted below. This chapter presented the findings pertinent to the research question, hypotheses related to the research question, and the themes that aligned with Wehmeyer's (1995) essential self-determination characteristics that emerged from content analysis of the supplemental questions adapted from Stage and Milne (1996) and created by the investigator.

A total of 377 students in 16 classes from the Criminal Justice program on one campus of Midwest Community College were invited to participate in the study for extra credit (M. Hepner, personal communication, February, 20 2014). A total of 121 students completed the survey, which indicated a response rate of approximately 32.1%. Seventy-seven of the 121 students self-identified as having no disability, while 44 of the 121 students self-identified as having an invisible disability. The responses from both groups of participants were included in the data analysis. Based on the definition of student success used in this study, the investigator excluded the responses obtained from participants who had less than a 2.0 cumulative GPA (3 with no disability, 8 with an invisible disability) from further analysis. Thus, responses from 74 students who self-



identified as having no disability and 36 students who self-identified as having an invisible disability were available for randomized selection and subsequent statistical analysis. The elimination of 11 participants with GPAs of less than 2.0 yielded a total convenience sample of 110. Ultimately, the investigator randomly selected the responses from 30 students with no identified disability and 20 students with an invisible disability for statistical analysis that consisted of *z*-tests for difference in means among the four Arc domains stated in the null hypotheses tested.

### **Quantitative Results**

Null Hypothesis: There is no difference between the internal and external characteristics of self-determination of successful students with invisible disabilities and the characteristics of their nondisabled peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

A *z*-test for difference in means was applied to the data. The *z*-test value of -0.9308 did not occur in the critical region marked by the boundaries of  $\pm 1.959$ . The *p*-value was 0.3519, with  $\alpha = 0.05$  (Table 5). The investigator did not reject the Null Hypothesis. The data did not support the Alternate Hypothesis, which was: There is a difference between the internal and external characteristics of self-determination of successful students with invisible disabilities and the characteristics of their nondisabled peers at a two-year community college, as measured by the modified Arc Self-Determination Scale. The successful students with invisible disabilities did not score significantly higher than the non-disabled successful students in the category of internal and external characteristics of self-determination. The invisible-disabled students scored observably higher with a 110.6 compared to a 105.0.

Table 5.

*Self-Determination: Non-Disabled and Disabled Students*

	Non-Disabled	Disabled
Mean	105.0345	110.6842
Known Variance	307.8034	498.2605
Observations	30	20
Z	-0.9308	
P(Z<=z) Two-tail	0.3519	
Z Critical Two-tail	1.9599	

Note:  $\alpha = 0.05$ .

Null Hypothesis 1a: There is no difference between the levels of autonomy of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

A z-test for difference in means was applied to the data. The z-test value of -1.3322 did not occur in the critical region marked by the boundaries of  $\pm 1.959$ . The p-value was 0.1827, with alpha = 0.05 (Table 6). The investigator did not reject Null Hypothesis 1a. The data did not support the Alternate Hypothesis, which was: There is a difference between the levels of autonomy of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale. The successful students with invisible disabilities did not score significantly higher than the non-disabled successful students in the category of self-determination characteristic of autonomy. The invisible-disabled students scored observably higher with a 73.6 compared to a 66.9.

Table 6.

*Autonomy: Non-Disabled and Disabled Students*

	Non-Disabled	Disabled
Mean	66.9655	73.6315
Known Variance	227.7023	326.5263
Observations	30	20
Z	-1.3322	
P(Z<=z) Two-tail	0.1827	
Z Critical Two-tail	1.9599	

Note:  $\alpha = 0.05$ .

Null Hypothesis 1b: There is no difference between the levels of self-regulation of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

A z-test for difference in means was applied to the data. The z-test value of 0.5494 did not occur in the critical region marked by the boundaries of  $\pm 1.959$ . The p-value was 0.5827, with  $\alpha = 0.05$  (Table 7). The investigator did not reject Null Hypothesis 1b. The data did not support the Alternate Hypothesis, which was: There is a difference between the levels of self-regulation of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale. The successful students with invisible disabilities did not score significantly higher than the non-disabled successful students in the category of self-determination characteristic of self-regulation. The non-disabled students scored observably higher with a 13.8 compared to a 13.0.

Table 7.

*Self-Regulation: Non-Disabled and Disabled Students*

	Non-Disabled	Disabled
Mean	13.8275	13.0526
Known Variance	19.09	25.29
Observations	30	20
Z	0.5494	
P(Z<=z) Two-tail	0.5827	
Z Critical Two-tail	1.9599	

Note:  $\alpha = 0.05$ .

Null Hypothesis 1c: There is no difference between the degree of psychological empowerment of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college as measured by the modified Arc Self-Determination Scale.

A z-test for difference in means was applied to the data. The z-test value of 0.2726 did not occur in the critical region marked by the boundaries of  $\pm 1.959$ . The p-value was 0.7851, with  $\alpha = 0.05$  (Table 8). The investigator did not reject Null Hypothesis 1c. The data did not support the Alternate Hypothesis, which was: There is a difference between the degree of psychological empowerment of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college as measured by the modified Arc Self-Determination Scale. The successful student with invisible disabilities did not score significantly higher than the non-disabled successful students in the category of self-determination characteristic of psychological empowerment. The non-disabled students scored observably higher with a 13.5 compared to a 13.3.

Table 8.

*Psychological Empowerment: Non-Disabled and Disabled Students*

	Non-Disabled	Disabled
Mean	13.5517	13.3157
Known Variance	7.3436	9.4184
Observations	30	20
Z	0.2726	
P(Z<=z) two-tail	0.7851	
Z Critical two-tail	1.9599	

Note:  $\alpha = 0.05$ .

Null Hypothesis 1d: There is no difference between the levels of self-realization of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

A z-test for difference in means was applied to the data. The z-test value of 0.0783 did not occur in the critical region marked by the boundaries  $\pm 1.959$ . The p-value was 0.9375, with  $\alpha = .05$  (Table 9). The investigator did not reject Null Hypothesis 1d. The data did not support the Alternate Hypothesis, which was: There is a difference between the levels of self-realization of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale. The successful student with invisible disabilities did not score significantly higher than the non-disabled successful students in the category of self-determination characteristic of self-realization. There was no observable difference in the means of 10.6.

Table 9.

*Self-Realization: Non-Disabled and Disabled Students*

	Non-Disabled	Disabled
Mean	10.6896	10.6315
Known Variance	9.9091	3.9473
Observations	30	20
Z	0.0783	
P(Z<=z) two-tail	0.9375	
Z Critical two-tail	1.9599	

Note:  $\alpha = 0.05$ .

**Qualitative Results: Emerging Themes**

Maxwell (2005) noted that “in qualitative research, the goal of coding is not to count things, but to . . . rearrange them (the data) into categories that facilitate comparison between things in the same category . . .” (p. 96). Several methods existed that researchers employed to code data; one such method was content analysis. Fraenkel et al. (2012) explained that there were specific objectives for using this approach, some of which included to “obtain descriptive information about a topic, formulate themes . . . that help to organize large amounts of descriptive information, check . . . research findings . . . to test hypotheses” (p. 480). Fraenkel et al. (2012) also noted that descriptive information was categorized in one of two ways. The first way involved the researcher determining categories before conducting his or her analysis. The second way required the researcher to become “very familiar with the descriptive information collected,” which “allows the categories to emerge as the analysis continues” (p. 480). The investigator determined that the former method of categorization was most appropriate. The categories established corresponded with the four essential characteristics of Wehmeyer’s (1995) theory of self-determination. Table 10 indicates alignment of the characteristics with Supplemental Questions used to collect data.

Table 10.

*Invisible Disabilities: Themes vs. Wehmeyer's Characteristics*

Supplemental Question Number and Emerging Themes	Wehmeyer's Four Essential Characteristics of Self-Determination
Question 1. Acting on own behavioral skill set	Self-Regulation
Question 2. Acting independently Interdependence with environment	Autonomy
Control through making decisions for self	Psychological Empowerment
Question 3. Acting independently Interdependence with environment	Autonomy
Control through making decisions for self	Psychological Empowerment
Question 4. Knowledge about their strengths and challenges and acting accordingly for their own benefit	Self-Realization
Acting on own behavioral skill set	Self-Regulation
Acting independently Interdependence with environment	Autonomy
Control through making decisions for self	Psychological Empowerment
Question 5. Knowledge about their strengths and challenges and acting accordingly for their own benefit	Self-Realization
Acting independently Interdependence with environment	Autonomy
Control through making decisions for self	Psychological Empowerment
Question 6. Control through making decisions for self	Psychological Empowerment
Question 7. Knowledge about their strengths and challenges and acting accordingly for their own benefit	Self-Realization

Question 8. Acting independently Interdependence with environment	Autonomy
Question 9. Acting independently Interdependence with environment	Autonomy
Knowledge about their strengths and challenges and acting accordingly for their own benefit	Self-Realization
Acting on own behavioral skill set	Self-Regulation
Control through making decisions for self	Psychological Empowerment

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In examining the supplemental question responses from those participants with an invisible disability, the investigator categorized the responses and observed several emerging themes that aligned with Wehmeyer's (1995) four essential characteristics of self-determination, as listed in Table 10. A discussion of the supplemental questions and the responses provided follows. Each participant with an invisible disability was identified as DP, coupled with an assigned number and the participant's disability.

#### *With Invisible Disabilities*

All of the quotations that follow were copied exactly as submitted by the participants. The first supplemental question, 'To what extent does your invisible disability affect your functioning at college?' prompted several responses that suggested an emerging theme of acting on the participant's own behavioral skill set in relation to each participant's respective disability. The following responses offered evidence of this emerging theme:

DP28 (Obsessive Compulsive Disorder): "Little things are annoying me so I do my work at home."



DP4 (Obsessive Compulsive Disorder): “It just requires a little more patience on my part when things are annoying me. Most of the time I have to do my work at home to get in the right environment.”

DP9 (Partial deaf left ear, ADD): “Sometimes it is hard to hear in class. I normally make up for it with having a spare recording. My ADD, I’ve learned to deal with. Push through it and move forward.”

DP24 (Paranoia): “I have to take online classes because I don’t trust anybody around me.”

The emerging theme of acting on one’s own behavioral skill set readily corresponded with Wehmeyer’s (1995) essential Self-Determination characteristic of Self-Regulation. According to Wehmeyer et al. (1996), “self-regulated people . . . examine the task at hand and their available repertoire; and formulate, enact, and evaluate a plan of action” (p. 633). In the four responses just presented, the participants explained how they created an action plan (working at home, tape recording class) and achieved their respective objectives by acting on their own preferences given their abilities. Wehmeyer et al. (1996) explained that self-regulated individuals usually possess the ability to self-monitor. Self-monitoring referred to being aware of one’s actions in one’s environment. This awareness logically led to their next point, that self-regulated individuals evaluated themselves, and in so doing, determined for themselves what sort of behaviors were appropriate for any given situation. Additionally, self-regulated people were able to self-reinforce; meaning that they provided consequences for their own “target behaviors” (Wehmeyer et al., 1996, p. 633). The responses from these disabled participants certainly demonstrated their abilities to self-regulate, self-monitor, and self-

reinforce. Indeed, without some modicum of self-regulation that included the specific decisions and actions specified in their answers, the participants' levels of success likely would have been impacted negatively.

The survey's second supplemental question, 'Are there any people and/or offices from this campus that were particularly helpful to you in adjusting to campus life?' suggested two themes that aligned with Wehmeyer's (1995) Autonomy characteristic, as well as one theme that aligned with the Psychological Empowerment characteristic. The first theme that emerged was acting independently. According to Wehmeyer and Schwartz (1997), a self-determined individual was autonomous when "the person acts according to his or her own preferences, interests and/or abilities, and independently, free from undue external influence or interference" (p. 246).

The second theme that emerged from this supplemental question was an individual's interdependence with his or her environment. Wehmeyer et al. (1996) admitted that "most people are not completely autonomous or independent; therefore, autonomy also reflects the interdependence of all family members, friends, and other people" (p. 633) with whom an individual interacts. Thus, while an individual acted according to his or her own preferences and abilities, and acted so free from undue external influence and/or interference, he or she must do so within his or her environment.

The third theme that emerged from this supplemental question aligned itself with a characteristic that Wehmeyer et al. (1996) regarded as Psychological Empowerment, which equated to perceived control. "People who are self-determined act based on their beliefs that (a) they have the capacity to perform behaviors needed to influence outcomes

in their environment and (b) if they perform such behaviors, anticipated outcomes will result” (Wehmeyer et al., 1996, p. 633).

The following responses from participants simultaneously illustrated both components of Autonomy and the essential characteristic of Psychological Empowerment. The emerging themes of acting independently, interdependence with one’s environment, and perceived control through making decisions were evident in the actions that the participants described.

DP8 (ADHD):

I went 2 the access office by [person’s name] is a [expletive] and tried 2 be my doctor when I already have a doctor an I don’t need [this same person] telling me that my meds are all wrong [this same person] not a doctor but [this same person] acts like a doctor. I dold [this same person] I don’t need some stuff but [this same person] forced me into stuff anyway like a notetake even thoug I told [this same person] I didn’t need one but [this same person] made me. [this same person] tried me make me go 2 counslor on campus but I already see one in [a municipality] so I don’t need school counslors. [this same person] thinks [this same person]’s a doctor but [this same person]’s not. [this same person] tries 2 treat me like im not a normal person. [this same person] tries 2 force me 2 do stuff I don’t wanna do or stuff I don’t need. You [expletive] [expletive] I’m not gimp retard project for you 2 change. I already go people so you need a dog to take of !!!!!

DP5 (ADHD):

I tried going to the Access Office on campus, but I found them to be too aggressive in trying to get me to agree to take part in certain services that I didn’t

need. Student life was great as I have become involved in some organizations that I really like and that I think will help me with my plans to expand my business.

The survey's third supplemental question, 'What do you think are the most important services provided for students with invisible disabilities and why?' elicited responses that, with regard to emerging themes, appeared virtually identical to those observed in the second supplemental question, namely, acting independently, interdependence with environment, and control through making decisions for self.

DP23 (Rheumatoid Arthritis):

I didn't get any services because they just wanted to throw me into all sorts of stuff that I didn't need. I just wanted to let my teachers know that I wood miss class but the disability office went all crazy and said I need tutors and time and other stuff and wheelchairs n I don't.

DP9 (Partial deaf left ear, ADD): "I've never asked for help so I wouldn't know."

DP4 (Obsessive Compulsive Disorder):

The Access Office has a lot of services that are great like different technology and interpreters, writers and note takers, but they really want to lump you into a category along with everybody else. There was very little personalization to help me cope with my OCD and college. The director (sorry, I don't remember [the person's] name) seemed to want to force a lot of things on me that I didn't ask for or need. I would have liked to be involved with the office, but my first visit was enough to know it was something I didn't want to be involved with. I hope this is just my personal experience and not the experience of others because the director

wasn't helpful at all It's a reall 'cookie cutter' approach as [this person] almost tried to force me into things I didn't need or want just my experience.

DP5 (ADHD, Dyslexia):

I think the most important service anyone could provide is just an understanding that things may take a little long for students with disabilities. My biggest problem with school when I was younger was that teachers thought I just wanted to goof off. When all reality I just didn't understand things the way they were presented to me.

DP15 (Depression, Learning disabilities): "I believe that getting help with registration is the most important because if you don't complete registration you wouldn't be able to attend college in the first place. Also it's a very confusing process."

DP29 (ADHD, Dyslexia): "My biggest problem with school is teachers who think I'm just blowing off work when in reality I don't understand things the way they are presented."

DP20 (ADHD): "I think I would like a note person but I don't want to go back and ask."

The survey's fourth supplemental question, "What do you do when you have difficulties learning?" provided additional evidence of the emerging themes of acting independently, interdependence with environment, and control through making decisions for self, which corresponded with Wehmeyer's (1995) essential characteristics of Self-Regulation, Autonomy, and Psychological Empowerment, as observed in the preceding supplemental questions. Furthermore, they suggested an additional emerging theme, knowledge about their strengths and challenges and acting accordingly for their own

benefit. The participants' ability to know enough about their respective aptitudes and limitations, coupled with the wherewithal to perform for their own gain, corresponded with Wehmeyer's essential characteristic of Self-Realization. Wehmeyer et al. (1996) explained that individuals who developed this ability were able to "capitalize on this (self) knowledge in a beneficial way" (p. 633).

