

## Gauging the Impact of Discovery on the Self-Determination of Youth with Developmental Disabilities

**Tammy Jorgensen Smith, Ph.D.**

**Christina J. Dillahunt-Aspilla, Ph.D.**

University of South Florida

College of Behavioral and Community Sciences

Department of Child and Family Studies

Division of Rehabilitation and Mental Health Counseling

13301 Bruce B. Downs Blvd; MHC 1632-12; Tampa  
Florida 33612, USA.

### **Abstract**

*Transition experts agree that meaningful assessment should guide the development and delivery of transition planning and services. Naturalistic assessments, such as Discovery, add an important dimension to transition planning by providing important information about students with complex disabilities, including those who are unable to participate in traditional testing. The purpose of this article is to present findings of a study conducted to gather preliminary data on the impact of the Discovery assessment on self-determination levels in youth with developmental disabilities. Pretest/posttest intervention data were collected and analyzed to assess changes in total self-determination scores and the associated domain areas of autonomy, self-regulation, psychological empowerment, and self-realization. Findings suggest that the Discovery intervention has a significant impact on total self-determination levels with increased scores in 75 percent of student participants. Implications for future research and practice are presented.*

**Keywords:** Developmental disabilities; Discovery; self-determination; transition planning.

### **Introduction**

Having a complex disability is a strong predictor of less than optimal post-school outcomes in employment, postsecondary education, community participation, and social relationships (Carter, Brock, & Trainor, 2014; Grigal, Hart, & Migliore, 2011). This holds particularly true for youth with developmental disabilities (DD) even though they typically remain in school longer than their peers and often receive costly long-term funded supports (Simonsen & Neubert, 2013; Butterworth, Smith, Hall, Migliore & Winsor, 2008; Migliore & Butterworth, 2008). A 2013 study by Simonsen and Neubert found that more than half(57.1%)of transitioning youth with disabilities ( $N = 338$ ) were engaged in sheltered or non-work activities andonly14.2 percent were in integrated employment 18 months after exiting the public school system. Another study found that approximately 30 percent of students with intellectual and developmental disabilities (IDD) attended postsecondary education compared to 56 percent of students with other types of disabilities (Grigal et al., 2011).

Higher levels of self-determination have been linked to better post school outcomes for youth with intellectual and developmental disabilities (Sheppard & Unsworth, 2011; Wehmeyer, Field, Doren, Jones, & Mason, 2004; Benz, Lindstrom, & Yovanoff, 2000). Self-determination interventions have been shown to improve academic skills, productivity, and organization in these youth (Fowler, Konrad, Walker, Test, & Wood, 2007). In addition, the development of components of self-determination such as self-awareness, self-regulation, self-knowledge, and self-advocacy lead to success in postsecondary education and employment (Carter et al., 2013; Grigal, Hart, & Weir, 2013).

## ***Self-Determination***

According to Wehmeyer (1992), self-determination is defined as “acting as the primary causal agent in one’s life and making choices and decisions regarding one’s life quality free from undue external influence or interference” (p. 305). Wehmeyer and Abery (2013) indicate that self-determination is a psychological construct and self-directed people are “active contributors to or authors of their behavior, which is self-regulated and goal-directed action” (p. 339). They also assert that the “ecological model views self-determination as driven by the intrinsic motivation of all people to be the primary determiner of their thoughts, feelings, and behavior” (p. 400). Wehmeyer (2010) identified four essential characteristics of self-determined people. These include 1) autonomous functioning; 2) self-regulation; 3) psychological empowerment; and 4) self-realization. Autonomy refers to both independence and individuation, otherwise described as the formation of a person’s individual identity. It is “...the progression from being dependent on others for care and guidance to self-care and self-direction, the outcome of which is autonomous functioning...” (Wehmeyer, 2010, p. 2). Self-regulation signifies the capacity to moderate the thoughts and emotions that govern human behavior (Leventhal, Nerenz, & Steele, 1984). It has direct links to motivation, self-discipline and adherence to the strategies that promote goal achievement (Garrin, 2014). Psychological empowerment is a cognitive state characterized by a sense of perceived control, perceptions of competence, and internalization of the goals and objectives of the organization (Menon, 1999). Finally, self-realization is defined as the act of achieving the full development of abilities and talents (Merriam-Webster, 2015). According to Wehmeyer (2010, p.3), “people who are self-determined are self-realizing in that they use a comprehensive, and reasonably accurate, knowledge of themselves—their strengths and limitations—to act in such a manner as to capitalize on this knowledge.” Combined, these constructs form a foundation for measuring levels of self-determination in individuals.

