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**The Impact of Teaching Self-Determination Skills on the On-Task and
Off-Task Behaviors of Students with Emotional and
Behavioral Disorders**

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**The Impact of Teaching Self-Determination Skills on the On-Task and
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Behavioral Disorders**

by

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Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

August, 2010

Dedication

In Memory of John Richard Kelly, Sr., Charles Mayfield Kelly, and Dr. Leslie H. Jarmon

Acknowledgements

I would like to thank those individuals who have supported me throughout this process. First, I am grateful to my family for their love and support over the years. Without their encouragement and patience I could not have made it through this process. I would like to especially thank my wife Lela Kelly whose idea this was in the first place and supplied the kick I needed every so often when things got difficult. I could not have done it without her. I want to express my gratitude to my son JJ, my daughter-in-law Sandra, and their two children Cole and Quinn whose service to our country gave me fortitude. I want to thank my daughter Rainey and her daughter Neally whose incredible energy kept me invigorated, and my son Luke whose special needs gave him a love for life that inspired my vocation and aspirations as an educator. I also want to express heartfelt thankfulness to my parents, Jean and Anna Tarbutton, who were there every step of the way to give me both emotional and financial support when I needed it most. They are incredible folks. I would be remiss if I did not give a special thanks to my sister Kathleen Nagel. She has always encouraged and believed in me. I want to show my appreciation for my wife's parents, Doug and Winnie Cox, who as dedicated educators provided me with an extraordinary teachers model to follow. This dissertation is dedicated to the memory of my father, John Kelly, who always encouraged me to chase

my dreams, my brother Charles who always had my back, and Dr. Leslie Jarmon who inspired me and empowered me with her enthusiasm to become a much better writer than I would have ever become on my own.

My doctoral preparation was influenced tremendously by my co-advisor and the co-supervisor of my dissertation committee, Dr. Karrie A. Shogren. Her research skills, commitment, and encouragement proved invaluable to me and to the success of my project. She was incredible. I want to particularly thank my other co-advisor and co-supervisor Dr. Herbert Rieth for accepting me as a student into the special education program and mentoring me throughout the five years I spent at The University of Texas at Austin. His patience and understanding were invaluable. I cannot thank him enough for his support. I also want to thank the other members of my dissertation committee who worked tirelessly on my behalf this last year. Dr. Cheryl Wilkinson, Dr. James Patton, Dr. Tiffany Whittaker, and Dr. Andrea Flower. I am so pleased to have worked with such respected scholars. I would like to offer a special thank you to Dr. Shogren, Dr. Wilkinson, and Dr. Patton whose input on my synthesis was invaluable.

I am extremely grateful to my cohorts, colleagues, and friends for their tireless support, patience, understanding, optimism, encouragement, and faith in me. I especially want to show my appreciation to Cathy Thomas, Kyong-Eun Na, Casey Grim, Jules Narcisse, Rob Donald, and Nancy Elder for their advice, ideas, and collaboration. They have truly been a blessing for my work and me. I particularly want to thank Tony Castro and Minyi Shih for encouraging me, sharing their ideas about my writing and research, and being my friends. I will always cherish the memories of our time together and look forward to collaborating with them in the future. Finally, I would like to thank the

faculty and support staff of The University of Texas at Austin's Special Education Department, whose help throughout the years made this all possible. Without Gwen VanPelt, Mary Ann Gustafson, Rose Amir, and Stephanie Hill-Townsend, life at The University of Texas at Austin would not have been quite as sweet. I am truly blessed!

Finally, I want to acknowledge my participants, the teachers, and the administration of the school district that took part in this study. This research would not have become a reality without them.

Thank You One and All!

The Impact of Teaching Self-Determination Skills on the On-Task and Off-Task Behaviors of Students with Emotional and Behavioral Disorders

Publication No. _____

John R. Kelly, PhD.

The University of Texas at Austin, 2010

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Historically, youth with emotional and behavioral disorders (EBD) have experienced higher rates of absenteeism, lower grade point averages, and higher course failure than their non-disabled peers; as a result students with EBD are at significant risk of school failure, dropping out of school, and experiencing poor life outcomes. Emerging literature suggests that teaching self-determination to students with EBD may be an effective strategy to address the in-school and post-school challenges faced by youth with EBD.

The purpose of this study was to examine the impact of teaching self-determination on adolescents with EBD's on- and off-task behavior, grades, progress towards self-selected goals, and global self-determination. The *Self-Determined Learning Model of Instruction* (SDLMI) was implemented with four high school students with

EBD between the ages of 14 and 16 years who were having difficulty meeting classroom behavioral expectations in two general education classrooms. The SDLMI teaches key components of self-determination, is suitable for diverse students, and is compatible with major academic content areas. Twelve lessons were taught as a separate curriculum individually to each participant. The entire study took 25-weeks, between October and April, to complete.

A multiple baseline across participants design was used to examine the functional relation between SDLMI intervention and the on- and off-task behaviors of high school students with EBD. The results showed that all four students significantly increased on-task behaviors and decreased off-task behaviors and all four participants maintained the increase of on-task behaviors and the decrease of off-task behaviors after the intervention was withdrawn. Moreover, all four students made progress towards their goal of implementing on-task behavior in the classroom and generalized on-task behavior to a second general education classroom. However, data regarding the impact on students' grades and self-determination were inconclusive.

The study provides evidence of effective self-determination instruction that supports students to improve their behavior in a general education classroom. It also provides direction for future research exploring the relationship between behavior and academic skills. Contributions to the field, limitations, and implications for practice and future research are provided.

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CHAPTER 1: INTRODUCTION

Students identified with emotional and behavioral disorders (EBD) face significant challenges in school and during the transition to adulthood (Mooney, Epstein, Reid, & Nelson, 2003; Rivera, Al-Otaiba, & Koorland, 2006). Compared to their peers with other disabilities, these students experience higher rates of absenteeism, lower grade point averages, higher course failure, and higher levels of school drop out (Benitez, Lattimore, & Wehmeyer, 2005; Wagner & Blackorby, 1996; Wagner, Newman, Cameto, Levine, & Garza, 2006). For example, Levy and Chard (2001) in a literature review stated that students with EBD tended to perform at a lower level than "non-disabled students in all academic areas and underachievement was a typical characteristic of this population" (p. 437). Wagner and Blackorby (1996), using data from the first National Longitudinal Transition Study (NLTS), reported that students with EBD tended to be at least one year older than their non-disabled peers, suggesting they had failed at least one grade level. Wagner and Blackorby went on to say that these types of results placed youth with EBD at significant risk for school failure and for dropping out of school. And, research has suggested that not completing high school is a predictor of poor outcomes in major life domains in adulthood (Mooney et al., 2003; Wagner & Blackorby, 1996).

GRADUATION OUTCOMES

The risk of school failure for students with EBD is evidenced by graduation rates and drop out rates for this population. Sources vary on recent graduation rates,

particularly when type of graduation is considered, for students with EBD; however, irrespective of the source, the graduation rates for this population are dismal. U.S. Department of Education (2004) data reported that 32% of students with EBD graduate from high school and data from the NLTS-2 suggest that only 48% of students with EBD who do complete high school actually graduate with a regular diploma (Wagner et al., 2006). Moreover, students with EBD carry the highest dropout rate of any disability group. The average dropout rate for students with other disabilities is 38%, while estimates range from 44% to 61% for students with EBD (U.S. Department of Education, 2004; Wagner et al., 2006).

POST-SCHOOL OUTCOMES

Research suggests that students with EBD not only experience problems in school, but also face significant difficulties in the transition to adulthood (Lehman, Clark, Bullis, Rinkin, & Castellanos, 2002). Meaningful work experiences, attending college, community engagement and other positive life outcomes are not achieved by many students with EBD (Benitez et al., 2005; Wagner et al., 2006). For example, only one in five youth with EBD have ever been enrolled in any postsecondary education program according to data from the National Longitudinal Transition Study-2 (Wagner et al., 2006). Further, postsecondary education outcomes for students with EBD have worsened over time. The original NLTS, conducted almost 10 years prior to NLTS-2, suggested that only 25.6% of students with EBD had ever attended a postsecondary school (Blackorby & Wagner, 1996). Failing to complete high school or to access post-secondary education opportunities increases the gap in employment and earnings between

students with EBD and the general population (Wagner and Blackorby, 1996), which is underscored by an unemployment rate of 50% for youth with EBD (Wagner et al., 2006).

COMMUNITY OUTCOMES

In terms of community engagement, the NLTS-2 data show that three to five years after leaving school, 65% of EBD youth still live at home (Wagner et al. (2006). Moreover, one-third of students with EBD report their only engagement with their community is employment (Wagner et al. 2006). Considering that 50% of students with EBD are unemployed three to five years post-school, it is clear that community engagement is very limited for this group. Furthermore, 58% of EBD youth have been arrested at least once since leaving high school and 43% are on probation or parole. In comparison, almost 30% of all youth with disabilities had been arrested at least once (19% if you exclude EBD) and 20% are on probation or parole (Wagner et al., 2006). Unfortunately, poor school outcomes, little meaningful work experience, lack of opportunity to attend college, and insignificant community engagement makes any reference to possible positive life outcomes for the EBD population an oxymoron.

FACTORS INFLUENCING THE POOR OUTCOMES OF STUDENTS WITH EBD

A number of possible factors that influence the poor outcomes of the EBD population emerge from the literature. Lane and Carter (2006) suggested that limited social, behavioral, academic, and vocational skills have impacted student outcomes; other researchers have cited the strong relationship between high absenteeism and poor academic outcomes (Lane & Carter, 2006; U.S. Department of Education, 2004; Wagner

& Blackorby, 1996). Another factor that has been identified by multiple researchers is problematic behaviors (e.g., off-task behavior, inappropriate communication, aggression) (Lane & Carter, 2006; Wagner & Blackorby, 1996). In fact, the impact of problem behaviors on the academic outcomes of students with EBD is directly supported by the federal definition of emotional disturbance (ED) in the Individuals with Disabilities Education Act (IDEA, 2004), which defines ED as "an inability to learn that cannot be explained by intellectual, sensory, or health factors" (Cullinan, 2007; U.S. Department of Education, 1998, p. II-46).

Another leading factor that has been cited as contributing to the poor academic and post school outcomes for student with EBD is a lack of specific preparation in high school for adult life. Post high school preparation (transition planning) can include both college preparation and vocational training. Because of a strong commitment by the Federal government to prepare all students for college, there has been a corresponding decrease of the promotion of vocational skills training in schools (Lane & Carter, 2006; Wagner & Blackorby, 1996). The lack of promoting vocational training is disappointing considering that research indicates that vocational training is a positive motivator for keeping students with EBD in school and a strong indicator of positive life experiences for this population (Carter, Lane, Pierson, & Glaeser, 2006; Lane & Carter, 2006). Increasingly, researchers have cited the importance of self-determination (Carter et al., 2006) and active student involvement in IEP or transition planning meetings (Arndt, Konrad, & Test, 2006; Powers, Turner, Westwood, Matuszewski, Wilson, & Phillips, 2001; Snyder & Shapiro, 1997; Wehmeyer & Lawrence, 1995) as key components to successful adult outcomes for students with disabilities, including EBD. However,

research also suggests that students with EBD tend to experience lower levels of self-determination and face inadequate preparation in this important skill area (Carter, et al., 2006).

POSSIBLE SOLUTIONS

The in-school and post-school challenges faced by the EBD population have not gone unnoticed (Lane & Carter, 2006; Shogren & Turnbull, 2004). As discussed earlier, researchers and practitioners have strongly advocated the need for research-based instruction, including vocational instruction, tailored to the needs of students with EBD (Carter et al., 2006; Wagner & Blackorby, 1996). Another key element cited by many researchers is implementing best practices in academic and behavior support while students with EBD are still in school (Mooney et al., 2003).

Benitez et al. (2005) and other researchers have suggested teaching self-determination to students with EBD either directly or by incorporating self-determination into the curriculum (Test, Fowler, Brewer, & Wood, 2005) as a means of implementing best practice in school to promote positive post school outcomes because of the impact of self-determination interventions have with other disability populations (Algozzine, Browder, Karvonen, Test, & Wood, 2001; Carter et al., 2006). The focus on self-determination in transition and special education emerged in the early 1990's as a result of the disability community searching for strategies to empower individuals with disabilities to be actively involved in their futures (Shogren & Turnbull, 2006; Wehmeyer, 1999). The year 1990 became a landmark year for self-determination research as the U.S. Department of Education's Office of Special Education (OSEP)

funded six projects to develop instructional materials to promote self-determination for students with disabilities (Wehmeyer, 1999).

The OSEP funding sparked a number of initiatives that directly affected the outcomes for youth with EBD (Wood, Fowler, Uphold, & Test, 2005). These initiatives increased the focus on promoting more positive outcomes for students with EBD through teaching skills associated with self-determination and transition planning (Lane & Carter, 2006; Wagner & Davis, 2006). IDEA (2004) now defines transition services as a coordinated set of activities designed within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from school to post-school activities. A key element of transition services is that the student's preferences and interests be integrated into the transition planning process and the design of a student's personalized curriculum. Legislation and best practices, such as person-centered planning and student-directed IEPs, place more responsibility on students in secondary programs to direct their own educational outcomes (Lehman et al., 2002; Wagner & Davis, 2006). However, many fear that students with disabilities, especially students with EBD, have not been taught the necessary skills to take on this expanded role.

As was mentioned earlier, many researchers, for example, Benitez et al. (2005) and Martin, Mithaug, Cox, Peterson, Van Dycke, and Cash (2003) assert that self-determination may be a critical factor to consider in efforts to address the poor post school outcomes of students with EBD. Additionally, self-determination's theoretical framework has been well formulated (Wehmeyer, 1999) for use with the EBD population because it includes the socialization and developmental outcomes (Hoffman & Field,

1995) that Lane and Carter (2006) suggested were critical to successful life outcomes for youth with EBD. The incorporation of socialization and developmental outcomes in the intervention framework may be why teaching self-determination skills has been successful with other disability groups and has potential for success with the EBD population.

THEORETICAL FRAMEWORK OF SELF-DETERMINATION

Wehmeyer's (1996b) theoretical model defines self-determination as "the attitudes and abilities necessary to act as a primary causal agent in one's life and to make choices and decisions regarding one's quality of life, free from undue external influences or interferences" (p. 24). Self-determined behavior is characterized by four essential characteristics: (a) acts autonomously; (b) behaviors are self-regulated; (c) responds to an event in a psychologically empowered manner; and (d) acts in self-realizing manner (Shogren & Turnbull, 2006; Wehmeyer, 1996; Wehmeyer, 1999). All of these characteristics are enhanced in students through the acquisition of component elements of self-determination, each of which has a unique developmental course and learning experience. Moreover, each component's unique developmental course is extremely important for developing instructional strategies to promote self-determination in students with disabilities, especially youth with EBD. Table 1 has a list of the components that are generally considered key to the development of self-determination (Shogren & Turnbull, 2006; Wehmeyer, 1999).

Table 1: Components of Self-Determination

1. Choice making skills
2. Decision making skills
3. Problem solving skills
4. Goal setting and attainment skills
5. Self-observation skills
6. Self-evaluation and self-reinforcement skills
7. Self-instruction skills
8. Self-advocacy and leadership skills
9. Internal locus of control skills
10. Self-efficacy skills
11. Self-knowledge skills

MODELS OF INSTRUCTION

Recent reviews of the literature have provided encouraging evidence that self-determination instruction may be effective in promoting self-determination skills in students with disabilities, including students with EBD (Algozzine et al., 2001; Chambers, Wehmeyer, Saito, Lida, Lee, & Singh, 2007; Wehmeyer, 1999). The different components identified in the theoretical framework of Wehmeyer have led to instructional strategies and curricular models that: (a) focus on teaching specific skills such as choice-making or self-advocacy or (b) focus on self-determination globally and teach multiple skills concurrently that lead to self-determined behavior (e.g., decision

making, goal setting, etc.) Examples include the *Self-Advocacy Strategy* (Van Reusen, Bos, Schumaker, & Deshler, 1994; Lancaster, Schumaker, & Deschler, 2002), which focuses on the individual component of self-advocacy and the *Self-Determined Learning Model of Instruction* (SLDMI; Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000) that targets all of the component elements of self-determined behavior (Wehmeyer et al.). The *Self-Determined Career Development Model* (SDCDM; Wehmeyer, Lattimore, Jorgensen, Palmer, Thompson, & Schumaker, 2003; Benitez et al., 2005) is an adaptation of the SDLMI that focuses on developing self-determination strategies for career and employment. Algozzine et al. (2001), in a meta-analysis of the literature on self-determination, also found that multiple strategies existed in the literature to teach self-regulation, goal setting and attainment, problem-solving, decision-making, self-advocacy, self-awareness, self-efficacy, and choice making (Shogren, Fagella-Luby, Bae, & Wehmeyer, 2004).

RATIONALE

Chambers et al. (2007) point to an emerging literature-base suggesting that self-determination is a valued and important outcome for all students with disabilities. Self-determination has also been identified as a critical component for facilitating student attainment of academic and transition-related goals (Wehmeyer, Agran, & Hughes, 1998) and promoting access to the general education curriculum for students with disabilities (Wehmeyer, Field, Doren, Jones, & Mason, 2004). While the successful development of instructional strategies for teaching self-determination is beneficial for all special education students, Algozzine's et al. (2001) meta-analysis found that the work was

primarily focused on students with learning disabilities and mild intellectual disabilities. Very few self-determination studies have included participants from the EBD population. In fact, out of the 51 studies in the meta-analysis (Algozzine et al., 2001) only five studies had participants with EBD. More recently, Chambers et al. (2007) cited only three studies that contained students with EBD in their review of the literature on global self-determination. Furthermore, Test et al. (2005) provided a methodological review of the literature on self-advocacy interventions that provided evidence that individuals with various disabilities can learn self-advocacy skills, but found only five studies out of the 25 ($n = 626$) included students with EBD ($n = 12$). Test, Mason, Hughes, Konrad, Neale, & Wood's (2004) review focused on students' involvement in their IEPs and found only three studies out of 16 ($n = 309$) that contained a total of six student participants with EBD.

These research reviews certainly draw attention to the small number of studies that focus on the self-determination skills of youth with EBD, along with the very restricted number of students with EBD that participated in any of the studies. In addition to the lack of research, the authors also point to a number of methodological limitations, such as the failure to disaggregate results and a lack of fidelity checks (Algozzine et al., 2001; Test et al. 2005). Therefore, the rationale for this dissertation is two-fold. First, there is a need for methodologically sound evaluations of the effects of teaching self-determination skills to adolescent students with EBD. Second, there is a need to investigate whether self-determination contributes to positive behavior and educational outcomes for students with EBD.

PURPOSE

Consequently, the purpose of this study is to determine the impact of teaching self-determination skills to adolescents with EBD in a public school setting. The *Self-Determined Learning Model of Instruction* (SDLMI) will be employed as the independent variable. There are a number of instructional models that were identified earlier that promote self-determination but the SDLMI is the only intervention that is based on all the key components of self-determination (Wehmeyer, 1999), is appropriate for both students with and without disabilities, and can be used in all major content areas to enable educators to teach students to self-direct the instructional process in order to enhance their self-determination (Palmer & Wehmeyer, 2003).

RESEARCH QUESTIONS

1. Does teaching self-determination skills have an impact on the on- and off-task behaviors of students with emotional and behavioral disorders?
2. Can students with EBD learn and utilize the SDLMI to make progress toward attaining self-selected goals related to their on-task behavior in the general education classroom?
3. Does using the SDLMI to change students' on-task behavior in the general education classroom generalize to other classes?
4. Does using the SDLMI to change students' on-task behavior in the general education classroom lead to collateral changes in their grades in that class?