The following responses to the question, 'What do you do when you have difficulties learning?' were illustrative of Wehmeyer's (1995) four essential characteristics of self-determination:

DP16 (ADHD): "Study harder or ask questions."

DP8 (ADHD): "Cheat (just being honest)."

DP5 (ADHD): "I handle my difficulties in learning by focusing on my work in private. I need to work alone in a place without distractions. Also sometimes when I can understand something I will research it until I find it in a format that I can understand."

DP15 (Depression, Learning disabilities): "I tend to walk away or focus on something else. I will ask someone that I know won't judge me (usually a family member). I will just guess and try to make the best of what I'm learning."

DP29 (ADHD, Dyslexia): "I do research it until I find what I need in a format I understand."

The survey's fifth supplemental question, 'In reflecting on your college experience, what things have been difficult for you?' elicited responses that provided additional evidence of the emerging themes of knowledge about their strengths and challenges and acting accordingly for their own benefit, acting independently and interdependence with environment, and control through making decisions for self. These

emerging themes aligned with Wehmeyer's (1995) essential characteristics of Self-Realization, Autonomy, and Psychological Empowerment. Responses included:

DP7 (ADHD, Depression): "I don't want to go to the axis office cuz [this person] thinks [this person] is a doctor but then profs won't give me extra time in class when I need it."

DP5 (ADHD, Dyslexia): "The main thing that gives has been difficult is keeping track of assignments and when things are to and what class. If I don't have my planner things go in one ear and out the other."

DP29 (ADHD, Dyslexia): "I have difficulty keeping track of assignments and classes if I don't have my planner up to date. This college is cool because of free planners."

The theme that emerged from the survey's sixth supplemental question, 'Under what circumstances do you tell others that you have an invisible disability?' was control through making decisions for self, which aligned with Wehmeyer's (1995) essential self-determination characteristic of Psychological Empowerment. Responses from the participants included:

DP16 (ADHD): "I usually don't tell anybody."

DP3 (Depression): "I don't tell anyone."

DP7 (ADHD, Depression): "Never."

DP8 (ADHD): "I don't."

DP5 (ADHD, Dyslexia): "I don't normally tell others about my disabilities no one outside my family knows."

DP21 (ADHD, Depression): "Need to know basis."

DP20 (ADHD): “I don’t care if anybody knows so I tell people all the time and its obvious since I take meds.”

The theme that emerged from the survey’s seventh supplemental question, ‘How do you think you compare with the average person of your own age?’ was knowledge about their strengths and challenges and acting accordingly for their own benefit, which aligned with Wehmeyer’s (1995) essential self-determination characteristic of Self-Realization. Participant responses included:

DP23 (Rheumatoid Arthritis): “Pretty good.”

DP28 (Obsessive Compulsive Disorder): “Pretty comparable.”

DP9 (Partial deaf left ear, ADD): “I push harder than anyone I know. I make sure to strive to be a better person each day.”

DP4 (Obsessive Compulsive Disorder): “I think I am pretty comparable to other people my own age.”

DP13 (Vision impairment):

I have a huge drive to achieve which is why academically I am in excellent standing. My leadership skills are also excellent, I’m great working with others which has helped me a lot in my academic career. Most people my age care a lot about their popularity where in all honesty I could care less how many friends I have/know. I do believe I get a bit more defensive about things than the average person does but I think it’s because I work so hard to get to the places I want to be, that the criticism against it makes me defend myself.

DP16 (ADHD):



I feel like I have more drive to achieve and determination than other people my age. I'm very defensive, especially toward myself. Even though I'm a sensitive person I tend to not let criticism affect me most of the time, but on occasion that it does I tend to not let it be known.

DP8 (ADHD): "Below average."

DP5 (ADHD, Dyslexia): "I feel like in compared to an average person my disability has made me a late bloomer. It took me a long time to figure out how I learn and what I need to do to fully comprehend material."

DP15 (Depression, Learning disabilities):

I have a stronger drive to achieve only due to my disability I don't want to be judged or teased. I am harsh on myself and depending on the subject I can go either way. I could really understand what I'm learning or completely bomb the subject/section of the subject. I like to have leadership however if I feel there is a better candidate for the job I will express how I feel.

DP32 (ADHD): "I am more intelligent than most but I lack any drive to succeed. I can do all the things listed better than almost anyone but for reasons I have said I don't."

DP29 (ADHD, Dyslexia): "I feel like in compared to an average person it takes me a long time to figure out class material."

The theme that emerged from the survey's eighth supplemental question, 'Do you feel you are treated differently when people know you have an invisible disability?' was acting independently, but with particular emphasis on interdependence with environment, which aligned with Wehmeyer's (1995) essential self-determination characteristic of Autonomy. Participant responses included:

DP28 (Obsessive Compulsive Disorder): “No.”

DP9 (Partial deaf left ear, ADD): “Nope.”

DP4 (Obsessive Compulsive Disorder): “Sometimes when my OCD related neurotic scratching is in full force.”

DP6 (Mood Disorder, Depression): “A little bit.”

DP3 (Depression): “Yes.”

DP5 (ADHD, Dyslexia): “I don’t feel I’m treated differently when I tell people about my disability.”

DP15 (Depression, Learning disabilities): “Of course I do. I believe a lot of people look down upon it, but I also believe that people are going to do that because they don’t understand my invisible disability and people normally fear what they don’t understand.”

DP29 (ADHD, Dyslexia): “I don’t feel I am treated differently.”

Themes that emerged from the survey’s ninth supplemental question, ‘What does self-determination mean to you and why?’ included acting independently, interdependence with environment, knowledge about their strengths and challenges and acting accordingly for their own benefit, acting on own behavioral skill set, and control through making decisions for self. These emerging themes aligned with all four of Wehmeyer’s (1995) essential characteristics of self-determination. Participant responses included:

DP9 (Partial deaf left ear, ADD): “This means to set, push, and achieve goals. You push to the furthest you can go, and then keep going. There is no room for failure and no room for stopping. Even when people think there is.”

DP4 (Obsessive Compulsive Disorder): “Working through my issues to get to success.”

DP19 (Post-Traumatic Stress Disorder): “Doing what you need to do to ensure your own success.”

DP13 (Visual impairment): “Self Determination to me means, having a personal reason for doing what you do. I am incredibly determined person and this is because I have a lot of dreams that I want to see come true, so I work as hard as I can to make it happen.”

DP3 (Depression): “It means: if you want something; you work to get it . . . It is one’s self drive. ‘This world is what you make of it.’”

DP5 (ADHD, Dyslexia): “It means to me that I won’t let things hold me back.”

DP32 (ADHD): “Self-Determination means I can push through anything in my way to achieve my goals.”

DP29 (ADHD, Dyslexia): “Not letting things hold me back.”

The investigator also examined the supplemental responses from those participants with no disabilities. Even though all participants were administered the same Arc including the same supplemental questions, the majority of the supplemental questions were not applicable to participants without invisible disabilities. However, three supplemental questions were applicable to both populations. Accordingly, the investigator examined the responses of participants with no disabilities to the following three supplemental questions: ‘What do you do when you have difficulties learning?’ (Question 4), ‘How do you think you compare with the average person of your own age?’ (Question 7), and ‘What does self-determination mean to you and why?’ (Question 9).

Table 11.

*Without Disabilities: Themes vs. Wehmeyer's Characteristics*

Supplemental Question Number and Emerging Themes	Wehmeyer's Four Essential Self-Determination Characteristics
Question 4. Acting on own behavioral skill set	Self-Regulation
Acting independently Interdependence with environment	Autonomy
Control through making decisions for self	Psychological Empowerment
Knowledge about their strengths and challenges and acting accordingly for their own benefit	Self-Realization
Question 7. Knowledge about their strengths and challenges and acting accordingly for their own benefit	Self-Realization
Question 9. Acting independently Interdependence with environment	Autonomy
Knowledge about their strengths and challenges and acting accordingly for their own benefit	Self-Realization
Acting on own behavioral skill set	Self-Regulation
Control through making decisions for self	Psychological Empowerment

The investigator categorized the responses and observed several emerging themes that aligned with Wehmeyer's (1995) four central characteristics of self-determination, as listed in Table 11. A discussion of the supplemental questions and the responses provided follows. Each participant without a disability was identified as P, coupled with an assigned number.

### *Without Disabilities*

With regard to participants without disabilities and their responses, the fourth supplemental question, 'What do you do when you have difficulties in learning?' generated several responses that suggested the emerging themes of acting on own behavioral skill set, acting independently, interdependence with environment, control through making decisions for self, and knowledge about own strengths and challenges and acting accordingly for own benefit. These emerging themes corresponded with Wehmeyer's (1995) essential characteristics of Self-Regulation, Autonomy, Psychological Empowerment, and Self-Realization. Responses included:

P15: "I try to solve the issue myself and if I can't then I go ask the teacher for help followed by some extra practice."

P10: "Ask others for help such as teachers or tutors."

P13: "Making flash cards."

P3: "When having difficulties, I seek help from my professor."

P48: "Ask others for help such as teachers."

P69: "Ask the teacher or a student that understands, to help me."

P52: "Contact the teacher."

P35: "Get help from the teacher."

P25: "Ask the instructor for help."

The theme that emerged from non-disabled students' responses to the survey's seventh supplemental question, 'How do you think you compare with the average person of your own age?' was knowledge about their strengths and challenges and acting accordingly for their own benefit, which aligned with Wehmeyer's (1995) essential self-determination characteristic of Self-Realization. Participant responses included:

P20:

Well I am only 20 I coach multiple sports back at my high school and so I have a drive to succeed. I want to be good at what I do and by sitting around wishing you are going to get far so I take the pride in stepping up and being a man and doing my job 110%.

P64: "I honestly think I'm above average. I have been through a lot in my life that has taught me to be strong and do things for myself. I believe I can achieve anything I can set my mind to."

P10:

I think my academic ability could be better if I applied myself more. I have good leadership skills and determination. I suppose I am popular. Not too terribly sensitive to criticism. I know my abilities and what I can do and so do the people who are important to me and that is enough for me.

P48: "I have good leadership skills but I'm sensitive to criticism."

P40: "Right about average."

P35: "I'm good."

P25: "If I actually put effort into it I can do anything."

Themes that emerged from non-disabled students' responses to the survey's ninth supplemental question, 'What does self-determination mean to you and why?' included acting independently, interdependence with environment, knowledge about their strengths and challenges and acting accordingly for their own benefit, acting on own behavioral skill set, and control through making decisions for self. These emerging themes aligned with all four of Wehmeyer's essential characteristics of self-determination. Participant responses included:

P15: "That you don't need anyone to tell you to do something you do it by yourself because it is the right thing to do."

P64:

It means never lettering anyone tell you no. It means coming to the end of my life without a lot of 'what ifs?' It means overcoming challenges in your life and choosing to let those challenges make you stronger rather than beat you down. My whole family is an example of all these things.

P10: "Self-determination to me means believing in yourself enough to go out and reach your goals even if you don't have the support around you."

P48: "Self-determination to means reach your goals."

P40: "Knowing how to achieve goals."

P13: "Setting goals and achievements."

P3: "It means to not give up even when that's all you feel like doing. Push through the tough things in life, it will only make you stronger."

P8: "Putting the team on your back."

P35: "Making my own future."

P25: “I can’t really explain what it means to me because it is different with everybody.”

### **Summary**

Examination and subsequent statistical analysis of the quantitative data obtained from the Arc administrations between both groups of participants revealed no significant differences in means with regard to participants’ Total Self-Determination Score. Additionally, a statistical analysis of the various domain scores (Autonomy, Self-Regulation, Psychological Empowerment, and Self-Realization) included on the Arc administrations revealed no significant differences in means between the two groups. In *z*-test comparison of measured means of self-determination of successful students with invisible disabilities to successful students with no disabilities, there were no differences in internal and external characteristics, nor in levels of autonomy, self-regulation, psychological empowerment, or self-realization.

A content analysis of the qualitative data obtained from the supplemental questions presented evidence of emerging themes, including acting independently, interdependence with environment, knowledge about their own strengths and challenges, acting accordingly for their own benefit, acting on own behavioral skill set, and control through making decisions for self. With regard to responses from participants with invisible disabilities, the examination of the emerging themes suggested alignment with the four essential self-determination characteristics posited by Wehmeyer (1995). With regard to the responses obtained from participants without disabilities, although only three supplemental questions were deemed applicable to this group, the content analysis presented evidence of the same emerging themes observed in the responses from



participants with invisible disabilities; therefore, they also aligned with the four essential self-determination characteristics.

## Chapter Five: Discussion

### Overview

Laws such as the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 existed to assure that individuals with disabilities had access to higher education. At the time of this writing, over the past few decades higher education in the United States observed an increase in enrollment, in some part due to the seemingly ever-growing population of students who self-identified with a disability (Hadley, 2006; 2007; 2011; Janiga & Costenbader, 2002; Levinson & Ohler, 1998; Skinner, 2004). Of the disabilities reported, invisible disabilities were the most common (Abreu-Ellis et al., 2009; Aron & Loprest, 2012; Joyce & Rossen, 2006; Parker & Boutelle, 2009; Thoma & Getzel, 2005; Skinner, 2004; Troiano et al., 2010). While an increase in the enrollment of students with invisible disabilities initially appeared encouraging, research suggested caution as enrollment did not guarantee graduation (Janiga & Costenbader, 2002; Skinner, 2004). Despite the sometimes negative outcomes, other studies confirmed that some students with disabilities were successful in higher education and completed their degrees (Barber, 2012; Skinner, 2004).

Several studies concluded that the success of individuals with disabilities, particularly invisible disabilities, who chose to participate in higher education, was attributed at least in some part, to their possession of certain characteristics (Hadley, 2006; 2007; Skinner, 2004, Thoma & Getzel, 2005). Chief among these characteristics was self-determination (Jameson, 2007; Skinner, 2004; Thoma & Getzel, 2005). The purpose of this mixed methods study was to garner additional evidence that self-determination was an important characteristic of successful students with invisible

disabilities who participated in higher education, as evidenced by its levels of existence when compared to a nondisabled and successful group of students. This chapter provided a summary of the study, as well as conclusions drawn from the data presented in Chapter Four. It also presented a discussion of the implications of the study and recommendations for future research.

The focus of the study investigated if levels of self-determination of successful students with invisible disabilities who participated in higher education differed from those of successful students without disabilities who participated in higher education. This study employed a mixed methods design that consisted of quantitative and qualitative components. The quantitative portion examined the dependent variable measured as the level of self-determination, and the independent variable was whether or not a participant had an invisible disability. The following hypotheses were considered:

**Alternate Hypothesis:** There is a difference between the internal and external characteristics of self-determination of successful students with invisible disabilities and the characteristics of their nondisabled peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

**Hypothesis 1a:** There is a difference between the levels of autonomy of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

**Hypothesis 1b:** There is a difference between the levels of self-regulation of successful students with invisible disabilities and the levels of their nondisabled

successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

**Hypothesis 1c:** There is a difference between the levels of psychological empowerment of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

**Hypothesis 1d:** There is a difference between the levels of self-realization of successful students with invisible disabilities and the levels of their nondisabled successful peers at a two-year community college, as measured by the modified Arc Self-Determination Scale.

The quantitative component utilized data from the administration of an online, anonymous, untimed survey consisting of the Arc Self-Determination Scale, as created by Wehmeyer and Kelchner (1995) and modified by Jameson (2007), to two groups of community college students; one that consisted of students who self-identified as having an invisible disability, and the other consisted of students who self-identified as not having a disability.

The research question, ‘How are the levels of self-determination of successful students with invisible disabilities participating in higher education different than those of nondisabled successful students at a two-year community college, as measured by the modified Arc Self-Determination Scale?’, was addressed through the qualitative component, which included a content analysis of participants’ responses to supplemental questions adapted from Stage and Milne (1996) and created by the investigator. The questions were included in the online survey and elicited responses from the participants

regarding self-determination and allowed for the observation of emerging themes that aligned with Wehmeyer's (1995) self-determination theory.

### **Interpretation of Results**

After the study-district sponsor removed personally identifiable information from the online survey responses, the investigator scored and completed a statistical analysis of the Arc Self-Determination Scale administrations by way of z-tests for difference in means between the two participant populations on their respective domain scores of autonomy, self-regulation, psychological empowerment, and self-realization, including the Self-Determination Total score. The data from this analysis did not support any of the alternate hypotheses, and data did not allow rejection of any of the null hypotheses. In z-test comparison of measured means of self-determination of successful students with invisible disabilities to successful students with no disabilities, there were no differences in internal and external characteristics, nor in levels of autonomy, self-regulation, psychological empowerment, or self-realization.

Thus, while this study did not indicate a significant difference between the means through comparison of any domain score among the two groups of participants, the quantitative data offered evidence that levels of self-determination, as measured by the Arc Self-Determination Scale modified by Jameson (2007) existed in successful students with invisible disabilities to an extent that was statistically equivalent to successful students without disabilities.

Moreover, the content analysis of the responses to the supplemental questions included in the survey revealed identical emerging themes of self-determination in both groups of participants, which appeared also to align with the essential characteristics of

self-determination posited by Wehmeyer (1995). These identical emerging themes and their alignment with the essential characteristics of self-determination offered evidence that self-determination existed in and was of some importance to both successful students with invisible disabilities who participated in higher education and their non-disabled peers.

### **Implications**

At the primary and secondary levels, special education teachers and other stakeholders can use the results of this study to further justify inclusion of individualized educational planning that contains multiple yearly objectives and interventions designed to enhance levels of self-determination in students with invisible disabilities. The literature supported the use of such interventions, which ultimately aide a student's transition from primary and secondary environments to the post-secondary environment (Kellems & Morningstar, 2010).

At the post-secondary level, administrators and access/disability office personnel can use the results of this study as a foundation upon which to continue refining existing student orientation programs for all students. While some research indicated that student orientation programs were beneficial for student retention, social interaction, and academic achievement (Soria, 2012), other research suggested that some such programs cover too many topics and, therefore the content of these programs should be reduced (Karp et al., 2012). Regardless of such content reduction, activities could nonetheless be incorporated into these programs to specifically develop every student's level of self-determination. Institutions could also specifically design orientation programs that develop self-determination for students who require reasonable accommodations.

### **Recommendations for Future Research**

The results of this study indicated that levels of self-determination did not statistically differ between successful students with invisible disabilities who participated in higher education and their non-disabled peers. These findings remain important to educators, students with invisible disabilities, and other stakeholders at all levels of education. However, the results of this study were limited, and further research is warranted.

The results of the study were based upon an analysis of 30 randomly chosen successful students who self-identified as not having a disability and 20 randomly chosen successful students who self-identified as having an invisible disability. Moreover, the participants were all recruited from one program at one campus of one community college district. Additionally, the participants had one month to complete the survey contained in this study. To verify, refute, or build upon the findings obtained in this study, future investigators should analyze data from a larger group of participants, which could reveal significant quantitative and/or qualitative differences in the levels of self-determination between the two participant groups that were not observed in the present study.

In addition to increasing the number of participants in future studies, another recommendation is to include participants from more than one program. Additionally, future researchers should consider including participants from more than one institution of higher education. Including individuals from other programs at a community college, as well as from other post-secondary institutions would provide additional data that could be used to strengthen the findings and help to ensure generalizability.

Future investigators may wish to consider including additional supplemental questions designed to allow participants to discuss self-determination. The present study included nine supplemental questions, three of which were deemed applicable to both groups of participants. Including additional questions applicable to both groups of participants would provide more opportunities to observe and address emerging themes.

A further recommendation for future investigators conducting similar studies is to increase the amount of time participants have to complete the survey. In the present study, participants received one month to complete the survey, which occurred during the beginning of the semester. There is no way of knowing whether additional participants would have completed the study had the survey remained open for more than one month, but it is conceivable that leaving the survey open throughout the semester would have yielded further participation.

A final recommendation for future investigators to consider is inclusion of unsuccessful students with and without invisible disabilities who participated in higher education. Data obtained from these individuals would allow future investigators to compare and contrast levels of self-determination in successful students with invisible disabilities from additional perspectives. Depending on the findings obtained from such a study researchers could provide additional justification for various educational programming.

### **Conclusion**

At the time of this writing, there are indications that the trend of students with invisible disabilities choosing to participate in higher education continues unabated (Hadley, 2006; 2007; 2011; Uretsky & Andrews, 2013). Many of these disabled students



who formerly received special education services at the primary and secondary levels were not successful and did not complete their degrees at the post-secondary level (Janiga & Costenbader, 2002; Skinner, 2004). However, some of these students were successful, and some researchers believed that in addition to the receipt of reasonable accommodations as mandated by various laws, certain personal characteristics played an important role in their success. Several researchers suggested that self-determination was the most important of these characteristics (Jameson, 2007; Skinner, 2004; Thoma & Getzel, 2005). The purpose of this study was to investigate levels of self-determination in successful students with invisible disabilities as compared to their successful, non-disabled peers. The quantitative data did not indicate a significant difference in the levels of self-determination between the two groups, and the qualitative data suggested emerging themes identical in both participation populations, that aligned with Wehmeyer's (1995) essential characteristics of self-determination. Further research investigating the experiences and characteristics of post-secondary students with disabilities is necessary if we are to provide the best education possible for some of our most deserving students.

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**Appendix A**

Arc as Modified by Jameson (2007)

**The Arc's  
Self-Determination  
Scale**

By Michael Wehmeyer, Ph.D., Principal Investigator  
Kathy Kelchner, M. Ed., Project Director  
Self-Determination Assessment Project

Student's name \_\_\_\_\_

Date \_\_\_\_\_

College \_\_\_\_\_

Year/s Attended \_\_\_\_\_

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Minor adaptations in #7, #21, #33, #38, #42,  
and front cover by Deborah Jameson, Ph.D. Candidate  
Formatted by Triandafyllos Bogiannou

<b>Section One Autonomy</b>		Directions: Check the answer on each question that BEST tells how you act in that situation. There are no right or wrong answers. Check only one answer for each question.			
<b>IA. Independence: Routine personal care and family oriented functions</b>		<b>IA. Subtotal</b> _____			
1. I make my own meals or snacks.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
2. I care for my own clothes.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
3. I do chores in my home.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
4. I keep my own personal items together.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
5. I do simple first aid or medical care for myself.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
6. I keep good personal care and grooming.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
<b>IB. Independence: Interaction with the environment</b>		<b>IB. Subtotal</b> _____			
7. I make friends with others.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
8. I use the post office.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
9. I keep my appointments and meetings.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
10. I deal with salespeople at stores and restaurants.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
<b>IC. Acting on the basis of preferences, beliefs, interests and abilities: Recreational and leisure time</b>		<b>IC. Subtotal</b> _____			
11. I do free time activities based on my interests.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
12. I plan weekend activities that I like to do.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
13. I am involved in school-related activities	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
14. My friends/family and I choose activities that we want to do.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
15. I write letters, notes or talk on the phone to friends and family.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
16. I listen to music that I like.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	

## SELF-DETERMINATION IN HIGHER EDUCATION 122

<b>ID. Acting on the basis of preferences, beliefs, interests and abilities:</b>		<b>ID: Subtotal</b> _____			
Community involvement and interaction					
17. I volunteer in things that I am interested in.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
18. I go to restaurants that I like.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
19. I go to movies, concerts, and dances.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
20. I go shopping or spend time at shopping centers or malls.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
21. I take part in group activities	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
<b>IE. Acting on the basis of preferences, beliefs, interests and abilities: Post-school directions</b>		<b>IE. Subtotal</b> _____			
22. I do school and free time activities based on my career interests.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
23. I work on school work that will improve my career chances.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
24. I make long-range career plans.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
25. I work or have worked to earn money.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
26. I am in or have been in career job classes or training.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
27. I have looked into job interests visiting work sites or talking to people in that job.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
<b>IF. Acting on the basis of preferences, beliefs, interests and abilities: Personal expression</b>		<b>IF Subtotal</b> _____			
28. I choose my clothes and the personal items I use every day.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
29. I choose my own hair style.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
30. I choose gifts to give to family and friends.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
31. I decorate my own room.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
32. I choose how to spend my personal money.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
Please check Section One, A thru F, to make sure there is only one answer for each question.					

**Section Two**  
**Self-Regulation**

Directions:

Each of the following questions tell the beginning of a story and how the story ends. Your job is to tell what happened in the middle of the story, to connect the beginning and the end. Read the beginning and ending for each question, then fill in the BEST answer for the middle of the story. There are no right or wrong answers. Remember, fill in the one answer that you think BEST completes the story.

2A. Interpersonal cognitive problem-solving

33. **Beginning:** You are sitting in a planning meeting with your family and your advisor. You want to major in Marketing and obtain an Associate Degree. Your family wants you to major in Early Childhood Education and get a certificate. You can only major in one.

**Middle:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Ending:** The story ends with you majoring in Marketing to get your Associates Degree. Story Score \_\_\_\_\_

35. **Beginning:** Your friends are acting like they are mad at you. You are upset about this.

**Middle:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Ending:** The story ends with you and your friends getting along just fine. Story Score \_\_\_\_\_

34. **Beginning:** You hear a friend talking about a new job opening at local book store. You love books and want a job. You decide you would like to work at the book store.

**Middle:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Ending:** The story ends with you working at the bookstore. Story Score \_\_\_\_\_

36. **Beginning:** You go to your English class one morning and discover your English book is not in your backpack. You are upset because you need that book to do your homework.

**Middle:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Ending:** The story ends with you using your English book for homework. Story Score \_\_\_\_\_

<p>37. <b>Beginning:</b> You are in a club at school. The club advisor announces that the club members will need to elect new officers at the next meeting. You want to be the president of the club.</p> <p><b>Middle:</b> _____          _____          _____          _____          _____</p> <p><b>Ending:</b> The story ends with you being elected as the club president.          Story Score _____</p>	<p>2B: Goal setting and task performance</p> <p>Directions:          The next three questions ask about your plans for the future. Again, there are no right or wrong answers. For each question, tell if you have made plans for that outcome and, if so, what those plans are and how to meet them.</p> <p>39. Where do you want to live after you graduate?  <input type="checkbox"/> I have not planned for that yet.  <input type="checkbox"/> I want to live _____          List four things you should do to meet this goal:          1) _____          2) _____          3) _____          4) _____</p>
<p>38. <b>Beginning:</b> You are at a new college and you don't know anyone. You want to have friends.</p> <p><b>Middle:</b> _____          _____          _____          _____          _____</p>	<p>40. Where do you want to work after you graduate?  <input type="checkbox"/> I have not planned for that yet.  <input type="checkbox"/> I want to work _____          List four things you should do to meet this goal:          1) _____          2) _____          3) _____          4) _____</p>
<p><b>Ending:</b> The story ends with you having many friends at the new college.          Story Score _____  <b>2A Subtotal</b> _____</p>	<p>41. What type of transportation do you plan to use after graduation?  <input type="checkbox"/> I have not planned for that yet.  <input type="checkbox"/> I plan to use _____          List four things you should do to meet this goal:          1) _____          2) _____          3) _____          4) _____  <b>2B Subtotal</b> _____</p>



<p style="text-align: center;"><b>Section Three</b> Psychological Empowerment</p>	<p>Directions: Check the answer that BEST describes you.  Choose only one answer for each question.  There are no right or wrong answers.</p>	<p>49. <input type="checkbox"/> It is no use to keep trying because that won't change things...or <input type="checkbox"/> I keep trying even after I get something wrong.</p>
		<p>50. <input type="checkbox"/> I have the ability to do the job I want...or <input type="checkbox"/> I cannot do what it takes to do the job I want.</p>
<p>42. <input type="checkbox"/> I usually do what others want...or <input type="checkbox"/> I tell others if they are doing something I don't want to do.</p>		<p>51. <input type="checkbox"/> I don't know how to make friends...or <input type="checkbox"/> I know how to make friends.</p>
<p>43. <input type="checkbox"/> I tell others when I have new or different ideas or opinions...or <input type="checkbox"/> I usually agree with other peoples' opinions or ideas.</p>		<p>52. <input type="checkbox"/> I am able to work with others...or <input type="checkbox"/> I cannot work well with others.</p>
<p>44. <input type="checkbox"/> I usually agree with people when they tell me I can't do something...or <input type="checkbox"/> I tell people when I think I can do something that they tell me I can't.</p>		<p>53. <input type="checkbox"/> I do not make good choices...or <input type="checkbox"/> I can make good choices.</p>
<p>45. <input type="checkbox"/> I tell people when they have hurt my feelings...or <input type="checkbox"/> I am afraid to tell people when they have hurt my feelings</p>		<p>54. <input type="checkbox"/> If I have the ability, I will be able to get the job I want...or <input type="checkbox"/> I probably will not get the job I want even if I have the ability</p>
<p>46. <input type="checkbox"/> I can make my own decisions...or <input type="checkbox"/> Other people make decisions for me.</p>		<p>55. <input type="checkbox"/> I will have a hard time making new friends...or <input type="checkbox"/> I will be able to make friends in new situations.</p>
<p>47. <input type="checkbox"/> Trying hard at school doesn't do me much good...or <input type="checkbox"/> Trying hard at school will help me get a good job.</p>		<p>56. <input type="checkbox"/> I will be able to work with others if I need to...or <input type="checkbox"/> I will not be able to work with others if I need to.</p>
<p>48. <input type="checkbox"/> I can get what I want by working hard...or <input type="checkbox"/> I need good luck to get what I want.</p>		<p>57. <input type="checkbox"/> My choices will not be honored...or <input type="checkbox"/> I will be able to make choices that are important to me.</p> <p style="text-align: right;"><b>Section 3 Subtotal</b> _____</p>

**Section Four**  
**Self-Realization**

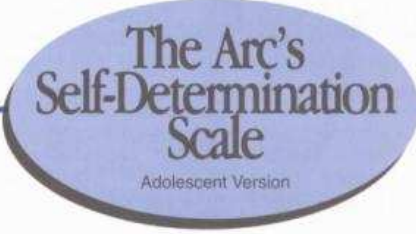
Directions:

Tell whether you think each of these statements describes how you feel about yourself or not. There are no right or wrong answers. Choose only the answer that BEST fits you.

58. I do not feel ashamed of any of my emotions.	<input type="checkbox"/>	<input type="checkbox"/>	66. I don't accept my own limitations.	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Don't agree		Agree	Don't agree
59. I feel free to be angry at people I care for.	<input type="checkbox"/>	<input type="checkbox"/>	67. I feel I cannot do many things.	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Don't agree		Agree	Don't agree
60. I can show my feelings even when people might see me.	<input type="checkbox"/>	<input type="checkbox"/>	68. I like myself.	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Don't agree		Agree	Don't agree
61. I can like people even if I don't agree with them.	<input type="checkbox"/>	<input type="checkbox"/>	69. I am not an important person	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Don't agree		Agree	Don't agree
62. I am afraid of doing things wrong.	<input type="checkbox"/>	<input type="checkbox"/>	70. I know how to make up for my limitations.	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Don't agree		Agree	Don't agree
63. It is better to be yourself than to be popular.	<input type="checkbox"/>	<input type="checkbox"/>	71. Other people like me.	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Don't agree		Agree	Don't agree
64. I am loved because I give love.	<input type="checkbox"/>	<input type="checkbox"/>	72. I am confident in my abilities.	<input type="checkbox"/>	<input type="checkbox"/>
	Agree	Don't agree		Agree	Don't agree
65. I know what I do best.	<input type="checkbox"/>	<input type="checkbox"/>			
	Agree	Don't agree			
					<b>Section 4 Subtotal</b> _____

Appendix B

Arc as Created by Wehmeyer and Kelchner (1995)



**The Arc's  
Self-Determination  
Scale**  
Adolescent Version

The Arc's Self-Determination Scale (Adolescent Version) is a student self-report measure of self-determination designed for use by adolescents with cognitive disabilities. The scale has two primary purposes:

- To provide students with cognitive disabilities and educators a tool that assists them in identifying student strengths and limitations in the area of self-determination; and
- To provide a research tool to examine the relationship between self-determination and factors that promote/inhibit this important outcome.

The scale has 72 items and is divided into four sections. Each section examines a different essential characteristic of self-determination: Autonomy, Self-Regulation, Psychological Empowerment and Self-Realization. Each section has unique directions that should be read before completing the relevant items. Scoring the scale (see Procedural Guidelines for scoring directions) results in a total self-determination score and subdomain scores in each of the four essential characteristics of self-determination. A comprehensive discussion and exploration of self-determination as an educational outcome is provided in The Arc's Self-Determination Scale Procedural Guidelines, as well as detailed scoring procedures and a discussion about the use of self-report measures in general. The scale **should not be** used until the administrator is thoroughly familiar with these issues.

The Arc's Self-Determination Scale (Adolescent Version) was developed by The Arc National Headquarters with funding from the U. S. Department of Education, Office of Special Education Programs (OSEP), under Cooperative Agreement #H023J20012. Questions used in Section One (Autonomy) were adapted, with permission from the authors, from the Autonomous Functioning Checklist. Questions used in Section 4 (Self-Realization) were adapted, with permission from the author, from the Short form of the Personal Orientation Inventory. Appropriate citations for both instruments are available in The Arc's Self-Determination Scale Procedural Guidelines. The Arc gratefully acknowledges the generosity of those researchers.


By Michael Wehmeyer, Ph.D.,    Principal Investigator  
Kathy Kelchner, M.Ed.,       Project Director  
Self-Determination Assessment Project

Student's name \_\_\_\_\_

Date \_\_\_\_\_

School \_\_\_\_\_

Teacher's name \_\_\_\_\_

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# Section One

## Autonomy

**Directions:**

Check the answer on each question that BEST tells how you act in that situation. There are no right or wrong answers. Check only one answer for each question. (If your disability limits you from actually performing the activity, but you have control over the activity (such as a personal care attendant), answer like you performed the activity.)

**1A. Independence: Routine personal care and family oriented functions**

**1A. Subtotal**

1. I make my own meals or snacks.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
2. I care for my own clothes.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
3. I do chores in my home.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
4. I keep my own personal items together.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
5. I do simple first aid or medical care for myself.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
6. I keep good personal care and grooming.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance

**1B. Independence: Interaction with the environment**

**1B. Subtotal**

7. I make friends with other kids my age.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
8. I use the post office.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
9. I keep my appointments and meetings.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
10. I deal with salespeople at stores and restaurants.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance

**1C. Acting on the basis of preferences, beliefs, interests and abilities: Recreational and leisure time**

**1C. Subtotal**

11. I do free time activities based on my interests.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
12. I plan weekend activities that I like to do.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
13. I am involved in school-related activities.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
14. My friends and I choose activities that we want to do.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
15. I write letters, notes or talk on the phone to friends and family.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance
16. I listen to music that I like.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance

<b>1D. Acting on the basis of preferences, beliefs, interests and abilities:</b>					<b>1D. Subtotal</b> _____
Community involvement and interaction					
17. I volunteer in things that I am interested in.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
18. I go to restaurants that I like.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
19. I go to movies, concerts, and dances.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
20. I go shopping or spend time at shopping centers or malls.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
21. I take part in youth groups (like 4-H, scouting, church groups)	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
<b>1E. Acting on the basis of preferences, beliefs, interests and abilities: Post-school directions</b>					<b>1E. Subtotal</b> _____
Post-school directions					
22. I do school and free time activities based on my career interests.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
23. I work on school work that will improve my career chances.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
24. I make long-range career plans.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
25. I work or have worked to earn money.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
26. I am in or have been in career or job classes or training.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
27. I have looked into job interests by visiting work sites or talking to people in that job.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
<b>1F. Acting on the basis of preferences, beliefs, interests and abilities: Personal expression</b>					<b>1F. Subtotal</b> _____
Personal expression					
28. I choose my clothes and the personal items I use every day.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
29. I choose my own hair style.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
30. I choose gifts to give to family and friends.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
31. I decorate my own room.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
32. I choose how to spend my personal money.	<input type="checkbox"/> I do not even if I have the chance	<input type="checkbox"/> I do sometimes when I have the chance	<input type="checkbox"/> I do most of the time I have the chance	<input type="checkbox"/> I do every time I have the chance	
<b>Please check Section One, A thru F, to make sure there is only one answer for each question.</b>					

**Section Two**  
Self-Regulation

**Directions:**

Each of the following questions tell the beginning of a story and how the story ends. Your job is to tell what happened in the middle of the story, to connect the beginning and the end. Read the beginning and ending for each question, then fill in the BEST answer for the middle of the story. There are no right or wrong answers. Remember, fill in the one answer that you think BEST completes the story.

**2A. Interpersonal cognitive problem-solving**

33. **Beginning:** You are sitting in a planning meeting with your parents and teachers. You want to take a class where you can learn to work as a cashier in a store. Your parents want you to take the Family and Child Care class. You can only take one of the classes.

**Middle:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Ending:** The story ends with you taking a vocational class where you will learn to be a cashier.

Story Score \_\_\_\_\_

35. **Beginning:** Your friends are acting like they are mad at you. You are upset about this.

**Middle:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Ending:** The story ends with you and your friends getting along just fine.

Story Score \_\_\_\_\_

34. **Beginning:** You hear a friend talking about a new job opening at the local book store. You love books and want a job. You decide you would like to work at the bookstore.

**Middle:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Ending:** The story ends with you working at the bookstore.

Story Score \_\_\_\_\_

36. **Beginning:** You go to your English class one morning and discover your English book is not in your backpack. You are upset because you need that book to do your homework.

**Middle:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Ending:** The story ends with you using your English book for homework.


Story Score \_\_\_\_\_



<p>37. <b>Beginning:</b> You are in a club at school. The club advisor announces that the club members will need to elect new officers at the next meeting. You want to be the president of the club.</p> <p><b>Middle:</b> _____                  _____                  _____                  _____                  _____                  _____</p> <p><b>Ending:</b> The story ends with you being elected as the club president.                  Story Score _____</p> <hr/> <p>38. <b>Beginning:</b> You are at a new school and you don't know anyone. You want to have friends.</p> <p><b>Middle:</b> _____                  _____                  _____                  _____                  _____                  _____</p> <p><b>Ending:</b> The story ends with you having many friends at the new school.                  Story Score _____</p> <p style="text-align: right;"><b>2A Subtotal</b> _____</p>	<p><b>2B: Goal setting and task performance</b></p> <p><b>Directions:</b>                  The next three questions ask about your plans for the future. Again, there are no right or wrong answers. For each question, tell if you have made plans for that outcome and, if so, what those plans are and how to meet them.</p> <p>39. Where do you want to live after you graduate?  <input type="checkbox"/> I have not planned for that yet.  <input type="checkbox"/> I want to live _____</p> <p>List four things you should do to meet this goal:                  1) _____                  2) _____                  3) _____                  4) _____</p> <hr/> <p>40. Where do you want to work after you graduate?  <input type="checkbox"/> I have not planned for that yet.  <input type="checkbox"/> I want to work _____</p> <p>List four things you should do to meet this goal:                  1) _____                  2) _____                  3) _____                  4) _____</p> <hr/> <p>41. What type of transportation do you plan to use after graduation?  <input type="checkbox"/> I have not planned for that yet.  <input type="checkbox"/> I plan to use _____</p> <p>List four things you should do to meet this goal:                  1) _____                  2) _____                  3) _____                  4) _____</p> <p style="text-align: right;"><b>2B Subtotal</b> _____</p>
--	--

<p><b>Section Three</b> Psychological Empowerment</p>	<p><b>Directions:</b> Check the answer that BEST describes you.  Choose only one answer for each question.  There are no right or wrong answers.</p>	<p>49. <input type="checkbox"/> It is no use to keep trying because that won't change things... or <input type="checkbox"/> I keep trying even after I get something wrong.</p>
<p>42. <input type="checkbox"/> I usually do what my friends want... or <input type="checkbox"/> I tell my friends if they are doing something I don't want to do.</p>	<p>50. <input type="checkbox"/> I have the ability to do the job I want... or <input type="checkbox"/> I cannot do what it takes to do the job I want.</p>	
<p>43. <input type="checkbox"/> I tell others when I have new or different ideas or opinions... or <input type="checkbox"/> I usually agree with other peoples' opinions or ideas.</p>	<p>51. <input type="checkbox"/> I don't know how to make friends... or <input type="checkbox"/> I know how to make friends.</p>	
<p>44. <input type="checkbox"/> I usually agree with people when they tell me I can't do something... or <input type="checkbox"/> I tell people when I think I can do something that they tell me I can't.</p>	<p>52. <input type="checkbox"/> I am able to work with others... or <input type="checkbox"/> I cannot work well with others.</p>	
<p>45. <input type="checkbox"/> I tell people when they have hurt my feelings... or <input type="checkbox"/> I am afraid to tell people when they have hurt my feelings.</p>	<p>53. <input type="checkbox"/> I do not make good choices... or <input type="checkbox"/> I can make good choices.</p>	
<p>46. <input type="checkbox"/> I can make my own decisions... or <input type="checkbox"/> Other people make decisions for me.</p>	<p>54. <input type="checkbox"/> If I have the ability, I will be able to get the job I want... or <input type="checkbox"/> I probably will not get the job I want even if I have the ability.</p>	
<p>47. <input type="checkbox"/> Trying hard at school doesn't do me much good... or <input type="checkbox"/> Trying hard at school will help me get a good job.</p>	<p>55. <input type="checkbox"/> I will have a hard time making new friends... or <input type="checkbox"/> I will be able to make friends in new situations.</p>	
<p>48. <input type="checkbox"/> I can get what I want by working hard... or <input type="checkbox"/> I need good luck to get what I want.</p>	<p>56. <input type="checkbox"/> I will be able to work with others if I need to... or <input type="checkbox"/> I will not be able to work with others if I need to.</p>	
	<p>57. <input type="checkbox"/> My choices will not be honored... or <input type="checkbox"/> I will be able to make choices that are important to me.</p>	
	<p><b>Section 3 Subtotal</b> _____</p>	



		<b>Directions:</b> Tell whether you think each of these statements describes how you feel about yourself or not. There are no right or wrong answers. Choose only the answer that BEST fits you.			
58. I do not feel ashamed of any of my emotions.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree	66. I don't accept my own limitations.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree
59. I feel free to be angry at people I care for.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree	67. I feel I cannot do many things.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree
60. I can show my feelings even when people might see me.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree	68. I like myself.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree
61. I can like people even if I don't agree with them.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree	69. I am not an important person.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree
62. I am afraid of doing things wrong.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree	70. I know how to make up for my limitations.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree
63. It is better to be yourself than to be popular.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree	71. Other people like me.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree
64. I am loved because I give love.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree	72. I am confident in my abilities.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree
65. I know what I do best.	<input type="checkbox"/> Agree	<input type="checkbox"/> Don't agree	<b>Section 4 Subtotal</b> _____		

**Scoring Step 1:**

Record the raw scores from each section:

**Autonomy**

1A =

1B =

1C =

1D =

1E =

1F =

Domain Total:

**Self-Regulation**

2A =

2B =

Domain Total:

**Psychological Empowerment**

3 =

Domain Total:

**Self-Realization**

4 =

Domain Total:

**Scoring Step 2:**

Sum each Domain Total for a Total Score:

**Self-Determination**

Total =

**Scoring Step 3:**

Using the conversion tables in Appendix A, convert raw scores into percentile scores for comparison with the sample norms (Norm Sample) and the percentage of positive responses (Positive Scores):

	Norm Sample	Positive Scores
--	-------------	-----------------

**Autonomy**

1A =

1B =

1C =

1D =

1E =

1F =

Domain Total:

**Self-Regulation**

2A =

2B =

Domain Total:

**Psychological Empowerment**

3 =

Domain Total:

**Self-Realization**

4 =

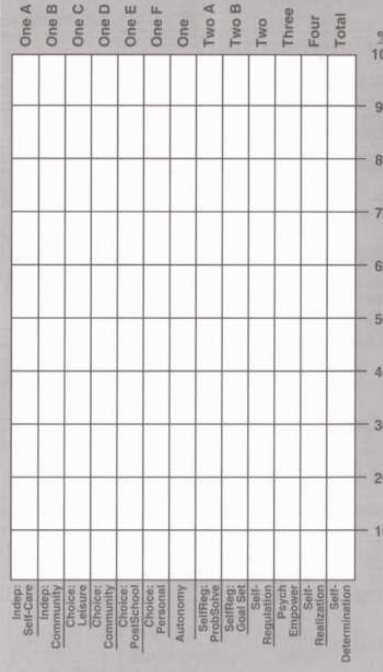
Domain Total:

**Self-Determination**

Total Score =

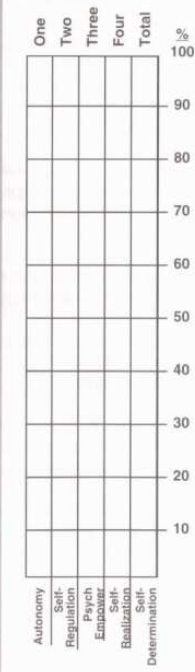
**Scoring Step 4:**

Fill in the graph for the percentile scores from the norming sample. From the appropriate percentile down, darken the complete bar graph (See example in Scoring Manual):



**Scoring Step 5:**

Fill in the graph for the percentile scores indicating the percent positive responses.



**Appendix C**

Stage and Milne and Principal Investigator Supplemental and Normative Questions

Do you have an invisible disability?

Please specify your invisible disability:

What is your age?

What is your gender?

Overall GPA?

Semester in college?

Enrollment Status:

To what extent does your invisible disability affect your functioning at college?

Are there any people and/or offices from this campus that were particularly helpful to you in adjusting to campus life?

What do you think are the most important services provided for students with invisible disabilities and why?

What do you do when you have difficulties in learning?

In reflecting on your college experience, what things have been difficult for you?

Under which circumstances do you tell others that you have an invisible disability?

How do you think you compare with the average person of your own age?

Do you feel you are treated differently when people know you have an invisible disability?

What does self-determination mean to you and why?

Did you receive special education services and/or a 504 before coming to the college?

## Appendix D

### Confidentiality and Informed Consent

I, Joseph D. Bryant, EdS, JD, am a doctoral student in the Instructional Leadership doctoral program at Lindenwood University and I am asking for your help in gathering information through this voluntary and anonymous survey regarding self-determination which is being conducted under the guidance of Lynda Leavitt, EdD. The information you provide will help identify similarities and differences between students' levels of self-determination, some of whom have invisible disabilities and some who do not; but all of whom are participating in higher education.

The amount of time involved in your voluntary participation can vary. There are several questions; but many people who have completed this survey in the past have spent less than 20 minutes. All your responses will be kept confidential. Only people directly involved with this project will have access to the surveys or see individual responses. Completion of this survey indicates voluntary consent to participate in this study.

There are no anticipated risks associated with this research. With that said however some of the questions may ask you to write about having a disability; and if you have a disability you may or may not have some uncomfortable feelings associated with answering some of the questions. You are reminded that personal information, such as your name or email address, will not be asked for on the survey itself. While the researcher will be able to read your responses, there will be no way for the researcher to link your response to your identity. Your responses will remain anonymous and you are reminded to not give your name or any information that could be used to identify you. With that said, the researcher will ask you identifiable questions such as your age, gender, year in school, major, GPA, whether you have been diagnosed with a disability, and if yes, what is it. Information such as this as well as other questions will be used to help categorize and analyze data and help confirm hypotheses the researcher created at the beginning of his study. Please Note:

There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about self-determination among students with and without disabilities who participate in higher education. Please Note:

- 1) Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose to look at the items and respond at another time or at another location (i.e. home, the library) where you will be most comfortable. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw. Alternatives for earning course credit are available from your course instructor if applicable.

2) We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study and the information collected will remain in the possession of the investigator in a safe location.

3) If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Joseph Bryant 314.984.7471 or the Supervising Faculty, Dr. Lynda Leavitt 636.949.4756. You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Jann Weitzel, Lindenwood's Provost at 636-949-4846.

Continuing beyond this consent form indicates that you have read its contents and have been given the opportunity to ask questions. You also acknowledge you can print this page or will be given a copy of this consent form for my records. By beginning this survey you expressly give your consent to participate in the research described above.

### **Vitae**

Joseph Daniel Bryant, II, is a native of St. Louis, Missouri and a life-long learner. After graduating from Chaminade College Preparatory School, Joseph went on to obtain his Bachelor of Arts degree in English from Creighton University, his Master of Education in Counseling degree from the University of Missouri-St. Louis, his Juris Doctor degree from Creighton University, his Educational Specialist degree in School Psychology from the University of Missouri-St. Louis, and now his Doctor of Education degree from Lindenwood University.

Joseph has remained fascinated by the continuing interplay of law, psychology, and education. A stalwart advocate for the disabled in all educational environments, Joseph hopes to continue his research and help to shape future educational policy for some of society's most deserving students.