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Promoting the Self-Determination of Students with Severe Cognitive Disabilities

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Abstract

This literature review explores five published articles focused on the promotion of self-determination of students with severe cognitive disabilities. The purpose of this literature review is to better understand the details of the interventions designed to support students with the most severe cognitive disabilities. Within this framework, data was collected to examine participants, settings, implementers, and results. All five studies reported positive outcomes for all students in the promotion of self-determination.

Keywords: self-determination, severe disabilities, mental retardation, cognitive disabilities, intellectual disabilities, interventions, strategies, students

Promoting the Self-Determination of Students with Severe Cognitive Disabilities

Both research and policy highlight the importance of providing students with severe cognitive disabilities the supports they need to participate in inclusive settings with their non-disabled peers (Agran, Cavin, Wehmeyer, & Palmer, S. 2006; Agran, Wehmeyer, Cavin, & Palmer, 2010; Agran et al., 2005). However, no federal definition exists standardizing the definition of "severe cognitive disability". Under the No Child Left Behind legislation, each individual state is given the authority to define what constitutes "severe cognitive disabilities". (NCLB, 2001). A clinical definition, based on the DSM-IV, for "mental retardation" has traditionally been used as a guideline in reference to the different levels of cognition. Section 300.8 of the Individual with Disabilities Improvement Act (IDEA, 2004) uses two categories to articulate the needs of students with the most severe disabilities as defined in subpart c (6) as mental retardation which means significantly sub average general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance; and (7) multiple disabilities means concomitant impairments (such as mental retardation-orthopedic impairment, mental retardation-deafness), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments (IDEA, 2004). This lack of specific definitions may lead to programs for students with severe disabilities where academic rather than functional skills are emphasized. Educational programs for students with severe cognitive disabilities need to promote more than functional skills, and should additionally facilitate access to the general education curriculum (Browder, Ahlgrim-Delzell, Courtade-Little, & Snell, 2006). Facilitating access also means identifying and implementing practices that are evidence-based, as mandated in IDEA (IDEA, 2004).

Spooner, Dymond, Smith, and Kennedy (2006) discussed four approaches for investigating access to the general education curriculum for students with severe cognitive disabilities: peer supports, self-determination, universal design for learning, and teaching and assessing content standards. This review focuses on literature about promoting self-determination for students with severe cognitive disabilities, so as to gain a better understanding of what interventions, strategies, and supports are being implemented. In addition, understanding where and by whom these same interventions, strategies and supports are being implemented is equally important. While research in self-determination is steadily increasing in the field of special education, only a limited number of studies available address practices to promote the self-determination of students with severe disabilities. Most research examines only an isolated component of self-determination, and many focus only on teaching choice-making skills (Algozzine, Browder, Karvonen, Test, & Wood, 2001). Other than choice making, limited attempts have been made to teach students with severe cognitive disabilities the components of self-determination. While other strategies, such as self-management, self-regulation, and problem solving, are being examined, the full scope of possibilities for students with severe cognitive disabilities is as of yet unclear. Additionally, while the literature base encourages the promotion of skills to promote the self-determination of students with severe cognitive disabilities, some educators express uncertainty about the value of these same skills (Wehmeyer, Agran, & Hughes, 2000). Wehmeyer et al. (2000) determined that 42% of special education teachers who were primarily serving students with severe cognitive disabilities, indicated they did not promote skills to enhance self-determination because they believed that their students would not benefit from this instruction. Additionally, these same teachers rated self-determination as less important than other areas of instruction. This Wehmeyer et al. (2000)

study illustrates a mismatch between the research and practice in the education of students with severe cognitive disabilities and demonstrates the importance of teachers and other practitioners gaining knowledge of what interventions are most effective. Because understanding the many aspects of promoting the self-determination of students with severe cognitive disabilities is imperative to their quality of life (Wehmeyer, 2005), a primary goal of this literature review is to gain a more comprehensive understanding of specific interventions and practices. To do this, the following questions were proposed:

What interventions have been applied to promote self-determination for students with severe cognitive disabilities age 3-21 as defined by IDEA?

1. Who are the students served by these interventions?
2. Where are the interventions taking place?
3. What are the specific components of self-determination addressed?
4. Who are the implementers (general education teachers, special education teachers, families, paraprofessionals, peers, volunteers, etc.) promoting the elements of self-determination for students with severe cognitive disabilities?
5. What outcomes have been achieved as a result of these interventions?

Method

Search Procedures

We identified published research studies to include in this review through a two-step procedure: (a) computer searches and (b) hand searches. First, a computer-assisted bibliographic search used keywords (self-determination, severe disabilities, mental retardation, cognitive disabilities, intellectual disabilities, interventions, strategies, students) in appropriate combinations. The databases included in this search were: (a) Educational Resources

Information Center (ERIC), (b) PsychINFO, (c) Wilson OmniFile Full Text Select, and (d) Academic Search Premier. Initially, a total of 158 articles were identified through this process. After a thorough review of titles and abstracts, a total of 29 journal articles and documents published between January 2002 and January 2012 were selected for inclusion in this review. Second, to ensure inclusion of any studies that might have been excluded due to keyword use or publication delay, we conducted a hand search in topical journals of articles published within the same timeframe that might include research on interventions promoting self-determination for students with severe cognitive disabilities (e.g., *Education and Training in Developmental Disabilities; Research and Practice for Persons with Severe Disabilities*;). Reference lists from journal articles were inspected for additional relevant studies. This hand search procedure identified two additional journal articles. The search procedure itself identified a total of 31 studies.

Inclusion and Exclusion Criteria

We next reviewed the 31identified studies to determine if they met criteria for this review. Because the purpose of this review was to investigate interventions promoting self-determination, inclusion consisted of articles meeting the following criteria: (a) published in a peer-reviewed journal; (b) reported results of interventions; (c) included at least 50% of students with severe cognitive disabilities, as determined by an IQ score of less than 40 (based upon DSM-IV criteria) and/or the publishing author designated participants with severe cognitive disabilities in the title or abstract and/or level three support needs based upon the school district definition (with 1 being the least amount of supports and 3 being the most intensive supports); (d) included participants ages 3-21, as defined by IDEA; (e) the promotion of self-determination was the primary purpose of the study and measured one or more component elements of self-

determination as a dependent variable; and (f) included precise intervention procedures to determine setting, implementer, and so forth. Studies were excluded if they did not report outcomes or effects of the intervention promoting self-determination or if other strategies were used during the course of the study but were not part of the intervention. In cases where studies identified participants with autism and described significant support needs without any mention of cognitive disability, the studies were omitted since the support needs were not clearly defined. Twenty-six of the 31 identified studies were not included in this review because they did not meet one or more of the inclusion criteria. A total of five studies met the inclusion criteria for this review.

Description of Study Characteristics

Design, Participants and Settings

This literature review included descriptions of the following: research design, participant demographics, settings, intervention, and results. Studies were reviewed to determine what types of research designs and methodologies were used to study the effectiveness of the intervention designed to promote self-determination. Participant demographics were gathered across studies to determine age, grade, sex, and disability status or intelligence quotient (IQ) score, both of which were mechanisms for the reviewers to determine whether the student's cognitive disability significantly impaired his or her functioning and increased the levels of support needed. The levels of support designations indicate intensity of both services and support (including modifications and accommodations to general education curriculum) needed to insure that the students could successfully participate across the school day. These designations were made by school personnel and maintained across each study. This information is recorded in Table 1.

Ideally, students with severe cognitive disabilities should be included in general education classrooms and involved in community-based activities. A review of the settings for

students with severe cognitive disabilities should yield a better understanding of the contextual factors that promote self-determination. We anticipated finding a variety of settings within the studies, including general education, homes, and community based.

Intervention

To better understand interventions used for students with severe cognitive disabilities, three primary characteristics were considered: (a) the component elements of self-determination, (b) the implementer of the intervention, and (c) the intervention procedures. The component elements of self-determination were taken from work initially introduced by Wehmeyer, Sands, Doll, and Palmer (1997), who emphasized the importance of self-determined behaviors emerging through opportunities constructed for students including, but not limited to, the development and acquisition of choice-making skills, decision-making skills, problem-solving skills, goal-setting and attainment skills, independence, risk-taking and safety skills, self-observation, evaluation and reinforcement skills, self-instruction skills, self-advocacy and leadership skills, internal locus of control and positive attributions of efficacy and outcome expectancy, and, lastly, self-awareness or self-knowledge (Wehmeyer et al., 1997). For the purposes of this review, the twelve component elements of self-determination were used to ensure that the interventions addressed skills leading to enhanced self-determination. Specific component elements (e.g. intervention includes self-instruction) are included in this review (See Table 2).

Of particular importance to this literature review was discerning who implemented interventions designed for students with severe cognitive disabilities, because research has suggested that the most successful interventions are contextualized and meaningful for students, teachers, and families (Shogren & Turnbull, 2006). The intervention procedures help to further

delineate the specific skills and behaviors used to promote self-determination, and illustrate the *how* and *what* of designing intervention for students with severe cognitive disabilities.

Results

The outcomes of the studies were reviewed to determine what was achieved as a result of the interventions for students with severe cognitive disabilities. The next section details the findings of the identified studies.

Findings from Reviewed Studies

The purpose of this review was to determine what interventions have been applied to promote the self-determination of students with severe cognitive disabilities, ages 3-21, as defined by IDEA. To better answer this question, data was collected on the following questions: (a) who are the participants/students served by these interventions?; (b) where are the interventions taking place?; (d) what are the specific component elements of self-determination addressed?; (e) who implemented the intervention (general education teachers, special education teachers, families, paraprofessionals, peers, volunteers, etc.)?; and (f) what outcomes were achieved as a result of these interventions? Each section below is framed around each of these specific research questions (See Tables 1, 2 and 3).

Research Design

A total of five articles met the inclusion criteria for this literature review. They are summarized in Table 1 and are organized in order of publication. All five of the studies used a single-subject design. Four of the five studies implemented a multiple baseline across participants design, and the remaining study implemented an ABCD design with multiple treatment conditions (Singh, Lancioni, O'Reilly, Molina, Adkins, & Oliva, 2003).

Participants or Students

All participants (n = 18) in the five studies were identified as having intellectual disability. Seventy-eight percent (n = 14) of participants were identified as having intellectual disability as the primary diagnosis. One participant was identified as having a dual diagnosis of intellectual disability and behavioral disabilities, and the remaining three participants were diagnosed with a primary diagnosis of autism spectrum disorder with intellectual disability as a secondary diagnosis. Of the 18 total participants, at least 44% (n = 8) of participants were determined to have severe cognitive disabilities based on an IQ score of 40 or less, author identification, and/or requiring Level 3 support needs. Four of the studies reported the age of participants to be between 13 and 20 years. The other study reported the grade level of the study participants as ranging between 8th and 9th grade. Overall, male participants were a slight majority (n = 10, 56%) over female participants (n = 8, 44%).

Setting

The setting for each study in this review was clearly defined. Forty percent of the studies (n = 2) were conducted in the general education setting (Agran, Wehmeyer, Cavin, & Palmer, 2010; Agran et al., 2005), whereas Copeland, Hughes, Agran, Wehmeyer, and Fowler (2002) conducted their study in a cosmetology vocational class setting with other general education peers. The remaining two studies were conducted either in the home of the participant (Singh et al., 2003) or in the community/employment setting of the study participants (McGlashing-Johnson, Agran, Sitlington, Cavin, & Wehmeyer, 2003).

Components of Self-Determination

Three main components of self-determination were addressed as the target outcome skill among the five studies for this review. They were goal setting and attainment (50%), self-monitoring (33%), and choice-making (17%). While four of the five studies focused on one

specific component of self-determination, the study by Copeland et al. (2002) targeted two, self-monitoring and goal setting and attainment. All of the studies incorporated other component elements of self-determination as intervention strategies (e.g., self-instruction, problem-solving, self-regulation) to achieve and master the desired outcome skill.

Implementers of Intervention

In four of the five studies, a researcher (or trained research team member) was directly involved as the primary data collector to help oversee and implement the intervention with the student participants. In the study by Agran, Wehmeyer, Cavin, & Palmer (2010), the researcher had assistance from two paraprofessionals and one general education teacher with 20% of the data collection, whereas the student participants helped the research assistant record performance data in the study by Agran et al. (2005). The data for the other two studies were collected by the researchers and other staff and graduate students who were trained to observe and help implement the study with the participating students. The data collection and implementation of the final study was done by the parents and caregivers of the study participant (Singh et al., 2003).

Results

All participants in the five studies showed increased performance in the target skills promoting self-determination. The participants in the studies that focused on goal-setting and attainment tended to have much better outcomes based on an increase in skill performance in the maintenance phase (Agran et al., 2010; Copeland et al., 2002; McGlashing-Johnson et al., 2003), whereas the students who worked toward self-monitoring as their target skill showed a slight decrease in performance during the maintenance phase (Agran et al., 2005).

Maintenance was performed in all of the studies. With the exception of two participants, one due to time constraints of the study (McGlashing-Johnson et al., 2003) and the other to not meeting the criteria to move into the maintenance phase (Copeland et al., 2002), all other study participants (89%) were able to complete the intervention training and follow up with maintenance. Although maintenance data was reported for four of the studies, Singh et al. (2003) reported only that the study participant was able to maintain and improve her ability to choose the foods and drinks of her choice even after the formal intervention had terminated. The parents and caregivers of the participant continued with an adaptive form of the intervention that gave the participant the opportunity to make choices throughout the day to be more independent during mealtime. Fifty-six percent (n = 10) of participants showed increased improvement even after the end of the intervention and into the maintenance phase. The performance of the remaining eight participants (44%) decreased slightly from the intervention phase, but was still improved from baseline.

With the exception Singh et al. (2003), all studies reported on the social validity of the intervention to promote self-determination and on its positive impact for participants. Copeland al. (2002) reported that one study participant felt proud of herself for being able to complete a worksheet task for the first time. This gave her the self-confidence to feel comfortable in class and to feel as if she belonged there. This sense of accomplishment was also noted in another study (McGlashing-Johnson et al., 2003), where participants expressed excitement and positive feelings about themselves and their accomplishments. The sense of accomplishment for these students was a motivation factor that helped them to be more independent and improve their performance outcomes.

Limitations

The purpose of this review was to examine the literature on self-determination for students with severe cognitive disabilities. We wanted to examine which component elements of self-determination were most prominently addressed for this population of students. Unfortunately, the biggest challenge encountered in this review was the limited number of studies that met the inclusion criteria. .

Another limitation that was encountered was with regard to how "severe disabilities" was defined by different researchers. In several instances, the title and/or abstract would refer to a student with "severe disabilities," but when the authors of this review would examine the student profile more closely, the student may have had a learning disability or a mild or moderate intellectual disability, in addition to a severe attention deficit disorder or emotional/behavior disorder that the researchers' determined to be "severe disabilities." When IQ levels were not reported or not clearly stated, it was difficult to know, if the severity of the disability was due to an intellectual challenge or other factors such as behavioral or communication limitations.

Due to the limited number of studies in this review, generalizing for this population in regards to self-determination is difficult. However, every student in the five studies showed improvement in his or her performance and was capable of learning skills leading to enhanced self-determination.

Discussion

Positive outcomes were reported for all participants from the five studies reviewed. Many factors possibly contributed to the success of the participant outcomes in the studies. For example, each study had high expectations of the participants regardless of the severity of their cognitive disabilities. In addition, some of the students were given the opportunity to be directly involved in the process of setting their own goals, while others were being taught how to self-

monitor or make choices for greater independence. Unfortunately, not everyone sees the value or benefit from teaching skills to promote self-determination for students with severe cognitive disabilities (Wehmeyer et al., 2000). This creates an obstacle for students who are waiting for the opportunity to learn and to have the chance to be the "causal agent" in their own lives (Wehmeyer, 2005). The successful outcomes of these studies show that students with severe cognitive disabilities are able to act with "volition" to contribute to their own quality of life (Wehmeyer, 2005). This was evident when the sense of accomplishment was a driving force or motivation for some of the students to improve their performance and to feel a sense of pride for something they made happen in their lives.

All five studies in this review demonstrated the potential of what students with severe cognitive disabilities can achieve when given the opportunity to learn and practice what it means to be self-determined. Only one study reported how the intervention of choice-making was implemented into the daily schedule to reinforce what was learned and to build on this skill to make it more meaningful for the participant. It may have been possible for this participant to have follow-up on a long-term basis since her parents and caregivers were the "constant" intervention implementers in her life. As for the participants in the remaining four studies, the researchers did not mention any long-term maintenance follow-up to support the students to retain what they had learned during the formal intervention training period.

All of the studies in this review targeted students in the middle school to high school range. No studies were found that addressed self-determination in younger years or earlier grades for students with severe cognitive disabilities. The promotion of self-determination in young children is not widely practiced since most of the components of self-determination are considered to be skills children acquire at a later age (Palmer & Wehmeyer, 2003; Wehmeyer &

Palmer, 2000). However, Wehmeyer and Palmer (2000) published recommendations as to how to promote self-determination at an early age for young children with disabilities. They noted that promoting self-determination at a young age could support children to learn more about themselves and to develop self-awareness. For children with more significant disabilities, they suggested using a more systematic instruction approach such as procedures or task analysis. For example in the study by Singh et al. (2003), the participant took almost 3,000 trials before she made the first self-initiation for choice-making. To move on to Phase 1, she took over 7,200 trials to reach mastery level. Only because she had the opportunity to practice more than 120 times a day, was she finally able to master the skill of choice-making at the age of 14. By starting young, children are exposed to more opportunities for learning and for reaching their full potential. Self-determination is considered not a process or set of skills (Wehmeyer, 2005) but components of behaviors/skills developed over a course of time or even a lifetime (Wehmeyer & Palmer, 2000). If students with severe cognitive disabilities are able to get a head start on developing the basic components of self-determination at an early age, higher expectations may result by the time students start elementary school and when they reach middle school or high school.

Implications for Practice and Research

While broad implications for practice cannot be made because of the limitations described previously, some research and practice implications are still apparent. Some of the most relevant practice implications are related to the importance of designing interventions for students with severe cognitive disabilities. Results of these studies clearly indicate that promoting self-determination with students with severe cognitive disabilities has benefits. The evidence exists to support teachers' implementation of promotion practices, but their

understanding of its importance and value is less clear (Wehmeyer, et al., 2000). Helping families, teachers, and related service providers to understand the value of promoting self-determination across a student's school career will enable the field of special education to gain the traction they need to support students with the most severe cognitive needs. Understanding the value of promoting self-determination may eventually lead to higher expectations for students with severe cognitive disabilities and, in turn, result in more interventions to enable them to participate more fully with their same age peers. This participation with same age peers may be facilitated by technology or systematic instruction, embedded in the general education curriculum, by not just special educations teachers but by peers, general education teachers, and people who are natural supports to the student at home and school. A comprehensive plan for teaching skills leading to enhanced self-determination may take the length of the student's school career, but the benefits will have lasting implications for the student and his or her family.

Due to the limited research in this area of self-determination, many possibilities exist for future work. One of the areas of need, based upon the research reported in this study, is for more studies focusing on students with severe cognitive disabilities who are elementary aged or younger. Another area of needed research is the continued measurement and development of short term goals for students and the ability of those goals, when appropriate, to be linked back to the Individual Education Plan (IEP) process for the student. Using existing models, like the Self-Determined Learning Model of Instruction (SDLMI) (Agran, Blanchard, & Wehmeyer, 2000; Agran, Cavin, Wehmeyer & Palmer, 2006;, Palmer & Wehmeyer, 2003; Shogren, Palmer, Wehmeyer, Williams-Diehm, & Little, 2011; Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000) should also be considered a priority in the area of self-determination research. SDLMI is a

model supporting teachers to enable students to self-regulate and self-direct the learning process and ultimately engage in self-determined learning.

Conclusion

This literature review explored five published articles on the promotion of self-determination conducted with students with severe cognitive disabilities, as defined by IDEA, ages 3-21. Using strategies such as goal setting and attainment, choice making, self-instruction, and self-monitoring effectively produced positive outcomes for students with severe cognitive disabilities. Through the promotion of self-determination, the participants in the studies were able to access general education curriculum. Further research should explore interventions and the measurement of short-term goals for younger students with severe cognitive disabilities.

References

Agran, M., Blanchard, C., & Wehmeyer, M. L. (2000). Promoting transition goals and self-determination through student self-directed learning: The self-determined learning model of instruction. *Education and Training in Mental Retardation and Developmental Disabilities, 35,* 351-364.

Agran, M., Cavin, M., Wehmeyer, M., & Palmer, S. (2006). Participation of students with moderate to severe disabilities in the general curriculum: The effects of the self-determined learning model of instruction. *Research and Practice for Persons with Severe Disabilities, 31,* 230–241.

Agran, M., Wehmeyer, M., Cavin, M. & Palmer, S. (2010). Promoting active engagement in the general education classroom and access to the general education curriculum for students with cognitive disabilities. *Education and Training in Autism and Developmental Disabilities, 45,* 163–174.

Agran, M., Sinclair, T., Alper, S., Cavin, M., Wehmeyer, M., & Hughes, C. (2005). Using self-monitoring to increase following-direction skills of students with moderate to severe disabilities in general education. *Education and Training in Developmental Disabilities, 40*(1), 3-13.

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*, 219-276, doi:10.3102/00346543071002219

Browder, D., Ahlgrim-Delzell, L., Courtade-Little, G., & Snell, M. (2006). Access to the general curriculum. In M. Snell & E Brown (Eds.), *Instruction of Students with Severe Disabilities* (6th ed., pp. 489-525). Upper Saddle River, NJ: Merrill/Prentice-Hall.

Copeland, S.R., Hughes, C., Agran, M., Wehmeyer, M.L., & Fowler, S.E. (2002). An intervention package to support high school students with mental retardation in general education classrooms. *American Journal on Mental Retardation, 107*(1), 32-45.

Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C. §1400, H. R.

McGlashing-Johnson, J., Agran, M., Sitlington, P., Cavin, M., & Wehmeyer, M. (2003). Enhancing the job performance of youth with moderate to severe cognitive disabilities using the self-determined learning model of instruction. *Research and Practice for Persons with Severe Disabilities, 28*(4), 194-204. doi: 10.2511/rpsd.28.4.194

No Child Left Behind Act of 2001, 20 U.S.C.A. § 6301 *et seq.*

Palmer, S. B. & Wehmeyer, M. L. (2003). Promoting self-determination in early elementary school: Teaching self-regulated problem-solving. *Remedial and Special Education, 24*(2), 115-126. doi: 10.1177/07419325030240020601

Shogren, K. A., Palmer, S. B., Wehmeyer, M. L., Williams-Diehm, K., & Little, T. D. (2011). Effect of intervention with the self-determined learning model of instruction on access and goal attainment. *Remedial and Special Education*, 34 (1), doi: 10.1177/0741932511410072

Shogren, K., & Turnbull, A. (2006). Promoting self-determination in young children with disabilities: The critical role of families. *Infants & Young Children, 19*(4), 338-352.

Singh, N. N., Lancioni, G. E., O'Reilly, M. F., Molina, E. J., Adkins, A. D., & Oliva, D. (2003). Self-determination during mealtimes through micro switch choice-making by an individual with complex multiple disabilities and profound mental retardation. *Journal of Positive Behavior Interventions, 5*(4), 209-215. doi: 10.1177/10983007030050040401.

Spooner, F., Dymond, S. K., Smith, A., & Kennedy, C. H. (2006). What we know and need to know about accessing the general curriculum for students with significant cognitive disabilities. *Research and Practice for Persons with Severe Disabilities, 31,* 277-283.

Wehmeyer, M. L. (2005). Self-determination and individuals with severe disabilities: Re-examining meanings and misinterpretations. *Research & Practice for Persons with Severe Disabilities, 30*(3), 113-120, doi: http://dx.doi.org/10.2511/rpsd.30.3.113

Wehmeyer, M. L., Agran, M., & Hughes, C. (2000). A national survey of teachers' promotion of self-determination and student directed learning. *Journal of Special Education, 34,* 58-68.

Wehmeyer, M. L., & Palmer, S. B. (2000). Promoting the acquisition and development of self-determination in young children with disabilities. *Early Education & Development, 11*(4), 465-481.

Wehmeyer, M. L., Palmer, S. B., Agran, M., Mithaug, D., & Martin, J. (2000). Promoting causal agency: The self-determined learning model of instruction. *Exceptional Children, 66,* 439-453.

Wehmeyer, M. L., Sands, D.J., Doll, B., & Palmer, S. B. (1997). The development of self-determination and implications for educational interventions with students with disabilities. *International Journal of Disability, Development and Education, 44,* 305-328.

Table 1
General Characteristics of Review Studies Related to Promoting Self-Determination for Students with Significant Disabilities

Reference	Design	Student	Age	Grade	Sex	Disability/IQ	Level of Support*	Setting
Agran, Wehmeyer, Cavin, & Palmer (2010)	Multiple baseline design across participants	A	N/R	8	F	ID	3	General education classroom
		E	N/R	8	F	ID	2	
		B	N/R	9	M	ID/BD	3	
Agran, Sinclair, Alper, Cavin, Wehmeyer, &Hughes (2005)	Multiple baseline design across participants	JB	13	7	M	ASD/60	2 (Group 1)	General education classroom
		JT	13	8	M	ID/50	2 (Group 1)	
		WH	15	8	M	ID/72	2 (Group 1)	
		CS	14	8	M	ID/50	3 (Group 2)	
		GS	15	8	M	ASD/60	3 (Group 2)	
		AH	14	8	M	ASD/30	3 (Group 2)	
McGlashing-Johnson, Agran, Sitlington, Cavin, & Wehmeyer (2003)	Multiple baseline design across participants	J	17	N/R	F	ID/(<55)[a]	3	Employment setting
		L	20	N/R	F	ID/(<40)[a]	3	
		M	16	N/R	M	ID/(<40)[a]	3	
		S	16	N/R	M	ID/(<55)[a]	3	
Singh, Lancioni, O'Reilly, Molina, Adkins, & Oliva (2003)	ABCD single case design	L	14	N/R	F	ID/(<25)[a]	N/R	Home
Copeland, Hughes, Agran, Wehmeyer, & Fowler (2002)	Multiple baseline design across participants	M	14	N/R	F	ID/40	N/R	Vocational (cosmetology) class with general education students
		C	15	N/R	M	ID/70	N/R	
		R	17	N/R	F	ID/68	N/R	
		T	17	N/R	F	ID/40	N/R	

Note. N/R = Not Reported
[a] IQ based on DSM-IV Mental Retardation scale according to how student was identified by authors.

Table 2
Intervention Characteristics of Review Studies Related to Promoting Self-Determination for Students with Significant Disabilities

Reference	Intervention characteristics		
	Component elements of self-determination	Implementer	Procedures
Agran, Wehmeyer, Cavin, & Palmer (2010)	Goal-setting and attainment skills	Researcher Paraprofessionals General education teacher	Student-direct learning strategies (SDLMI) were employed to achieve self-identified goals including 1) antecedent cue regulation and 2) self-instruction strategies. During baseline the students' performance related to their chosen target behaviors were recorded No feedback or reinforcement was given during this condition.
Agran, Sinclair, Alper, Cavin, Wehmeyer, &Hughes (2005)	Self-monitoring	Researcher Research Assistant	Students were instructed to acknowledge a given direction, complete the task and monitor their performance. Students were instructed to make a "+"mark in the box on the self-monitoring sheet each time the completed a step in their task analysis and a "-"in the box if they did not complete the step. During the baseline condition, the observer recorded the frequency of the target behaviors prior to the intervention.
McGlashing-Johnson, Agran, Sitlington, Cavin, & Wehmeyer (2003)	Goal setting and attainment	Researcher Staff members Graduate research assistants	The students learned to set their own goals, develop an action plan, implement the plan, and adjust their goals and plans as needed at their specific job sites. During the baseline condition, data were collected on each student's performance of the target behaviors at their job sites. A task analysis was developed with student input and for observers to determine the number of steps required to complete each student's target behavior.
Singh, Lancioni, O'Reilly, Molina, Adkins, & Oliva (2003)	Choice making	Parents Caregivers	Assess observing response, 4 prompts Phase 1: shape and assess initial observing response Phase 2: shape and assess initial choice response, 2 choices Phase 3: choose brown food and drink, 3 choices Phase 4: choose among foods and drinks, 5 choices Maintenance phase: 6-20 trials/day - (120trials/day)
Copeland, Hughes, Agran, Wehmeyer, & Fowler (2002)	Self-monitoring Goal setting and attainment	Researcher Graduate research assistant	Students were trained in the following procedural components including: (a) modification of teacher-assigned worksheets, (b) instruction in assignment completion, (c) instruction in self-monitoring of classroom performance skills, (d) including instruction in setting performance goals, and (e) instruction in goal-evaluation.

Table 3

Table 3

Results of Studies Promoting Self-Determination for Students with Significant Disabilities

Reference	Students					Study
	Student	Baseline	Intervention	Maintenance		
Agran, Wehmeyer, Cavin, & Palmer (2010)	A	56	80	84		Positive change for all students. All students and two teacher shared positive perceptions about the value of SDLMI of instruction
	E	43	76	87		
	B	73	81	89		
Agran, Sinclair, Alper, Cavin, Wehmeyer, &Hughes (2005)	JB	33	100	71		All students learned the strategy and maintained their performance at mastery levels for the duration of the maintenance condition. General and special education teachers supported these findings through a social validity measures.
	JT	28	84	63		
	WH	60	92	77		
	CS	20	86	55		
	GS	66	100	86		
	AH	40	86	60		
McGlashing-Johnson, Agran, Sitlington, Cavin, & Wehmeyer (2003)	J	40-60	50	GAS 80	M[a] 83	All students improved their performance. Three of the 4 participants achieved their self-selected goals, and 1 student did not meet the mastery criterion but performed at a higher level during the training condition
	L	0-33	79	80	80	
	M	0-37	46	50	N/A	
	S	60-80	79	80	80	
Singh, Lancioni, O'Reilly, Molina, Adkins, & Oliva (2003)	L	0	2,880 prompt trials before first self-initiation. Phase1: 7200 trials for mastery. Phase2: terminated 3 of 18 days. Phase3: terminated 18 of 28 days after 5-15 trials. Phase4: terminated 18 of 21 days after 10-19 trials	YES		The student was slow to learn the initial observing response. However, when this response was established, she rapidly learned the choice responses until she was able to determine what she wanted from the choices presented. She continued to make food choices following termination of formal training.
Copeland, Hughes, Agra, Wheeler, & Fowler (2002)	M	3	86	57	Change in Grade D to C	All students improved performance on modified assignments for all participants, and higher report card grades were achieved for 3 participants. Three of 4 participants also evaluated their performance in relation to their goals.
	C	6	98	85	C to C	
	R	20	87	74	C- to C	
	T	8	93	96	D to C	

[a] M = Maintenance