## ***Discovery***

Working with youth with complex disabilities, such as developmental disabilities, creates challenges to traditional methods of assessment. According to Hagner, “naturalistic assessments add an important dimension to the assessment toolkit...” (p. 33). He defines naturalistic assessment as “the assessment of performance on real-world tasks and observation of responses in natural contexts” (Hagner, 2010, p. 28). Hagner suggests that naturalistic assessments provide meaningful information about individuals with the most complex disabilities, including those who are unable to participate in traditional testing. A combination of naturalistic and traditional assessment approaches can complement each other and reveal a more complete picture of the individual than either approach used alone. Discovery is a type of naturalistic assessment that is utilized to learn about the strengths, talents, and interests of a person through interaction in natural environments (Callahan, Shumpert, & Condon, 2009). It is the first strategy in the larger customized employment (CE) process. The Office of Disability Employment Policy (USDOL, 2014) defines customized employment as a flexible process designed to personalize the employment relationship between a job candidate and an employer in a way that meets the needs of both. Although Discovery is a critical element of the CE process, it also has utility in circumstances that require the attainment of personal information when planning for specific outcomes, for example, transition planning. Discovery utilizes a person-centered, team approach to gather information about an individual through unstructured interviews, observations, and interactions. The product of Discovery is a representational profile that focuses on achieving customized outcomes that are driven by the individual’s interests, skills, talents, and choice. Typical Discovery activities include spending time with the individual in familiar and novel activities, visiting the person’s home and neighborhood, and conducting conversational interviews with the individual and those who know the person well. The strategy is particularly useful when working with people who have complex disabilities that impact communication, sensitivity levels (to sounds, lights, textures, changes in routines, crowds, etc.) and create challenges to identifying the strengths, talents, interests, support needs, and environmental conditions that facilitate success for the person.

## ***Review of the Literature***

There is causal evidence that youth with developmental disabilities can increase their level of self-determination through instruction, involvement in educational planning, and access to the general education curriculum when provided the proper accommodations and supports (Wehmeyer, Palmer, Shogren, Williams-Diehm, & Soukup, 2012; Wehmeyer, Palmer, Lee, Williams-Diehm, & Shogren, 2011; Shogren et al., 2012; Nota, Ferrari, Soresi, & Wehmeyer, 2007).

Teaching skills in decision-making, goal setting and attainment, self-advocacy, problem solving and self-awareness has been shown to have a moderate effect on self-determination when taught in group settings and a strong effect when taught individually (Algozzine, Browder, Karvonen, Test, & Wood, 2001). However, studies show that instruction to promote self-determination skills is incidental in most schools and does not carry into postsecondary programs (Carter et al., 2013; Carter et al., 2008).

Research suggests that self-determined behavior is reciprocally influenced by individual, family, and school characteristics (Shogren, Wehmeyer, Palmer, Rifenbark, & Little, 2015; Shogren, 2013; Wehmeyer et al., 2012; Carter et al., 2009). From a social-ecological perspective, person-environment fit and diverse systems influence human functioning (Shogren, 2013; Schalock et al., 2010). A study by Cobb, Lehmann, Newman-Gonchar, and Alwell (2009) found that people with developmental disabilities who live in community-based, non-congregate settings have higher levels of self-determination. Other contextual factors that have been identified in the literature to potentially impact self-determination of youth include age, gender, race/ethnicity, disability label, culture, family factors, social networks, school factors, teacher characteristics, school program characteristics, disability support systems, community factors, and opportunities for self-determination (Shogren, 2013).

In a study conducted by Carter, Owens, Trainor, Sun, and Sweeden (2009), teachers evaluated self-determination capacities of youth more optimistically than parents did. A later publication by Carter et al. (2014) stated that transition planning may be enhanced by high expectations. These same authors also suggested that family factors including cohesion, interaction, well-being, family-professional partnerships, and religious/spiritual values may be moderators in the level of emphasis that parents give to fostering self-determination (Carter et al., 2013). These researchers also indicated that it is important to identify methods for parents and families to better support the development of self-determination skills at home and within the community. Recommendations included avenues such as parent trainings and workshops, leadership initiatives, and mentoring to foster self-determination skill development.

Self-determination is a core dimension of quality of life (QOL) (Wehmeyer and Abery, 2013; Schalock & Verdugo, 2012). An Italian study by Soresi, Nota, and Sgaramella (2003) found a significant correlation between self-determination levels and personal satisfaction. The study found that people with lower self-determination had greater maladjustment levels, higher rates of isolation, and more interpersonal communication problems. Additional studies have also linked self-determination to QOL (Laachappelle et al., 2005; Wehmeyer & Schwartz, 1998).

The Individuals with Disabilities Education Act (IDEA) of 1990 mandates assessment as a key component of transition planning and experts agree that meaningful assessment should guide the design and delivery of services (Neubert, 2012; Wehman, 2011). According to Carter et al. (2014), an essential element of high-quality transition assessment and planning involves integrated perspectives of multiple individuals who know a student well. Interdisciplinary team members have varied vantage points from which to observe and interact with the student. These individual perspectives may be particularly useful when working with students who may not be able to articulate specific interests, talents, and support needs. The researchers also indicate that a second critical element of transition assessment is that it should inform the planning team about student strengths, preferences, interests, and needs. Thompson, Wehmeyer and Hughes (2010) assert that strengths coexist with needs in every person, including persons with complex disabilities. Recently, one of the top experts in self-determination research stated; "If we continue to view disability using models that emphasize deficits, I believe that efforts to promote self-determination will remain marginalized" (Wehmeyer, 2015, p. 21).

The purpose of the current study is to determine the impact of Discovery, when implemented with fidelity to the model, on self-determination levels in youth with DD. Pretest/posttest intervention data were collected and analyzed to assess changes in total self-determination scores and the associated domain areas of autonomy, self-regulation, psychological empowerment, and self-realization. Preliminary data are presented along with implications for research and practice. Findings from this study will be utilized to inform a larger randomized controlled study.

## **Method**

### **Participants**

Participants in the study include 8 high school students between the ages of 14-21 who have been diagnosed with DD [defined as a severe, chronic disability which: originated at birth or during childhood, is expected to continue indefinitely, and substantially restricts the individual's functioning in several major life activities (AIDD, 2016)]. Sixty-three percent of the student participants are males ( $n=5$ ). Each student is enrolled in an exceptional education program at one of three public high schools in Southwest Florida. Additional demographic data for student participants were not available.

Assessment data were submitted by the school district using coded identifiers. Since the researchers had no direct contact with the participants or their identifying information, the University's Institutional Review Board (IRB) exempted the study from IRB oversight.

### **Procedure**

This study was conducted in conjunction with a larger demonstration project, the Collaborative on Discovery and Innovation in Employment, designed to build the capacity of school professionals and county transition teams to implement the Discovery process in supporting youth with DD. The larger project included the provision of training, mentoring and ongoing technical assistance to county based Discovery implementation teams. School districts in Florida applied to participate in the demonstration project. Administering the self-determination assessment was optional. Three of the four participating school districts opted to utilize the additional assessment. However, only 8 of the 18 students completed both the pretest and the posttest measures. The assessment was administered before and after the Discovery intervention process to assess levels of self-determination over time. The average time between pretest and posttest assessments was five months.

To promote the validity of the self-report measure utilized in the study, students were encouraged to report what they truly believe about themselves. Exceptional education teachers who administered the instrument were coached on how to help students to understand the purpose of the assessment. They were also trained to communicate to students how the information will be used and why they were being asked these questions. All administrations of the assessment were conducted individually. To minimize disruption of daily student routines, assessment times were arranged to complement each student's schedule and were completed in one session.

In addition to the provision of training and technical assistance for district team members on the correct administration of the self-determination scale, teams were trained extensively on implementing the Discovery intervention. A training manual accompanied face-to-face and online training modules. Technical assistance was provided to ensure proper application of the process. A fidelity checklist was utilized to ensure that Discovery was implemented with fidelity to the model.

### **Instrument**

The Self-Determination Scale (SDS) is a self-report measure of self-determination for youth with intellectual and developmental disabilities (Wehmeyer & Kelchner, 1995). The assessment is designed to empower students to become more self-determined by providing a vehicle by which they can, with appropriate supports and accommodations: 1) evaluate their own beliefs about themselves and their self-determination; 2) work collaboratively with educators and others to identify individual areas of strength and limitations related to self-determination goals and objectives; and 3) self-assess progress in self-determination over time. According to the developers of the instrument, it should be noted that the SDS is not a diagnostic or prescriptive tool, but a vehicle for eliciting discussion about the causes of low self-determination and to provide insight into potential interventions. The assessment is not designed to identify causal relationships. The scale can be used to generate discussion about items the student finds interesting, problematic, or wants to discuss more broadly. It can also be used as a basis for discussion about student beliefs, desires, abilities, limitations, and future plans.

The Short Version of the SDS scale was utilized in this study. This version takes approximately 30 minutes to complete, but additional time may be required when accommodations are needed. The full version of the scale includes 72 items and takes considerably longer to administer. The short version was utilized to promote student participation and the cooperation and support of school districts and transition professionals.

Items on the scale are written at a 4th grade reading level. Use of the scale does not require credentials or training in psychometric evaluation. However, those who assisted students who required accommodations and/or supports were trained on proper administration of the assessment and resource materials were provided. Scoring was completed by the researchers and an interpretation of the results was relayed to the transition team working with the student.

The SDS was normed with 500 adolescents with intellectual disabilities and has adequate reliability and validity in measuring self-determination (Wehmeyer, 1996). It is “the most widely used assessment of global self-determination in the disability field and has demonstrated good internal consistency across multiple studies of diverse disability populations...” (Shogren, et al., 2014, p. 224). The instrument is presented in four sections or domain areas: 1) autonomy; 2) self-regulation; 3) psychological empowerment; and 4) self-regulation. The domain of self-regulation has two sub domains that measure: a) problem solving; and b) goal setting and task attainment. More information on the domains and scoring of the SDS is presented in Table 1.

**Table 1: Self-Determination Scale Domains**

Domain	Description	Scoring
Autonomy	Seven questions that measure the level of autonomy with scores ranging from 0-21. Higher scores represent a greater level of autonomy.	<ul style="list-style-type: none"> <li>• 0 = I do not even if I have the chance</li> <li>• 1 = I do sometimes when I have the chance</li> <li>• 2 = I do most of the time I have the chance</li> <li>• 3 = I do every time I have the chance</li> </ul>
Self-Regulation <ul style="list-style-type: none"> <li>a. Problem-Solving</li> <li>b. Goal Setting and Task Attainment</li> </ul>	This section contains two sub-domains. <ul style="list-style-type: none"> <li>a. Includes story-based items for which the student identifies what s/he considers to be the best solution to a problem. The beginning and ending of the story is provided. Responses are scored on a scale of 0-2 points depending on the effectiveness of the solution to solve the problem. This section has 12 points possible with higher scores representing more effective interpersonal cognitive problem solving.</li> <li>b. Asks students to identify a transportation goal and steps needed to achieve this goal. Goals are not judged on probability of achievement, but simply on their presence or absence. However, steps to achieve goals are judged based on viability. Three points are possible with higher scores representing more effective goal setting and task attainment skills</li> </ul>	Subsection a: <ul style="list-style-type: none"> <li>• 0 = no answer or the solution would fail to achieve the indicated ending to the story</li> <li>• 1 = the answer provided is okay, but has limited ability to achieve the ending identified</li> <li>• 2 = the answer provided is an adequate way to achieve the indicated ending</li> </ul> Subsection b: <ul style="list-style-type: none"> <li>• 0 = selected “I have not planned for that yet”</li> <li>• 1 = identifies goal, but no steps to reach goal</li> <li>• 2 = identifies goal and 1 to 2 steps</li> <li>• 3 = identifies goal and 3 to 4 steps</li> </ul>
Psychological Empowerment	Students respond to questions with the choice that BEST describes them. Two choices are provided for each question. There are 7 points possible with higher scores represent a greater level of psychological empowerment.	<ul style="list-style-type: none"> <li>• 0 = the first response choice; does not reflect a psychologically empowered belief/ attitude</li> <li>• 1 = the second response choice; indicates a more psychologically empowered choice</li> </ul>
Self-Realization	Measures self-knowledge and self-awareness. There are 7 points possible. Higher scores reflect greater self-realization.	<ul style="list-style-type: none"> <li>• 0 = response of “no”</li> <li>• 1 = response of “yes”</li> </ul>

## Analysis

This study employs a quasi-experimental design with a nonrandomized, one-group pretest-posttest with no control group. The intention was to collect pilot data to inform a larger study. Through this study, it was not logistically feasible to conduct a randomized controlled trial (RCT). The sample is from a relatively normal distribution; therefore a paired sample t-test was conducted to determine whether the Discovery intervention had a statistically significant impact on self-determination scores. Total self-determination scores and pretest-posttest scores for the four constructs of autonomy, self-regulation, psychological empowerment, and self-realization were analyzed. Self-regulation sub domains of problem-solving and goal setting/ task attainment were also analyzed. SPSS 22.0 (IBM Corp., 2013) was utilized to analyze the data.

## Results

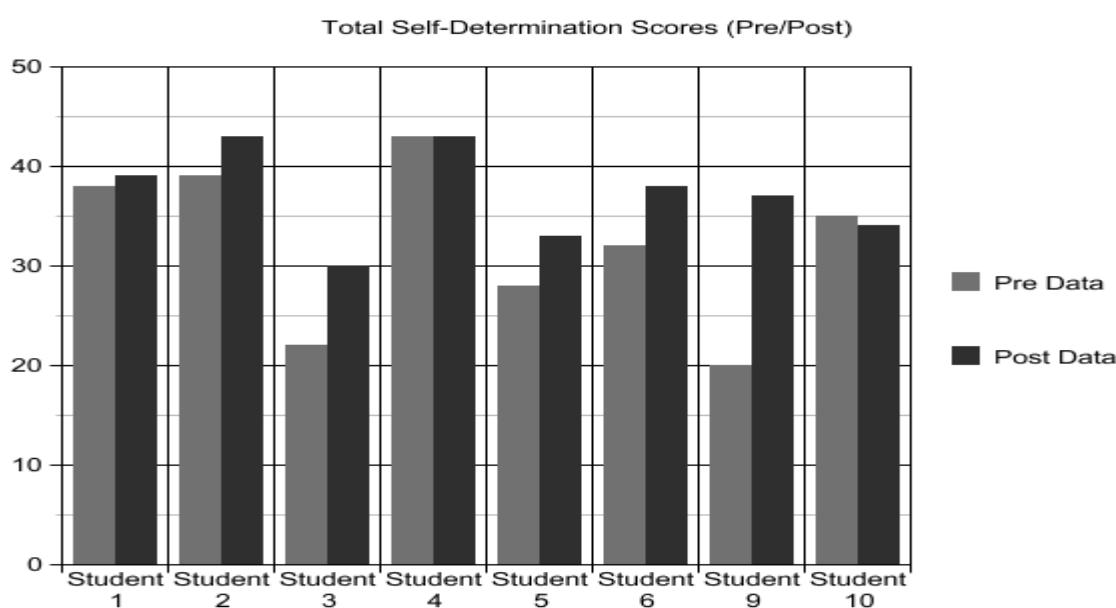
A two-tailed paired samples t-test of total self-determination scores revealed that post intervention levels of self-determination ( $M = 37.12$ ,  $SD = 4.64$ ) are significantly higher ( $t(7) = -2.457$ ,  $p = 0.044$ ) than pre intervention levels ( $M = 32.12$ ,  $SD = 8.23$ ). Of the four self-determination domains, only psychological empowerment showed a significant increase in post test scores ( $p = 0.048$ ). Results for the analysis of the three other domains and two self-regulation sub domains were not significant. Data are presented in Table 2.

**Table 2: Analyses of Pre-Post Self-Determination Scores**

Domain Subdomain	Pretest		Posttest		n	95% CI for Mean Difference	t	df	p
	M	SD	M	SD					
Total Self-Determination	32.12	8.23	37.12	4.64	8	-9.81, -0.18	-2.45*	7	0.044*
Autonomy	11.00	3.96	13.50	2.61	8	-6.31, 1.31	-1.54*	7	0.165
Total Self-Regulation	8.37	5.34	9.87	4.25		-3.68, 0.68	-1.62*	7	0.149
Problem Solving	7.00	4.53	7.87	4.42	8	-2.24, 0.49	-1.50*	7	0.175
Goal Setting/ Task Attainment	1.37	1.06	2.12	0.83	8	-1.82, 0.32	-1.65*	7	0.142
Psychological Empowerment	6.00	1.06	6.75	0.46	8	-1.49, -0.00	-2.39*	7	0.048*
Self-Realization	6.75	0.70	6.87	0.35	8	-0.82, 0.57	-0.42*	7	0.685

\*  $p < .05$ .

**Figure 1. Total Self-Determination Scores (Pre/Post)**



## **Discussion**

Figure 1 is a graphical representation of total self-determination scores pre and post the Discovery intervention. Seventy-five (75) percent of students had an increase in total self-determination after the intervention. A review of individual scores shows the largest gains in the area of autonomy. The average gain in autonomy scores was  $M = 2.5$  with a range of -3 to 11 points. Two students had a decrease in posttest scores which impacted the significance level found through the paired t-test. Five of the eight students gained in this domain area with an average gain of 5 points. The only domain that shows a statistically significant increase is psychological empowerment. It should be noted that most students scored close to the maximum points in this domain on the pretest.