5. What impact does the SDLMI have on the self-determination of students with EBD?

CHAPTER 2: LITERATURE REVIEW

As a first step to address the research questions discussed at the end of Chapter 1, a synthesis of the literature examining interventions to promote self-determination in students with EBD was conducted. The purpose of this literature review was to: a) explore interventions that have been used to teach self-determination to students with EBD; b) identify the characteristics of the students with EBD that were involved in the intervention studies; c) determine the self-determination components that were the focus of the interventions; d) investigate what self-determination outcomes have been examined; and (e) examine the degree of methodological rigor that has characterized these studies. In this chapter, the methods utilized to conduct this synthesis, the findings of the synthesis, and the factors identified that are relevant to this dissertation will be discussed. This chapter will end with a discussion of how the existing research informed and provided direction for this dissertation.

METHOD

Multiple sources were accessed in order to conduct a comprehensive literature search of interventions that have been used to increase self-determination skills in students with EBD. These sources included: four published reviews of self-determination intervention research; an external database search; and a manual search of journals. First, the reference lists of published literature reviews were examined (Algozzine et al., 2001; Chambers et al., 2007; Test et al., 2005; Test et al. (2004). The Algozzine et al. (2001)

meta-analysis of self-determination studies cited three studies that met the criteria for selection. The Chambers et al. (2007) literature review of global self-determination yielded one additional study for this review. The Test et al. (2005) methodological review of self-advocacy interventions was consulted and provided three additional studies. The Test et al. (2004) review of studies involving IEP meetings afforded no additional studies. Next, an electronic database search was conducted using Educational Resources Information Center (ERIC) and Ovid Database's Psych INFO. Eight generally accepted search terms were used to capture self-determination articles; these included: self-determination, self-advocacy, self-direction, self-awareness, goal setting, problem solving, choice making, and self-regulation. In conjunction with these terms, three search terms typically used with emotional and behavioral disorder (emotional disturbance, behavior disorders, affective disorders) were used. In addition, five search terms often used in self-determination research including transition, transition programs, transition and special education, IEP, and person-centered planning, were used to further identify articles. Search terms included full and truncated versions of a word or phrase in order to include all derivatives of the term. Two search terms (self management and locus of control) typically associated with self-determination were not used. Self-management and its sub-components were excluded because the existing research is very large and well known, and would not add to this synthesis. Also, locus of control was excluded as a search term because it has been identified as a construct with limited utility by Algozzine et al., (2001) and others.

Finally, a manual search of journals going back 10 years was done to augment the electronic database search. Three journals that have a history of publishing research

related to self-determination, EBD, and other related topics were accessed: *Behavioral Disorders, Remedial and Special Education, and Exceptional Children*. Reference lists from identified articles, books, chapters of books, and position papers were inspected for additional relevant research studies. No date restrictions were used because of the paucity of research.

Inclusion/Exclusion Criteria

Articles included in this review met the following criteria: (a) published in peer-reviewed journals, (b) reported quantitative results of intervention studies, (c) measured global self-determination or one or more of the component elements of self-determination as a dependent variable, (d) at least one participant was labeled with EBD (results did not have to be disaggregated), and (e) participants were in grades K-12. A number of studies were excluded because they did not examine self-determination as the primary outcome measure. For example, studies that measured increased task completion or those that looked at reducing problem behavior as the primary outcome measure were excluded. In addition, studies were excluded from data analysis if they were testing preference or reinforcement to manipulate behavior, because some question whether changing behavior by simply using preferred items or reinforcement is self-determination (Wood et al., 2005).

Analysis of Literature

Twelve research articles met the inclusion criteria for this synthesis. Seven of the studies used a single subject design (58%) and five (41%) used a group design. For

studies using a single-subject design, multiple baselines were used most frequently ($n = 4$, 57%). Three (42%) made use of a multiple probe design (Konrad & Test, 2007; Lancaster et al., 2002; Test & Neale, 2004). In addition, Lancaster et al. (2002) used a multiple probe across students design and augmented it with additional pre- and post-multiple group comparison measures. The remaining five (41%) quantitative studies used both experimental and quasi-experimental group designs. One group study (Powers et al., 2001) used an experimental random assignment treatment and control group design and provided group equivalency data. One study used a non-randomized treatment and control quasi-experimental group design (Hoffman & Field, 1995). The rest ($n = 3$, 60%) used quasi-experimental pretest-posttest single group designs (Martin et al., 2003; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000).

Content Findings

The number of participants in the studies totaled 276 (see Figure 1 & 2 for the breakdown of major demographics). All participants were described as students whose ages ranged from five years to 25 years ($M = 14.09$). The majority of the students were male ($n = 139$, 63%), which is disproportionate when compared to the number of males in the general education population but under representative when compared to the number of male students (79%) who make up the population of students with EBD (U.S. Department of Education, 2003). Six (50%) studies reported participant race/ethnicity. Of those reported, over half of the participants were Caucasian, as shown in Figure 1 (Arndt et al., 2006; Benitez et al., 2005; Konrad & Test, 2007; Lancaster et al., 2002; Powers et al.,

2001; Wehmeyer & Lawrence, 1995). Unfortunately, studies that did report ethnicity did not disaggregate results based on ethnicity, which makes it difficult to generalize results.

Figure 1: Race/Ethnicity

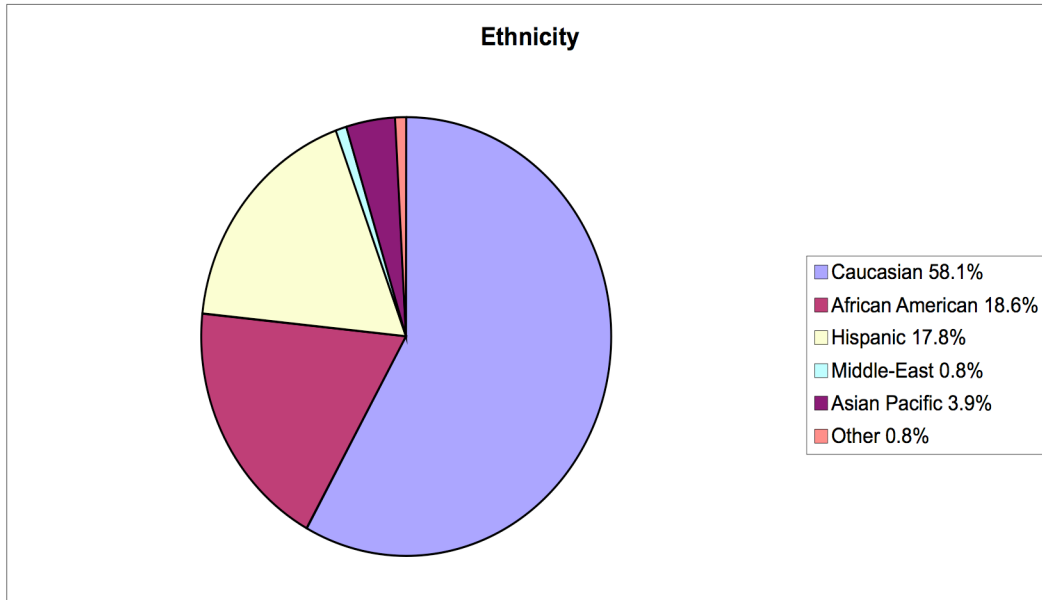
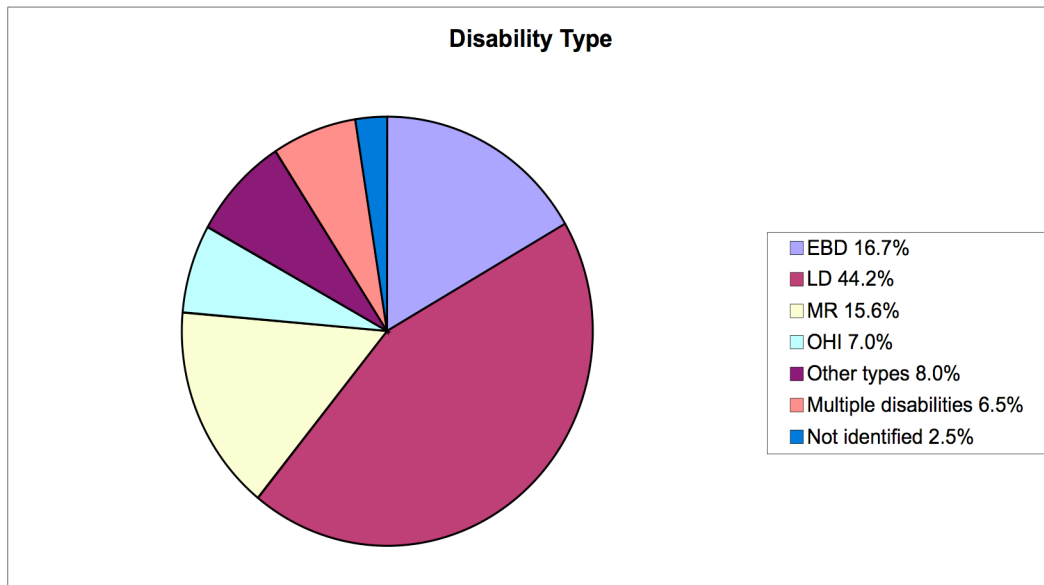


Figure 2: Disability Type



All the studies identified the primary disability of the participants (see Figure 2). Of the total of 276 participants, 122 (44%) were identified with Learning Disability (LD). Only 46 (17%) of the participants were classified as having EBD. Thus, the disparity in numbers of participants with LD and EBD may limit the findings of the current review, especially since six (50%) of the studies did not disaggregate results by disability (Hoffman & Field, 1995; Lancaster et al., 2002; Martin et al., 2003; Powers et al., 2001; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000). However, one group study (Wehmeyer et al., 2000) did compare disability group differences for students with Learning Disabilities (LD), Intellectual Disabilities (ID) and EBD. Significantly, Wehmeyer and colleagues found no statistical differences between groups in their response to self-determination instruction; all participants acquired self-determination skills as a result of the intervention. However, Wehmeyer et al. (2000) only included 10 students with EBD in their sample. Having so few participants with EBD in each of the studies makes it difficult to synthesize findings. Further, across the 12 studies in this review, the number of participants identified with EBD ($n = 46$) may be misleading because not all of the single subject studies disaggregated results. For example, Lancaster et al. (2002) reported results across 22 students but failed to identify which specific graphs were associated with the five students in the sample with EBD. Although the graphs and data did confirm that all students made substantial gains, the bottom line is that only 12 (5%) students with EBD had results that could be clearly identified. Finally, six (50%) studies reported IQ-scores, only one study identified students as English

Language Learners (ELL) (Konrad & Test, 2007) and no study included individual student socio-economic status.

The settings for the studies were primarily public schools ($n = 8$, 67%). Within the public schools, the intervention was conducted in variety of locations: the general education classroom ($n = 3$, 38%), the resource room ($n = 2$, 25%), the self-contained classroom ($n = 2$, 25%) and a library ($n = 1$, 12%). Resource rooms are classrooms (sometimes smaller classrooms) where a special education program for one core subject can be delivered to a student with a disability. The self-contained classroom refers to a special education placement where a student will be removed from all academic subjects in general education classrooms to work in a small controlled setting with a special education teacher. Three studies (25%) were situated in residential facilities and one (8%) was located at an alternative school. Powers et al. (2001) conducted their study in multiple settings (public school, home, and in the community). Six (50%) studies described the community the study took place in; four (33%) identified the community setting as urban or suburban, and five (42%) of the studies described the region where schools were located.

Independent Variables

All but two of the studies (Martin et al., 2003; Mithaug & Mithaug, 2003) used published curricula to teach students the skills of self-determination. Each published curriculum was derived from field tests and used to promote self-determination behavior (Hoffman & Field, 1995; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000). The majority of the studies employed systematic direct instruction models, which is

considered best practice and a validated instruction method (Wood et al., 2005) for the EBD population (Carter et al., 2006; Lane & Carter, 2006; Wehmeyer et al., 2000). Two studies did not use a published curriculum as the independent variable. Mithaug and Mithaug (2003) utilized the type of instruction occurring in the classroom (teacher-directed and student-directed) as their independent variable. Martin et al. (2003) developed a self-determination contract with participants that served as the independent variable. A self-determination contract is a special kind of contingency contract (completing specified task gets you a specified reward) that allows the individual student to self-direct their behavior in order to meet changes in task demands.

Dependent Variables

This synthesis showed that no matter what self-determination curriculum was used or what self-determination component was taught, the researchers used multiple methods to measure self-determination outcomes (see Table 2 for a Summary of Self-Determination Outcomes). The most common dependent variable involved measuring multiple aspects of self-determination. Four studies (33%) used what they characterized as global measures of self-determination. Three studies (25%) measured global self-determination using the *Arc's Self-Determination Scale* (SDS; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000; Test & Neale, 2004). The SDS is considered global, because it measures the four essential characteristics of self-determination (Wehmeyer et al., 2000). Wehmeyer et al. (2000) used two additional tools (a) the *AIR Self-Determination Scale* (AIR; Wolman, Campeau, Mithaug, & Stolarski, 1994) to measure capacity and opportunity for self-determination and (b) Goal Attainment Scaling (GAS;

Kiresuk, Smith, & Cardillo, 1994) to determine goal attainment (this was the only study to use this measure). Interestingly, Wehmeyer and Lawrence (1995) used a 20-item student self-report/self-efficacy questionnaire that was especially developed for their study for their third measure. On the other hand, Test and Neale (2004), in a single subject study, utilized a student self-report 10-question probe to measure the quality of student contributions in addition to the SDS. Another group study, Hoffman and Field (1995), measured global self-determination by measuring three components they regarded as characteristics of self-determination using the *Self-Determination Knowledge Scale* (SDKS). The SDKS is 30-item student test that the researchers designed for the study to measure cognitive knowledge and affective action (self-efficacy). The second evaluation they used was the *Self-Determination Observation Checklist* (SDOC) that was a behavioral observation checklist of self-determination in the classroom.

Table 2: Summary of Self-Determination Outcomes

Research Study Group = G	Global self-determination	Locus of Control	Capacity & Opportunity for self-determination	Goal setting & attainment	Self-efficacy	Self-advocacy	Self-regulation	Problem solving	Psychological empowerment
Hoffman & Field (1995) G	X		X						
Wehmeyer & Lawrence (1995) G	X	X			X				
Snyder & Shapiro (1997)					X	X			
Wehmeyer et al. (2000) G	X	X	X	X					
Powers et al. (2001) G						X			
Lancaster et al. (2002)						X			X
Mithaug & Mithaug (2003)							X		
Martin et al. (2003) G								X	
Test & Neale (2004)	X					X			
Benitez et al. (2005)				X					
Arndt et al. (2006)						X			
Konrad & Test (2007)				X					

Five studies (41%) looked at changes in specific skills associated with self-determination such as self-advocacy (Arndt et al., 2006; Lancaster et al., 2002; Powers et al., 2001; Snyder & Shapiro, 1997; Test & Neale, 2004). Other components investigated were (a) choice making, (b) problem solving, (c) decision making, (d) goal setting, and (e) leadership. One of the unique tools used to measure self-advocacy and the other components were increased participation in a school meeting ($n = 5$). Four of the studies (33%) measured increased participation in IEP meetings (Arndt et al., 2006; Lancaster et al., 2002; Snyder & Shapiro, 1997; Test & Neale, 2004) and one article (8%) measured level of student activity in transition meetings (Powers et al., 2001). In addition to participation in meetings, each of these studies used additional measures. Three studies (25%) looked at the effects of teaching self-regulated problem solving skills to promote self-determination by measuring observable behaviors. Two of these studies were single subject studies. Benitez et al. (2005) utilized a student-rating scale that measured progress toward a goal. And, Mithaug & Mithaug (2003) measured the number of correct self-management responses that happened during independent work sessions. The one group study that looked at problem solving, Martin et al. (2003), used two measures: percentage of correspondence between elements in a self-determination contract and *Woodcock-Johnson Battery of Scores* (Woodcock, McGrew, & Mather, 2001) to measure academic success (one of two studies that used this measure). Self-efficacy was measured in three (25%) studies using a student rating scale (Hoffman & Field, 1995; Snyder & Shapiro, 1997; Wehmeyer & Lawrence, 1995).

All twelve studies employed multiple methods to quantify the various dependent variables, showing a lack of agreement among researchers about how to best measure self-determination (see Table 3 for a Summary of Dependent Measures). Seven studies utilized standardized measures (Hoffman & Field, 1995; Martin et al., 2004; Power et al., 2001; Snyder & Shapiro, 1997; Test & Neale, 2004; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000). Whereas, the majority of the studies used some type of student response rating scale, five did not (Arndt et al., 2006; Hoffman & Field, 1995; Konrad & Test, 2004; Martin et al., 2003; Mithaug & Mithaug, 2003). Eight studies used behavioral observation methods, which was by far the most widely used measure (Benitez et al., 2005; Hoffman & Field, 1995; Lancaster et al., 2002; Martin et al., 2004; Mithaug & Mithaug, 2003; Power et al., 2001; Snyder & Shapiro, 1997; Wehmeyer et al., 2000) and five studies included researcher-developed measures (Arndt et al., 2006; Lancaster et al., 2002; Test & Neale, 2004; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000). Only three academic or curriculum based measures were identified. Martin et al. (2003) utilized the *Woodcock Johnson Battery of Scores* (Woodcock et al., 2001) to measure achievement when testing their self-determination contract. Hoffman and Field (1995) used a researcher-developed curriculum-based response test to measure student cognitive knowledge of self-determination. Finally, Konrad and Test (2007) employed ten curriculum-based dependent variables that were researcher-developed to measure the impact of students' composition of IEP goals on goal setting. The two primary variables in this study were the students' written articulation of goals and the quality of the writing in each goal paragraph. Finally, seven studies measured social validity as an outcome measure: surprisingly, two were group studies (Martin et al., 2003; Wehmeyer et al.,

2000) and five were single subject (Arndt et al., 2006; Benitez et al., 2005; Lancaster et al., 2002; Snyder & Shapiro, 1997; Test & Neale, 2004).

Table 3: Summary of Dependent Measures

Research Study Group = G	Global Self Report Measure	Student Response Rating Scale	Student Probe	Non-Student Response Rating Scale	Behavioral Observation	Researcher Developed Measure	Standardized Measure	Academic/ Curriculum Based Measures	Social Validity
Hoffman & Field (1995) G					Y	Y	Y	Y	
Wehmeyer & Lawrence (1995) G	Y	Y					Y		
Snyder & Shapiro (1997)		Y			Y	Y	Y		Y
Wehmeyer et al. (2000) G	Y				Y		Y		Y
Powers et al. (2001) G		Y		Y	Y	Y	Y		
Lancaster et al. (2002)		Y	Y		Y				Y
Mithaug & Mithaug (2003)					Y	Y			
Martin et al. (2003) G					Y	Y	Y	Y	Y
Test & Neale (2004)	Y		Y				Y		Y
Benitez et al. (2005)		Y				Y			Y
Arndt et al. (2006)					Y				Y
Konrad & Test (2007)						Y		Y	

Impact of Self-Determination Instruction

All the single subject studies showed positive effects on the dependent variable, except one (Snyder & Shapiro, 1997). In their study, one out of three students showed no improvement because he refused to participate in the intervention activities. The five studies that used participation in the IEP and transition meetings showed strong results for all participants. In three of the studies, participants with EBD demonstrated increased participation (Arndt et al., 2006; Lancaster et al., 2002; Snyder & Shapiro, 1997). In one of the studies, participants with EBD met selected goals in transition meetings (Lancaster et al., 2002) and, in the last study, EBD students showed increases in quality of contributions to their own IEP meetings (Test & Neale, 2004). The only academic interventions for EBD students that resulted in increases in the quality of goal setting occurred in Konrad and Test's (2007) study. In one of the two studies that did not utilize a published curriculum, all the students (Mithaug & Mithaug, 2003) showed increases in self-regulation but inconclusive results on assignment completion. Altogether, the single subject studies demonstrated that students with EBD could learn self-determination skills.

For the most part, the group results were mixed and inconclusive for EBD students. One immediate finding of the review was that the group studies as a whole did not disaggregate results for participants or offer group comparisons by disability group, which made it difficult to synthesize any meaningful results for EBD students. However, there was one exception in the Wehmeyer's et al. (2000) study, in which the SLDMI was field-tested and the results of different disability groups were compared. No significant differences were found among disability groups; all participants (including EBD

students) acquired self-determination skills. In every group study but one (Wehmeyer & Lawrence, 1995), students increased their self-determination skills. Wehmeyer and Lawrence (1995) determined that the *Whose Future is it Anyway?* curriculum produced limited outcomes for increased student control of the transition planning process and failed to promote self-determination and locus of control. However, the results did illustrate significant changes in self-efficacy and outcome expectancy in women, and regression analysis suggested that self-determination plays a role in student involvement.

Maintenance data were collected for only four studies, all of which were single subject (Benitez et al., 2005; Konrad & Test, 2007; Lancaster et al., 2002; Mithaug & Mithaug, 2003). Benitez et al. (2005) and Lancaster et al. (2002) collected maintenance data for 1 to 3 weeks after the intervention was completed. Konrad and Test (2007) collected data for 2 to 6 weeks after their IEP goal writing intervention was completed. Both Benitez et al. and Konrad and Test found that the skills were maintained over time. However, Mithaug and Mithaug (2003) reported that students did not maintain self-regulatory behaviors after their intervention. Generalization data were collected in 4 single subject studies (Arndt et al., 2006; Konrad & Test, 2007; Snyder & Shapiro, 1997; Test & Neale, 2004). Arndt et al. (2006) and Konrad and Test (2007) had positive generalization results. However, Snyder and Shapiro (1997) and Test et al. (2004) did not see generalization of the skills.

Methodological Quality Findings

Each of the studies was examined for the presence of quality indicators of special education research. The seven single subject studies were examined for quality indicators of single subject research based on the work of Horner, Carr, Odom, and Wolery (2005) and Kennedy (2005). The five domains (participants, dependent variable, independent variable, baseline, and validity) and indicators of quality described by Horner et al. (2005) and Kennedy (2005) are summarized in Table 4. Table 4 also describes the degree to which the seven single subject studies included in this review met the criteria. All but one study (14%) adequately provided descriptions of participants and research settings in order to allow for replication (Mithaug & Mithaug, 2003). However, three studies (42%) failed to provide sufficient detail on participant selection. Few studies provided any details about the community setting ($n = 3$, 43%). In terms of the dependent variables, all seven studies described the dependent variable (s) with replicable precision, used quantifiable dependent variables, repeatedly measured the dependent variable over time and gathered interobserver agreement data. All seven single subject studies described how the interobserver agreement was calculated and all but one (14%) of the studies (Konrad & Test, 2007) had interobserver agreement above 80%. For independent variables, all studies provided adequate descriptions of independent variables and all systematically manipulated the independent variable. Procedural fidelity was inadequately described or not addressed at all in four (57%) of the single-subject studies (Benitez et al., 2005; Lancaster et al., 2002; Mithaug & Mithaug, 2003, Snyder & Shapiro, 1997). Baseline conditions were clearly described in all seven studies. However,

one study (14%) failed to establish baseline data at three different points in time (Arndt et al., 2006). Three studies (29%) did not adequately provide a stable pattern of responding in their baseline data (Arndt et al., 2006; Mithaug & Mithaug, 2003; Snyder & Shapiro, 1997). All studies were assessed for quality indicators related to internal validity, external validity, and social validity (Horner et al., 2005; Kennedy, 2005). Although all the studies showed positive results for participants, one study (Benitez et al., 2005) did not demonstrate experimental effects at three different points in time as recommended by Horner et al. (2005). External validity can be determined through replication within studies and across studies (Horner et al. 2005). In the current review, all seven (100%) studies replicated effects across participants or settings and four (57%) single-subject studies specifically replicated earlier studies (Arndt et al., 2006; Benitez et al., 2005; Konrad & Test, 2007; Test & Neale, 2004). However, four (57%) reported threats to internal validity (Benitez et al., 2005; Lancaster et al., 2002; Mithaug & Mithaug, 2003; Snyder & Shapiro, 1997). All the studies provided a rationale for importance of the dependent variable being measured. The magnitude of change in dependent variable was adequate in all seven studies and intervention methods appeared to be cost effective and practical. The one possible exception was Lancaster's et al. (2002) hypermedia multimedia intervention to teach self-advocacy, as no cost for the technology was disclosed. Five studies (71%) reported the intervention was implemented over an extended period of time and except for two interventions (29%) all studies were within typical context (Benitez et al., 2005; Lancaster et al., 2002).

Table 4: Quality Indicators for Single Subject (Horner et al., 2005; Test et al., 2005)

<i>Single Subject Design</i>	Benitez et al., 2005	Lancaster et al., 2002	Test & Neale, 2004	Mithaug & Mithaug 2003	Snyder & Shapiro, 1997	Arndt, Konrad, & Test, 2006	Konrad & Test, 2007
<i>Indicator</i>							
PARTICIPANTS							
• Described sufficiently	Y	Y	Y	N	Y	Y	Y
• Selection described sufficiently	N	Y	N	N	Y	Y	Y
• Setting described sufficiently	Y	Y	Y	N	Y	Y	Y
DEPENDENT VARIABLE							
• Described with replicable precision	Y	Y	Y	Y	Y	Y	Y
• Quantifiable	Y	Y	Y	Y	Y	Y	Y
• Measurement described to replicable precision	Y	Y	Y	Y	Y	Y	Y
• Measurement occurred repeatedly	Y	Y	Y	Y	Y	Y	Y
• Interobserver agreement data reported	Y	Y	Y	Y	Y	Y	Y
INDEPENDENT VARIABLE							
• Described with variable precision	Y	Y	Y	Y	Y	Y	Y
• Systematically manipulated	Y	Y	Y	Y	Y	Y	Y
• Procedural fidelity described	N	N	Y	N	N	Y	Y
• Procedural fidelity measured	N	N	Y	N	N	Y	Y
BASELINE							
• Described with replicable precision	Y	Y	Y	Y	Y	Y	Y
• Phase provided evidence of pattern, prior to intervention	Y	Y	Y	Y	N	Y	Y
VALIDITY							
• Three demonstrations of experimental effect	N	Y	Y	Y	Y	Y	Y
• Design controlled threats to internal validity	N	N	Y	N	N	N	Y
• Effects replicated indicate external validity	Y	Y	Y	Y	Y	Y	Y
• DV socially important	Y	Y	Y	Y	Y	Y	Y
• Magnitude of change in dependent variable due to intervention socially important	Y	Y	Y	Y	Y	Y	Y
• IV is cost effective	Y	Y	Y	Y	Y	Y	Y
- IV implemented over time	Y	Y	Y	Y	N	N	Y
- IV implemented in typical contexts	N	N	Y	Y	Y	Y	Y
- IV implemented by typical intervention agents	N	N	Y	Y	Y	Y	Y
• Effect size reported	N	N	N	N	N	N	N

The experimental group design studies were examined for quality indicators as suggested by Gersten, Fuchs, Compton, Coyne, Greenwood, & Innocenti, (2005), which are summarized in Table 5. In terms of research conceptualization, two studies (40%) used previously researched independent variables. The other group studies (60%) were field tests of innovative approaches (Hoffman & Field, 1995; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000). All of these studies gave valid arguments for the proposed design but only two studies stated research questions (Powers et al., 2001; Wehmeyer et al., 2000).

Table 5: Quality Indicators for Group Experimental Design (Gersten et al., 2005)

<i>Experimental Design</i>	Hoffman & Field, 1995	Wehmeyer & Lawrence 1995	Wehmeyer et al., 2000	Martin et al., 2003	Powers et al., 2001
<i>Indicator</i>					
RESEARCH					
• Based on previous studies OR	N	N	N	Y	N
• Importance compelling	Y	Y	Y	Y	Y
• Design supported	Y	Y	Y	Y	Y
• Research questions stated	N	N	N	N	Y
• Purpose well defined	Y	Y	Y	Y	Y
Participants					
• Described sufficiently	N	Y	N	Y	Y
• Equivalency of groups	N	N	N	N	Y
• Attrition documented	N	N	N	N	Y
• Intervention agents described sufficiently	Y	Y	N	N	Y
• Equivalency of intervention agents	Y	Y	Y	N	Y
INTERVENTION					
• Described clearly	Y	Y	Y	Y	Y
• Procedural fidelity described	N	N	N	Y	Y
• Procedural fidelity measured	N	N	N	Y	N
• Difference between intervention and control described clearly	Y	N/A	N/A	N/A	Y
OUTCOME MEASURES					
• Multiple measures	Y	Y	Y	Y	Y
• Reliability data provided	Y	Y	Y	N	Y
• Validity data provided	Y	Y	Y	N	Y
• Timing appropriate	Y	Y	N	Y	Y
• Data collectors unfamiliar with conditions	N	N	N	N	Y
• Data collectors unfamiliar with participants	N	N	N	N	Y
DATA ANALYSIS					
• Techniques linked to research question	N	N	N	N	Y
• Variability in sample accounted for	N	N	N	N	Y
• Unit of analysis linked to statistical analysis	Y	Y	Y	Y	Y
• Unit of analysis supported	Y	Y	Y	Y	Y
• Power analysis provided	N	N	N	N	N
• Effect size provided	Y	N	N	N	Y

In terms of participants, all studies with the exception of Wehmeyer et al. (2000) provided adequate description of participants. However, none of the studies provided sufficient details on the intervention agent. Only two group experimental design studies (40%) utilized a control group (Hoffman & Field, 1995; Powers et al., 2001) and only Powers et al. (2001) provided sufficient detail about control and experimental groups to determine equivalency. Only one group study gave details regarding attrition (Powers et al., 2001).

All studies - based on the Gersten's et al. (2005) criteria for quality group experimental studies - clearly described their independent variable and the difference between intervention and control was described clearly in the two studies (40%) that used a treatment-control group design. Procedural fidelity was not described in 60% ($n = 3$) of the studies (Hoffman & Field, 1995; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000) and was measured in only one of the two that described it (Martin et al., 2003). For the outcome measures, all ($n = 5$, 100%) used multiple measures, four (80%) provided reliability data on the dependent measure (Hoffman & Field, 1995; Powers et al., 2001; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000), and three (60%) provided validity information (Hoffman & Field, 1995; Wehmeyer & Lawrence, 1995; Wehmeyer et al., 2000). Of the five group studies, only one (20%) reported not collecting data in a timely manner (Wehmeyer et al., 2000). One study (20%) reported information on whether data collectors were unfamiliar with conditions and whether data collectors were unfamiliar with participants in the study (Powers et al., 2001). Four studies (80%) used self-reporting measures yet only one mentioned anything about the data collectors.

Finally, in terms of data analysis, one study (20%), Powers et al. (2001), appropriately linked techniques to research questions according to standards established by Gersten et al. (2005). However, the other group studies did not include research questions. Variability in sample was accounted for in the same study (Powers et al., 2001). All studies linked their unit of analysis to the statistical analysis and provided enough information to support their unit of analysis. None of the studies provided a power analysis and effect size was provided by only two studies (Hoffman & Field, 1995; Powers et al., 2001).

DISCUSSION

Students with EBD are at risk for poor school and post school outcomes due to academic failure and behavioral problems (Rivera et al., 2006). Self-determination instruction has been suggested by researchers as means to possibly improve outcomes for the EBD population since there is evidence that self-determination interventions have had an impact with other disability populations. This synthesis focused on students with EBD and examined intervention studies that targeted self-determination instruction as an independent variable with student with EBD and measured component skills of self-determined behavior as a dependent measure. The remainder of this chapter will identify the limitations of the existing literature base and implications for future research and practice, including this dissertation.

Intervention Procedures Used

All studies used systematic direct instruction to teach students self-determination skills. However, there are a number of procedures in the intervention studies that go beyond simply, systematic direct instruction. For example, Lancaster et al. (2002) developed an interactive hypermedia computer program to teach self-advocacy, which was the first of its kind and proved successful. Hoffman and Field (1995) used teachers as co-learners and used modeling and cooperative learning with peer tutoring. Powers et al. (2001) utilized direct instruction but also incorporated coaching sessions, community-based workshops, mentoring, and parent support. Konrad and Test (2007) used writing strategies and procedures to improve goal setting. Reinforcement procedures were used in three studies and were shown to be effective in helping students learn self-determination skills (Lancaster et al., 2002; Martin et al., 2003; Mithaug & Mithaug, 2003). But, while Mithaug and Mithaug asserted that reinforcement was instrumental to the success of their intervention using direct instruction, Wood et al. (2005) warned that reinforcement may be "incongruent with self-determination" (p. 144), because they believe it may be inconsistent with the participant's own initiative (i.e., self-determining). Although the literature base in regards to the research with students with EBD in the area of self-determination has not been prolific, this synthesis has revealed the different procedures and methods that have shown promise with students with EBD. Researchers should further explore these different methods and procedures in order to determine under what conditions specific interventions are most effective.

Components of Self-Determination Taught and Not Taught

Combinations of components taught to promote self-determination varied in this review. Typically, self-determination models were made up of different combinations of choice making, decision-making, goal setting and attainment, problem solving, self-awareness, self-advocacy, self-regulation, and self-efficacy. However, no study was found that taught all eight components. Two studies taught problem solving, goal setting and attainment, self-regulation, self-selection (choice), and student directed instruction (Benitez et al., 2005; Wehmeyer et al., 2000). Hoffman and Field (1995) taught cognitive knowledge, affective, and behavioral components to promote self-determination. Two other studies taught self-advocacy along with choice making, problem solving, decision-making, goal setting, and leadership to promote self-determination (Arndt et al., 2006; Snyder & Shapiro, 1997).

Self-determination components were also taught individually. One study taught self-direction skills (Mithaug & Mithaug, 2003) but indicated in their findings that self-direction was possibly successful because it included choice. Martin et al. (2003) taught self-regulation and three studies taught only self-advocacy (Lancaster et al., 2002; Powers et al., 2001; Test & Neale, 2004). Goal setting without attainment was taught by Konrad and Test (2007) who used academic writing and goals to teach goal setting, and advocated combining academic and self-determination instruction.

These findings suggest that the majority of self-determination components have not been taught separately to students with EBD. The components not taught individually include choice making, decision-making, goal setting and attainment, problem solving,

self-awareness, and self-efficacy. As noted earlier, these variables have been used to promote self-determination in combination with other components such as choice making, decision-making, problem solving, self-awareness, self-advocacy, self-regulation, and self-efficacy. When multi-component interventions are utilized, it is difficult to determine if it is a specific component or the combination of the components that is most effective.

Limitations

Limitations exist in all research. This review of the research found several limitations in the studies designed to promote self-determination skills to students with EBD. First, two studies that characterized themselves as targeting self-determination were not included because the dependent variable was not tied to changes in self-determination (Jolivette, Wehby, Canale, & Massey, 2001; Kern, Bambara, & Fogt, 2002). Second, the small number of EBD participants ($n = 46$, 17%) makes generalizability or analysis of individual or ecological factors that impact intervention success difficult. Third, all group studies except one (Wehmeyer et al., 2000) as well as one of the single subject studies (Lancaster et al., 2002) did not disaggregate results by participant demographics such as disability groups, gender, ethnicity, or SES, which can affect generalizability. Fourth, most studies did not clearly describe their participants based on quality indicators established by Horner et al. (2005) and Gersten et al. (2005). For example, Snyder and Shapiro (1997) included participants labeled with EBD by the school system but with medical diagnoses of ADHD. Fifth, a wide range of dependent

measures, some of which are not well validated, were utilized, which limits conclusions that can be drawn relative to effects across studies.

Implications for Research

The 12 articles synthesized in this Chapter point to an emerging body of research demonstrating positive responses to self-determination interventions by students with EBD. However, the limitations discussed in the last section suggest that the teaching models that promote self-determination skills with students with EBD have problems that must be addressed in future research. There are several clear implications for research that are important for guiding this dissertation study. First, more studies are needed that focus exclusively on teaching self-determination to students with EBD in order to determine the relative impact of self-determination on such students. Only three of the twelve studies included in this synthesis specifically targeted this population (Benitez et al., 2005; Martin et al., 2003; Snyder & Shapiro, 1997). However, it is important to note that all three studies showed positive effects on various component elements of self-determination behavior of students with EBD. Second, more research is needed that examines both singular and multi-component interventions to better understand the differential effects. Several researchers suggest that self-determination skills must be taught together and embedded across the curriculum, but research is needed to explore this hypothesis. Third, studies are needed that further explore the relationship between promoting self-determination and improved academic and behavior performance of students with EBD. Two studies were found that were successful in promoting behavioral change using a singular (choice-making) intervention, no study has been found that

examined the potential for teaching self-determination skills to change classroom behavior as well as whether this leads to collateral changes in academic performance in the classroom and vice-a-versa.

The methodological quality indicators developed by Gersten et al. (2005) and Horner et al. (2005) provided guidelines for analyzing the rigor of the 12 intervention studies. Several problems were identified in the studies included in the synthesis, which have implications for future research. First, the assessment of procedural reliability must be improved. Several studies did not report any procedural fidelity data. Ensuring that the independent variable was implemented with fidelity is fundamental to understanding the impact of the independent variable on the dependent variable. Second, several studies did not include enough replications of the experimental effect. Third, multiple studies failed to provide adequate descriptions of participant selection, intervention agents, and research setting, which are important for replication and generalizability. Four, the unit of analysis needs to be better linked to research questions as well as the linkage between self-determination and the unit of analysis.

Implications for Practice

Practical suggestions for implementing components of self-determination by teachers have emerged out of this review. Findings show that EBD students may be able to learn self-determination skills in any setting whether it is a classroom or in the community. Instruction can be stand-alone or incorporated into ongoing curriculum. It is important that teachers become familiar with the published curricula, but also think outside of the box and incorporate in their classrooms some of the instructional methods

that have been shown to be successful in promoting self-determination in these 12 studies. After all, the curricula were designed to work with all student populations. Also, self-determination must be viewed as bi-directional; teachers need to provide both instruction and create opportunities to practice self-determination in the environment.

All practitioners need to review their own cultural and disability beliefs and investigate how these beliefs inform their position on instruction regarding self-determination. It is crucial that those who surround these individuals understand how self-determination looks across cultural contexts, and be receptive to and support self-determined behaviors as they emerge. This includes giving students with EBD choice and the opportunity to self-direct instruction. The evidence shows that the EBD population may respond with increased academic involvement and positive behavior when allowed to be involved in decisions about factors that impact their lives.

Finally, improved parent-teacher-student communication and incorporating person-centered planning into self-determination instruction was consistently recommended in the literature; however, there has been very limited research examining this combination of practices. Along these same lines, it was recommended that teachers combine functional behavior assessment with self-determination instruction because not all components of self-determination may be needed. Again, there was no basis for this recommendation found in the research, but it should be explored further.

CONCLUSIONS

While the existing body of literature suggests the promise of self-determination instruction for students with EBD, additional research is critically needed. The key

reasons have been summarized previously; however, it is critical to emphasize that only two studies measured the impact of self-determination on the academic outcomes experienced by students with EBD and no studies specifically examined changes in externalizing behaviors demonstrated by these students. Given that behavior problems and academic failure are two of the key issues identified as challenges for students with EBD in school and are among the main impediments to success post school, it is critical that the impact of self-determination instruction on these outcomes be measured for students with EBD.

This study will, therefore, attempt to address the need for further research in this area by implementing a self-determination intervention in a typical education setting with students with EBD. The *Self-Determined Learning Model of Instruction*, a multi-component intervention to promote overall self-determination, will be utilized because it is the only existing intervention based on the key components of self-determination (Wehmeyer, 1999) that is appropriate for students with and without disabilities and can be used in all major content areas. Specifically the SDLMI will be utilized with students to engage them in a goal setting process around improving their behavior in targeted general education classrooms, with the impact on behavior being examined as a primary dependent variable and the collateral impact on grades in the class also being evaluated. Further, each student's overall self-determination and progress on self-selected goal attainment will be measured. As such, this study will incorporate multiple measures of self-determination as well as outcomes particularly relevant to students with EBD. A multiple baseline across students single subject research design will be utilized because this design provides a means to answer the targeted research questions and to address the

methodological limitations identified in studies included in the synthesis; the quality indicators of single-subject research in special education will be followed in the design of the study, as described in the following chapter, to provide a sound evaluation of the impact of teaching self-determination skills to adolescent students with EBD.

CHAPTER 3: METHOD

The purpose of this study was to examine the impact of *Self-Determined Learning Model of Instruction* (SLDMI) on adolescent students with Emotional and Behavioral Disorders (EBD). The goal was to determine whether students improved their on- and off-task behavior, achieved better grades, made progress towards self-selected goals, and increased their self-determination.

PARTICIPANTS

Participants in this study were four high school students labeled with EBD. Two students were enrolled in one high school while the second pair were enrolled in a second high school in the same school district. The school district designated the high schools that participated. The student participants were selected from a pool nominated by the special education teacher at each campus according to the following criteria:

1) Student had a diagnosis of EBD based on a Full and Individual Evaluation (FIE) conducted by a Licensed Specialist in School Psychology (LSSP) and determined by the Multi-Disciplinary Team (MDT) to need special education instruction, using the federal guidelines of IDEA (2004), which is as follows:

- (i) The term means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance: (A) An inability to learn that cannot be explained by intellectual, sensory, or health factors; (B) An inability to build or

maintain satisfactory interpersonal relationships with peers and teachers; (C) Inappropriate types of behavior or feelings under normal circumstances; (d) A general pervasive mood of unhappiness or depression; (E) A tendency to develop physical symptoms or fears associated with personal or school problems [34 C.F.R. § 300.7(b)(4)].

2) Student received instruction in a self-contained resource room for at least one period of the day, where SDLMI instruction could occur.

3) Student received instruction in at least one core academic area in a general education classroom (e.g., math, science, English, social studies) and received instruction in at least one additional general education classroom (e.g., foreign language, drafting, art) where they exhibited difficulties with meeting classroom behavioral expectations according to the special education teacher designated by the district who provided the pool of nominees for each campus.

4) Student maintained minimum attendance requirements necessary to attain core academic credits in the State of Texas during the current semester. The State requires that a student attend at least 90% of the days that the class is offered.

5) Consent to participate forms were signed by a parent/guardian and assent was provided by the student.

A total of 10 students, five at each school, that potentially met the criteria for participation (8 males and 2 females) were identified by the special education teachers. The researcher observed each of the 10 students in a general education classroom to identify potential on- and off-task behaviors that were suitable for the intervention. Two students (1- male and 1- female) did not demonstrate observable on- and off-task

classroom behaviors that adversely affected their academic performance. Four students left school for varying reasons prior to baseline data collection: two students dropped out of school, one student was sent to an alternative campus, and one student entered a psychiatric treatment center. The four remaining students met study criteria.

Three of the four participants were diagnosed with emotional disturbance by a school district psychologist independent of this research project and one participant had a diagnosis on file from a psychologist independent of the school district, which was used as part of the FIE for placement in special education. Interviews with the participants, their teachers, and direct observation in the classroom confirmed that all four students exhibited low levels of on-task behavior and high levels of off-task behaviors that put them at risk for poor academic performance. Table 6 provides additional demographic information including age, ethnicity, sex, grade level, IQ, free/reduced lunch status, and behavior intervention plan (BIP) status. The school district denied the author's request for achievement and attendance information.

Table 6: Participant Demographics

Participant	Grade /Age	Gender	Ethnicity	IQ Score	Secondary Disability Diagnosis	BIP	Eligibility for Free/Reduced Lunch
Charles	10 th /16	Male	Caucasian	118 (WJ III)	Specific Learning Disability	Yes	Eligible
Jack	10 th /16	Male	Caucasian	105 (WJ III)	None	Yes	Not Eligible
David	9 th /14	Male	Caucasian	89 (WISC III)	Specific Learning Disability	Yes	Eligible
George	11 th /16	Male	Caucasian	104 (WJ III)	None	Yes	Not Eligible

Note: BIP = Behavior intervention plan. WJIII = *Woodcock-Johnson III Battery*, an IQ test. WISC III = *Wechsler Intelligence Scale for Children III*, an IQ test.

Charles was a 16-year-old Caucasian male with an educational diagnosis of emotional disturbance (ED) that would primarily manifest as a general pervasive mood of unhappiness or depression that interfered with his ability to make adequate educational progress in all general education domains. Charles also had a secondary educational diagnosis of specific learning disability in basic reading, math calculation, math reasoning, and written expression. He had never been retained. Results of a behavior evaluation in 2005 using parent, teacher, and student self-report ratings from the

Behavior Assessment System for Children, 2nd Edition (BASC II) indicated patterns of depression. Charles had difficulty accepting responsibility for his behavior and perceived that others were responsible. According to the Licensed Specialist in School Psychology (LSSP), Charles was not taking any prescribed medications during this study. The participant had a BIP that included the following target behaviors and strategies. Charles engaged in avoidance to gain control over difficult situations (e.g., teacher demands, class assignments, and authority). Control took the form of frequent absences, noncompliance with rules, disrespect towards adults and incomplete work. BIP strategies included offering Charles choices, verbal reminders, praising others using appropriate behavior, social skills class, setting well-defined limits, rules, and task expectations, contact with LSSP, place to cool off, work completion contracts, and use of a timer for self-monitoring of on-task behavior. Based on observations, the BIP was appropriate but was not implemented in general education classrooms. Charles was also enrolled in the school's Students Pursuing Advocacy Centered Education (SPACE) program for students with intensive behavioral need. SPACE is a behavior support program that students who have a BIP can access as needed. Charles accessed this program on an intermittent basis. SPACE provides a learning lab setting, some resource level core content instructional delivery, an alternative in-school suspension program called lock-down, and thorough tracking of student's academic and behavioral progress. According to interviews with the participant, his teachers, and direct classroom observations, Charles rarely demonstrated on-task behaviors such as paying attention in class, taking notes, timely work completion, and participating in classroom or group discussion. He also tended to disrupt classroom activities regularly by being loud, talking out to the teacher and his peers without

permission, being argumentative and abrasive with the teacher and other students alike, and arguing with anyone that questioned him. Non-disruptive off-task behaviors included inattention to lectures, spacing out, texting on his phone, and the inappropriate use of materials.

Jack was a 16-year-old Caucasian male with an educational diagnosis of emotional disturbance (ED). His ED manifested as a general pervasive mood of unhappiness or depression that interfered with his ability to make adequate educational progress in all content areas. Jack was relatively new to special education, having been first referred in the fall of 2007 while he was in 8th grade. He had no history of being retained. His current placement in special education was based on a neuropsychological exam performed in 2008. The psychiatrist had diagnosed Jack with Depressive Disorder, Anxiety Disorder, and Cognitive Disorder - processing speed discrepancy. The psychiatrist had also indicated that Jack might have schizophreniform disorder due to paranoid thinking and occasional auditory hallucinations. Jack was on a number of medications for depression and Attention Deficit Disorder (ADD). However, the psychiatrist indicated that Jack's ADD like symptoms were caused by his anxiety. He had a BIP that targeted the following behaviors and strategies. Jack missed a lot of school and class time because of his anxiety. Increasing pro-social behaviors for Jack was the primary strategy in the BIP for reducing anxiety and raising attendance. This included allowing Jack to participate in a behavior inclusion program that allowed him access to the general education classroom, access to a cool off area when needed, work completion contracts, use of timer for self-monitoring of on-task behavior, frequent choices, psychological services from the LSSP, instruction to build social interactions, and

increased exposure to anxiety-provoking tasks. Based on observations, the BIP was appropriate but the only strategies implemented were access to the cool off area and psychological services from the LSSP. Jack was also enrolled in the school's program for students with intensive behavior needs, SPACE (described above), which he used on a regular basis, as the SPACE room was the designated cool off area. According to interviews with the participant, his teachers, and direct classroom observations, Jack was rarely overtly disruptive in the classroom. However, he did engage in off-task behavior primarily drawing, listening to his iPod, and daydreaming. He also sometimes left the classroom and went to the SPACE classroom, an accommodation he was allowed to use at his discretion per his BIP in order to reduce his depression and anxiety. Jack rarely engaged in on-task behaviors such as class participation, paying attention during lectures, note taking, and turning work in on time.

David was a 14-year-old Caucasian male with a primary educational diagnosis of emotional disturbance (ED). David primarily demonstrated inappropriate types of behaviors or feelings that interfered with his ability to make adequate educational progress in all academic subjects. David also had a secondary educational diagnosis of specific learning disability in basic reading, reading comprehension, math calculation, math reasoning and written expression. David was a relatively new student to the school district, who had come from another state in 2008 with no academic or behavior records from previous schools. He had no known history of ever being retained. Results of a behavior eligibility re-evaluation by the school in January of 2009 using parent, teacher, and student self-report ratings from the BASC II indicated patterns of interpersonal problems, negative self-esteem, and an inability to effectively cope with anger and

frustration that led to aggression and feelings of inadequacy. David had a behavior intervention plan (BIP), which included the following target behaviors and strategies. During unstructured times, David would often become frustrated with peers in social situations where he felt he was picked on, which often led to verbal and physical fighting. The BIP called for David to identify coping strategies to reduce stress, anger, and frustration. Strategies also included providing him with a place to cool-off, consultation with the LSSP, frequent eye contact, and positive encouragement/praise. Based on observations, the BIP was appropriate but was not implemented in the general education setting. The LSSP reported that David was not on prescription medication. An academic evaluation in 2010 indicated that David currently functioned on a kindergarten level in reading and writing. As a result, David was moved from general education English to resource English during this study. In other classes, he received instructional modifications and accommodations such as reduced assignments, increased time for completing assignments, exemption from reading before peers, and oral administration of tests and assignments. According to interviews with the participant, his teachers and direct classroom observations, it was determined that David rarely performed on-task behaviors such as paying attention in class, taking notes, timely completion of assignments, and participating in classroom or group discussion. Though David's poor concentration and attention, and limited academic skills did not cause class disruptions, they did contribute to numerous off-task behaviors such as spacing out, talking with peers, not paying attention to the teacher, and the inappropriate use of materials (e.g., twirling pencil and tearing paper into tiny pieces) that put him at risk academically.

George was a 16-year-old Caucasian male identified with an educational

diagnosis of emotional disturbance (ED) that was manifested primarily as inappropriate types of behaviors or feelings that interfered with his ability to make adequate educational progress in all subject areas. George had no history of retention. Results of a behavioral evaluation conducted by the school district in 2002 indicated that George had clinically significant anxiety, which led to a need for special education supports and services. George also had a diagnosis of post-traumatic stress disorder (PTSD). This was diagnosed by an independent neurological evaluation in 2000, and was described as being due to family violence. David had a history of nightmares and fear. A re-evaluation in 2004 using the BASC II and the Revised Children Manifest Anxiety Scale (RCMAS) indicated that the student continued to have significant anxiety that resulted in poor concentration. George also had a history of seizures as a child, and was on prescription medications including Zoloft for his anxiety and another medication for a nerve problem in his leg that was unrelated to his anxiety or ED. George had a Behavior Intervention Plan (BIP), which included the following targeted behaviors and strategies. George's targeted behaviors were poor coping and self control skills that resulted in off-task behavior that contributed falling behind in completing his schoolwork, causing feelings of anxiety. George would "shut down" to shun work and sometimes avoid school altogether. The BIP called for George to be given recognition when he successfully completed a task, provided with positive reinforcement when he was on-task, supported to recognize abilities and strengths, provided a safe area, support to set daily goals, work completion contracts, use of timer for self-monitoring on-task behavior, and psychological services with the LSSP. Based on observations, the BIP was appropriate but was not implemented. In addition, George was enrolled in the school district's Project

Achieve program for students with a need for intensive social and behavioral instruction. Project Achieve is a campus level behavior support program that provides a learning lab setting, some resource level core content instructional delivery, an alternative in-school suspension program, and thorough tracking of a student's academic and behavioral progress. George accessed this program on a frequent basis. Interviews with the participant, his teachers, and direct classroom observations showed that George exhibited few on-task behaviors such as paying attention in class, taking notes, timely work completion, or participating in classroom or group discussion. Instead, George spent most of his time sleeping in the classroom. The teacher believed – and George confirmed - that he slept because he was bored and uninterested in the subject due to a lack of understanding of the concepts being discussed in the classroom. Besides sleeping, other off-task behaviors observed were daydreaming, inattention to teacher, inappropriate use of materials, few notes taken, texting on his phone, and poor transitioning between activities in class. George was not outwardly disruptive in the classroom but was inconsistent with completing his work, and often avoided contact with peers and the teacher during class discussions or group activities.

SETTING

A mid-size suburban school district in the Southwestern region of the United States served as the site for this study. Table 7 provides demographic data for the school district. The special education director from the school district granted the researcher permission to conduct this study in the school district. The special education transition coordinator was designated by the Director to coordinate the research activities within the

school district and make recommendations to the researcher on possible sites and personnel. Two high schools and two special education teachers who served as campus behavior specialists at each school, and who taught potential participants for at least one class period in a self contained setting focusing on improving social behavior, agreed to participate in the study. This self-contained class period was individualized for each student, based on his/her unique social and behavior needs (e.g., dealing with peers, coping strategies to reduce anxiety, and ways to reduce off-task behavior), but common concerns were staying on-task, completing assignments, and making friends. All assessments and *Self-Determined Model of Instruction* (SDLMI) training sessions were conducted in a quiet corner of the self-contained classroom that was equipped with a desk and two chairs.

Table 7: District and School Demographic Information

Demographic	District	School 1	School 2
School Type		High School	High School
Total Enrollment	28,364	2005	2347
African American	1,475 (5.2%)	133 (6.6%)	163 (6.9%)
Hispanic	5,729 (20.2%)	407 (20.3%)	692 (29.5%)
White	19,514 (68.8%)	1,379 (68.8%)	1,414 (60.2%)
Native American	142 (0.5%)	9 (0.4%)	5 (0.2%)
Asian	1,475 (5.2%)	77 (3.8%)	73 (3.1%)
Economically Disadvantaged	5,417 (19.1%)	331 (16.5%)	696 (29.7%)

Source: Texas Education Agency, 2008-2009

RESEARCHER/INTERVENTIONIST

The author served as the principal researcher and interventionist. He has a master's degree in special education and is a doctoral student in special education at The University of Texas at Austin. He has experience teaching special education at the junior and senior high levels, having taught seventh and eighth grade students with EBD in a

self-contained classroom, and having served as a cooperating math teacher in an inclusive high school. In addition, the researcher has had extensive research experience providing instruction, conducting data collection, and administering assessments for various research projects.

DEPENDENT VARIABLES AND MEASUREMENT

In order to determine the impact of the SDLMI on classroom behavior and answer the research questions five dependent measures were employed:

On-Task Behavior

The primary dependent variable for all participants was on-task behavior. On-task behavior was selected because it is a common desirable behavior for students with EBD (Bramlett, Murphy, Johnson, Wallingsford, & Hall, 2002) and it has been consistently used in the literature as a positive behavior indicator that is readily available in a classroom setting (general or special education) with diverse populations (Beck, Burns, & Lau, 2009; Damon, Riley-Tillman, & Fiorello, 2008; Gilbertson, Duhon, Witt, & Dufrene, 2008; Hume & Odom, 2007; Sutherland, Wehby, & Copeland, 2000). On-task behavior was defined individually for each student in this study and these specific definitions are provided in Table 8. To develop individualized definitions of on-task behavior, the researcher interviewed each general education teacher to create a list of on-task behaviors expected of all students in the classroom, and then to identify the key behaviors specifically needed by the participant to be successful. After the target

behaviors were identified, the researcher asked for descriptions of how these were operationalized in the classroom. Then, the researcher met with each participating student to review the list of expected behaviors and generate a set of criteria to operationally define the specific on-task behaviors in the targeted general education classroom. For example, one of David's targeted on-task behaviors was "pay attention to the teacher." The criterion specified for this on-task behavior was that David remain sitting in his chair with his feet on floor with his head and body oriented towards teacher, that he request teacher attention by raising his hand at the appropriate time, and that he verbalize appropriately with students or the teacher when spoken to. These definitions were then reviewed with the teacher and modified until the student and teacher both agreed that they were acceptable.

Each participant's on-task behavior was observed and measured in a targeted core academic general education classroom (e.g., math, science, English, social studies) where the student was struggling academically and behaviorally based on teacher report and school records. Observations were done in the same class and at the same time of day throughout the study. Details of how on-task behavior was measured can be found in the Observation and Recording section.

Data collection for on-task behaviors began during baseline and continued through all three experimental conditions in order to determine if a functional relationship existed between the independent variable (SDLMI) and each student's on-task behaviors as observed in the targeted core classroom. On-task behavior for each student as defined in Table 8 was the primary dependent variable that was used to demonstrate experimental control in this multiple baseline across participants design.

To assess generalization, each participant's on-task behavior was measured in a second general education classroom once during each phase of the experiment.

Table 8: Operational Definitions of On-Task Behavior

Participant	Operational Definitions of On-Task Behavior
Charles	Pay attention to the speaker (peer or adult); remain sitting in chair with feet on floor with head and body oriented towards teacher; speak out appropriately on topic by requesting teacher attention by raising hand at the appropriate time; verbalize with student or teacher when directed; work on assigned tasks with or without others as directed by the teacher; use appropriate materials, which includes classroom materials (e.g., worksheets) and personal materials (e.g., cell phone) in way they were designed and/or teacher's instruction; and self-monitor behavior by completing on-task behavior checklist during class and operating a timer.
Jack	Pay attention to the speaker (peer or adult); remain sitting in chair with feet on floor with head and body oriented towards teacher; ask for help by requesting teacher attention raising hand at the appropriate time; verbalize with student or teacher when directed by the speaker; follow directions from teacher; complete class work assignments in class on time as directed by teacher; and use iPod and drawing at appropriate times as specified by teacher.
David	Pay attention to speaker (peer or adult); remain sitting in chair with feet on floor with head and body oriented towards teacher; request teacher attention by raising hand at the appropriate time; and verbalize appropriately with student or teacher when spoken to; work on assigned tasks with or without others as directed by the teacher; use classroom materials (e.g., pencil) in way they were designed and/or teacher's instruction; and self-monitor behavior by completing on-task behavior checklist during class and operating a timer.
George	Sit facing teacher; remain sitting in chair with feet on floor with head, body and eyes oriented towards teacher; make eye contact; ask for help by requesting teacher attention by raising hand at the appropriate time; and ask and answer questions by verbalizing with student or teacher when directed by the speaker; work on assigned tasks with or without others as directed by the teacher; and complete class work assignments in class on time as specified by teacher

Off-Task Behavior

Data were also collected on student off-task behavior in the same targeted core general education classroom that had been used for the on-task behavior (e.g., math, science, English, social studies). As with on-task behavior, the general education teacher was interviewed and the researcher conducted direct observations in the classroom to identify off-task behaviors demonstrated by the participant. A list of off-task behaviors and operational definitions for each participant was generated and reviewed with the student and teacher until agreement on the target behaviors and their operational definitions was reached. Specific behaviors and definitions for each participant are provided in Table 9. For David, off-task behavior was defined by not attending to the teacher during lectures and instruction (i.e., by failing to orient his head, body, and eyes towards the teacher for at least three seconds when the teacher was lecturing or giving instruction). Off-task behavior was also defined as talking out to other students without raising his hand to ask permission from teacher, "spacing out", not using materials appropriately as specified and directed by teacher, and not working on assigned tasks specified and directed by the teacher.

Data collection for off-task behaviors occurred concurrently with data collection for on-task behaviors to determine if a functional relationship existed between the independent variable (SDLMI) and off-task behavior. The Observation and Recording section provides details about the measurement of off-task behavior.

Table 9: Operational Definitions of Off-Task Behavior

Participant	Operational Definitions of Off-Task Behavior
Charles	Not attending to the teacher during lectures and instruction by failing to orient his head, body and eyes towards the teacher for at least three seconds when the teacher was lecturing or giving instruction; talking out to other students or teacher without raising hand to ask permission from teacher; spacing out; texting on cell phone; not using materials appropriately (e.g., calculator) as specified and directed by teacher; and not working on assigned tasks specified and directed by the teacher.
Jack	Not attending to the teacher during lectures and instruction by failing to orient his head, body and eyes towards the teacher for at least three seconds when the teacher was lecturing or giving instruction; talking out to other students without raising hand to ask permission from teacher; spacing out; not working on assigned tasks specified and directed by the teacher; using iPod; and drawing at inappropriate times (not specified by teacher).
David	Not attending to the teacher during lectures and instruction by failing to orient his head, body and eyes towards the teacher for at least three seconds when the teacher was lecturing or giving instruction; talking out to other students without raising hand to ask permission from teacher, spacing out; not using materials appropriately as specified and directed by teacher; and not working on assigned tasks specified and directed by the teacher.
George	Not attending to the teacher during lectures and instruction by failing to orient his head, body and eyes towards the teacher for at least three seconds when the teacher was lecturing or giving instruction; sleeping; not working on the assigned task as specified or directed by teacher; texting on cell phone; fiddling and doodling; and spacing out.

Weekly Grade Reports

Weekly grade reports from targeted core general education classroom (e.g. math, English, science, or social studies) were collected for each student. Grade reports were obtained by the researcher from the schools' electronic data system where teachers are required to report student's grades each week. The district required that weekly grades be a weighted average of the student's cumulative grade comprised of 20% homework, 20% daily assignments, and 60% tests. However, teachers had latitude in the make-up of the grades entered based on course content. Weekly grades were collected continuously through all three experimental conditions. Weekly grade reports were used to assess any collateral affect the intervention may have had on grades.

Goal Attainment Scaling

The Goal Attainment Scaling (GAS; Kiresuk, Smith, & Cardillo, 1994) process was used to measure student progress towards attaining a self-selected behavior goal linked with the SDLMI intervention. GAS has been successfully implemented in a number of self-determination intervention studies (Wehmeyer et al., 2000). The process involves establishing a goal and specifying a range of outcomes or behaviors that indicate progress in achieving these goals (Carr, 1979). For the purposes of this study, the students were encouraged to develop a behavioral goal, which is more fully described in Phase 1. Developing the GAS scoring rubric requires a number of steps. First, a behavioral goal was selected by the student during Phase 1 of the SDLMI intervention.

Next, after goals were established, possible outcomes for each goal are identified by the teacher, with support from the researcher. Goal outcomes are individually determined, but are objective and measurable and involve two parameters. For example, David set a goal to implement on-task behaviors to become a better student and pass his courses; he wanted to change his behavior in his targeted general education class by paying attention to the speaker, working on assigned tasks, asking for help, using appropriate materials and self-monitoring. Based on these targeted outcomes, a rubric is then created that operationally defines possible outcomes on a five-point scale ranging from the least favorable to the most favorable outcome, with the expected outcome in the middle. For example, David's GAS rubric for his goal included the following rating scale: least favorable outcome (-2 points: Student will utilize 2 out of 5 on-task behaviors 60% or less of 5-minute intervals over a 60 minute period in math class.), less favorable (-1 point: Student will utilize 2 out of 5 on-task behaviors 60-70% of 5-minute intervals over a 60-minute period in math class), acceptable (0 points: Student will utilize 3 out of 5 on-task behaviors 60-70% of 5-minute intervals over a 60-minute period in math class), favorable (+1 point: Student will utilize 4 out of 5 on-task behaviors 60-70% of 5-minute intervals over a 60-minute period in math class) and most favorable (+2 points: Student will utilize 4 out of 5 on-task behaviors 70-80% of 5-minute intervals over a 60-minute period in math class). The specific outcomes and ratings of less favorable, acceptable, and more favorable will depend on the student and the goal they are working on. Appendix A displays each participant's GAS scoring rubric.

After Phase 1 of the SDLMI intervention was completed (described in greater detail below) and GAS rubric established, each week the special education teacher and

the student independently completed the GAS scoring rubric. Using a raw score conversion key for GAS developed by Cardillo (1994), raw scores were converted to standardized T-scores with a mean of 50 and a standard deviation of 10. Standardized GAS scores range from 30 to 70. The conversion of raw scores to a standardized score allowed comparison between goal areas and subjects, independent of the particular goal area. When interpreting scores from the GAS, it is important to note that the converted T-score of 50 represents an acceptable outcome, where an acceptable outcome means that the student achieved the goal to the level expected by the teacher. Standardized scores of 40 or below indicate that the student did not achieve an acceptable outcome and scores of 60 and above indicate that the student's progress exceeded expectations.

Self-determination Scale

Arc's Self-determination Scale (SDS; Wehmeyer & Kelchner, 1995) was administered as a pre/post measure of each student's level of self-determination. The SDS is a 72-item student self-report measure based on the functional theory of self-determination developed and validated by Wehmeyer (1996a, 1997, 1999, 2001) and Wehmeyer et al (2003). The items are divided into four subscales that measure the four essential characteristics of self-determination behavior: Autonomy, Self-Regulation, Psychological Empowerment, and Self-Realization (Wehmeyer, 1996a). Each subscale score and a total score were tabulated with higher scores indicating higher levels of self-determination. However, because SDLMI intervention targets self-regulated problem solving skills, the primary measure of interest for this study was the pre and post-test

scores on the Self-Regulation subscale. The total score and the other subscales were measured but were not expected to demonstrate significant changes given the small number of participants and the short period of time between pre and post-testing.

The researcher administered the assessment once before the start of the baseline condition to all participants individually and again during the maintenance condition. The researcher gave the assessment over multiple sessions because of the length of the assessment and to help alleviate students' anxiety over being tested. Also, researcher offered routine assistance to the students as necessary (e.g., reading questions aloud), consistent with SDS administration protocol guidelines.

Reliability and validity of the measure were established in a study of 500 adolescents with cognitive disabilities conducted by Wehmeyer (1996b). The Cronbach alpha value for the entire SDS test was .90; autonomy was .90; psychological empowerment was .73; and self-realization was .62 (Test & Neale, 2004). The self-regulation section used open-ended questions and did not provide a reliability score. In another study conducted by Shogren, Wehmeyer, Palmer, Soukup, Little, Garner, & Lawrence (2008), it was reported that the SDS was a viable tool to assess the self-determination of students with diverse disability labels. In this study, Shogren et al. recruited 407 high school participants receiving special education services to be part of a longitudinal study that examined the impact of interventions designed to promote self-determination skills and post school outcomes. Through the use of structural equation modeling it was determined that the four subscales of the SDS all contributed to the self-determination construct as proposed by Wehmeyer's (1996b) functional theory of self-determination. The SDS is provided in Appendix B.

OBSERVATION AND RECORDING PROCEDURES

During the study, each student was videotaped by the researcher in the targeted general education classroom two to three times a week to collect data on their on- and off-task behavior. The number of observations varied each week because of block scheduling, in which each subject is taught every other day. Videotaping began immediately after the class bell rang and continued until a 10-minute segment of teacher classroom instruction was recorded. The videotape of each 10-minute segment of classroom instruction was then reviewed by the data collectors (described below). The data collectors watched the 10-minute segments and used pencil and paper methods to record the targeted student's on-task and off-task behaviors (see Dependent Variable section for each student's specific behaviors). Partial ten-second interval recording was used to estimate the occurrences of on- and off-task behavior during the 10-minute segment (see Appendix C for sample data recording sheet). Specifically, if the student exhibited any one of the behaviors associated with being on-task at any time within a ten second interval, the interval was scored as on-task. If the student demonstrated an off-task behavior at any time within the same ten-second interval, the interval was scored as off-task. On- and off-task behaviors were not considered mutually exclusive during a given interval, which means that an interval could be double coded and both on- and off-task behavior could occur in the same interval, regardless of which behavior occurred first. Percentage of intervals with on-task behavior was calculated by summing the number of intervals with on-task behavior and dividing by the total number of possible intervals, multiplied by 100. Percentage of intervals with off-task behaviors was

calculated summing the number of intervals with an off-task behavior divided by the total possible intervals, multiplied by 100. Data were collected over a 25-week period between October and April.

Observer Training

Data collectors were trained in the data collection procedures prior to baseline. Data collectors included the researcher and three graduate students in special education. Data collectors were chosen to participate based on their interest and availability to assist in the research study.

Data coding sheets were created for each student, which defined those criteria for on- and off-task behavior for the student. The codes were different across students because the criteria for on- and off-task behaviors were individualized for each student. The data collectors practiced using the data coding sheets using videotapes of the general education classroom with the target student present that had been recorded prior to baseline data collection. Training continued until all observers reached 80% agreement on the occurrence of on- and off-task behavior over two consecutive sessions. The researcher reviewed the criteria with the data collectors every three weeks to protect against observer drift.

Interobserver Agreement

The researcher and at least one additional data collector independently observed between 36% and 41% of all sessions for each participant. Data from the two observers were compared for agreements and disagreements. An agreement was scored when both

observers recorded an occurrence or nonoccurrence. A disagreement was scored when there was a discrepancy. Interobserver agreement for on- and off-task behavior were then calculated separately for each session using the following formula:

$$\text{Interobserver Agreement} = \frac{\text{Agreement}}{\text{Agreements} + \text{Disagreements}} \times 100$$

The mean interobserver agreement combined across all sessions, on-task behaviors and off-task behaviors, and participants was 93% (range, 89% to 97%). Table 10 reports the mean for on- and off-task behaviors for each participant.

Table 10: Mean Interobserver Agreement Results for Observation Data

Participant	On-Task Behavior	Off-Task Behavior
Charles	97%	94%
Jack	96%	92%
David	94%	91%
George	92%	89%

INDEPENDENT VARIABLE

The Self-Determined Learning Model of Instruction (SDLMI) is a teaching model based on the theoretical principles of self-determination, which Wehmeyer (1999) defines as "acting as the primary causal agent in one's life and making choices and decisions regarding one's quality of life free from undue external influence or interference" (p. 28). A causal agent is someone who makes things happen in their life and exhibits four characteristics of self-determined behavior: acting autonomously, self-regulating behavior, being psychologically empowered, and acting in a self-realizing manner. The SDLMI model builds a student's capacity for self-determination by teaching a number of skills and attitudes such as choice making, decision-making, problem solving, goal setting and attainment, self advocacy, self-evaluation, self instruction, and self efficacy (Wehmeyer, 1996) through an individualized goal setting, problem solving process.

For the purposes of this study, the SDLMI was used as stand-alone curriculum augmentation strategy that helped guide the researcher's instruction and supported each student's engagement in self-regulated problem-solving strategies. The researcher as instructor taught students, using direct instruction, how to set their own learning goals, develop action plans to attain those goals, and evaluate their progress through a twelve step process. The SDLMI instruction was composed of three problem-solving instructional phases (see Appendix D). Each phase presents a problem to be solved by the student in the form of a question: What is my goal? What is my plan? What have I learned? There are four student questions per phase that are linked to teacher objectives (see Appendix D). The objectives assisted the researcher in working through the twelve

questions by scaffolding instruction, direct teaching, and collaboration with the student. Also, each instructional phase included a list of educational supports (see Appendix D) that offered various student-directed learning strategies that enabled students to successfully navigate through the twelve questions. Student-directed learning strategies (e.g., self-monitoring, self-evaluation, self-management) enabled students to acquire skills that facilitated their becoming self-directed learners.

The researcher's responsibility, as an instructor using the SDLMI, was to facilitate, instruct, advocate, and support the student to work through the sequence of questions in each instructional phase. All instruction was unscripted. The student's response to the questions in one phase led to the problem-solving sequence in the next phase. The questions differ across phases but represent similar steps in the problem-solving sequence. Students identified their problem, identified potential solutions to the problem, identified barriers to the solution, and identified consequences for each solution. The sequence of questions form a means-end problem-solving process that facilitates the student learning a self-regulated problem-solving strategy by connecting the student's interest and desires to actions and anticipated outcomes via goals, plans, and student-directed learning strategies. Direct instruction of SDLMI was delivered by the researcher in a self-contained classroom where the student normally received behavior instruction for one period. Sessions took 60 to 90 minutes to complete. The SDLMI instruction began when each student left baseline (see baseline criteria in next section) and ended once the student entered the Maintenance condition (see Maintenance criteria in next section). Instruction took six to ten sessions to complete.

EXPERIMENTAL DESIGN AND CONDITIONS

A multiple baseline across participants design was employed to evaluate the effects of the SDLMI model. A multiple baseline was chosen because a return to baseline was not possible because it was not believed that the learning associated with the SDLMI could be reversed (Kennedy, 2005). Experimental conditions included baseline, SDLMI instruction, and maintenance.

Pre Baseline

Prior to baseline, the special education teacher for each student helped the researcher select one core general education classroom (e.g., math, English, science, social studies) where each participant was having the most difficulty behaviorally and academically based on archival school data (e.g., grades, attendance, discipline referrals). The general education teacher and the student were interviewed separately by the researcher to record their perceptions of the student's on-task behavior and off-task behaviors in order to identify expected behavior in the classroom. The description of on- and off-task behavior varied with each participant but was defined for each student prior to baseline by the student and the researcher based on teacher expectations and was used to develop dependent measures for both on- and off-task behaviors (see dependent variable section for details). The SDS assessment was administered prior to baseline. Data collection for both the on- and off-task behaviors and weekly grades began at baseline.

Baseline

Two students from each campus entered baseline concurrently. During the baseline data collection phase, each participant's performance of targeted on- and off-task behaviors were observed and recorded using a partial interval method two to three times per week during the same general education class. The number of observations per week varied because classes in each subject met every other day. Typical classroom instructional practices continued with no modifications during baseline. The first student at each school that exhibited a steady state of on-task behavior over multiple data points (five or more) with no extreme variability moved to the intervention condition, SDLMI instruction, while the remaining student stayed in baseline (Horner et al., 2005). The exception to this rule was David, who entered the intervention phase with only two sessions of steady states of observed on- and off-task behavior. This was due to unforeseen circumstances that caused the special education teacher to remove David from English, the original targeted core general education classroom (see participation criteria in Participant section). His transfer to a resource classroom (a non-core classroom) for English after the intervention began resulted in the researcher having to abandon all data collected in English after the completion of baseline data collection. However, since the researcher had collected observation data in both this student's English and World Geography class during baseline phase, the researcher replaced data collected in English class with those collected in World Geography, which was the student's only other core general education classroom (see participation criteria in Participant section). The

baseline data collected in World Geography ended with only two sessions of steady states of observed on- and off-task behavior.

Once the first student at each school entered the intervention condition and showed a definitive change in pattern from baseline, (i.e., a steady increase of on-task behavior) the second student who was in baseline condition began the intervention condition. In addition, during baseline, on- and off-task behavior was observed and data collected for one period in a non-targeted general education classroom to establish the frequency of on-task behavior in another general education classroom. Weekly grade reports were also collected throughout baseline. Baseline took anywhere from four to 14 weeks to complete.

SDLMI Instruction

After collecting baseline data, SDLMI instruction was administered as a stand alone curriculum augmentation strategy to each participant individually as the intervention, or independent variable, in this study. The SDLMI instruction involved teaching three specific phases centered on three questions: "What is my goal?" "What is my plan?" and "What have I learned?" The students completed worksheets during each phase that allowed them to record their responses to each question (see Appendix D and Appendix E). Here, I present a brief description of each phase.

Phase 1: What is my goal? During Phase 1, each student was provided instruction and trained one-on-one on how to set an on-task behavior goal for their core targeted general education classroom (e.g., math, English). The instruction for Phase 1 consisted of a series of structured conversations between the researcher and the student around four

prescribed questions for the phase. The answers to these questions enabled the student to identify and define the on-task behavior they wanted to learn or change. The four questions were: What do I want to learn? What do I know about it now? What must change for me to learn what I don't know? What can I do to make it happen?

To answer the first question (What do I want to learn?), the researcher used a student-centered approach that led the student through a cognitive process that supported each student as they endeavored to identify persons, places, strengths, weaknesses, needs, hopes, and dreams in the school and their class settings. The researcher demonstrated how students might respond to the questions in Phase 1 by having students discuss each question within the context of school and classroom environments that the student identified in the student-centered interview. Each student's problem situations in the classroom provided an authentic context that helped each student understand the concepts and the activities they were doing when answering the model's questions.

During this conversation, the student used the information taken from his interview to communicate his preferences and values and learned to prioritize his behavioral needs. The student was encouraged to write down a list of on-task behavioral needs on his recording sheet. In answering question two (What do I know about it now?), the student compared his present status to his on-task behavioral needs and gathered information on his opportunities and barriers for implementing the behaviors. Question three (What must change for me to learn what I don't know?) enabled the student to decide if his actions would focus on capacity building, modifying his environment, or both. Once the student decided on an action, the researcher supported the student, who formally chose the on-task behaviors he intended to address out of the prioritized list he

had made in response to question one. To make sure that the on-task behavior goal was ambitious enough, the student was required to choose a minimum of five on-task behaviors from his list to focus on. Finally, to answer question four (What can I do to make it happen?), the instructional procedure supported the participant in transforming the behavioral need into a stated goal (on-task behaviors) that was expressed as a desired and positive outcome. This on-task goal was specific, measurable, achievable, and attainable in the targeted core general education classroom. Please refer to Appendix F for each participant's goal and list of on-task behaviors.

Phase 1 took between one and three instructional sessions for a student to state his goal and develop his on-task list. The time it took for a student to work through Phase 1 depended upon the class time the researcher was given with each student and the participant's capabilities, experiences, interests, and needs. Class time varied because of pep rallies, early release, and other school activities that were set by the school and out of the control of the special education teacher whose self-contained classroom was the setting where the participant received intervention instruction (see Setting section for details). Once the student had written the stated positive behavioral goal he wished to implement in the targeted core general education classroom, an additional observation of behaviors was taken and then the student began receiving Phase 2 instruction in the subsequent intervention session. Teachers began GAS scoring the first observation session after the students identified their on-task behaviors.

Phase 2: What is my plan? After each student stated the positive behavioral goal in Phase I of SDLMI, Phase 2 of the intervention began. Phase 2 required students to

complete two major tasks: developing an action plan and implementing a self-monitoring strategy.

First, students developed an action plan to be used to reach their self-selected goal. The action plan is a list of specific activities or steps chosen by the student that he will perform every day to meet his goal. The participants initially answered four questions related to their action plans: Where do I start? What is in my way? How can I get these things out of my way? When do I start? Students completed worksheets during this phase that allowed them to record their responses to each question (see Appendix E). The researcher guided the students individually through this phase by utilizing various support strategies suggested by the SDLMI model (see Appendix D) to encourage students to utilize their action plans in attaining their goal.

Second, students identified and, with support from the researcher, implemented a self-monitoring strategy that was designed to enhance the student's utilization of the on-task behaviors they selected to implement in the classroom in Phase 1. The self-monitoring strategy was incorporated as one of the steps in each student's action plan. In keeping with self-directed learning, students chose the type of self-monitoring strategy they wished to implement. This required each student to select the process they would employ for recording the on-task behaviors they exhibited in the classroom and design the self-monitor recording device they would use to document the extent of behaviors performed in the classroom. For example, a self-monitoring strategy such as a journal entry format found in Appendix G provides students with the opportunity to reflect on their behavior, record their activities, and describe the tasks they completed towards their goal in a qualitative manner. To support the students, the researcher used direct

instruction that consisted of an introduction to the importance of self-monitoring, instruction on how to use the strategy, modeling of the strategy by the researcher, guided practice with the student by the researcher, and independent practice for the student.

Two types of quantitative methods for self-monitoring were chosen by the students. Two students, Jack and George, who were at different schools, chose to record their behaviors immediately after class and developed a recording device that consisted of an objective Likert-type scale for recording each of the on-task behaviors they performed. They simply circled the percentage of each on-task behavior they demonstrated during a 60-minute period. Charles and David chose a procedure that required them to record their behaviors on their self-monitoring sheet during class. Each was cued (Charles in 10 minute intervals and David in 5-minute intervals) by a timer that reminded them to circle a yes or no answer for each on-task behavior during each interval, indicating whether the behavior was exhibited during that interval over a 60-minute period. Each recording sheet was one page in length, unique to that student, included the student's individual goal chosen in Phase 1, and the action plan established at the beginning of this phase. Appendix F displays each student's self-monitoring sheet.

Regardless of the procedure, the researcher and student reviewed the student's entries on their self-monitoring sheet and compared it to the researcher's observation sheet after each observation during the subsequent intervention session to confirm that the entries reflected the student's on-task activities and the student was following the action plan. Because each student chose an objective self-monitoring strategy, the researcher asked each student to set a goal of what percentage of on-task behaviors the student would achieve. All the participants selected 80% except Jack, who chose 85%.

The development of the action plan and the self-monitoring strategy took one to three intervention sessions.

GAS scoring began in Phase 2 for both the researcher and students. The researcher's GAS scoring for each student began as the student entered Phase 2 and the participants' GAS scoring began after each student initiated the scoring of his own self-monitoring sheet. To augment the students' GAS scoring, the researcher taught each student how to convert his self-monitoring data into student derived GAS scores and then record them on his own GAS scoring rubric. Student GAS scores were recorded independent of the researcher's GAS scores. Appendix A provides an example of the final GAS rubric for each student (see Dependent Variable section for a full description of the GAS process). The researcher and the student compared their GAS scores point by point after each observation during the intervention sessions to provide the student with feedback on his progress towards achieving his goal. Teaching students to accurately convert their own self-monitoring scores into GAS scores without guidance from the researcher took an additional one to three intervention sessions. Phase 2 took a total of three to six sessions to fully implement.

Phase 3: What have I learned? The third phase of instruction was designed to assist students in evaluating their progress in obtaining their goals. In this phase students answered the following questions: What actions have I taken? What barriers to success have I removed? What has changed about what I don't know? Do I know what I want to know? Participants responded to these questions and evaluated how they believed they performed in obtaining their goals. A central component of this phase was for students to compare the actions taken on their action plan to their success in obtaining their goals,

making adjustments as needed. The participants facilitated this comparison when they converted their self-monitoring scores (Appendix F) into their GAS scores (Appendix A) as described in Phase 2. In addition, the researcher facilitated reflection and self-regulation for the students during this phase by showing students a graph of the researcher's observation data, which gave them another source to use in monitoring their progress toward their individual goals.

Participants had to demonstrate an 80% success rate for reaching their targeted on-task behaviors for three consecutive sessions before being allowed to move into the maintenance condition of this study, based on the researcher's observation data. Phase 3 instructions took one to two sessions per student.

Maintenance

Maintenance data were collected on all participants. During maintenance, participants continued to be observed, both on- and off-task behaviors were measured, and the researcher continued GAS scoring. However, during this condition no additional training occurred and no specific praise or feedback was given to participants. Generic praise was provided on occasion to participants for being on-task. Maintenance was collected over four sessions, which took two to four weeks to complete. The SDS was re-administered the week following the last Maintenance observation.

TREATMENT FIDELITY

To ensure integrity of the implementation of the treatment, a trained graduate student observer monitored approximately 25% of all training sessions for every student

and confirmed the extent to which the instruction was delivered as prescribed by the SDLMI model. Training sessions for all phases were randomly selected. The model provided for three separate and distinct instructional phases that were measured for fidelity. Each phase presented a problem to be solved by the student in the form of a question: Phase 1's question was "What is my goal?" Phase 2's question was "What is my plan?" and Phase 3's question was "What have I learned?" The student solved the problem posed in each phase by answering four student questions specific to that phase and must be answered in sequence to solve the phase's problem (see Appendix D). Each student question had a list of unique instructional objectives designated by SDLMI that the researcher had to meet in order to support the student through the self-regulated problem solving process and answer the student questions, which when answered in sequence solved the corresponding phase question. For treatment fidelity, a separate instructional protocol checklist for each phase was provided that consisted of a list of instructional objectives that were adapted from the SDLMI teacher guideline manual (Wehmeyer, Lawrence, Kelchner, Palmer, Garner, & Soukup, 2004) (see Appendix H for protocols). Each protocol used a paper and pencil method in which the observer checked-off each instructional objective met by the researcher during an intervention session.

Two graduate student observers' were trained by the researcher prior to intervention to identify the instructional objectives listed in the protocol and match them with the researcher's targeted behaviors by reviewing videotapes of instruction sessions unrelated to the current study. Training continued until both observers reached 80% agreement on the occurrence of instructional objectives over two consecutive sessions.

For treatment fidelity, the percent of instructional objectives completed by the researcher during the intervention session was calculated. A trained graduate student observed the videotaped instructional session using the instructional protocol checklist to determine the number of instructional objectives completed during the intervention session. Percent of instructional objectives completed was calculated by dividing the number of objectives completed by the number of objectives specified in the instructional protocol checklist for the phase and multiplying by 100. The treatment fidelity percentage was 100%.

The second trained graduate student observer was asked to watch 33% of the videotaped treatment fidelity sessions to provide interobserver reliability. A point-by-point comparison was used to calculate interobserver agreement. The agreement was computed by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. The interobserver agreement was 100%.

SOCIAL VALIDITY

At the end of maintenance condition, a structured interview was conducted with teachers and participating students to assess their perspectives of the intervention and its impact on student academic and behavior outcomes. Both the teacher and student questions used in this interview were adapted with permission from the social validity questionnaires used in an IES study on SDLMI conducted by Wehmeyer and Shogren in the spring of 2009. The interview was conducted individually with students using a structured format. The researcher read each of the questions to the students and recorded their answers and comments about what they learned, how they felt about the

intervention, and if they would use the skills they learned in the future (see Appendix I for sample student questions). The teacher interview followed the same format. Both the targeted classroom teacher and self-contained classroom teacher were interviewed and asked to indicate whether they felt the program had made an impact on student academic and behavior outcomes and to provide additional comments they had about the intervention (see Appendix J for sample teacher questions).

DATA ANALYSIS

The percentage of on-task and off-task behaviors was graphically displayed with a regression trend line for each condition. Graphs were analyzed using level, trend/magnitude, and variability around the trend line to determine if a functional relation had been established between the on- and off-task behaviors and the independent variable, SDLMI. Descriptive analysis was utilized to assess change in grades, GAS scores, and the SDS data.

CHAPTER 4: RESULTS

This chapter presents the results of a multiple baseline across participants study used to evaluate the impact of the Self-Determined Learning Model of Instruction (SDLMI) on the on-task and off-task behavior, weekly grades, goal attainment, and self-determination scores of students with emotional and behavioral disorders (EBD). The results are organized around the five research questions presented in Chapter 1.

RESEARCH QUESTION 1

Research Question 1 investigated the impact of self-determination skills instruction on the on-and off-task behavior of students with emotional and behavioral disorders. To answer the question, the percent of intervals a participant exhibited on-task and off-task behavior during a 10-minute observation period in a core academic classroom (e.g., math, science, English, social studies) was calculated to measure the impact of teaching self-determination skills using the SLDMI on students with EBD. In this section, the data from the four participants at two schools is graphically displayed, patterns in the data analyzed, and results presented for each participant.

The visual analysis process and the criteria used to identify the patterns in the graph are based on the work of Kennedy (2005). The primary data patterns in the graphs that were analyzed and described for each participant are mean level, trend, and variability. Mean level refers to the average score within a phase. A difference in mean levels of each condition helps define the immediacy of effect of the intervention and is

described as rapid or slow. Trend refers to the best-fit line that represents the data within the phase and is described by slope and magnitude. Slope is positive (upward), flat, or negative (downward). Magnitude refers to the size of the slope and is referred to as low, medium or high. Direction and the magnitude of a trend are qualitative measures used to describe the relationship between the intervention and dependent variables, much like a correlation statistic. Variability refers to the degree of deviation (low, medium, high) of the data points from the trend line within a phase. Mean level, trend, and variability are used to describe the within and between phase patterns that are primary determinates in evaluating a functional relation between the intervention (SDLMI) and dependent variables on-and off-task behavior (Kennedy, 2005).

The participants were grouped by school, with two participants at each school. Each graph, therefore, displays a multiple baseline across two participants, where the dependent variables (on- and off-task behaviors) are presented in a separate tier for each individual participant. A tier is the graphic display of data for one participant. Figure 3 displays the multiple baseline results for Charles and Jack, the students enrolled in School 1. Figure 4 displays the multiple baseline results for David and George, the students enrolled in School 2.

Charles

On-task behavior. The top tier in Figure 3 displays the percentage of intervals Charles was engaged in on-task behaviors in Math, his targeted core general education class. During baseline, he had limited on-task behavior with a mean level of 7% (range, 0 to 15%) with a low negative trend and a low degree of variability. During intervention, Charles received individualized SDLMI instruction in three phases (as described in the

Methods Chapter). Immediately following initial implementation of the intervention, there was an increase in his level of on-task behavior. During the intervention phase, he continued to show higher levels of on-task behavior (M = 72%, range, 18 to 95%) with a medium upward trend, high variability, and no overlap with baseline. During the maintenance phase, when direct instruction was withdrawn, Charles continued to show high levels of on-task behavior (M = 93%, range, 90 to 95%) with a slight positive upward trend, low variability, and complete overlap (100%) with the intervention phase.

Off-task behavior. The top tier in Figure 3 also displays the percentage of intervals Charles engaged in off-task behavior in math. During baseline, there was considerable off-task behavior (M = 96%, range, 92 to 100%) with a slight positive trend and a low degree of variability. When Charles entered the intervention phase, there was a decrease in his mean level of off-task behavior (M = 43%, range, 20 to 92%) with a medium negative trend, high variability, and a one data point overlap (20%) with the previous baseline. During maintenance, there was a continued decrease in his level of off-task performance (M = 16%, range, 7 to 22%) with a slight downward trend, medium variability, and a one-point overlap (8%) with the previous intervention condition.

Summary. Charles's data suggests an immediate intervention effect for both on-task and off-task behaviors. The effect was evident from the second intervention point for both dependent variables. Despite the considerable variability in on- and off-task behavior during the intervention, there was a difference of 29-percentage points between the mean level of on-task behavior and the mean level of off-task behavior during the intervention phase. The increasing trend in on-task behavior appears to correspond to the declining trend in off-task behavior. Maintenance conditions for both dependent variables

suggest that the student continued to enhance his percentage of time spent on on-task behaviors and diminish his off-task behaviors after withdrawal of the direct instruction.

Jack

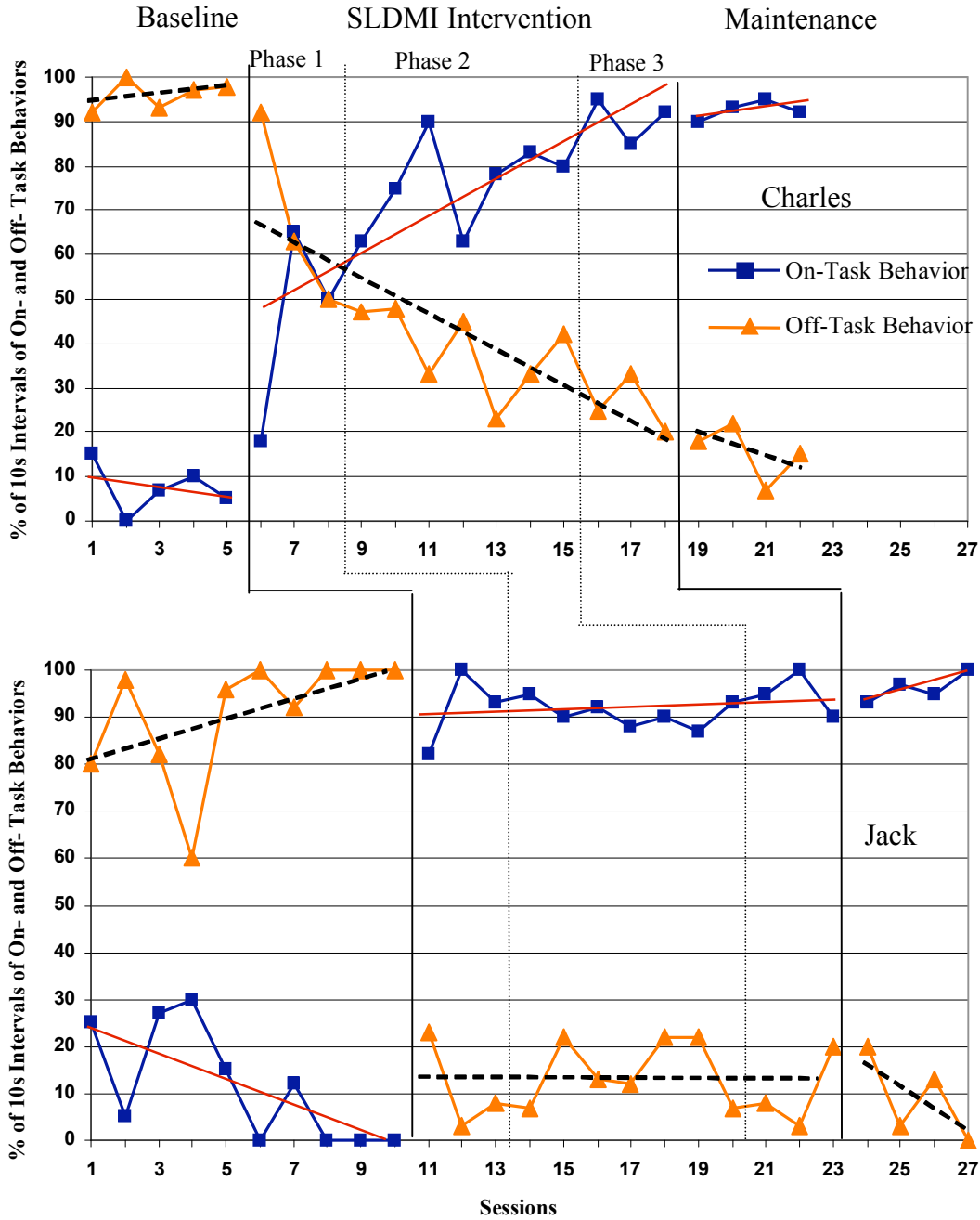
On-task behavior. The bottom tier of Figure 3 displays the percent of intervals Jack was engaged in on-task behaviors during English class, his targeted core general education class. During the baseline, Jack's on-task behaviors had a mean level of 11% with a range of 0 to 30% with a negative trend and considerable variability. During the intervention phase, Jack like Charles received instruction in the SDLMI framework phases. After intervention was implemented, there was an rapid immediate effect on Jack's level of on-task behavior. During the intervention phase, he emitted a higher level of on-task behavior than during baseline (M = 92%, range, 82 to 100%) with a slight upward trend and the behavior was stable with no overlap with baseline. During the maintenance phase, Jack continued to increase his level of on-task behavior (M = 96%, range, 93 to 100%), variability remained low, the positive trend continued and there was a complete overlap (100%) with the previous intervention condition.

Off-task behavior. The second tier of Figure 3 also presents the percentage of intervals Jack was engaged in off-task behavior in English. During baseline, his off-task behavior had a mean level of 91% with a range 60 to 100% and an upward trend with considerable variability. When Jack entered the intervention phase, there was an immediate and sustained decrease in his level of off-task behavior (M = 13%, range, 3 to 23%) with a flat trend, high variability, and zero overlap with baseline. During the maintenance phase, Jack continued to display low levels of off-task behavior (M = 9%,

range, 0 to 20%) with a steep downward trend, some variability, and an overlap of data (23%) with the prior intervention condition.

Summary. Jack's data suggest an immediate and rapid effect of the intervention for both on-task and off-task behaviors. The effect was apparent from the first intervention data point for both dependent variables. The increased level of on-task behavior corresponded with the decrease in off-task behavior with a difference of 79-percentage points between the average level of on- and off-task behavior during the intervention phase. There was also considerably less variability for both on-task and off-task behavior during intervention. Maintenance conditions for both dependent variables suggested that Jack continued to enhance his on-task behaviors and diminish his off-task behaviors after direct instruction ceased.

Figure 3: Percentage of 10s Intervals of On-Task and Off-Task Behavior during 10 min Classroom Observations for Charles and Jack across Conditions



David

On-task behavior. The top tier in Figure 4 displays the percentage of intervals David was engaged in on-task behavior in a World Geography class, his targeted core general education class. During baseline, David was on-task for a mean of 53% with a range of 42 to 60%; there was an overall positive trend during baseline, however, there was a downward trend in the last two data points. After intervention began, there was an immediate increase in David's level of on-task behavior. The mean was 80%, with a range of 66 to 93%, and a low upward trend with some variability, but no overlap with baseline. During maintenance, David continued to increase his on-task behavior (M = 88%, range, 83 to 95%) with a small positive trend, some variability, and limited overlap of data (23%) with the intervention condition.

Off-task behavior. The first tier in Figure 4 also presents the percentage of intervals David was engaged in off-task behavior in World Geography. During baseline, off-task behavior occurred at a mean level of 58% with a range of 48 to 73% and some variability with an overall moderate downward trend, except for the last two data points prior to intervention, which displayed an upward trend. When David entered the intervention phase, there was an immediate decrease in off-task behavior. Throughout the intervention phase, David displayed lower mean levels of off-task behavior (M = 29%, range, 17 to 50%) with a small negative trend, increased variability from baseline, and a one data point overlap (8%) with baseline phase. There was a further decrease in David's level of off-task behavior during maintenance (M = 19, range, 12 to 35%) with a low downward trend, variability, and one data point that overlapped (8%) with the intervention phase.

Summary. Examination of David's results for on-task and off-task behaviors across conditions suggests an immediate effect of the intervention for both on-task and off-task behaviors. While off-task behaviors did show considerable variability early in the intervention phase, after six data points a clear downward trend was evident. There is a trend continuous across conditions for both on- and off-task behavior that may be a cause for concern. However, there was a sizeable 51-percentage point difference between the mean level in on-task behavior and the mean level in off-task behavior during intervention phase that overrides the trend. The increasing levels and upward trend in on-task behavior appears to correspond to the decreasing levels and negative trend of the off-task behavior. Maintenance data for both dependent variables suggest that David continued to enhance his on-task behaviors and diminish his off-task behaviors after withdrawal of the intervention.

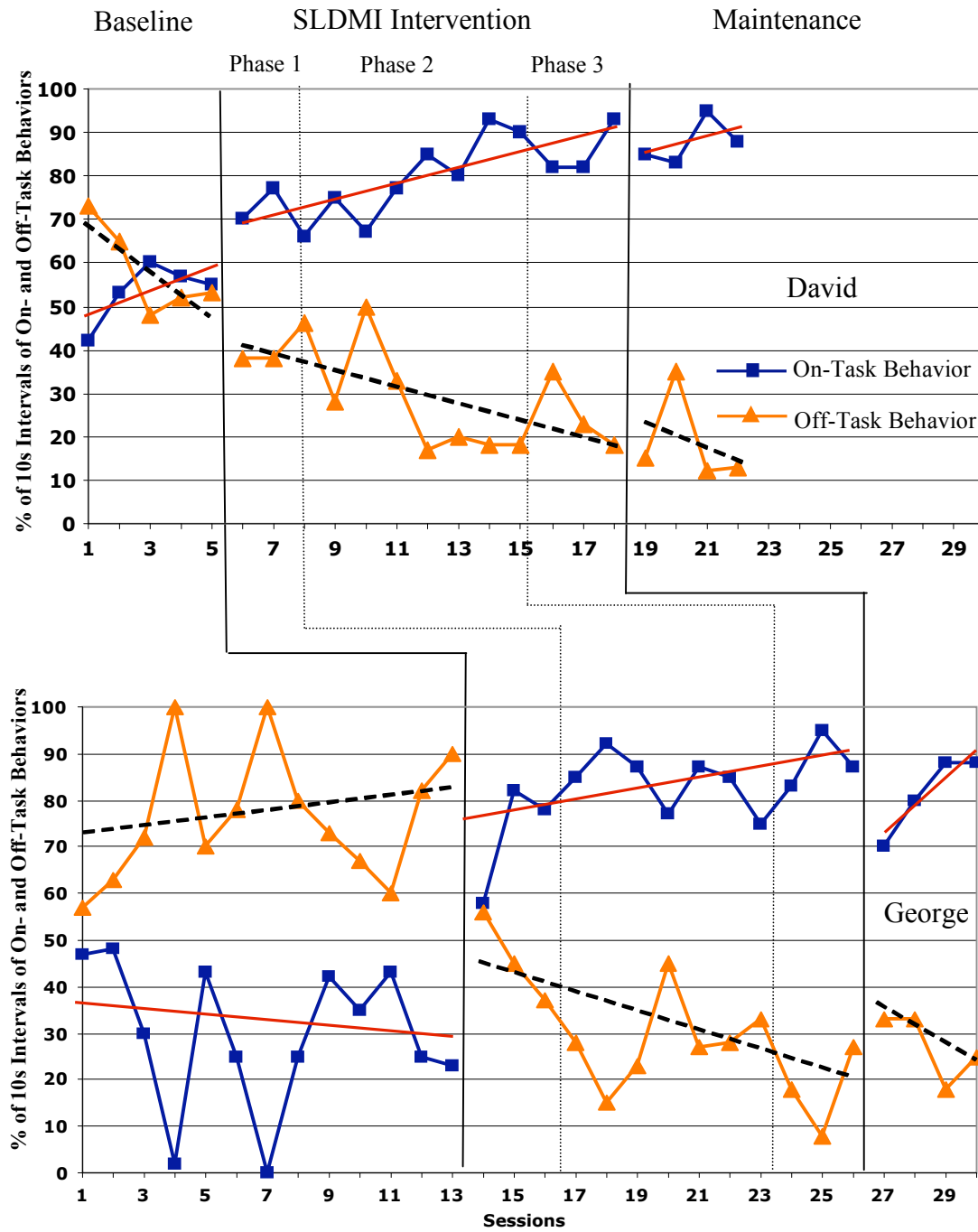
George

On-task behavior. Figure 4 tier 2 displays the percentage of intervals George was engaged in on-task behaviors in Math class, his targeted core general education class. During baseline, George had a mean level of 30% on-task behavior (range, 0 to 48%), with variability, but a negative trend. Following implementation of the intervention, there was a rapid increase in George's on-task behavior that was maintained through intervention (M = 82%, range, 58 to 92%) with an upward trend, variability, and no overlap with baseline. There was an initial decrease in on-task behavior during the maintenance phase, however, George's on-task behavior quickly rose to levels similar to intervention (M = 82, range, 70 to 88%); there was little variability with a steep positive trend.

Off-task behavior. The second tier in Figure 4 presents the percentage of intervals George was engaged in off-task behavior in Math. During baseline, George's off-task behavior was relatively high, with a mean level of 76% with a range of 57 to 100% and an upward slope trend with high degree of variability. When Jack entered the intervention phase, there was an immediate decrease in the level of off-task behavior, which was maintained over the intervention phase (M = 30%, range, 8 to 56%) with a negative trend, variability, and zero overlap with the previous baseline for off-task behaviors. George maintained his decreased off-task performance during the maintenance condition (M = 27%, range, 18 to 33%) with a downward trend, variability, and a complete overlap (100%) with the previous intervention condition.

Summary. Examination of George's on-task and off-task behaviors results across conditions suggests an immediate intervention effect for both on-task and off-task behaviors. The effect was evident immediately after intervention began for both dependent variables. The increased level and slope of on-task behavior appears to correspond to the decrease in level and slope in off-task behavior with a 52-percentage point difference between the mean intervention levels of on- and off-task behavior. However, there continued to be considerable variability in off-task behavior through all three conditions, however, the level of off-task behavior was lower in intervention and maintenance.

Figure 4: Percentage of 10s Intervals of On-Task and Off-Task Behavior during 10 min Classroom Observations for David and George across Conditions.



Summary of Findings

For the purposes of this study, two multiple baselines were used to examine the effects of using SDLMI to teach self-determination to students with EBD. The data within and across conditions shown in Figures 1 and 2 suggest that experimental control was established for the effect of the SDLMI intervention on the on- and off-task behaviors of four students with EBD. However, the trend across conditions between the baseline and intervention phase for David may suggest that the functional relation between the intervention and on- and off-task behaviors may not be as robust in Figure 2. Baselines were established concurrently for each of the four student's on- and off-task behaviors. The intervention was sequentially introduced one tier at a time at each school and only after a change in pattern of on-task behavior was identified was the second participant at the school introduced to the intervention. This experimental effect was replicated across the two multiple baselines.

Documentation of experimental control comes from multiple sources found within the graphs. First, the mean level data demonstrate that an immediate intervention effect was evident for both on-task and off-task behaviors for each participant. Specifically, the difference between the mean levels of on-task behaviors during baseline and during intervention was 65% for Charles, 81% for Jack, 27% for David, and 52% for George. The difference in mean levels of off-task behaviors between baseline and intervention for the four participants was 53%, 78%, 29%, and 46% respectively. Second, despite the considerable variability in on- and off-task behavior during the baseline, for all but one participant, there was a decreasing trend in on-task behavior and an increasing trend in off-task behavior during baseline, followed by a corresponding increasing trend

for on-task behavior and a decreasing trend for off-task behavior after the intervention was introduced. The one exception was David, who had an overall increasing trend in on-task and a decreasing off-task trend during baseline followed by similar trends during the intervention condition. Though a trend that is continuous across conditions is a potential restriction in establishing experimental control, there is other compelling evidence (Kennedy, 2005) that also supports that a functional relation has been established. For example, David reversed the overall trend in the last two data points for both on- and off-task behavior during baseline before phase change. This reversal, followed by the distinct and immediate effect established by the initial data points in the intervention phase and the amount of difference in the mean levels of on- and off-task behavior between the baseline and intervention phases clearly suggest a functional relation. Also, the diminishing magnitude of the trend in baseline compared to the subsequent low slopes of the on-task and off-task trend lines when the intervention was introduced make the mean level data more meaningful as a descriptor of the data pattern. This, along with the continuation of the on- and off-task behavior patterns when the intervention was removed, is further evidence that suggests a functional relation has been established for David.

Though level and trend are important determinates of experimental control, further visual analysis of the graphs for all four students helps reveal the possible functional relation established between the introduction of SDLMI and the changes in on- and off-task behaviors of each participant. For example, despite the variability in on- and off-task behavior during all three conditions at each school, the graphs show that there was no overlap in the on-task behaviors between baseline and intervention and only a few

data points for off-task behavior overlapped between baseline and intervention. In addition, the variability in data around the trend lines for all students tended to decrease as time progressed. Finally, maintenance data for both dependent variables suggest that all four students continued to maintain and enhance on-task behaviors and diminish off-task behaviors after withdrawal of the direct instruction. Because each graph showed similar results, the replication of the findings across the two multiple baselines provided evidence that SDLMI has a functional relation with the increase in on-task behavior and the decrease in off-task behavior.

RESEARCH QUESTION 2

Research Question 2 attempted to ascertain if students with EBD could learn and utilize the SDLMI to make progress toward attaining self-selected goals related to their on-task behavior in the general education classroom. The Goal Attainment Scaling (GAS) process was used to measure each student's progress towards attaining his self-selected behavior goal (Kiresuk, Smith, & Cardillo, 1994). After each observation, the special education teacher and researcher together, and the student independently, completed a GAS change-scoring rubric (see Appendix A).

As described in the Method section, a GAS score of 50 represents students achieving the expected outcome for their goal and GAS scores can range from 30 to 70. Table 11 provides the number of GAS ratings made and the mean GAS scores for teachers and students during the intervention and maintenance phases. As shown in Table 11, teachers made an average of 18 GAS ratings for student's goals and students made an

average of 10 ratings. Students' average number of ratings were lower because the teacher and researcher scoring began immediately after the student established the goal and ended after completion of the maintenance condition. Each student's scoring began with Phase 2 and ended before maintenance condition, except for one student, George, who continued to score the GAS during maintenance. Teacher's average rating of student goal attainment was 59, and student's average rating of their own goal attainment was 61.

Because a GAS score of 50 or higher indicates that a student met or achieved expectation, the percent of GAS ratings greater than 50 was also calculated to determine the percentage of ratings for which students were meeting or exceeding expectations for their goal. As shown in Table 11, for the majority of GAS ratings made by teachers, students met or exceeded expectations. On average, students met or exceeded teacher expectations in 86% of the ratings. Charles performance met or exceeded his teacher's expected expectations for 13 of 17 ratings (76%), Jack exceeded expectations for 17 of 19 ratings (89%), David's performance met or exceeded his teacher's expectations 14 of 16 ratings (88%), and George's performance exceeded expectations 16 of 18 ratings (89%).

The results of the students' ratings of their achievement of their behavior goals were very similar to the teachers'. As shown in Table 11, for the majority of GAS ratings made by students, the students reported meeting or exceeding the expectations set in the GAS rubric. On average, they met or exceeded their own expected behavior outcomes 87% of the time. Charles met or exceeded expectations least frequently, meeting or exceeding satisfactory levels 7 of 11 scores (64%), Jack was 100 % with six of six scores,

David met or exceeded satisfactory levels on 10 of 12 scores (83%), and George attained 11 of 11 scores (100).

Table 11: Goal Attainment Scaling of Student Goals by Teachers and Students

Participant	# of Teacher Ratings	Mean GAS Scores for Teachers	% of Teacher GAS Scores that Met or Exceeded Expectations	# of Student Ratings	Mean GAS Scores for Students	% of Student GAS Scores that Met or Exceeded Expectations
Charles	17	58	76	11	51	64
Jack	19	61	89	6	63	100
David	16	56	88	12	65	83
George	18	59	89	11	64	100
Average	18	59	86	10	61	87

Note: A GAS score of 50 or above indicates the student met or exceeded expectations.

RESEARCH QUESTION 3

Research Question 3 examined whether the impact of using the SDLMI to change students' on-task behavior in a core general education class would generalize to other classes. The on-task behavior selected for each student was probed in a non-targeted academic general education classroom once during each condition (baseline,

SDLMI instruction, and maintenance) to determine if changes in on-task behavior were also observed in another classroom. The results are summarized in Table 12.

Charles

Generalization data for Charles were recorded in his English class. The student was rarely on-task (17% of intervals) during the baseline probe. Charles spent most of the observation period staring into space and not attending to the teacher's lecture. During the intervention probe, Charles' on-task behaviors increased to 63% of intervals. During the observation, he was attending to the teacher's lecture during the majority of intervals. During the maintenance probe his on-task behavior further increased to 92% of intervals.

Jack

For Jack, on-task behaviors in a Math class were observed for generalization effects. Jack was on-task 13% of the observation period during the baseline probe. He spent much of the observation staring into space or drawing and not attending to the teacher's lecture. During the intervention probe, his on-task behavior increased to 98% of intervals. Jack was observed attending to the teacher and taking notes on the class lecture. On-task behaviors remained high at 92% of intervals during maintenance.

David

Generalization data for David were taken in a Computer Assisted Drafting (CAD) class. David demonstrated no on-task behaviors during the baseline probe (0%). He spent his time during the observation playing computer games, talking with peers, and not completing assigned work. When David's on-task behavior was probed during the intervention phase, his on-task behavior had increased to 100% of intervals. David was working on an assignment related to drawing on the computer during the entire

observation period. David maintained his on-task behavior at 100% during the maintenance probe.

George

Generalization data for George were collected in his English class. George was on-task for 40% of the intervals during the observation probe during baseline. For a majority of the observation, George slept or played with an object on his desk. During the intervention probe, George's on-task behavior increased to 92% of intervals. He was observed to engage in assigned silent reading during the observation. George maintained a higher level of on-task behaviors during the maintenance probe (87% of intervals).

Data suggest that all four students generalized their on-task behaviors to other class settings.

Table 12: Generalization of On-Task Behavior to Another Classroom

Participant	Class	Baseline	Intervention	Maintenance
Charles	English	17	63	92
Jack	Math	13	98	92
David	CAD	0	100	100
George	English	40	92	87

Note: Numbers represent each student's percentage of intervals of on-task behavior observed during one 10 minute session in a second general education classroom across all conditions

RESEARCH QUESTION 4

Research Question 4 investigated whether using the SDLMI to change students' on-task behavior in the general education classroom would lead to collateral changes in their grades in that class. Grade reports for each student in their targeted core general education classroom (e.g. math, English, science, or social studies) were collected and recorded weekly by the researcher from the schools' electronic data system to measure the collateral effect the SDLMI intervention may have had on grades. The results are summarized for Charles and Jack in Figures 5 and for David and George Figure 6.

Charles

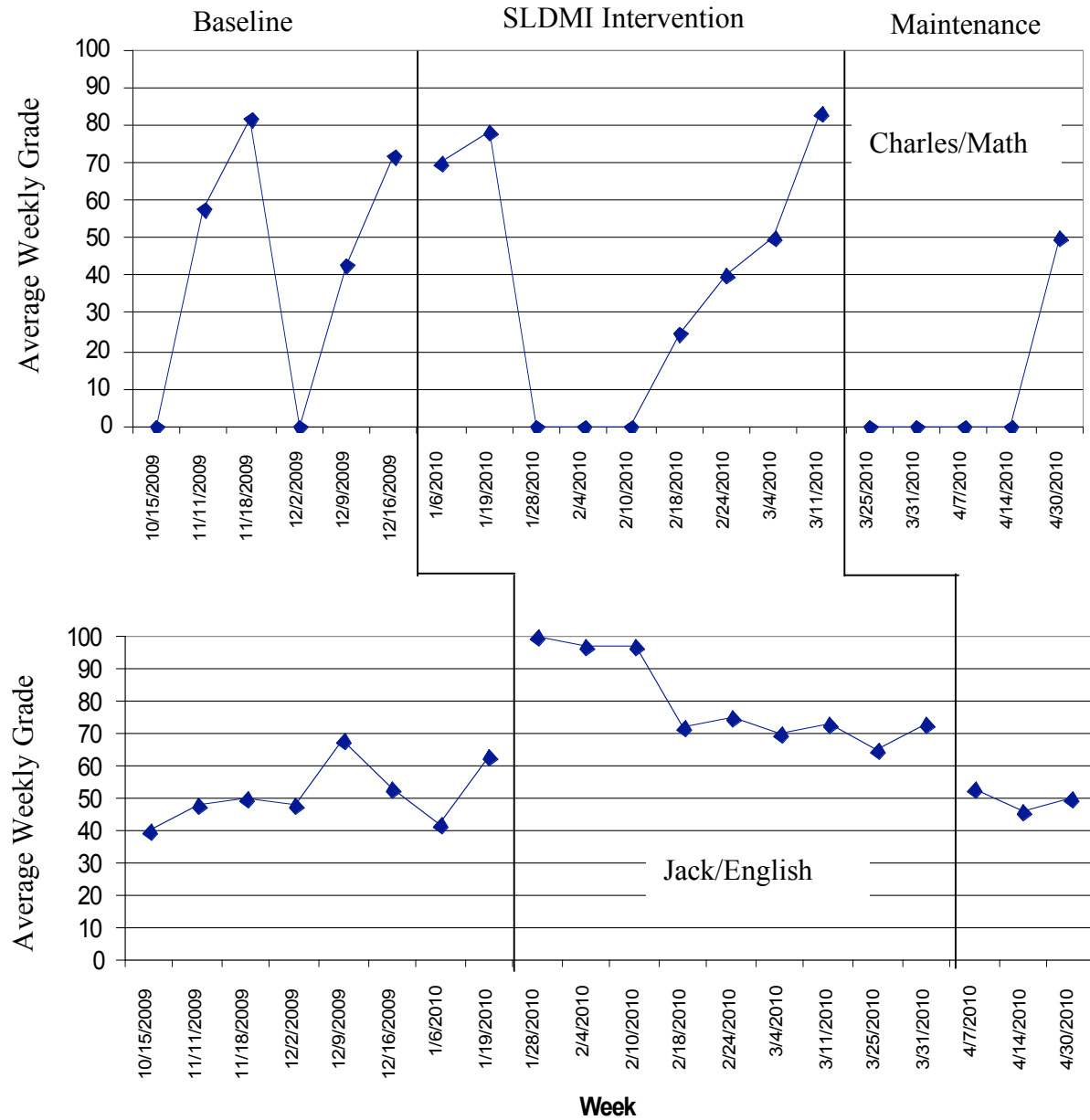
As shown in Figure 5, Charles's grades showed great variability within and across conditions. Charles had a number of zeros in his grade reports because he had a history of turning in work sporadically and waiting to submit much of his work until the end of a six-week period. Because of this variability, it is difficult to interpret any pattern within or across conditions. Also, Charles showed an overall decline in his grades across conditions because of the significant number of zeros during intervention and maintenance due to submitting work late. His mean baseline grade was 42.5 (SD=35.45), the mean intervention grade was 34.6 (SD=34.36), and the mean maintenance grade was 12 (SD=25).

Jack

As shown in Figure 5, Jack's grades also had some variability within and between conditions. Jack's data suggest, however, an increase in mean grade scores between

baseline and intervention conditions. However, the initial increase that was seen during the intervention phase tapered off during the remainder of the intervention and during the maintenance phase. Jack's mean baseline grade was 51.5 (SD=9.68), the mean intervention grade was 80.22 (SD=13.64), and the mean maintenance grade was 49.7 (SD=3.51).

Figure 5: Average Weekly Grades for Charles and Jack across all Conditions



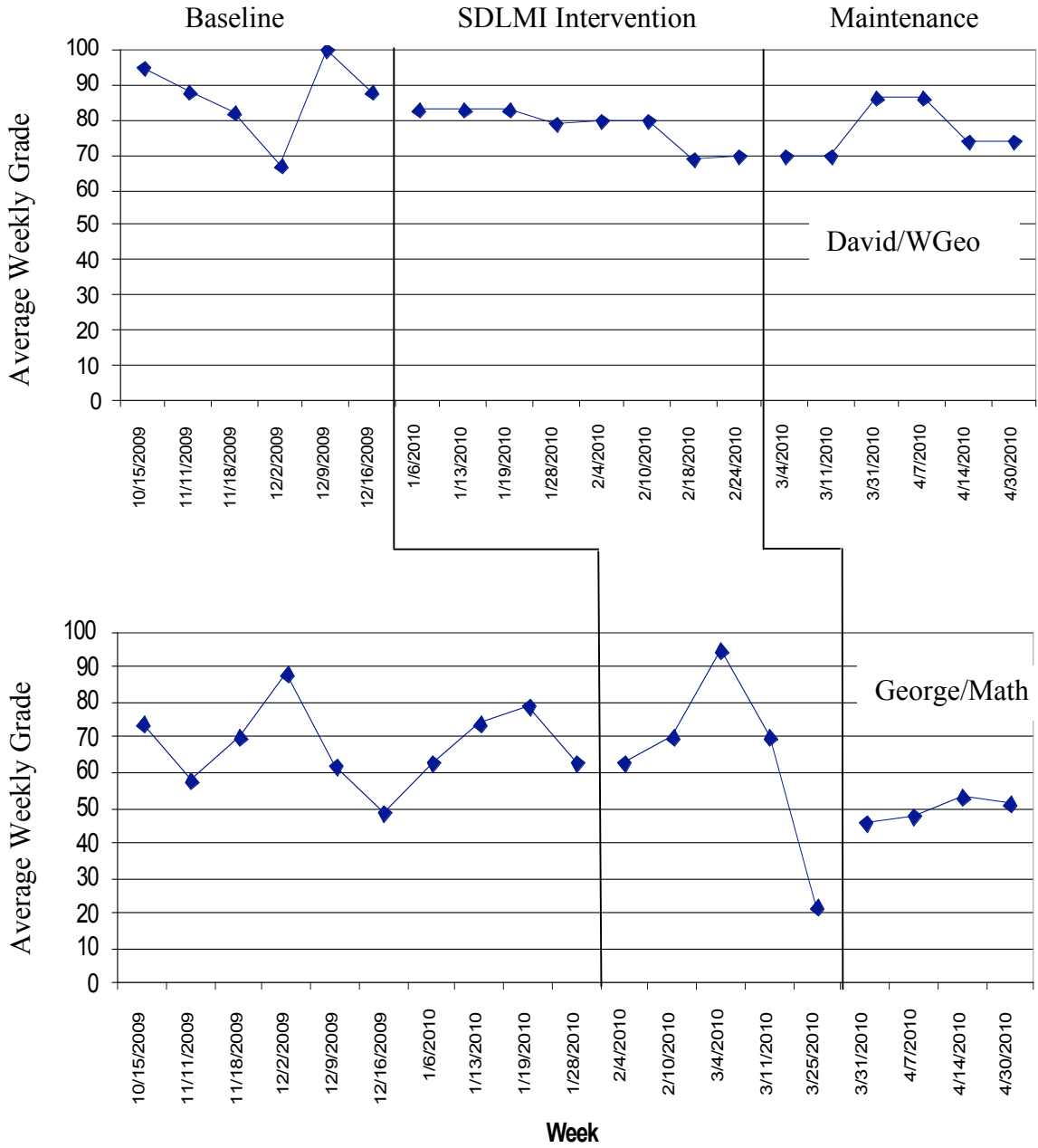
David

As shown in Figure 6, David's grades were fairly stable within and across conditions, and his grades were high during baseline conditions, creating a ceiling effect. There was, however, a slight decline in David's grades from baseline to intervention and maintenance. His mean baseline grade was 86.7 (SD=11.48), the mean intervention grade was 78.4 (SD=5.71), and the mean maintenance grade was 78 (SD=7.45).

George

As shown in Figure 6, George's grades showed great variability within and across conditions – there was no consistent pattern associated with the phases. There was an overall decrease in his grades from baseline to intervention and from intervention to maintenance where his grades stabilized, well below passing. The mean baseline grade was 68 (SD=11.27), the mean intervention score was 64 (SD=14.06), and the mean maintenance score was 49.5 (SD=3.11).

Figure 6: Average Weekly Grades for David and George across all Conditions



The data suggest significant variability in student grades across conditions. It is possible that this variability was related to other factors that teachers identified during the social validity interview (described below) as influencing grades, including: inaccuracies in teacher's report and updating of grades, failure of grades to account for documented student accommodations such as submitting work late, and issues with the appropriateness of the measures used to document student progress for grade report. Because of the variability across phases and students, and because of the potential issues with the validity of the grades as reported electronically, no conclusions could be drawn regarding the relationship between student grades and the SDLMI intervention.

RESEARCH QUESTION 5

Research Question 5 explored what impact the SDLMI had on the self-determination skills of students with EBD. The *Arc's Self-Determination Scale* (SDS; Wehmeyer & Kelchner, 1995) was implemented as a pre/post measure of changes in each student's self-determination. Higher scores indicated higher levels of self-determination. Students' scores on the SDS prior to baseline and during the maintenance phase are summarized in Table 13. One student showed slight gains in his total self-determination score from pretest to posttest. Three of the four students showed slight gains on the self-regulation subscale (see Table 14), which had been predicted because SDLMI is a self-regulated problem solving process that specifically teaches self-regulation skills.

Table 13: Participant Pre Baseline and Post Intervention SDS Total Scores

Participant	Pre Baseline SDS Total Score	Post intervention SDS Total Score
Charles	117	112
Jack	109	105
David	85	74
George	95	99
Mean (SD)	101.5 (SD = 14.27)	97.5 (SD = 16.54)

Table 14: Participant Pre Baseline and Post Intervention SDS Subscale Scores

Participant	Autonomy		Self Regulation		Psychological Empowerment		Self-Realization	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Charles	77	68	15	18	16	16	9	10
Jack	74	71	13	11	15	14	7	9
David	51	37	11	16	14	13	9	8
George	61	60	7	11	16	15	11	13

SOCIAL VALIDITY

At the conclusion of the maintenance phase, a structured interview was conducted with the special education teacher, the general education teachers from the core classrooms, and the generalization classroom teacher for each student. Each participating student was also interviewed to assess his perspective of the intervention and its impact on academic and behavior outcomes.

Teachers' Perceptions

Before the interview, the research study and its operational context were reviewed with each special and general education teacher that participated in the project. Each teacher was interviewed independently and was asked to reflect on his/her students' behavior in the classroom, any changes in this/her students' behavior over the course of the study, and his/her perspectives on the SDLMI intervention.

All general education teachers had very favorable impressions of the effects of the intervention on their students. All core subject matter teachers and all but one generalization teacher saw improved on-task and reduced off-task behavior. Each teacher reported an increase in work completion and active participation in class, and improved attendance and grades. Because teachers' reports of better grades were contradictory to the findings reported in Research Question 4, teachers were asked about the discrepancy. The four core general education teachers reported that they recalled significant increases in work completion and participation and grades and were rather shocked when the researcher presented the grade averages from the online electronic system. Several

teachers followed up and checked their grades, and admitted that they had failed to enter grades when students had made up work. One teacher even reported that she had forgotten to change a six-week grade from failing to passing, despite the fact that the student had submitted all of the work necessary to earn a passing grade. One teacher specifically attributed changes in overall class behavior and class grades to his student's decrease in off-task behaviors.

Teachers also reported positive changes in their students in self-advocacy, confidence, achievement, and focus. One English teacher remarked that she did not believe the student was even capable of doing the work until he started showing improved on-task behavior. Now she believed he could do the work because he was using skills he had never exhibited before. Another teacher reported that his student's improved on-task behavior uncovered an underlying skill deficit in math, which was addressed immediately and with extra instruction, the student began to close the math discrepancy.

The special education teachers also noted improvements in behavior. In addition, they reported less absenteeism, fewer office referrals, and increases in grades as a result of the intervention. They believed the students' grades were actually better than expected for this time of the year. Special education teachers reported that most students were maintaining their grades at a higher level (see Figure 5 and 6) than in the past years, when their grades had become progressively worse over the course of the school year. They also reported positive changes in self-advocacy, confidence, achievement, and focus, which they stated came from being in class more, increased work completion, increased time on-task, and positive feedback from teachers. All special education teachers said this was very different from the previous year.

Two of the core general education teachers discussed the self-monitoring sheet and timer that their students used as part of the intervention. One felt the timer was effective in reducing the student's disruptive behaviors in the classroom because he thought the student was focused on monitoring his behavior and less motivated to socialize with other students. The other teacher was not sure the timer had any effect. All of the teachers reported being very impressed by the significant behavior transformation they had observed in their students and believed the intervention was responsible for the transformation. Moreover, all of the general education teachers believed that goal setting, action planning, and self-monitoring fit with the goals they have for student learning, were interested in the learning more about the process and wanted to be included, if possible, in any future in-service teacher training on self-determination.

The special education teachers observed the intervention taking place in their special education classrooms. They reported that the student's experiences with goal setting, action planning, and self-monitoring were very positive. One special education teacher believed the process always seemed productive and made their students aware of the frequency of their off-task behaviors and the relationship between their on-task behaviors and their overall performance in the classroom. According to the teachers, the intervention provided the students with structure, time management skills, focus, and the opportunity to take responsibility for their own actions. The special education teachers stated that goal setting, action planning, and self-monitoring fit with the goals they have for student learning and what they would be interested in learning more about the use of the SDLMI intervention with students for next year.

Participants' Goals and Self-Perceptions

During the pre-baseline interviews, all participants indicated a desire to implement or increase on-task behaviors that they believed would make them successful in the classroom. In post-maintenance interviews, all participants indicated that they had accomplished the individual goal they set during the intervention phase and felt good about it. All students stated that learning to set goals, take action, self-monitor their own actions, and evaluate outcomes were important skills to learn because they helped them in their regular classes. One student believed it helped him get organized and two students reported that the instruction was valuable because it helped them focus and break things down into manageable parts. All but one enjoyed the process, would use it in the future, and would recommend it to others. Interestingly, the one dissenter said he thought it might be useful for others even though he would not use it in the future. He said the intervention made him anxious (this student had significant anxiety problems) and that he was already doing the on-task behaviors and was responsible for the changes in his on- and off-task behavior. He also said the process was too slow. In fact, all but one participant felt the process was too slow. All the students reached their goal of 80% on-task behaviors early in the intervention phase and each participant indicated in their evaluation phase (Phase 3) that they were ready to move on to another goal.

With the exception of the participant who reported he was already performing the on-task behaviors targeted in the intervention (previous paragraph), the remaining participants said that the intervention helped them meet their goals. These three students were excited that their progress in their targeted classroom was so immediate and all but

one planned to use the strategies in other classes. One student reported being very happy because he had passed all of his classes in one semester for the first time and his parents were happy with his grades and attitude except for one class, German. He reported regretting that he had fallen so far behind in German that his new on-task behavior could not help him. He was later removed from the German class by his Admission, Review, and Dismissal (ARD) committee for reasons that were not revealed to the researcher. Another student remarked during the intervention that he was now finally passing his weekly planner evaluations regularly. All the students said that they found it easier to set their own goals because they knew themselves better than anyone else, they knew what they could accomplish, and that the goal was their choice.

CHAPTER 5: DISCUSSION

The purpose of this study was to examine the impact of the *Self-Determined Learning Model of Instruction* (SDLMI) on adolescents' with emotional and behavioral disorders (EBD) on- and off-task behavior, grades, progress towards self-selected goals, and global self-determination. The researcher implemented the intervention with four high school students between the ages of 14 and 16 who received academic instruction in at least two general education classrooms and in a self-contained resource room for at least one period a day. The resource room provided a setting where SDLMI instruction could occur. Twelve SDLMI lessons were taught individually to each student over a 25-week period between October and April.

The SDLMI is a teaching model based on the theoretical principles of self-determination (Wehmeyer, 1999). In this study, the SDLMI was used as a framework to guide instruction and support each student's engagement in self-regulated problem-solving strategies in a core general education classroom. SDLMI instruction was composed of three problem-solving instructional phases. Each phase presented a problem in the form of a question to be solved by the student: What is my goal? What is my plan? What have I learned? Each of the three phases contained four supporting questions for a total of twelve questions. Each student utilized the twelve questions in a problem solving sequence to set his own behavior goal, to develop and implement an action plan to attain the behavior goal, and to execute self-directed learning strategies (e.g., self-monitoring, self-evaluation, self-management) that allowed him to evaluate his progress towards his

individual goal. For the purposes of this study, a person-centered planning process was used by the researcher to support each student in selecting a behavior goal that he believed would help him overcome obstacles that had precluded them from being successful in the classroom in the past. The person-centered process consisted of a conversation between the researcher and the student that gave each student the opportunity to identify persons, places, strengths, weaknesses, needs, hopes, and dreams in the school and their class settings. The information provided an authentic context that helped each student individualize the concepts and the activities used while answering the twelve questions. In this study, all participants chose to improve their performance in the classroom by increasing their on-task behaviors (which were individually defined by the student and teacher). Each student chose a set of on-task behaviors based on his individual need. By self-selecting a goal, students gained experience making choices and decisions and establishing priorities.

The results demonstrated a functional relation between the SDLMI intervention and the on- and off-task behavior of the participants. Specifically, all four students significantly increased on-task behaviors and decreased off-task behaviors and all four participants were able to maintain the increase/decrease after the intervention was withdrawn. Moreover, all four students made progress towards their goal and generalized their increased on-task behavior to a second general education classroom.

Though the intervention was successful in increasing on- and decreasing off-task behavior, its impact on students' grades was inconclusive and there was no clear impact on self-determination as measured by SDS. For all of the students, grade performance varied significantly across each condition (i.e., baseline, intervention, maintenance),

which may have been influenced by the reliability and validity of the electronic grades reported by teachers. Furthermore, the overall level of student self-determination as measured by the SDS increased for only one student. However, three participants showed small increases on the self-regulation subscale. All the general education teachers, special education teachers, and all but one student viewed using the SDLMI as a positive experience and would use it in the future.

The remainder of this chapter describes the major findings of the study pertaining to the five research questions and implications for future research and practice.

ON-TASK BEHAVIOR AND OFF-TASK BEHAVIOR

Does teaching self-determination skills have an impact on the on- and off-task behaviors of students with emotional and behavioral disorders?

On-Task Behavior

The primary dependent variable was on-task behavior. On-task behavior was defined individually for each student and the specific definitions created by each student are provided in Table 8. Examples of on-task behaviors included: paying attention to speaker (peer or adult); remaining sitting in chair with feet on floor and head and body oriented towards teacher; requesting teacher attention by raising hand at the appropriate time; verbalizing appropriately with students or teacher when spoken to; working on assigned tasks with or without others as directed by the teacher; using classroom materials (e.g., pencil) in the way they were designed and/or as indicated by teacher's

instruction; and self-monitoring behavior by completing on-task behavior checklist during class and operating a timer.

There was a functional relation between the intervention and increasing on-task behavior for all four students. All four students substantially increased levels of on-task behaviors between baseline and intervention (i.e., 65% for Charles, 81% for Jack, 27% for David, and 52% for George) and all were able to maintain the behaviors after the intervention was removed. Furthermore, students generalized their on-task behavior to other classrooms. This provides empirical evidence that students with EBD can be taught, learn, and operationalize new behaviors in the classroom. Furthermore, it supports the supposition of other researchers that self-determination may be a critical factor influencing whether students with EBD achieve positive outcomes (Martin, et al., 2003)

The SDLMI led to immediate and substantial increases in on-task behavior for all four participants. This was somewhat surprising based on research with different special education populations, such as students with an intellectual disability, where the impact of the SLDMI was slower and more gradual. The immediate, highly positive results could be attributable to differences in the characteristics of the special education populations, or it could be that the intervention was well matched to the characteristics of the EBD population. There has been speculation in the literature that self-determination is a very effective way to address the behaviors commonly demonstrated by students with EBD (Wehmeyer, 1999). Researchers and practitioners have strongly advocated for the use of researched-based instruction, such as self-determination instruction, that is tailored to the social and developmental needs of students with EBD (Carter et al., 2006; Hoffman &Field, 1995; Lane & Carter, 2006; Wagner & Blackorby, 1996). Other key elements

cited by many researchers are implementing best practices in academic and positive behavior support (Mooney et al., 2003), direct instruction (Benitez, 2005), choice making (Mithaug & Mithaug, 2003), and student-centered instruction personalized for the specific needs of the EBD student (Wagner & Davis, 2006). Each of these strategies is included in the SDLMI intervention. But, before this study, they had rarely been tested experimentally, as part of a comprehensive intervention, implemented with students with EBD (Algozzine, et al., 2001). Based on the synthesis reported in Chapter 2, this was the first time research on self-determination had targeted students with specific diagnoses of EBD, used observation measures of their classroom behavior, and offered discernable experimental results on individual students.

Compared to baseline, there was an increasing trend line and a dramatic decrease in variability of on-task behavior in all four students over time during the intervention condition that continued into maintenance. This was an important determinant for establishing experimental control and a functional relation between SDLMI and on-task behaviors. One potential explanation is that students were becoming more cognizant of their on-task behaviors in the classroom as the intervention progressed. This may imply an ongoing impact of the SDLMI intervention on students' behavior as they have more opportunities to practice and apply the skills they are learning and see the positive impact they have in the classroom - such as increasing the probability of access to teacher reinforcement, e.g., teacher praise and - assignment completion. This has implications for practice because the study provides teachers of students with EBD evidence of effective instruction that supports improved behavior performance in the classroom.

Furthermore, the reduction in variability of on-task behavior underscored the strength of the relationship between self-determination and behavior. Looking at the on-task and off-task behavior graphs found on pages 83 and 87, one may determine at first glance that during intervention and maintenance there remained some unexplained variability in on-task behavior data for all four subjects. However, there are several possible explanations for this. First, it was difficult to get traction or consistency implementing the SDLMI. For example, because of class scheduling, holidays, and state testing, Charles had three different time periods where he went 11 days between sessions. This was true for all of the students. For example, the block scheduling used at both schools led to repeated four-day gaps between sessions. In addition, as is often described in the literature, students missed class time because of frequent absences and removal from the classroom for behavioral issues. It is interesting to note that despite the frequent gaps between sessions, the data still showed clearly an increasing trend and reduced variability in the on-task behavior. The intervention had an impact, even with repeated absences and periods of time with no direct instruction from the researcher during the intervention phase. The reduced variability in the data may reflect that students were internalizing the cognitive strategies that they were learning through SDLMI instruction and applying the strategies independently in the classroom. When students were interviewed about their experiences at the end of the study, their responses suggested they had, in fact, internalized some of the strategies they learned. Jack reported that he was thinking about being on-task the minute he entered the classroom and monitored his own behavior throughout the class. Further research is needed to explore how students learn and apply cognitive strategies, such as the strategies taught by the SDLMI. In addition, to

more clearly demonstrating the impact of SDLMI instruction, future research is needed that addresses the impact of variability in implementation schedules for students with EBD.

Off-Task Behavior

Data were also collected on student off-task behaviors in the targeted core general education classroom (e.g., math, science, English, social studies). Examples of off-task behavior were: not attending to the teacher during lectures and instruction by failing to orient head, body and eyes towards the teacher for at least three seconds when the teacher was lecturing or giving instruction; talking out to other students without raising hand to ask permission from teacher, "spacing out"; not using materials appropriately as specified and directed by teacher; and not working on assigned tasks specified and directed by the teacher.

There was a functional relation between the intervention and decreasing off-task behavior. All four students substantially decreased levels of off-task behaviors between baseline and intervention and all were able to maintain the decrease in behaviors after the intervention was removed. Because the primary dependent variable was on-task behavior, students' off-task behavior was not observed for generalization purposes. However, the functional relation provides empirical evidence that students with EBD can decrease levels of off-task behavior when they are focusing on increasing their on-task behavior. This is the first time there has been a demonstration of the relationship between the SDLMI and on- and off-task behavior. It appears that the increased on-task behavior may have replaced students' need to engage in off-task behavior. Further research is needed to explore this relationship.

Off-task behavior showed a gradual descending trend during intervention that continued through maintenance. However, off-task behavior had much more variability than on-task behavior in all three conditions. Issues that are endemic to the EBD population that cause decreases in class time such as punishment, frequent absences, and illness due to mental conditions such as anxiety may lead to inconsistency in on-task behaviors, which would lead to more off-task behavior.

Observing both on- and off-task behavior across four students in two schools, established the strength of the SDLMI for enabling students with EBD to increase their appropriate (and decrease their inappropriate) classroom behavior. The rapid impact of the intervention needs to be replicated in future research. The implications of this finding for practice should also be considered. The results suggest that the SDLMI may be a relatively easy to implement intervention that can lead to substantial changes in student behavior.

GOAL ATTAINMENT

Can students with EBD learn and utilize the SDLMI to make progress toward attaining self-selected goals related to their on-task behavior in the general education classroom?

The Goal Attainment Scaling (GAS; Kiresuk, Smith, & