

A COMPARISON OF THE IMPACT OF CURRICULUM

A COMPARISON OF THE IMPACT OF CURRICULUM ON THE PERCEIVED
LEVEL OF SELF-DETERMINATION IN ADULTS WITH INTELLECTUAL AND
DEVELOPMENTAL DISABILITIES

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DEDICATION

This is dedicated to my amazing husband, James, my beautiful children, Xavier and Bentley, my parents, Dan and Bonnie, and all the students I have served in my 20 years of education who have taught me that one of the most important things I can instill in them is a greater sense of empowerment and self-determination. I am truly blessed to be surrounded by such supportive people and have had the opportunity to serve some amazing students.

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Finally, I want to thank each of my former students who participated in my research. Your participation was greatly appreciated and will help improve the education for students with disabilities in the future.

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ABSTRACT

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A COMPARISON OF THE IMPACT OF CURRICULUM ON THE PERCEIVED LEVEL OF SELF-DETERMINATION IN ADULTS WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES

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Higher levels of perceived self-determination (SD) in individuals with intellectual and developmental disabilities (IDD) often correlate to improved post-school outcomes in education, employment, independent living, and relationships. It is imperative that instructional practices used with students with IDD address the behaviors and skills that a person must possess to be self-determined. This study used a quasi-experimental design to measure the perceived level of self-determination (SD) and the four essential characteristics of self-determined behavior and skills: autonomy, self-regulation, psychological empowerment, and self-realization in 18 adults with intellectual and developmental disabilities. The curriculum used was Life Centered Education (LCE) (Wandery, Wehmeyer, & Glor-Scheib, 2013). Results of the study revealed statistically significant differences in self-regulation interpersonal cognitive problem-solving norm sample and self-regulation interpersonal cognitive problem-solving positive scores between participants with an intellectual disability compared to those with a

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developmental disability. Additionally, there were significant differences in mean scores between disabilities in all four essential characteristics of self-determination.

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CHAPTER I

INTRODUCTION

The Americans with Disabilities Act (ADA) of 1990 defines a person with a disability as having a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such impairment, or a person who is perceived by others as having such impairment.

For school-age students, the Individuals with Disabilities Education Improvement Act (IDEA) of 2004 defines a child with a disability as having:

mental retardation, hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance (referred to in this title as ‘emotional disturbance’), orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities; and who, by reason thereof, needs special education and related services (IDEA Partnership).

The term mental retardation was first used in relation to developmental delay in 1895 (Reynolds, Zupanick, & Dombeck, 2013). The term replaced more derogatory terms such as simpleton, moron and feeble-minded. The DSM IV defines mental retardation as “significantly subaverage general intellectual functioning that is accompanied by significant limitations in adaptive functioning in at least two of the following skill areas: communication, self-care, home-living,

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social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety” (p. 39). In 2010, passage of Rosa’s Law, Public Law 111-256, required the terms mental retardation and mentally retarded be replaced by intellectual disability and individuals with an intellectual disability in federal records (Reynolds et al., 2013).

The Texas definition for intellectual and developmental disabilities (IDD) is a severe chronic disability that is caused by a mental or physical impairment or combination that manifests before the age of 22 and that will last a lifetime, and which creates substantial limitations in three or more areas: self-care; receptive and expressive language; learning; mobility; self-direction; capacity for independent living; economic self-sufficiency. Additionally, it reflects the individual’s need for specialized supports that are planned and coordinated (Texas Council for Development Disabilities, 2017). Further, school-age students served under IDEA with a disability code of Autism, are often served in the category of developmental delay.

Transition from school to adulthood can be difficult for all students, including students with IDD. Transition planning for students must (1) be systematic over time; (2) give attention to development of essential skills; (3) identify assistance in the transition process; and (4) identify ongoing support in adulthood (Odom, Horner, Snell, & Blacher, 2007).

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IDEA 2004 defines transition services as a coordinated set of activities for a child with a disability, which are results-oriented, focus on academic and functional achievement, and based on the individual child's needs including instruction (Dragoo, 2017).

IDEA 2004 mandates that transition services be developed based on assessment results focusing on the individual's needs. The intent of transition services is to ensure that public schools are providing an appropriate outcome driven process to students with disabilities. Section 601(d)(1)(A) of IDEA Amendments of 1997 address the need for a free appropriate public education that emphasizes special education and related services and should meet the unique needs of students in the areas of employment and independent living (Miller, Lombard, & Corbey, 2007).

The process of planning for the future can be quite daunting. Transition services involve many decisions, including goal setting, employment options, post-secondary education options, and independent living. Students should understand their role in the process and how to identify goals, develop a plan for attaining their goals, and effectively articulate their rights in the decision-making process. In recent years there has been an emphasis on the individual, his or her freedoms, and the idea that social supports should help foster the development of skills and decision-making capacity of students (Kochhar-Bryant & Greene, 2009).

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Self-determination (SD) is a topic of study in education that is especially important in the area of transition services. Individuals who are self-determined possess the ability to act autonomously, self-regulate their behavior, and are psychologically empowered and self-realizing (Kochhar-Bryant & Greene, 2009; Weheyer, 2007; Wehmeyer & Field, 2007). The idea that an individual can be a causal agent in his or her life is at the heart of self-determined behavior (Wehmeyer, 2007; Wehmeyer & Field, 2007).

The construct of SD can be applied to all individuals regardless of age or disability or lack thereof. The construct of SD has the fundamental premise that individuals have a natural tendency towards growth and that they want to improve their lives and feel good about themselves (Kochhar-Bryant & Green, 2009). Given the developmental issues for students with IDD, it is important that their level of self-determination be identified and deficit areas be addressed. Life satisfaction of individuals with disabilities directly relates to how self-determined they perceive themselves to be (Miller & Chan, 2008). Denney and Daviso (2012) state, that higher levels of self-determination skills improve outcomes for students with disabilities.

Instructional models to help educators improve their practices in teaching self-determination skills for students of all ages have been developed. Hoffman and Field (1995) developed the Model for Self-Determination. The theory behind the model is that SD is affected by internal factors such as values, knowledge, and skills, as well as environmental factors. The model consists of five components: Know Yourself, Value

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Yourself, Plan, Act, and Experience Outcomes and Learn. The Self-Determination Learning Model of Instruction provides teachers with a structure to better support students in becoming more self-regulated and self-directed toward setting and attaining goals (Shogren, Wehmeyer, Burke, & Palmer, 2017a).

There are commercially available curricula available focusing on developing SD. Examples of curricular material are *Beyond High School (BHS)* model (Wehmeyer, Garner, Lawrence, & Yeager 2006); *ChoiceMaker: A Comprehensive Self-Determination Transition Program* (Martin & Marshall, 1995); *Steps to Self-Determination* curriculum (Hoffman & Field, 1995); *The Life-Centered Career Education (LCCE) Inventory: A Curriculum-Based, Criterion-Related Assessment Instrument* (Bucher & Brolin, 1987); *The Road to Personal Freedom: Self-Determination* (Ludi & Martin, 1995); *TAKE CHARGE For The Future* (Powers, Turner, Westwood, Loesch, Brown, & Rowland, 1998); *Next S.T.E.P.: Student Transition and Educational Planning* (Halpern, Herr, Doren, & Wolf, 2000); and *Whose Future is it Anyway? Promoting Student Involvement in Transition Planning* (Wehmeyer & Lawrence, 1995).

To measure the level of self-determination a person has, practitioners can utilize resources such as *The Arc's Self-Determination Scale*, *The AIR Self-Determination Scale*, or *The Field Hoffman Self-Determination Assessment Battery*. Each of these instruments is designed to gain insight into a person's perceived level of self-determination.

The Arc's Self-Determination Scale-Adult Version is used to determine the perceived level of SD for participants. The survey consists of 72 items for participants to

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respond to. The essential characteristics of self-determination evaluated are: autonomy, self-regulation, psychological empowerment, and self-realization. A total of 148 points are available on the scale, with higher scores indicating higher levels of self-determination. The scale was developed and normed with 500 adolescents with cognitive disabilities (Wehmeyer, 1995). It was demonstrated to have adequate reliability and validity in the measurement of self-determination for adolescents with cognitive disabilities.

Research Questions

1. What impact does the Life Centered Education (LCE) curriculum have on the four essential characteristics of self-determined behavior and overall self-determination in adults with disabilities when compared across years of exposure?
2. What are the differences in the four essential characteristics and overall self-determination in participants with an intellectual disability, developmental disability, and other disabilities?

Limitations

The limitations to this study include the following:

1. Only adults who attended a specific transition program in an urban school district in North Texas were part of the study.
2. There could be an issue with fidelity in which the curriculum was implemented due to some teachers leaving the program and new teachers hired.

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3. The participants and researcher knew each other when participants were enrolled in the program.

Summary

Self-determination plays a vital role in the success of individuals with disabilities. Transition services for students with intellectual and developmental disabilities are a legal requirement mandated by the IDEA. This study can add to the growing body of literature in self-determination and curriculum. It can provide educators with evidence on the impact of one curriculum designed to improve self-determined behaviors and skills for students with disabilities as they transition into post-school employment and independent living.

CHAPTER II

REVIEW OF THE LITERATURE

According to the U.S. Department of Health and Human Services National Center for Health Statistics (Zablotsky, Black, & Blumberg, 2017) data brief, there was an increase in children diagnosed with developmental disabilities from 5.76% in 2014 to 6.99% in 2016; while the prevalence of children diagnosed with intellectual disabilities did not significantly change from 1.10% in 2014 to 1.14% in 2016. The American Association on Intellectual and Developmental Disabilities (AAIDD, 2018) defines an intellectual disability as a significant limitation, occurring before the age of 18, that impacts both intellectual functioning and adaptive behavior and covers many everyday conceptual, social and practical skills (American Association on Intellectual and Developmental Disabilities) AAIDD further elaborates on intellectual functioning as being general mental capacity like learning, reasoning and problem solving. Adaptive behaviors, conceptual skills, social skills, and practical skills are defined as

conceptual skills—language and literacy, money, time, and number concepts; and self-direction

social skills—interpersonal skills, social responsibility, self-esteem, gullibility, naivety, social problem solving, and the ability to follow rules/obey laws and to avoid being victimized

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practical skills—activities of daily living (personal care), occupational skills, healthcare, travel/transportation, schedules/routines, safety, use of money, use of the telephone (American Association on Intellectual and Developmental Disabilities, 2018).

The *Developmental Disabilities Assistance and Bill of Rights Act of 2000*, Public Law 106-402 defines developmental disabilities as:

a severe, chronic disability of an individual that

- (i) is attributable to a mental or physical impairment or combination of mental and physical impairments;
- (ii) is manifested before the individual attains age 22;
- (iii) is likely to continue indefinitely;
- (iv) results in substantial functional limitations in 3 or more of the following areas of major life activity:

- (I) Self-care.
- (II) Receptive and expressive language.
- (III) Learning.
- (IV) Mobility.
- (V) Self-direction.
- (VI) Capacity for independent living.
- (VII) Economic self-sufficiency; and

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(v) reflects the individual's need for a combination of sequence of special, interdisciplinary, or generic services, individualized supports, or other forms of assistance that are of lifelong or extended duration and are individually planned and coordinated.

The learning needs of students with intellectual and developmental disabilities are vast. Similar to their counterparts without disabilities, students with disabilities aspire to learn what is connected with their personal life goals in the areas of employment and daily living or personal interests (Bowman & Plourde, 2012).

Legislation

Over the years there have been additional legal mandates passed to help protect and support individuals with disabilities. Of these mandates, Public Law 94-142 (1975), states "all children with disabilities have available to them a free appropriate public education which emphasizes special education and related services designed to meet their unique needs" (U. S. Department of Education, 2007).

Public Law 102-569: The Rehabilitation Act Amendments of 1992 addresses the shift in paradigm in how disabilities are viewed, stating that

"disability is a natural part of the human experience and in no way diminishes the right of an individual to live independently, enjoy self-determination, make choices, contribute to society, pursue meaningful careers, and enjoy full inclusion and integration in the economic, political, social, cultural, and education

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mainstream of American society [Section 2(a)(3)(A-F)] (Rehabilitation Act Amendments of 1992 (1992).

The Individuals with Disabilities Education Act 1997 addresses transition services for students with disabilities. Section 601(d)(1)(A) describes the need for a free appropriate public education that emphasizes special education and related services and should meet the unique needs of students in the areas of employment and independent living (Miller, Lombard, & Corbey, 2007). Transition services are defined in IDEA 1997 Section 602(30)(A)(B)(C) as:

a coordinated set of activities for a student with disability that is designed within an outcome-oriented process, which promotes movement from school to post-school activities, including post-secondary education, vocational training, integrated employment (including supported employment) continuing and adult education, adult services, independent living, or community participation; is based upon the individual student's needs, taking into account the student's preferences and interests; and includes instruction, related services, community experiences, the development of employment and other post-school adult living objectives, and when appropriate acquisition of daily living skills and functional vocational evaluation (Johnson, 2004).

In the reauthorization of IDEA 2004 Section 601(d)(1)(A), there is an emphasis placed on special education and related services that should meet the unique needs of students for further education (Johnson, 2004). Additionally, IDEA 2004 requires

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transition services be provided to students at the age of 16 and include academic and functional goals, and goals shall be based on age appropriate assessments and include independent living skills when appropriate (American Foundation for the Blind, 2018). Further, IDEA 2004 Section 602(34)(A)(B) stresses that transitions services be within a results-oriented process, that is focused on improving the academic and functional achievement of the student with a disability to facilitate the child's movement from school to post-school activities including vocational education and that they account for the child's strengths (Johnson, 2004).

The 2004 reauthorization of IDEA Section 614(d)(1)(A)(VIII)(aa) requires schools to develop measurable post-school goals in the areas of employment, education/training, and, if appropriate, independent living. It also requires states to report post-school outcomes on students with disabilities one year after graduation in the areas of higher education enrollment, other postsecondary education program, competitive employment, or other employment types (Texas Transition A Bridge to the Future, 2017; Individuals with Disabilities Education Act, 2004).

The continual evolution of legislation designed to protect the rights of individuals with disabilities and require their active participation in not only the education while in school, but also the planning for their lives after graduation, provides clear evidence for the need for instruction that emphasizes self-determination.

Transition Services

IDEA 2004 defines transition services as a coordinated set of activities for a child with a disability, which are results-oriented, focus on academic and functional achievement, and based on the individual child's needs including instruction (IDEA Partnership, 2004).

Transition services involve many decisions based on the students' needs and goals in the areas of academics, vocation, post-secondary and independent function. Students need understanding in the areas of goal setting, employment options, post-secondary education options, and independent living options. Because transition services are to be results-oriented, students should understand their role in the process and how to identify goals, develop a plan for attaining their goals, and effectively articulate their rights in the decision-making process.

The emphasis on evidence-based practices, which can increase self-determination in students with disabilities, has led to changes in the Texas Administrative Code beginning in the 2018-2019 school year. Section 19, Subsection 89.1055 states:

(j) Beginning with the 2018-2019 school year, not later than when a student reaches 14 years of age, the ARD committee must consider and, if appropriate, address the following issues in the IEP:

(1) appropriate student involvement in the student's transition to life outside the public school system;

(10) the use and availability of appropriate:

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(A) supplementary aids, services, curricula, and other opportunities to assist the student in developing decision-making skills; and

(B) supports and services to foster the student's independence and self-determination, including a supported decision-making agreement under Texas Estates Code, Chapter 1357

The U.S. Department of Education conducted the National Longitudinal Transition Study-2 (Newman, Wagner, Knokey, Marder, Nagle, Shaver, Wei, with Cameto, Contreras, Ferguson, Greene, & Schwarting, 2011) *The Post-High School Outcomes of Young Adults With Disabilities up to 8 Years After High School* and reported that adults with other health impairments, speech/language impairments, or learning disabilities (64% to 67%) were more likely to be employed at the time of the study than adults with deaf-blindness, orthopedic impairments, autism, multiple disabilities, mental retardation, or visual impairments (30% to 44%). Additionally, adults with hearing impairments (57%) were more likely to be employed than adults with autism or mental retardation (30% to 39%) (Newman et al., 2011).

Theories

The construct of self-determination received its roots in the disciplines of philosophy, political science, and psychology. Within the psychological construct, there have been debates on the ideas of determinism and free will (Wehmeyer & Mithaug, 2005). To better understand the concept of SD in the construct of psychology, determinism and free will should be defined. Free will is defined as, the capacity to

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choose among another possibility or to act in certain situations free of natural, social, or divine restraints (Augustyn, Bauer, Duignan, Eldridge, Gregersen, Luebering, McKenna, Petruzzello, Rafferty, Ray, Rogers, Tikkanen, Wallenfeldt, Zeidan, & Zelazko, 2016a). Determinism is defined as, events, including moral choices, as being completely determined by previously existing causes. The theory of determinism postulates that the universe is utterly rational because complete knowledge of any given situation assures that absolute knowledge of its future is also possible. (Augustyn, Bauer, Duignan, Eldridge, Gregersen, Luebering, McKenna, Petruzzello, Rafferty, Ray, Rogers, Tikkanen, Wallenfeldt, Zeidan, & Zelazko, 2016b).

Wehmeyer and Mithaug (2005) presented two forms of determinism: hard and soft. Hard determinism assumes that human behaviors are driven by wants, wishes, desires, motivations, or feelings, and that they are triggered by specific conditions that ensure their occurrence. Soft determinism hypothesizes that behaviors can be both caused and free. Further, soft determinism assumes that every behavior occasions a trigger; but not all behaviors are coerced (Wehmeyer & Mithaug, 2005).

Wehmeyer and Mithaug (2005) identified supporters of free will as indeterminists and anti-determinists, and their position is on the construct believing that behavior is not occasioned by events or actions. The political construct views self-determination as the right of nations or groups to self-governance and is tantamount with freedom and independence (Wehmeyer, 1999).

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Given the theory that together or separately, internal and/or external factors influence the behaviors and choices of people, theorists of motivation have sought to explain the factors which influence people's behaviors and choices. White (1959) asserted there was an internal source that provided motivation for human behavior. Subsequently, Deci and Ryan (1985) expanded on White's theory of motivation and postulated a theory on intrinsic motivation that posited the role for self-determination (Wehmeyer, 1999).

Deci and Ryan (2018) presented the *Self-Determination Theory* (SDT) as a “framework for the study of human motivation and personality” (Deci & Ryan, 2018). SDT provides a theory for motivational studies, defining intrinsic and varied extrinsic motivations in cognitive and social development and in individual differences (Deci & Ryan, 2018). The theoretical framework consists of six mini-theories: cognitive evaluation theory, organismic integration theory, causality orientations theory, basic psychological needs theory, goal contents theory, and relationship motivation theory. SDT addresses two facets of human behavior: Why people do what they do, and the costs and benefits of different ways of socially regulating or encouraging behavior (Deci & Ryan, 2018). Within the SDT framework, self-determination is defined as the capacity and need to choose and have choices, instead of external motivators and reinforces driving or coercing a person's behavior (Deci & Ryan, 2018; Wehmeyer, 1999).

The construct of self-determination was applied to the education of students with disabilities in the early 1990s as an outcome of new federal mandates focused on

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transition services and the involvement of students in the transition planning of their education (Wehmeyer, 1999; Wehmeyer, 2007).

A Functional Model of Self-Determination (Wehmeyer, 1999) was developed following the Office of Special Education Programs (OSEP) funding of six projects to promote self-determination (SD) in youth with disabilities. Wehmeyer (1999) expanded on the existing theories and definitions of SD previously established in an effort to create a theory of SD to be used in education.

Within the parameters of *A Functional Model of Self-Determination*, Wehmeyer (1999) offered a clear description of the four essential characteristics: 1) behavioral autonomy—acting in accordance to personal preferences, interests, and/or abilities; and independently, without external influence or interference; 2) self-regulation—using self-management strategies, goal-setting and attainment behaviors, problem-solving and decision-making behaviors, and observational learning strategies; 3) psychological empowerment—learning and using problem-solving skills and perceiving and attaining control in a person’s life, individuals develop a view of psychological empowerment; 4) self-realization—understanding what an individual does well and acting accordingly (Wehmeyer, 1999). These essential characteristics can be found in most instructional and curricular material designed to help improve the level of self-determination in students.

Self-Determination

Prior to being used in the education field, the construct of self-determination was rooted in philosophy, psychology, and political science. Initially, SD began within

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theories of personality, but evolved into theories of motivation within the psychological construct (Wehmeyer, 1999).

Ward (1988) defined self-determination as referring to “both the attitudes which lead people to define goals for themselves and to their ability to take the initiative to achieve these goals” (p. 2). Wehmeyer (1998) defined self-determination as behaviors a person possesses to determine their own fate or act without pressure.

Hoffman and Field (1995) defined self-determination as “one’s ability to define and achieve goals based on a foundation of knowing and valuing oneself” (p. 136). Their model of self-determination consists of five components: 1) know yourself, 2) value yourself, 3) plan, 4) act, and 5) experience outcomes and learn. These components address cognitive, affective, and behavioral factors that promote self-determination.

To be self-determined, individuals must exhibit behaviors that allow them to accomplish typical roles concomitant with adulthood (Field, Martin, Miller, Ward, & Wehmeyer, 1998). Within the arena of education, the concept of self-determination has been a growing area of study. Field et al, (1998) defined self-determination as:

a combination of skills, knowledge, and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behavior. An understanding of one’s strengths and limitations together with a belief in oneself as capable and effective are essential to self-determination. When acting on the basis of these skills and attitudes, individuals have greater

ability to take control of their lives and assume the role of successful adults (p. 2).

Field et al., (1998) provided a summarized definition of self-determination: “self-determination is a combination of skills, knowledge, and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behavior” (p. 10). Additionally, an individual must understand his or her strengths and limitations, and possess a belief in his/her capabilities to effectively self-determine (Field et al., 1998). Individuals are at a greater advantage to be self-determined if they act based on these skills and attitudes.

According to Wehmeyer (1999), historical definitions of self-determination focused on it as “a basic human right, a specific response class, and based on functional properties of the response class” (p. 55). Wehmeyer (1999) postulated that self-determination should be measured by the actions of a person in four essential characteristics (a) acting autonomously, (b) behaving self-regulated, (c) initiating and responding in a psychologically empowered manner, and (d) acting in a self-realizing manner. These essential characteristics are discussed more in-depth later in this paper.

Wehmeyer and Mithaug (2005) and Wehmeyer (2007) expanded on previous definitions of SD by proposing that “self-determined behavior refers to volitional actions that enable one to act as the primary causal agent in one’s life and to maintain or improve one’s quality of life” (p. 117); the individual causes themselves to perform in certain ways, as opposed to other people or things evoking other actions in them (Wehmeyer, 2007).

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The definition of self-determination has evolved over the years due to research in the fields of psychology and education. The evolution of the definition and the defining characteristics of self-determined behavior has led researchers to create instructional and curricular material to improve students' ability to become causal agents in their lives.

Field and Hoffman (2002) discussed their curriculum that is designed to improve the self-determined behaviors in students with disabilities. The curriculum, *Steps to Self-Determination* (Field & Hoffman, 1996) is built upon the theory that SD is affected by internal factors such as values, knowledge, and skills, as well as environmental factors. The model consists of five components: Know Yourself, Value Yourself, Plan, Act, and Experience Outcomes and Learn. The Self-Determination Learning Model of Instruction provides teachers with a structure to better support students in becoming more self-regulated and self-directed toward setting and attaining goals (Shogren, Wehmeyer, Burke, & Palmer, 2017a).

Wehmeyer, Palmer, Agran, Mithaug, and Martin (2000) offered *The Self-Determined Learning Model of Instruction* (SDLMI) as a framework to deliver instruction to students with disabilities. The SDMLI provides teachers with a model to support students in setting and attaining goals by becoming more effective in initiating and self-regulating their actions (Shogren et al., 2017a). The teacher acts as a facilitator, instructor, and advocate, while the student becomes self-directed and an active participant.

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Wehmeyer et al. (2000) field tested the SDMLI with 40 students with disabilities in two states with a mean age from 14.2 to 17.2. The mean score of participants on *The Arc's Self-Determination Scale* (Wehmeyer, 1995), prior to using the SDMLI was 94, with a mean score of 99 following the use of the SDMLI. Participant scores on the Nowicki-Strickland Locus of Control Scale (1973) were 15.8, with a mean score of 14.1 (lower scores were more adaptive) following the intervention. These results indicate that some students with disabilities can improve in the area of self-regulation and improve in self-determination.

Models

Four models used to promote greater self-determination in students with disabilities were found in the literature: *Beyond High School (BHS)* model (Wehmeyer, Garner, Lawrence, Yeager, Lawrence, & Davis, 2006); *Whose Future is it Anyway? Promoting Student Involvement in Transition Planning* (Wehmeyer & Lawrence, 1995); and *TAKE CHARGE For The Future* (Powers, Turner, Westwood, Matuszewski, Wilson, and Phillips, 2001); and the SDLMI (Shogren, Wehmeyer, Burke, & Palmer, 2017a).

The BHS model (Wehmeyer et al., 2006) was designed to meet the needs of students ages 18-21 and to enhance their postsecondary outcomes, as well as to improve Indicator 14 data as mandated by IDEA. The model consists of three stages: Stage One involves targeted instruction teaching students to self-direct planning and decision-making directly connected to the transition process; Stage Two involves the students convening a person-centered planning meeting involving other stakeholders to work with

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the student on goal refinement; and Stage Three involves the student implementing and monitoring progress on his/her plan using the supports identified in stage two (Wehmeyer et al., 2006). The BHS model utilizes the *Whose Future Is It Anyway?* (WFA) (Wehmeyer & Lawrence, 1995) curriculum and the SDLMI (Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000) to help teach goal setting, refinement and progress monitoring.

The BHS model was field tested using fifteen students with intellectual disabilities between the ages of 18 and 21. The model incorporates the use of *Whose Future Is It Anyway?* curriculum (Wehmeyer & Lawrence, 1995) and the SDLMI (Wehmeyer et al., 2000). Participants' performance in setting 37 goals of various topics was evaluated. The results of the field test showed participants met or exceeded their set goals using the BHS model. Participants set a total of 37 goals: 12 employment-related goals; 12 living goals; eight recreation/leisure goals; and 5 social relationship goals. Researchers used the goal attainment scaling (GAS) to measure each student's achievement towards their goals. Standardized scores of 40 or below on the GAS indicate the student did not achieve their goal. Scores of 60 or above indicate students exceed expectations on their goal attainment. There was a mean score of 51.55 for all 37 goals. Only 5.4% of goal scores fell below 40 on the GAS scale. Additionally, only 40.5% were below 50. *The Arc's Self-Determination Scale* (Wehmeyer, 1995) was used to evaluate the students' level of SD. There were no significant differences on *The Arc's Self-Determination Scale* between pre and post-treatment.

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The BHS model was evaluated by Palmer, Wehmeyer, Shogren, Williams-Diehm, and Soukup (2012). The study included 109 high school students in three states and 23 school districts served in their 18-21-year-old program and receiving special education services as students with intellectual disabilities. Participants had mild and moderate levels of intellectual disabilities and ranged between 17.8 and 21 years of age. The sample size included 37% females and 60% males. Participants consisted of 60% of Caucasian, 12% Hispanic, 21% African American, 4% Native American/Alaskan Native, and 3% other. Disability categories consisted of 54% mild intellectual disability and 46% moderate intellectual disability. There were 79 participants who completed the two-year study. Results on *The Arc Self-Determination Scale* showed a significant increase in self-determination scores from baseline to post intervention. There was no significant difference in gender; however, there was a significant difference, over time. Students with mild IDD initially showed higher scores, but both students with mild and moderate IDD showed the same pattern of change over time (Palmer et al., 2012).

The *TAKE CHARGE For The Future* (Powers, Turner, Westwood, Matuszewski, Wilson, and Phillips, 2001) model is a multi-component intervention designed to promote student involvement in transition planning. The core component of the *TAKE CHARGE* mode is student-directed participation in relevant transition planning and preparation activities in school, community, and home settings (Powers et al., 2001). Students are taught strategies to pinpoint, communicate, and reach their transition goals, and they receive the information and support necessary to ensure their success.

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Powers et al., (2001) conducted a randomized field test of the *TAKE CHARGE For The Future* model with 43 youth with various disabilities (learning, emotional, orthopedic, or other health disabilities) from four high schools in four states. Participants consisted of 10 to 14 youth between 14 and 17 years of age were identified by educators in each school for possible participation. There were 18 participants had a learning disability; four had an orthopedic disability; two had an emotional disability; and one had a health impairment disability.

Prior to implementation of the *TAKE CHARGE* model, the overall level of involvement in transition planning was assessed using the *Educational Planning Assessment* (EPA). The assessment consisted of 14 Likert-type questions designed to determine their level of participation in the transition planning process. The *Transition Awareness Survey*, a 14-item evaluation, was completed by students and parents. The *Family Empowerment Scale*, a 34-item measure that assesses an individual's management of day-to-day situations, accessing of services, and advocating on behalf of others was administered to all participants. Lastly, an observational coding system was used to evaluate student participation in transition planning meetings. An independent-groups, repeated measures design was used to evaluate the impact of the *TAKE CHARGE* model. Participants were randomly assigned to one of two groups: a treatment group or a wait group. Analysis of pre and post intervention data from the treatment group, utilizing an ANOVA revealed a large effect size of .71 in Educational Planning; .61 in Student Empowerment; .79 in Parent Educational Planning; .67 in Parent Transition Awareness;

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and 1.16 in Educator Educational Planning (Powers et al., 2001). The analysis of data revealed a medium effect size of .39 in Student Transition Awareness. T test analysis showed significant differences between treatment and wait list groups in observed behaviors during transition planning meetings, with the treatment group showing significant improvement in initiation and participation.

The SDLMI (Shogren et al., 2017a) was designed to provide a model for teaching students how to self-direct their transition planning. The model is based on Wehmeyer's (1999) component elements of self-determination and the process of self-related problem solving (McGlashing-Johnson, Agran, Sitlington, Cavin, & Wehmeyer, 2003; Wehmeyer et al., 2000). Further, the model is designed to help students set goals, develop an action plan for meeting their goals, problem-solve, and self-regulate their work behavior.

The SDLMI (Shogren et al., 2017a) was field tested using 40 students across two states who were receiving special education services. Thirteen participants were identified as having mental retardation, 17 were identified as having a learning disability, and 10 were identified as having an emotional or behavioral disorder. Participants identified a total of 43 goals to work on using the SDLMI. Goal attainment scaling (GAS) results indicated that 25% of the GAS scores showed that teachers rated 25% of the total number of goals students received instruction on as being achieved as expected; and 30% of the total goals as exceeded expectations. Slightly more than 25% of the remaining GAS scores were between 40 and 49, signifying that students made progress on their goals, but did not fully achieve it, and just under 20% were rated as the least favorable

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outcome. There was a mean score increase on *The Arc's Self-Determination Scale* from 94 to 99 after instruction using the SDLMI. There was an improvement in mean score on the *Nowicki-Strickland Locus of Control Scale* from 15.8 to 14.1 (lower scores are more adaptive) following instruction using the SDLMI.

Shogren, Palmer, Wehmeyer, Williams-Diehm, and Little (2012) conducted a two-year study with 312 high school students with intellectual and learning disabilities to examine the impact of the SDLMI on academic and transition related goal attainment, access to the general education curriculum, and self-determination. Thirty percent of participants were classified as having an intellectual disability, while 70% were classified as having learning disabilities. Shogren et al., (2012) used a cluster or group-randomized trial control group design for their study.

Participants were located in three states and 20 school districts. Individual campuses were charged with randomly assigning participants to either a treatment or control group during the first year. Participants in the treatment group received instruction using the SDLMI, while the control group did not. In year two, participants in the treatment group continued receiving instruction using the SDLMI and participants in the control group began receiving instruction using the SDLMI. The GAS results indicated significant differences in academic and transition scores, but that disability interacted with the differences. A post hoc analysis of four groups revealed that participants in the treatment group who had learning disabilities had significantly higher attainment on academic goals but not transition goals, whereas, participants in the

treatment group who had intellectual disabilities had significantly higher goal attainment on transition goals but not academic goals. The overall analysis of the data revealed that participants with intellectual disabilities showed significant gains over time both in the control and treatment group, with the treatment group having significantly greater gains than those in the control group. Participants with learning disabilities showed significant gains in the treatment group, but not in the control group (Shogren et al., 2012).

Instructional and Curricular Materials

There are commercially available curricula available empathizing self-determination. Instructional material and practices may include a wide range of approaches from simple to complex. Students may be taught a target skill such as choice-making which would include real world examples, to more abstract multistep skills such as utilizing support persons to help in setting and attaining goals using appropriate communication skills (Eisenman, 2007). Common instructional practices include the skills and procedures needed in choice-making, decision-making, problem solving, goal setting and attainment, self-advocacy, self-efficacy, self-awareness and understanding, self-observation, evaluation, and reinforcement (Algozzine, Browder, Karvonen, Test, & Wood, 2001).

Field et al., (1998) conducted a review of 35 instructional material and curricula available to teach self-determination skills. A listing of materials reviewed is included (see Appendix A). The researchers provided information on research and field testing of the instructional materials and curricula reviewed. Ten materials and curriculum used

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user feedback on the value of the program; four used expert appraisal of material; two used a controlled study; one stated the study was presented elsewhere and showed major change in students' self-determination; one stated data was included; one provided none; 14 reported no research; and 3 did not specify research. One reported field testing, but no outcome data was presented and longitudinal data not yet available and short-term qualitative outcomes and counts are available upon request; one reported publisher testimonials and publisher describes value; one reported a single group pre/posttest with an evaluation of materials reported with regard to users in the group, and objectives without control group with data included; one reported a field teste, but no outcome data presented for over 1,000 students; one reported a field test, but no outcome data presented for two schools; one reported a field test with outcomes published elsewhere and the publisher describes the value of the program; one reported a single group pre/posttest performance field test without a control group; one reported field test information available upon request; eight reported none; one had no report; three did not specify; nine reported field testing, but no outcome data presented; one reported field testing, but no data available; one reported data elsewhere with significant differences in pre/post on knowledge and behavior assessed of SD; and six did not report field test information.

A review of the literature revealed research on the following instructional material and curricula in teaching self-determination skills to students with disabilities:

ChoiceMaker: A Comprehensive Self-Determination Transition Program (Martin & Marshall, 1995); *Steps to Self-Determination* curriculum (boyer 1997

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Field & Hoffman, 1996); *The Life-Centered Career Education (LCCE) Inventory: A Curriculum-Based, Criterion-Related Assessment Instrument* (Bucher & Brolin, 1987); *The Road to Personal Freedom: Self-Determination* (Ludi & Martin, 1995); and *Next S.T.E.P.: Student Transition and Educational Planning* (Halpern, Herr, Wolf, Doren, Johnson, & Lawson, 2000).

Martin and Marshall (1995) offered the *ChoiceMaker* curriculum to help enhance self-determination in students with disabilities. The curriculum consists of three sections: 1) choosing goals, 2) expressing goals, and 3) taking action. Each section consists of two to four teaching goals and numerous teaching objectives that address six transition areas (Martin & Marshall, 1995). The *ChoiceMaker* curriculum was socially validated by surveying 95 university-based transition experts, teachers, adults with disabilities, and parents across the country. There were 46 respondents which validated initial SD concepts and the curriculum framework. Focus groups and field tests over the course of three years were conducted to finalize the curriculum. The curriculum is comprised of three sections: 1) choosing goals, 2) expressing goals, and 3) taking action. The assessment components of the curriculum are criterion-referenced and the initial test-retest agreement scores were 82%.

Steps to Self-Determination (Field & Hoffman, 1996; Hoffman & Field, 1995; Field & Hoffman, 2002) is a curriculum designed to increase students' knowledge, beliefs, and skills needed improve their ability to self-determine. The curriculum consists of five components: Know Yourself, Value Yourself, Plan, Act, and Experience

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Outcomes and Learn (Hoffman & Field, 1995; Field, & Hoffman, 2002). The first two components provide the emphasis on internal processes in self-determination while the last three components consist of specific external skills that grow from foundational understandings to actions. The curriculum consists of ten principles: establishing a co-learner role for teachers, emphasizing modeling as an instructional strategy, using cooperative learning, promoting experiential learning, using integrated or inclusive environments, accessing support from family and friends, emphasizing the importance of listening, incorporating interdisciplinary teaching, appropriately using humor, and capitalizing on teachable moments (Field & Hoffman, 2002).

Field testing of *Steps to Self-Determination* resulted in significant, positive difference from pre to post-test gains of cognitive knowledge and observed behavior associated with SD in the treatment group compared to the control group (Hoffman & Field, 1995). Two Midwestern high schools in different socioeconomic settings participated in the study with a total of 77 student completing the curriculum (Hoffman & Field, 1995).

The *Life-Centered Career Education (LCCE) Inventory* curriculum was designed for “educable mentally handicapped” and “specific learning disabled” individuals. The curriculum is made up of 22 competency areas. The curriculum assesses students in two batteries: knowledge battery and performance battery. Both batteries are criterion-referenced. The theory that the knowledge and performance abilities of an individual with disabilities are not equal, represents the rationale for measuring both batteries. The

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Knowledge Battery, in addition to being criterion-referenced, is also standardized. This are of the curriculum assesses students in 20 of the 22 competencies. Each of the 20 competencies have 89 subcompetencies for a total of 1,780 items. The Performance Battery is not standardized and has had limited field testing done on it. This battery consists of 97 subcompetencies in 21 competency areas.

As a result of a three-year self-determination grant issued by the Office of Special Education and Rehabilitative Services (OSERS), U.S. Department of Education, Ludi, and Martin (1995) developed the *Self-Determination: The Road to Personal Freedom* curriculum. The curriculum was piloted with students with mild, moderate, and severe disabilities from a variety of ethnic backgrounds. However, no descriptive statistics on disability groups, age, gender, ethnic groups were provided in the literature.

The Road to Personal Freedom curriculum was developed based on results from a Q-sort analysis rank-order for high and low functioning students: a) skills identified in the literature, b) skills identified by focus groups, and c) skills they generated themselves, and survey results from 146 respondents on: a) core traits identified by the researchers; b) specific SD traits needed to get and keep a job; c) need to identify community resources and use them; d) knowing their rights; e) need to family support in developing SD skills; f) need for SD skills to be taught prior to graduating; and g) self-advocacy (Ludi & Martin, 1995). The Q-short methodology was also applied to researcher rankings for self and for high functioning and low functioning youth with disabilities to determine if gender, ethnicity, work role, and disability versus nondisabled status of board members

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affected their perceptions. The results were used to divide the curriculum into eight units: Unit 1) Introduction to Self-Determination: The Road to Personal Freedom; Unit 2) Expanding Roles: Practice Makes Perfect; Unit 3) Communication: A Look At Individual Styles; Unit 4) Facing Facts: Disabilities and Accommodations; Unit 5) Fostering Interdependence; Family, Friends, and Support; Unit 6) The Big R's: rights and Responsibilities; Unit 7) Future Planning: Getting From Here to There; and Unit 8) Conclusion: Celebration of Self (Ludi & Martin, 1995).

Field-testing of *The Road to Freedom* revealed that some teachers lack sufficient knowledge about SD to follow the development and scope of the curriculum which left them feeling uncomfortable. Pre and post-test results showed growth in student self-assessment and knowledge gained. However, there is a belief that the data did not fully reflect the level of acquisition of SD skills in participants (Ludi & Martin, 1995).

Wehmeyer, Palmer, Lee, Williams-Diehm, and Shogren (2011) evaluated the *Whose Future Is It Anyway?* intervention for improving self-determination. The researchers used a randomized-trial, placebo control group design to study the impact of the intervention. According to Wehmeyer et al., (2011), "The WFA was developed primarily for secondary-age students with disabilities to promote greater involvement in transition planning." (p. 48). Research participants included 493 students being served by special education across multiple disability categories in districts located in six states. Participants were identified as receiving services as: 31% learning disabled; 27% intellectually disabled; 6% attention deficit disorder/attention deficit hyperactivity

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disorder; 9% emotionally disturbed / behavioral disorder; 6% other health impairment; 6% autism; 17% other. The participants ranged in age from 11.3 to 21.8 years of age, with females consisting of 35.9% of the population and males consisting of 64.1%. 58.4% of participants were Caucasian, 19.3% were African American, 14.4% were Hispanic, 1% was Native American, 2% was Asian, and 1.2% was mixed race. Two self-determination measurement tools were used in this study: The Arc's Self-Determination Scale and the AIR Self-Determination Scale. According to the researchers, "all students showed gains in self-determination over time for both measures of self-determination, whereas students in the WFA group scored significantly more positively on AIR than did students in the placebo control group." (Wehmeyer et al., 2011, p. 52).

Shogren, Wehmeyer, Palmer, Rifenbark, and Little (2015) reported on a follow-up analysis of 779 students with disabilities who participated in group-randomized, control group studies examining the efficacy of SD interventions while in high school 1-2 years following the completion of high school based on adult outcomes. Participants were recruited due to their participation in two prior studies conducted by Wehmeyer and colleagues in 2011 and 2013. In their study designed to determine the effectiveness of *Whose Future Is It Anyway?* curriculum, Wehmeyer et al., (2011) reported that students with various disabilities who were exposed to the curriculum, showed significantly higher levels of self-determination than students in the control group.

Wehmeyer, Palmer, Shogren, Williams-Diehm, and Soukup (2010) reported significantly greater growth in the self-determination of students with mental retardation

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and learning disabilities who were exposed to multiple self-determination curricula over the course of three years. The study utilized a randomized trial placebo control group of 371 high school students from six states receiving special education services. Teachers who were randomly selected to be assigned to the intervention conditions selected from a list of interventions developed to promote student involvement in transition planning: *ChoiceMaker Curriculum* (Martin & Marshall, 1995); *Steps to Self-Determination* (Field & Hoffman, 1996); *Whose Future Is It Anyway?* (Wehmeyer et al., 2004); SDLMI (Wehmeyer et al., 2000); and *NEXT S.T.E.P. Curriculum* (Halpern, Herr, Doren, & Wolf, 2000). All students in the study demonstrated improved SD over the three years; however, students in the intervention group showed significantly greater growth, with specific intraindividual variables affecting growth (Wehmeyer et al., 2010).

Assessment

The *LCCE* curriculum consists of two batteries: Knowledge Battery and Performance Battery. The Knowledge Battery is a standardized criterion-referenced instrument consisting of 89 subcompetency tests covering 20 competencies, giving the battery a total of 1,780 items. The Knowledge Battery is designed for small group administration. The Performance Battery is a criterion-referenced assessment consisting of 97 subcompetencies covering 21 competencies. Each test specifies: (a) the materials needed for assessment, (b) directions to the evaluator, and (c) directions to the student. Teachers evaluate students' performance using a score sheet based on the provided

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criteria for master. Some tasks can be completed in a group, while others must be performed individually.

The assessment was first pilot tested with junior and senior high school students prior to completing three field tests. The first field test consisted of 245 students and 22 teachers from three Missouri communities. The field tests covered seven tests, 30 subcompetencies, and 987 items. Correlation and descriptive analysis were used for item analysis. Items were analyzed according to content and statistical characteristics. Test format was evaluated using content analysis comments by examiners.

Test Two consisted of 20 competencies, 89 subcompetencies and 3,576 items. There were 135 examiners who administered 2,510 competency tests. The second field test covered 20 competencies from the battery. A total of 89 subcompetency tests and 3,576 items were contained in the 20 competency areas. A total of 135 examiners from 12 states administered 2,510 competency tests. Students in grades 7-12 were involved in the field test. Analysis of Test Two consisted of (a) information gathered as a result of student response choices and (b) structured and unstructured feedback from teachers regarding the responses of the students. The third field test consisted of 4,267 competency tests for standardization of the Knowledge Battery. 152 special education from 12 states administered the battery to 469 eighth grade students in regular-classes. The performance of the students was used as an estimate of the competency level of special education students.

Post-School Outcomes

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Shogren, Wehmeyer, Palmer, Rifenbark, and Little (2015) conducted a follow-up analysis of 779 students with disabilities who had participated in a group-randomized, control group studies. The studies examined the efficacy of self-determination interventions in secondary schools. Shogren et al., (2015) analysis examined the relationship between self-determination status when leaving the high school setting and adult outcomes one and two years post-high school.

Participants in the original study were eligible to participate in the follow-up analysis. Participants were recruited from six states and 50 school districts. Participants were educationally diagnosed as 37% learning disability; 30% intellectual disability; 11% other health impairment; 9% emotional disturbance; 6% autism; 2% speech impairment; 1% hearing or vision impairment; .6% orthopedic impairment; and 2% missing information (Shorgren et al., 2015).

Shogren et al., (2015) used an 11-construct measurement model to examine relationships between self-determination and postschool outcomes. The measures were applied to two groups (control group and treatment group) and across time. Self-determination was measured at times 1, 2 and three (3 years); community access, employment, and life satisfaction were measured at times 4 and 5 (2 years); and financial independence and independent living were measured at time 5 (1 year) only. Beta pathways collapsed across control and treatment groups showed that self-determination scales (SDS) at time 1 predicted SDS at time 2, which predicted SDS at time 3. SDS at time 3 significantly predicted Community Access at time 4 and 5; Employment at time 4,

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but not Employment at time 5. SDS at time 3 predicted a significant decrease in the Financial Independence construct at time 5. Results of a factorial invariance analysis showed significant differences across groups in SDS at times 1 and 2, and significant differences in Life Satisfaction, Community Access, and Employment at time 4 (Shogren et al., 2015). Participants in the treatment group scored higher in Life Satisfaction compared to those in the control group. Finally, participants in the treatment group scored higher on the Financial Independence compared with the control group.

Shogren, Villareal, Lang, and Seo (2017b) conducted a secondary data analysis using the National Longitudinal Transition Study-2 (NLTS2) data to examine to what degree three of the four essential characteristics of self-determination play an arbitrating role in the relationship between school-based and post-school outcomes. The secondary analysis of the NLTS2 data suggests that autonomy, self-realization, and psychological empowerment play a significant role in affecting the relationships between school-based factors and post-school outcomes. This research helps reinforce the importance of IDEA's mandate that schools provide transition services that are outcome driven and appropriate for students with disabilities.

Summary

Individuals who are self-determined demonstrate behaviors in regulation, problem-solving, self-advocacy, and pursuing goals (Hong & Shull, 2009). The life satisfaction of individuals with disabilities directly relates to how self-determined they perceive themselves to be (Miller & Chan, 2008). Denney and Daviso (2012) reported

that higher levels of self-determination skills improve outcomes for students with disabilities; however, professionals in the field of education may lack understanding and training which creates gaps in research and implementation of SD strategies.

In education, self-determination is especially important when coupled with transition services. Individuals who are self-determined possess the ability to act autonomously, self-regulate their behavior, and are psychologically empowered and self-realizing (Kochhar-Bryant & Greene, 2009; Weheyer, 2007; Wehmeyer & Field, 2007). The idea that an individual can be a causal agent in his/her life is at the heart of self-determined behavior (Wehmeyer, 2007; Wehmeyer & Field, 2007). The theory of SD has the fundamental premise that individuals have a natural tendency towards growth and that they want to improve their lives and feel good about themselves (Kochhar-Bryant & Green, 2009). Given the developmental needs of students with IDD, it is important that their level of self-determination be determined and areas of strengths be built upon.

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CHAPTER III METHODOLOGY

SD is an educational construct and has been a topic of research in recent years. There is a growing body of research on the impact of self-determination on outcomes for students with disabilities. It is important to conduct research on the instructional material and curricula found in the literature and the effects of self-determination and student outcomes. Thus, the purpose of the current study is to determine the impact of the LCE curriculum on the perceived level of SD and the four essential characteristics of SD in adults with intellectual and developmental disabilities, as well as determine the differences between disability groups when comparing participants' perceived level of SD and its essential characteristics.

The study was conducted in a North Texas urban school district during the 2017-2018 school year. The district included 138 campuses and enrolled approximately 87,233 students; 62.3% Hispanic/Latino, 11.1% White, 23% African American, 1.8% Asian, 0.1% Pacific Islander, and 0.1% American Indian. Of these students, 76.7% are considered economically disadvantaged, 30.9% Limited English Proficient (LEP), 75.2% at risk, and 7.89% receiving services through special education.

The LEAP Program is the only terminal 18+ age transition program in the school district utilizing the LCE curriculum. The curriculum is designed to build student

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capacity in self-determination. The Life Center Education curriculum was adopted by the campus in 2013 for core content delivery with students enrolled in the program. Prior to 2013, the program did not have a specific curriculum to guide instructional practices. The program is part of a continuum of services offered to students served by special education. It is located in a building which houses two other special education programs. One of the other programs serves approximately 50 students with intellectual and developmental disabilities who have severe behaviors that cannot be managed on a general education campus regardless of supports. Students attending this program are expected to transition back to a lesser restrictive environment once they can demonstrate adequate management of their own behavior or when they can be managed by an effective behavior improvement plan. The other program is a half-day transition program serving approximately 72 juniors and seniors from the 12 high school campuses who need vocational training. This program consists of four classes where students learn vocationally specific skills as well as generalizable soft skills. In addition to these programs located in the same building, there is another terminal 18+ program serving approximately 45 students who need additional supports to make educational progress in their vocational, life and vocational skills.

The participants in this study were selected using convenience sampling. Convenience sampling means individuals who are willing to participate and are available when you need them. Participants were selected based on their participation in the LEAP Program between 2010 and 2017. Participants had to have been enrolled for at least two

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consecutive years and graduated from the program. Participants were at least 18 years old and no older than 30 years old.

While in school, some participants qualified for services under IDEA as students with an intellectual disability or developmental delay. With Autism and developmental delay being interchangeable per definition, participants referred to as having a DD represent those with Autism. Other disability categories, under IDEA, such as other health impairment, learning disability/specific learning disability, auditory impairment, orthopedic impairment, and emotional disturbance are represented in the participant group titled other disabilities. Enrollment in the program was not dependent upon a specific disability; however, students had to qualify for Special Education Services and require additional services past 12th in school to complete their graduation plan. Students enrolled in the program were expected to be competitively employable and able to access city transportation independently prior to graduation. Students needing more than natural supports to be successful in employment were not eligible for the program.

Participants met specific criteria to participate in the study: 1) received an educational diagnosis of an intellectual and developmental disabilities, or other disability; 2) demonstrated the ability to read survey material; 3) attended the LEAP Program for a minimum of two consecutive years before graduating from the program; and 4) graduated from the LEAP program between 2010 and 2017. All participants met the following criteria: (a) have a diagnosis of an intellectual and developmental delay or other disabilities, (b) able to read written materials, (c) have graduated from the LEAP Program, (d) have

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attended the LEAP Program for a minimum of 2 consecutive years, and (e) have attended the LEAP Program between 2010 and 2017.

A review of student enrollment documents between 2010 and 2017 revealed a total of 70 students who met the four criteria for participation in the study. Of the 70 students meeting the qualifications to participate in the study 64 (N = 64) had contact information on file at the campus. Students who attended and graduated prior to the fall of 2010 did not have contact information available and therefore were eliminated from the study. The breakdown of participants eligible to participate in the study based on disability is: intellectual disability (N = 29), developmental disability (N = 11), and other disabilities (N = 24) (see Table 1).

Table 1.

Demographics of Eligible Participants

Grad Year	Intellectual Disability	Developmental Disability	Other Disabilities
2011	2	0	0
2012	3	1	3
2013	3	1	5
2014	6	3	3
2015	6	0	4
2016	6	2	4
2017	3	4	5

Note: Other Disabilities—Other Health Impairment, Learning Disability/Specific Learning Disability, Auditory Impairment, Orthopedic Impairment, and Emotional Disturbance

The 64 individuals with contact information on file were contacted by letter with a description of the study and inviting them to make contact with the researcher if

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interested in participating (see Appendix B). Following the initial letter to participants, a second letter was sent 10 days later, again inviting participants to participate in the study.

A quasi experimental research design was utilized across participants to measure the perceived level of self-determination based on years exposed to the LCE curriculum and participant disability grouping. Utilizing *The Arc's Self-Determination Scale-Adult Version* (Wehmeyer, 1995) for the study allowed the researcher to assess the level of perceived self-determination and the four essential characteristics of SD of individual participants and compare the results across groups of to determine the impact of curriculum on the level of SD in adults with intellectual and developmental disabilities.

The independent variables in the study were participants' disability and participants' exposure or lack of exposure to the *LCE* curriculum. The dependent variables in the study were participant's scores on *The Arc's Self-Determination Scale-Adult Version* (Wehmeyer, 1995) in the essential characteristics of self-determined behavior: autonomy, self-regulation, psychological empowerment and self-realization, and their overall score in self-determination.

Prior to implementation, study design and procedures used in this study were screened, and permission granted by the Institutional Review Board (IRB) for Human Research Protection (see Appendix C). Additionally, the school district (see Appendix D) and the program where participants graduated (see Appendix E) granted permission for this study, which took place on school district property with former students.

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Once signed informed consent was obtained the study commenced (see Appendix F). The research sessions took place in small groups and one-on-one sessions with participants. Participants completed their survey either at the school or in their home.

Participants were asked to complete the *Information About You* (see Appendix G) before being asked to complete *The Self-Determination Scale-Adult Version* (see Appendix H). *The Arc's Self-Determination Scale-Adult Version* (Wehmeyer, 1995) was utilized during this study. This scale was chosen because of its reliability and validity with people with intellectual and developmental disabilities. To ensure all material was properly read and understood, the researcher read the instructions, questions and answer choices out loud to participants. Clarification was provided to individual participants upon request.

Following the completion of the sessions, the researcher used *The Arc's Self-Determination Scale-Adult Version: Procedural Guidelines* (Wehmeyer, 1995) to score individual participant's survey.

Once totals in autonomy, self-regulation, psychological empowerment, self-realization, and self-determination were established for each participant, the researcher documented raw scores on the survey's scoring document and used the conversion tables found in *The Arc's Self-Determination Scale-Adult Version: Procedural Version* (see Appendix H) to determine the *norm sample* and *positive scores* for each essential characteristic and overall self-determination for each participant. For this study the

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researcher used mean scores based on the raw scores of participants to analyze their level of self-determination.

CHAPTER IV

RESULTS

The purpose of this study was to extend the research on self-determination and the impact of curriculum and instruction on the level of SD in adults with ID and DD. The study utilized a quasi-experimental design to compare the perceived level of self-determination of adults with IDD and its four essential characteristics.

During each research session, the researcher utilized the *Information About Me* and *The Arc's Self-Determination Scale-Adult Version* to gather information from participants. Participants were read all material aloud by the researcher to ensure proper understanding. Clarification on instructions, questions and answer choices were given to individuals when requested. Participants documented their responses to demographic information and survey questions on their individual documents.

After obtaining human subject research approvals from the university and permission from the school district, and program, student records were reviewed to determine which students attended the program between 2010 and 2017. Additionally, the researcher determined which participants had contact information listed in school files. This information was used to generate a list of qualified participants. Sixty-four students graduated between 2010 and 2017 and met the four qualifications to participate in the study and had contact information on file at the program.

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Of the 64 participants who met all four qualifications and had contact information on file, 18 responded to the invitation to participate in the study. The demographic breakdown of these 18 participants (N = 18) included 50% Hispanic/Latino, 17% Caucasian, 28% African American, and 5% Other (see Table 2). Participants' were first divided into disability groups: intellectual disabilities (N = 9); developmental disabilities (N = 4); and other disabilities (N = 5) (see Table 3). Next participants were divided into five groups based on their exposure to the LCE curriculum: 0 years exposure (N = 5); 1 year exposure (N = 5); 2 years exposure (N = 2); 3 years exposure (N = 5); and 4 years exposure (N = 1) (see Table 4).

Table 2.

Demographic Information of Participants (N = 18)

Race	Hispanic/ Latino		Caucasian		African American		Other	
	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>
	9	50%	3	17%	5	28%	1	5%

Table 3.

Demographics Based on Disability (N = 18)

Disability Groups	Intellectual Disability		Developmental Disability		Other Disabilities	
	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>
	9	50	4	22.2	5	27.8

Note: Other Disabilities—Emotional Disturbance, Auditory Impairment, and Other Health Impairment

Table 4.

Years Exposed to LCE and Disability Groups (N = 18)

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Years of LCE	0		1		2		3		4	
	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>	<i>N</i>	<i>Pct</i>
	5	27.8%	5	27.8%	2	11.0%	5	27.8%	1	5.6%

Participants' scores in the four essential characteristics of SD and overall SD were compared to determine the impact of the LCE curriculum on adults with disabilities. Participants' individual scores were used to calculate the mean score for each participant group.

To answer the specific research question:

What impact does the Life Centered Education (LCE) curriculum have on the four essential characteristics of self-determined behavior and overall self-determination in adults with disabilities when compared across years of exposure?

When comparing groups with more than one participant in them, data analysis revealed that participants with no exposure to the LCE curriculum had the highest mean score in the area of self-realization ($M = 12.40$), participants with one year exposure to the LCE curriculum had the highest mean scores in three areas: self-regulation ($M = 7.80$), psychological empowerment ($M = 14.80$), and self-determination ($M = 104.20$), and participants with three years exposure had the highest mean score in autonomy ($M = 72.60$). It is important to note that there was only one participant with four years exposure to the LCE curriculum in the study whose scores in psychological empowerment, self-realization, and self-determination were similar to other participant's when compared individually.

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Table 5.

Years of LCE and Mean Scores

Years of LCE	Autonomy		Self- Regulation		Psychological Empowerment		Self- Realization		Self- Determination	
	<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>
0	5	66.00	5	4.80	5	14.20	5	12.40	5	97.40
1	5	70.60	5	7.80	5	14.80	5	11.00	5	104.20
2	2	43.50	2	6.50	2	9.50	2	9.50	2	69.00
3	5	72.60	5	6.40	5	12.00	5	11.20	5	102.20
4	1	58.00	1	9.00	1	15.00	1	13.00	1	95.00

The comparison of scores based on years of exposure to the LCE curriculum revealed that participants with at least 1 year exposure perceived themselves to be more self-determined than participants with no exposure. Participants with only 1 year exposure ($N = 5$) perceive themselves to be more self-determined than those with 2-4 years exposure.

Participants' scores were analyzed based on their disability to answer the specific research question:

What are the differences in the four essential characteristics and overall self-determination in participants with an intellectual disability, developmental disability, and other disabilities?

Data analysis revealed that participants with an intellectual disability ($N = 9$) had a higher mean score in five areas: autonomy ($M = 71.89$), psychological empowerment ($M = 14.11$), self-realization ($M = 11.67$), and self-determination ($M = 101.67$).

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Participants in the other disability group ($N = 5$) had a higher mean score in self-regulation ($M = 9.20$) (see Table 6).

Table 6.

Disabilities and Mean Scores

Disability	Autonomy		Self-Regulation		Psychological Empowerment		Self-Realization		Self-Determination	
	<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>	<i>N</i>	<i>M</i>
ID	9	71.89	9	4.00	9	14.11	9	11.67	9	101.67
DD	4	61.25	4	8.75	4	13.50	4	11.25	4	94.75
Other	5	59.80	5	9.20	5	11.60	5	11.00	5	91.60

Note: Other Disabilities—Other Health Impairment, Learning Disability/Specific Learning Disability, Auditory Impairment, Orthopedic Impairment, and Emotional Disturbance.

These data indicate that participants with an intellectual disability ($N = 7$) perceived themselves more self-determined than participants with a developmental disability ($N = 4$) and participants with other disabilities ($N = 5$).

CHAPTER V

DISCUSSION

Self-determination is a construct that has been studied for many years.

Researchers have identified four essential characteristics in self-determined behavior: autonomy, self-regulation, psychological empowerment, and self-realization (Kochhar-Bryant & Greene, 2009; Wehey, 2007; Wehmeyer & Field, 2007).

Palmer et al., (2012) evaluation of the BHS curriculum with 109 students with mild and moderate intellectual disabilities, utilized the *Arc's Self-Determination Scale* to assess self-determined behavior and skills in participants. Results on the *Arc's Self-Determination Scale* showed a significant increase in self-determination scores from baseline to post intervention. There was no significant difference in gender; however, there was a significant difference, over time. Students with mild ID initially showed higher scores, but both students with mild and moderate ID showed the same pattern of change over time (Palmer et al., 2012). There was a pattern of change observed over time in both groups of participants.

Wehmeyer et al., (2011) evaluation of WFA intervention for improving self-determination. Participants were 493 middle and high school age students, including students 18-21 years of age. Participants in the study included students with, learning disabilities, intellectual and developmental disabilities, and other disability categories.

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The treatment group consisted of 351 participants and the control group consisted of 142 participants. In this sample, the test for homogeneity of dispersion matrices was significant, Box's $M = 67.65$, $F(10, 349713) = 6.69$, $p < .001$ (Wehmeyer et al., 2011). The study affords causal evidence of the value of the WFA intervention to promote the SD of students with disabilities. All students showed gains in SD over time for both SD measures *AIR-Self-Determination Scale* (Woman, Campeau, Dubois, Mithaug, & Stolarski, 1994) and *the Arc's Self-Determination Scale* (Wehmeyer, 1995). Students who received instruction from teachers using the WFA showed enhanced self-determination and transition knowledge and skills across both middle and high school.

The results of this study are akin to the aforementioned studies given the overall positive impact the LCE curriculum had on participant's perception of their self-determined behaviors and skills, regardless of disability, as measured using the *Arc's Self-Determination Scale-Adult Version*. Additionally, participants in the intellectual disabilities group had higher mean score in four of five when compared to participants in the developmental disabilities and other disabilities groups. It is important to note that the group of participants exposed to four years of instruction guided by the LCE ($N = 1$) had the highest mean scores in three areas: self-regulation ($M = 9.00$); psychological empowerment ($M = 15.00$); and self-realization ($M = 13.00$).

Limitations

The study was conducted with participants who attended one specialized transition program in a specific urban school district in Texas. Due to the small number

of participants, generalizability of the results may be limited. Participants' comprehension level may have played a factor in their full understanding of questions asked in the *Arc's Self-Determination Scale-Adult Version*. The difference in instructional practices from teachers between 2010 and 2017 may have impacted how participants perceived their behaviors and skills in self-determination. Finally, the relationship between research and participants had been established prior to the start of the study due to their connection with the program.

Future Research

This study focused on adults with intellectual and developmental disabilities who attended a specialized transition program for students with disabilities. An analysis of mean scores across disability groups and years of exposure to instruction guided by the LCE curriculum revealed difference across groups. However, the limited number of participants limits the generalizability of this study. Therefore, additional research is needed with greater numbers of participants who did and did not have exposure to instruction guided by the LCE curriculum. It will be important for future research to have a larger number of participants exposed to instruction guided by the LCE curriculum over time.

To further understand the differences in self-determined behaviors and skills in adults with disabilities, mean scores were compared across gender and disabilities. Male participants in the developmental disability group ($N = 3$) had higher mean scores in: psychological empowerment ($M = 14.00$); and self-realization ($M = 12.00$); whereas

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females in the developmental disability group (N = 1) had higher mean scores in: autonomy (M = 81.00); self-regulation (M = 12.00); and self-determination (M = 114.00). Male participants in the intellectual disability group (N = 3) had higher mean scores in: psychological empowerment (M = 14.33); and self-realization (M = 12.00), whereas females in the same group (N = 6) had the highest mean scores in: autonomy (M = 73.50); self-regulation (M = 4.83); and self-determination (M = 103.83). Female participants in the other disabilities group (N = 2) had the highest mean scores in all five areas when compared to males in the same group (N = 3): autonomy (M = 68.50); self-regulation (M = 11.00); psychological empowerment (M = 13.50); self-realization (M = 11.00); and self-determination (M = 105.50). Overall female participants (N = 9) had higher mean scores greater than the male participants (N = 9).

Future research could include the possible links between greater scores in the essential characteristics for females compared to males and why females perceive themselves to be more self-determined than males.

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Appendix A

Instructional Material and Curricula Available to
Teach Self-Determination Skills

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- *A Maze to Amaze: Transition Planning for Youth with Disabilities* (McAlonan & Longo)
Become Your Own Expert: Self-Advocacy Curriculum for Individuals with Learning Disabilities (Carpenter)
- *Becoming the Me I Want To Be, Building Skills, and Making Choices, Becoming Self-Determined* (Holub)
- *ChoiceMaker Self-Determination Curriculum: Choosing Employment Goals* (Marshall, Martin, Mason & Jerman)
- *ChoiceMaker Self-Determination Curriculum: Self-Directed IEP* (Martin, Marshall, Maxon & Jerman)
- *ChoiceMaker Self-Determination Curriculum: Take Action* (Marshall, Martin, Maxon, Miller, Hughes, McGill & Jerman)
- *Colorado Transition Manual* (McAlona & Longo); *Connections: A Transition Curriculum for Grades 3 Through 6* (Aspinall, Roberts & Robinson)
- *Fostering Self-Determination: Activities, Resources, Lessons, and Video* (Ben, Anderson & Wiedle)
- *Group Action Planning: An Innovative Manual for Building A Self-Determined Future* (Anderson, Seaton, Dinas & Satterfield)
- *In Their Own Words Video and Study Guide* (Collins, Price, Evelo, Johnson & Shroat)
Irvine Unified School District Self-Determination Materials: Student Strategies, Support Strategies, and Transition (Tabor, Deboer & O'Neal)
- *Learning with Purpose: An Instructor's Manual for Teaching Self-Determination Skills to Students Who Are At-Risk for Failure* (Serna & Lau-Smith)

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- *Lessons For Living: A Self-Determination Curriculum for Transitional Aged Students* (Kurland, Simms, Young & Beckwith)
- *Life Centered Career Education* (Brolin)
- *Next S.T.E.P.* (Halpern, Herr, Wolf, Lawson, Doren & Johnson)
- *Project Partnership: A Model Program for Encouraging Self-Determination Through Access to the Arts; Putting Feet On My Dreams: A Program in Self-Determination for Adolescents and Young Adults* (Fullerton)
- *Rocketing Into The Future: A Student Conference Launching Kit* (Miller & Corbey)
- *Self-Advocacy: How Students With Learning Disabilities Can make the Transition From High School to College* (Eaton)
- *Self-Advocacy For People with Developmental Disabilities* (Rhoades & Browning)
- *Self-Advocacy Strategy For Education and Transition Planning* (Van Reusen, Bos, Schumaker & Deshler)
- *Self-Determination: A Resource Manual for Teaching and Learning Self-Advocacy* (People First of Washing/Families Working Together)
- *Self-Determination for Youth with Disabilities: A Family Education Curriculum* (Abery)
- *Self-Determination: Pathway to Inclusion Training Manual and Video* (Miller & Miller)
- *Self-Determination Profile, It's My Life-Preference: Preference Based Planning, My Life Planner, Profile Decks, and Dignity Based Models* (Curtis)
- *Self-Determination: The Road to Personal Freedom* (Ludi & Martin)
- *Self-Determination Training: Journey to Independence* (Wehmeyer & Bersani)
- *Steps to Self-Determination Instructor's Guide and Student Activity Book* (Hoffman, Field & Sawilowsky)

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- *A Student's Guide to the IEP and Helping Students Develop Their IEPs + Audiotape*
(The National Information Center for Children and Youth with Disabilities)
- *Take Charge and Take Charge for the Future* (Powers)
- *The Trans-Plan: Planning for Your Future* (Begun, Minor, Silvers & Witcher)
- *Transition Issues Curriculum: A Curriculum for Students in Special Education with Moderate Needs to Plan and Prepare for Their Own Transition* (Carter)
- *Whose Future Is It Anyway? A Student-Directed Transition Planning Process*
(Wehmeyer & Kelchner)

Appendix B

TWU Institutional Review Board for Human

Research Protection Approval

A COMPARISON OF THE IMPACT OF CURRICULUM



Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3378
email: IRB@twu.edu
<http://www.twu.edu/irb.html>

DATE: April 25, 2018

TO: Mr. Terry Guthrie
Teacher Education

FROM: Institutional Review Board (IRB) - Denton

Re: Approval for A Comparison of the Level of Self-Determination in Young Adults with Intellectual/Developmental Disabilities (Protocol #: 20065)

The above referenced study has been reviewed and approved by the Denton IRB (operating under FWA00000178) on 4/25/2018 using an expedited review procedure. This approval is valid for one year and expires on 4/25/2019. The IRB will send an email notification 45 days prior to the expiration date with instructions to extend or close the study. It is your responsibility to request an extension for the study if it is not yet complete, to close the protocol file when the study is complete, and to make certain that the study is not conducted beyond the expiration date.

If applicable, agency approval letters must be submitted to the IRB upon receipt prior to any data collection at that agency. A copy of the approved consent form with the IRB approval stamp is enclosed. Please use the consent form with the most recent approval date stamp when obtaining consent from your participants. A copy of the signed consent forms must be submitted with the request to close the study file at the completion of the study.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any adverse events or unanticipated problems. All forms are located on the IRB website. If you have any questions, please contact the TWU IRB.

cc. Dr. Diane Myers, Teacher Education
Dr. Jane Pemberton, Teacher Education
Graduate School

Appendix C

Fort Worth Independent School District

Research Approval Letter

A COMPARISON OF THE IMPACT OF CURRICULUM

Stacy M. Burrell, Ph.D.
Director, Grants Compliance and Monitoring
100 N. University Drive, Suite SW212A, Fort Worth, Texas 76107
OFFICE 817.814.1850 FAX 817.814.1855
askeval@fwisd.org



Date: March 6, 2018

To: Terry Guthrie

Re: Request for External Research with Fort Worth ISD (R_sdQj3QQgBkO9OoN)

Your application to conduct research in FWISD has been reviewed. We are pleased to inform you that your study, **A Comparison of the Level of Self-determination in Young Adults with Intellectual/Developmental Disabilities**, has been approved.

You are free to begin your study. Please remember that all data collected in FWISD schools are protected by the Grants Compliance and Monitoring CERR and IRB functions. This authority supersedes any contractual agreement or Memorandum of Understanding (MOU) per FWISD-Legal.

You agree to keep all data confidential which includes creating special subject numbers, keeping data safeguarded, not sharing or reporting individual data to third parties for research or other purposes, and using the data only for agreed upon research and program development purposes. You understand and agree that no confidential information regarding any individual teacher or student will be disclosed in any document intended for public disclosure.

Although this letter constitutes approval from the Grants Compliance and Monitoring Department, you must have principal's consent before you can start your study. Teacher and student participation in your study is strictly voluntary.

Please send us results and/or publications resulting from your study. We wish you the best in your research. Please contact AskEval@fwisd.org if you have further questions.

Sincerely,

Stacy M. Burrell, Ph.D.
Director, Grants Compliance and Monitoring

CC: Tracy Marshall, Executive Director, Grants Development, Management and Monitoring

Appendix D

Transition Center LEAP Program Approval Letter

A COMPARISON OF THE IMPACT OF CURRICULUM

Transition Center LEAP Program
5100 El Campo, Fort Worth, Texas 76107
OFFICE 817.814-6400. FAX 817.814-6451
www.fortworthisd.org



Paul C. Kaufman, Principal
Terry Guthrie, Assistant Principal
Marcus Torres, Teacher Coordinator

To Whom it May Concern

09 March 2018


My name is Paul Kaufman and I am the principal of the Transition Center LEAP Program. Mr. Terry Guthrie has requested permission to access locally kept student contact information to communicate with former students who graduated between 2010 and 2017 as part of his research for his dissertation.

Please accept this letter as documentation of my permission for Mr. Guthrie to access locally kept student information to compile a list of former students who meet the criteria for inclusion in his reach and their contact information to communicate with them.

Additionally, Mr. Guthrie has my permission to use the building located at 5100 El Campo Ave., Fort Worth, TX 76107, to conduct his research study.

If you have any questions, please do not hesitate to contact me.

Sincerely,



Paul C. Kaufman,
Principal
Transition Center LEAP Program

Appendix E

IRB Stamped Participant Consent Form

A COMPARISON OF THE IMPACT OF CURRICULUM

TEXAS WOMAN'S UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Title: A Comparison of the Level of Self-determination in Young Adults with Intellectual/Developmental Disabilities

Investigator: Terry Guthrie, MEd.....tguthrie@twu.edu 817-676-8941
Advisor: Jane Pemberton, PhDjpemberton@twu.edu 940-898-2218

Explanation and Purpose of the Research

You are being asked to participate in a research study for Mr. Guthrie's dissertation at Texas Woman's University. The purpose of the study is to compare perceived levels of self-determination in young adults with intellectual/developmental disabilities. The findings will help the researchers understand the impact of curriculum and instruction on the level of self-determination in individuals with disabilities. You have been asked to participate in this study because you are a young adult with a disability and graduated from the Transition Center LEAP Program.

Description of Procedures

As a participant in this study you will be asked to spend up to 2 hours of your time completing the survey. The researcher will read the instructions, questions and answer choices out loud to the group. The first page of the survey is titled *Information About You*. This information consists of your age, the year you graduated, your gender, your race, your relationship status, your employment status, your living arrangement, your housing type, and your means of transportation. Questions on the *ARC's Self-Determination Scale* will be divided into four categories: (a) autonomy; (b) self-regulation; (c) psychological empowerment; and (d) self-realization. You will respond by selecting the answer choice that best fits your perception. There will be some questions where you will respond with a short-written response. You will be assigned a random number to put on the front page of the survey where it asks for your name. That number will be assigned to you when you sign-in for the study session.

Potential Risks

There are some potential risks associated with this study. First, you may have a difficult time reading and understanding specific words or statements in the survey. To minimize this risk, the researcher will read all material out loud to the group and provide clarification to individual participants upon request. Second, you may experience emotional discomfort and/or anxiety associated with being selected to participate because you have a disability or because of the setting you are in. To limit the risk, the survey does not focus on your disability, nor are you expected to disclose your disability. Additionally, you may take breaks when you need to and you may request to complete the survey in another location of the building. Third, there is a risk of loss of confidentiality. There is a potential risk of loss of confidentiality in all email and US mail transactions. The researcher has taken steps to minimize this risk by not requiring you to

Approved by the
Texas Woman's University
Institutional Review Board
Approved: April 24, 2018

Initials
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disclose any personally identifiable information as well as making sure you have adequate space during the study so that others cannot see your responses. No names or institution will be associated with submitted responses. Fourth, there is a risk of coercion. Your participation is completely voluntary and you may withdraw from the study at any time without question or penalty. Your participation in the study or withdrawing from the study will not affect your relationship with the researcher or the LEAP Program. Fifth, there is a risk of loss of time. This risk will be minimized by ensuring your understanding of the time commitment as well as providing you with the opportunity to take breaks as you need them. Sixth, there is a risk of loss of anonymity. In an effort to minimize this risk, all data will be kept secure and no identifiable information will be collected during the study. Finally, there is a risk of fatigue. To minimize this risk, you may take breaks as needed throughout the study.

The researcher will try to prevent any problem that could happen because of this research. You should let the researcher know at once if there is a problem and he will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Participation and Benefits

Your involvement in this study is completely voluntary and you may withdraw from the study at any time. Your participation in the study will help the researcher understand the impact of curriculum and instruction on the level of self-determination in individuals with disabilities.

Questions Regarding the Study

You will be given a copy of this signed and dated consent form to keep. If you have any questions about the research study you should ask the researchers; their phone numbers are at the top of this form. If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact the Texas Woman's University Office of Research and Sponsored Programs at 940-898-3378 or via e-mail at IRB@twu.edu.

Signature of Participant

Date

*If you would like to know the results of this study tell us where you want them to be sent:

Email: _____

or

Address: _____

Approved by the
Texas Woman's University
Institutional Review Board
Approved: April 24, 2018

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Appendix F
Information About You Form

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Information About You

Participant ID Number: _____ **Age:** _____

Year Graduated: _____

Gender: _____ Male _____ Female

Employment: _____ Competitively Employed
_____ Supported Employment
_____ Supported Work Center (sheltered workshop)
_____ Self-employed
_____ Unemployed

Relationship Status: _____ Single _____ **Race:** _____ Caucasian
_____ Married _____ Hispanic
_____ Divorced _____ African American
_____ Dating _____ Asian
_____ Other

Living Arrangements: _____ With Parents
_____ With Roommate
_____ By Myself
Other: _____

Housing Type: _____ House
_____ Apartment
_____ Group Home

Housing: _____ Own
_____ Rent

Transportation: _____ City Transportation
_____ My Own Car
_____ Parents
_____ Relatives
_____ MITS
Other: _____

Appendix G

The Arc's Self-Determination Scale-Adult Version

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The Arc's Self-Determination Scale Adult Version

The Arc's Self-Determination Scale (Adult Version) is a self-report measure of self-determination designed and validated primarily for use by adults with cognitive and developmental disabilities. The scale has two primary purposes:

- To provide a tool that assists in identifying individual strengths and areas of support need in self-determination; and
- To provide a research tool to examine the relationship between and among self-determination and factors that promote/inhibit self-determined behavior, to evaluate the efficacy of interventions to promote self-determination, and for use with related research activities.

The scale has 72 items and is divided into four sections. Each section examines a different **essential characteristic** of self-determined behavior: **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-determined behavior. The Arc's Self-Determination Scale Procedural Guidelines (http://www.beachcenter.org/education_and_training/self-determination/default.aspx) provides information for administration and scoring the measure 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-Adult Version was developed by Michael Wehmeyer and Nancy Bolding at The Arc of the United States 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 Four (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 these researchers.

By Michael Wehmeyer, Ph.D., Principal Investigator
Nancy Bolding, M.A. Project Director

Self-Determination Assessment Project

Name _____

Date _____

Agency/
Location _____

Facilitator's name _____



© 1995 The Arc of the United States and Michael L. Wehmeyer

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<div style="border: 2px solid black; border-radius: 50%; padding: 10px; display: inline-block;"> Section One Autonomy </div>		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 you have a disability that limits you from actually performing the activity, but you have control over the activity by using 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 others 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 sales people 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	

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1C. Acting on the basis of preferences, beliefs, interests and abilities: Recreational and leisure					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 community 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	
1D. Acting on the basis of preferences, beliefs, interests and abilities: Community Involvement and interaction					1D. Subtotal _____
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 community groups (like YMCA/YWCA and church)	<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	

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1E. Acting on the basis of preferences, beliefs, interests and abilities: Post-school directions				1E. Subtotal
22. I do 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 activities 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
1F. Acting on the basis of preferences, beliefs, interests and abilities: Personal Expression				1F. Subtotal
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 hairstyle.	<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

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Section Two Self-Regulation

Directions: Each of the following questions tells 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 answer that you think BEST completes the story.

2A. Interpersonal cognitive problem-solving.

33. **Beginning:** You are sitting in a planning meeting with your boss. You want to learn to work the computer. Your boss wants you to learn to work a cash register. You can only learn one of them.

Middle:

Ending: The story ends with you learning to work a computer.

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 bookstore. 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 job one morning and discover you do not have some of the papers you need. You are upset because you need those papers to do your job.

Middle:

Ending: The story ends with you using the papers to do your job.

Story Score _____

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<p>37. Beginning: You are in a committee at work. The committee chair announces that the members will need to elect new officers at the next meeting. You want to be the chair person of the committee.</p> <p>Middle:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Ending: The story ends with you being elected as the committee chair person.</p> <p>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 in five years?</p> <p><input type="checkbox"/> I have not planned for that yet.</p> <p><input type="checkbox"/> I want to live _____</p> <p>List four things you should do to meet this goal:</p> <p>1) _____</p> <p>2) _____</p> <p>3) _____</p> <p>4) _____</p>
<p>38. Beginning: You are at a new job and you don't know anyone. You want to have friends.</p> <p>Middle:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Ending: The story ends with you having many friends at the new job.</p> <p>Story Score _____</p>	<p>40. Where do you want to work in five years?</p> <p><input type="checkbox"/> I have not planned for that yet.</p> <p><input type="checkbox"/> I want to work _____</p> <p>List four things you should do to meet this goal:</p> <p>1) _____</p> <p>2) _____</p> <p>3) _____</p> <p>4) _____</p> <p>41. What type of transportation do you plan to use in five years?</p> <p><input type="checkbox"/> I have not planned for that yet.</p> <p><input type="checkbox"/> I plan to use _____</p> <p>List four things you should do to meet this goal:</p> <p>1) _____</p> <p>2) _____</p> <p>3) _____</p> <p>4) _____</p>

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<div style="border: 2px solid black; border-radius: 50%; padding: 10px; display: inline-block; text-align: center;"> Section Three Psychological Empowerment </div> <div style="margin-left: 10px;"> Directions: Check the answer that BEST describes you. Choose only one answer for each question. There are no right or wrong answers. </div>		
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.	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.
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.	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
44.	<input type="checkbox"/> I usually agree with people when they tell me I can't do some thing...or <input type="checkbox"/> I tell people when I think I can do something that they tell me I can't.	51. <input type="checkbox"/> I don't know how to make friends...or <input type="checkbox"/> I know how to make friends.
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.	52. <input type="checkbox"/> I am able to work with others...or <input type="checkbox"/> I cannot work well with others.
46.	<input type="checkbox"/> I can make my own decisions...or <input type="checkbox"/> Other people make decisions for me.	53. <input type="checkbox"/> I do not make good choices...or <input type="checkbox"/> I can make good choices.
47.	<input type="checkbox"/> Trying hard at work doesn't do me much good...or <input type="checkbox"/> Trying hard at work will help me get a good job.	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.
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.	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.
		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.
		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.
		Section 3 Subtotal _____

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<div style="border: 2px solid black; border-radius: 50%; padding: 10px; display: inline-block;"> Section Four Self-Realization </div>		Directions: Tell whether 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"/> Disagree	66. I don't accept my own limitations	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree
59. I feel free to be angry at people I care for.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	67. I feel I cannot do many things.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree
60. I can show my feelings even when people might see me.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	68. I like myself.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree
61. I can like people even if I don't agree with them.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	69. I am not an important person.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree
62. I am afraid of doing things wrong.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	70. I know how to make up for my limitations.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree
63. It is better to be yourself than to be popular.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	71. Other people like me.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree
64. I am loved because I give love.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	72. I am confident in my abilities.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree
65. I know what I do best.	<input type="checkbox"/> Agree <input type="checkbox"/> Disagree	Section 4 Subtotal _____	

Appendix H

The Arc's Self-Determination Scale-Adult

Version Conversion Tables

A COMPARISON OF THE IMPACT OF CURRICULUM

Conversion Tables of The Arc's Self-Determination Scale-- Adult Version

Table 1
Conversion Table of Autonomy Domain Total Score

Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile
0	---	0	33	---	3.2	66	51.40	55.6
1	---	0	34	29.54	3.7	67	52.09	59.9
2	---	0	35	30.22	4.3	68	52.77	61.0
3	---	0	36	30.90	4.8	69	53.45	65.2
4	---	0	37	---	4.8	70	54.14	67.4
5	---	0	38	---	4.8	71	54.82	68.4
6	---	0	39	---	4.8	72	55.50	71.1
7	---	0	40	33.64	6.4	73	56.19	72.2
8	---	0	41	34.32	7.0	74	56.87	74.3
9	---	0	42	35.00	8.0	75	57.55	77.5
10	---	0	43	35.69	8.6	76	58.24	80.7
11	---	0	44	36.37	10.2	77	58.92	82.4
12	---	0	45	37.05	11.2	78	59.60	85.0
13	---	0	46	37.74	11.8	79	60.29	87.2
14	---	0	47	38.42	13.9	80	60.97	88.2
15	---	0	48	39.10	15.0	81	61.65	90.4
16	---	0	49	39.79	16.6	82	62.34	90.9
17	---	0	50	40.47	19.3	83	63.02	91.4
18	---	0	51	41.15	20.3	84	63.70	92.0
19	---	0	52	41.84	21.4	85	64.39	92.5
20	---	0	53	42.52	24.1	86	65.07	93.0
21	---	0	54	43.20	25.1	87	---	93.0
22	---	0	55	43.89	27.3	88	66.44	94.1
23	---	0	56	44.57	29.4	89	67.12	96.3
24	---	0	57	45.25	30.5	90	67.80	97.3
25	23.39	0.5	58	45.94	31.6	91	---	97.3
26	---	0.5	59	46.62	36.4	92	69.17	97.9
27	---	0.5	60	47.30	36.9	93	69.85	99.5
28	---	0.5	61	47.99	39.6	94	---	99.5
29	26.12	1.6	62	48.67	44.4	95	---	99.5
30	---	1.6	63	49.35	48.1	96	71.90	100
31	27.49	2.1	64	50.04	49.2			
32	28.17	3.2	65	50.72	51.3			

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Table 2
Conversion Table of Self-Regulation Domain Total Score

Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile
0	24.37	2.7	8	43.49	28.9	16	62.62	94.7
1	---	2.7	9	45.88	34.2	17	65.01	96.3
2	29.15	3.7	10	48.27	42.8	18	67.40	97.9
3	31.54	5.3	11	50.66	56.1	19	69.79	98.4
4	33.93	7.0	12	53.05	65.8	20	72.18	99.5
5	36.32	10.7	13	55.45	74.3	21	74.57	100
6	38.71	17.1	14	57.84	80.2			
7	41.10	21.4	15	60.23	88.2			

Table 2.1
Conversion Table of Self-Regulation Domain A. Interpersonal Cognitive Problem-Solving Total Score

Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile
0	24.69	4.3	7	51.07	61.0
1	28.46	6.4	8	54.84	75.9
2	32.23	8.6	9	58.60	86.1
3	36.00	10.7	10	62.37	94.1
4	39.76	15.5	11	66.14	98.4
5	43.53	24.6	12	69.91	100
6	47.30	42.8			

Table 2.2
Conversion Table of Self-Regulation Domain B. Goal Setting and Task Performance Total Score

Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile
0	35.99	19.3	5	53.48	66.3
1	39.49	23.0	6	56.98	81.8
2	42.99	28.9	7	60.47	85.0

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3	46.48	49.2	8	63.97	90.4
4	49.98	55.6	9	67.47	100

Table 3
Conversion Table of Psychological Empowerment Domain Total Score

Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile
0	---	0	9	33.42	9.6
1	---	0	10	37.42	13.9
2	---	0	11	41.41	19.3
3	9.46	1.1	12	45.41	28.9
4	---	1.1	13	49.40	44.9
5	---	1.1	14	53.40	64.7
6	21.44	2.1	15	57.39	88.2
7	25.44	4.3	16	61.38	100
8	29.43	5.9			

Table 4
Conversion Table of Self-Realization Domain Total Score

Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile
0	---	0	8	33.33	9.2
1	---	0	9	38.29	16.8
2	---	0	10	43.25	32.4
3	---	0	11	48.20	49.7
4	---	0	12	53.16	69.2
5	---	0	13	58.12	85.9
6	23.42	2.2	14	63.08	95.1
7	28.38	3.2	15	68.03	100

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Table 5
Conversion Table of The Arc's Self-Determination Total Score

Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile	Raw Score	Standard Score	Percentile
0	---	0	36	---	0	72	76.79	7.0
1	---	0	37	---	0	73	77.64	8.0
2	---	0	38	---	0	74	78.50	8.6
3	---	0	39	---	0	75	79.36	9.1
4	---	0	40	---	0	76	80.22	9.6
5	---	0	41	---	0	77	81.08	11.2
6	---	0	42	---	0	78	81.93	12.3
7	---	0	43	---	0	79	82.79	13.9
8	---	0	44	---	0	80	83.65	15.0
9	---	0	45	---	0	81	84.51	16.6
10	---	0	46	54.48	0.5	82	85.37	18.2
11	---	0	47	---	0.5	83	86.22	19.3
12	---	0	48	---	0.5	84	---	19.3
13	---	0	49	---	0.5	85	87.94	19.8
14	---	0	50	---	0.5	86	88.80	20.3
15	---	0	51	---	0.5	87	89.65	21.9
16	---	0	52	59.63	1.1	88	90.51	25.1
17	---	0	53	---	1.1	89	91.37	29.9
18	---	0	54	---	1.1	90	92.23	30.5
19	---	0	55	---	1.1	91	93.09	32.6
20	---	0	56	---	1.1	92	93.94	34.2
21	---	0	57	---	1.1	93	94.80	36.4
22	---	0	58	64.78	1.6	94	95.66	39
23	---	0	59	---	1.6	95	96.52	41.7
24	---	0	60	---	1.6	96	97.38	42.2
25	---	0	61	---	1.6	97	98.23	46.5
26	---	0	62	68.21	2.1	98	99.09	48.7
27	---	0	63	69.07	3.2	99	99.95	51.3
28	---	0	64	69.92	4.3	100	100.81	54.0
29	---	0	65	---	4.3	101	---	54.0
30	---	0	66	---	4.3	102	102.52	56.1
31	---	0	67	---	4.3	103	103.38	57.8
32	---	0	68	73.35	4.8	104	104.24	58.8
33	---	0	69	---	4.8	105	105.10	61.5

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34	---	0	70	75.07	5.9	106	105.95	63.6
35	---	0	71	---	5.9	107	106.81	65.2
108	107.67	67.4	122	---	91.4	136	131.69	100
109	108.53	69.0	123	120.54	92.0	137	---	100
110	109.39	72.2	124	---	92.0	138	---	100
111	110.24	75.4	125	122.25	92.5	139	---	100
112	111.10	78.6	126	123.11	94.1	140	---	100
113	111.96	81.8	127	123.97	94.7	141	---	100
114	112.82	82.4	128	124.83	96.3	142	---	100
115	113.68	82.9	129	---	96.3	143	---	100
116	114.53	85.0	130	126.54	96.8	144	---	100
117	115.39	86.1	131	127.40	97.3	145	---	100
118	116.25	87.7	132	128.26	97.9	146	---	100
119	117.11	88.2	133	---	97.9	147	---	100
120	117.97	89.8	134	129.98	98.9	148	---	100
121	118.82	91.4	135	---	98.9			