## **Limitations**

Study limitations include a small, nonrandomized sample and lack of a control group. Future studies that utilize a larger, more representative sample will facilitate better generalization of results. Including randomized sampling with a control group will allow for additional statistical analysis and the use of ANCOVA (analysis of covariance). A single assessment tool was utilized in this study. Although reliability and validity of the instrument have been established, the assessment was not designed to identify causal relationships. Also, the study does not control for potentially confounding extraneous variables such as history, maturation, test administration, and regression artifacts. Practice effect, defined as an influence on performance from previous experience, may also have impacted the posttest results.

## **Implications for Research and Practice**

This study provides the groundwork for future studies with a larger, randomized sample with a control group. Due to changes that occur in both the individual and environment over time, additional research with better controls for these threats is needed to assess the impact of external factors on self-determination scores. Researchers should also consider individual factors such as type of disability, level of support, age, maturation, and other aspects that may impact self-determination and the effective implementation of intervention strategies. Consideration should be given when assembling implementation teams to ensure buy-in (philosophically and in terms of time allotment) and commitment to the process. Teams should be diverse to provide multiple perspectives and ideally involve the parents and other support professionals and service providers. The student should always be included in all planning and team meetings. Training and technical assistance in the Discovery process and in the proper use of assessment tools is essential and evaluation using fidelity measures is vital to ensure valid outcomes. With Discovery, focus should be on quality over quantity.

Researchers and transition teams should be proactive in planning for and handling potential challenges including time constraints, team member turnover, leadership support and buy-in, available resources, school-based travel constraints, and working with minors who are considered to be part of a vulnerable population because of age and disability. One recommendation is to appoint a coordinator to be in charge of Discovery activities for the school district. Teams should also strive to build better partnerships with community providers to facilitate a more seamless transition process.

## **Conclusion**

This study lays the groundwork for a larger randomized, controlled trial that will utilize a more rigorous design, analysis, and evaluation. Preliminary data suggest that the Discovery assessment impacts self-determination levels when implemented with fidelity to the model. Integration of this and other methods to increase self-determination levels in youth with complex disabilities has the potential to improve post-school outcomes for these students.

**Acknowledgements:** The authors would like to acknowledge the Florida Developmental Disabilities Council for supporting this study, the project advisory committee for their guidance, participating school districts, teachers, and students, and the Florida Center for Inclusive Communities. The larger study was sponsored by U.S. Department of Health and Human Services, Administration on Developmental Disabilities and the Florida Developmental Disabilities Council, Inc.

## References

- AIDD: The Developmental Disabilities Assistance and Bill of Rights Act of 2000 (DD Act). (2016). *Acl.gov*. Retrieved 25 April 2016, from <http://www.acl.gov/Programs/AIDD/DD>
- Algozzine, B., Browder, D., Karvonen, M., Test,D. W., & Wood, W. M. (2001). Effects of interventions to promote self-determination for individuals with disabilities. *Review of Educational Research*, 71(2), 219–277.
- Benz, M. R., Lindstrom, L., & Yovanoff, P. (2000). Improving graduation and employment outcomes of students with disabilities: Predictive factors and student perspectives. *Exceptional Children*, 66(4), 509–529.
- Butterworth, J., Smith, F.A., Hall, A.C., Migliore, A., Winsor, J.E. (2008). *StateData: The national report on employment services and outcomes*, 2008. Boston, MA: The Institute of Community Inclusion (UCEDD)
- Callahan, M., Shumpert, N., & Condon, E. (2009). *Discovery: Charting the course to customized employment*. Marc Gold & Associates: Gautier, MS.
- Carter, E. W., Brock, M. E., & Trainor, A. A. (2014). Transition assessment and planning for youth with severe intellectual and developmental disabilities. *Journal of Special Education*, 47(4), 245-255.
- Carter, E. W., Lane, K. L., Cooney, M., Weir, K., Moss, C. K., & Machalicek, W. (2013). Self-determination among transition-age youth with autism or intellectual disability: Parent perspectives. *Research & Practice for Persons With Severe Disabilities*, 38(3), 129-138.
- Carter, E.W., Austin, D., & Trainor, A. A. (2012). Predictors of postschool employment outcomes for young adults with severe disabilities. *Journal of Disability Policy Studies*, 23, 50Y63. doi:10.1177/1044207311414680
- Carter, E. W., Owens, L., Trainor, A., Sun, Y., & Swedeene, B. (2009). Self-determination skills and opportunities of adolescents with severe intellectual and developmental disabilities. *American Journal on Intellectual and Developmental Disabilities*, 114(3), 179–192.
- Carter, E. W., Lane, K. L., Pierson, M. R., & Stang, K. K. (2008). Promoting self-determination for transition-age youth: Views of high school general and special educators. *Exceptional Children*, 78, 55-70.
- Fowler, C. H., Konrad, M., Walker, A. R., Test, D. W., & Wood, W. M. (2007). Self-determination interventions' effects on the academic performance of students with developmental disabilities. *Education and Training in Developmental Disabilities*, 42, 270–285.
- Garrin, J. (2014). Self-efficacy, self-determination, and self-regulation: The role of the fitness professional in social change agency. *Journal of Social Change*, 6(1), pp. 41–54.
- Grigal, M., Hart, D., & Weir, C. (2013). Postsecondary education for people with intellectual disability: Current issues and critical challenges. *Inclusion*, 1, 50-63. doi:10.1352/2326-6988-1.1.050
- Grigal, M., Hart, D., & Migliore, A. (2011). Comparing the transition planning, postsecondary education, and employment outcomes of students with intellectual and other disabilities. *Career Development for Exceptional Individuals*, 34, 4–17. doi:10.1177/0885728811399091
- Hagner, D. (2010). The role of naturalistic assessment in vocational rehabilitation. *Journal of Rehabilitation*, 76(1), 28-34.
- IBM Corp. (2013). *IBM SPSS Statistics for Windows*, Version 22.0. Armonk, NY: IBM Corp.
- Individuals With Disabilities Education Act of 1990, 20 U.S.C. § 1400 et seq. (1990).
- Lachapelle, Y., Wehmeyer, M. L., Haelewycck, M., Courbois, Y., Keith, K. D., Schalock, R., & Walsh, P. N. (2005). The relationship between quality of life and self-determination: an international study. *Journal of Intellectual Disability Research*, 49(10), 740-744. doi:10.1111/j.1365-2788.2005.00743.x
- Leventhal, H., Nerenz, D., & Steele, D. (1984). *Illness representations and coping with health threats*. In A. Baum & J. Singer (Eds.), *A handbook of psychology and health* (Vol. 4) (pp.219–252). Hillsdale, NJ: Erlbaum.
- Menon, S. T. (1999). Psychological empowerment: Definition, measurement, and validation. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*, 31(3), 161-164. doi:10.1037/h0087084
- Merriam-Webster.(2015). "Self-realization". Retrieved August 15, 2015 from: <http://www.merriam-webster.com/dictionary/self-realization>.
- Migliore, A. & Butterworth, J. (2008). Trends in outcomes of Vocational Rehabilitation Services serving adults with Developmental Disabilities: 1995-2005. *Rehabilitation Counseling Bulletin*, 52(1), 35-44.
- Neubert, D. A. (2012). Transition assessment for adolescents. In M. L. Wehmeyer and K. W. Webb (Eds.), *Handbook of adolescent transition education for youth with disabilities* (pp. 73–90). New York, NY: Routledge.
- Nota, L., Ferrari, L., Soresi, S., & Wehmeyer, M. (2007). Self-determination, social abilities and the quality of life of people with intellectual disability. *Journal of Intellectual Disability Research*, 51(11), 850-865. doi:10.1111/j.1365-2788.2006.00939.x
- Schalock, R. L. & Verdugo, M. A. (2012). *A leadership guide for today's disabilities organizations*. Baltimore, MD: Paul H. Brookes.
- Schalock, R. L., Borthwick-Duffy, S., Bradley, V., Buntix, W. H. E., Coulter, D. L., Craig, E. P.

- M., ... Yeager, M. H. (2010). *Intellectual disability: Definition, classification, and systems of support* (11th ed.). Washington, DC: American Association on Intellectual and Developmental Disabilities.
- Sheppard, L., & Unsworth, C. (2011). Developing skills in everyday activities and self-determination in adolescents with intellectual and developmental disabilities. *Remedial And Special Education*, 32(5), 393-405.
- Shogren, K. A., Wehmeyer, M. L., Palmer, S. B., Rifenbark, G. G., & Little, T. D. (2015). Relationships between self-determination and postschool outcomes for youth with disabilities. *Journal of Special Education*, 48(4), 256. doi:10.1177/0022466913489733
- Shogren, K. A., Kennedy, W., Dowsett, C., & Little, T. D. (2014). Autonomy, psychological empowerment, and self-realization: Exploring data on self-determination from NLTS2. *Exceptional Children*, 80(2), 221-235.
- Shogren, K. A. (2013). A social-ecological analysis of the self-determination literature. *Intellectual & Developmental Disabilities*, 51(6), 496. doi:10.1352/1934-9556-51.6.496
- Simonsen, M. L., & Neubert, D. A. (2013). Transitioning Youth with Intellectual and Other Developmental Disabilities: Predicting Community Employment Outcomes. *Career Development And Transition For Exceptional Individuals*, 36(3), 188-198.
- Soresi S., Nota L. & Sgaramella T. M. (2003) *La Valutazione delle Disabilità. (Secondo Volume) [The Evaluation of Disabilities. (Second Volume)]*. EripEditrice, Pordenone.
- Thompson, J. R., Wehmeyer, M. L., & Hughes, C. (2010). Mind the gap! Implications of a person-environment fit model of intellectual disability for students, educators, and schools. *Exceptionality*, 18, 168-181. doi:10.1080/09362835.2010.513919
- United States Department of Labor. (2014b). *What Is Customized Employment?* Retrieved August 15, 2015 from: <http://www.dol.gov/odep/categories/workforce/CustomizedEmployment/what/>
- Verdugo, M. A., Vicente, E., Fernández-Pulido, R., Gómez-Vela, M., Wehmeyer, M. L., & Guillén, V. M. (2015). Original article: A psychometric evaluation of the ARC-INICO Self-Determination Scale for adolescents with intellectual disabilities. *International Journal of Clinical And Health Psychology*, 15, 149-159. doi:10.1016/j.ijchp.2015.03.001
- Wehman, P. (2011). *Essentials of transition planning*. Baltimore, MD: Brookes.
- Wehmeyer, M. L. (2015). Framing the future: Self-determination. *Remedial & Special Education*, 36(1), 20. doi:10.1177/0741932514551281
- Wehmeyer, M. L., & Abery, B. H. (2013). Self-determination and choice. *Intellectual & Developmental Disabilities*, 51(5), 399. doi:10.1352/1934-9556-51.5.399
- Wehmeyer, M. L., Palmer, S., Shogren, K., Williams-Diehm, K., & Soukup, J. (2013). Establishing a causal relationship between interventions to promote self-determination and enhanced student self-determination. *Journal of Special Education*, 46(4), 195-210.
- Wehmeyer, M. L., Shogren, K. A., Palmer, S. B., Williams-Diehm, K., Little, T. D., & Boulton, A. (2012). Impact of the Self-Determined Learning Model of Instruction on student self-determination: A randomized-trial placebo control group study. *Exceptional Children*, 78, 135-153.
- Wehmeyer ML. (2010). *Self Determination*. In: JH Stone, M Blouin, editors. International Encyclopedia of Rehabilitation. Available online: <http://cirrie.buffalo.edu/encyclopedia/en/article/34/>
- Wehmeyer, M. L., Field, S., Doren, B., Jones, B., & Mason, C. (2004). Self-determination and student involvement in standards-based reform. *Exceptional Children*, 70, 413-425.
- Wehmeyer, M. L. (2003). A functional theory of self-determination: Definition and Categorization. In M. L. Wehmeyer, B. H. Abery, D. E. Mithaug, & R. J. Stancliffe (Eds.), *Theory in self-determination: Foundations for educational practice*(pp. 174-181).
- Springfield, IL: Charles C Thomas.
- Wehmeyer M. L. & Palmer S. B. (2003) Adult outcomes for students with cognitive disabilities three years after high school: the impact of self-determination. *Education and Training in Developmental Disabilities*, 38, 131-44.
- Wehmeyer, M. L. (1999). A functional model of self-determination: Describing development and implementing instruction. *Focus on Autism and Other Developmental Disabilities*, 14, 53-62.  
<http://dx.doi.org/10.1177/108835769901400107>
- Wehmeyer M. L. & Schwartz M. (1998). The relationship between self-determination, quality of life, and life satisfaction for adults with mental retardation. *Education and Training in Mental Retardation and Developmental Disabilities*, 33, 3-12.
- Wehmeyer, M. L. (1996). Student self-report measure of self-determination for students with cognitive disabilities. *Education and Training in Mental Retardation and Developmental Disabilities*, 31, 282-293.
- Wehmeyer, M. L., & Kelchner, K. (1995). *The Arc's Self-Determination Scale*. Arlington, TX: The Arc National Headquarters.
- Wehmeyer, M. L. (1992). Self-determination and the education of students with mental retardation. *Education and Training in Mental Retardation and Developmental Disabilities*, 27, 302-314.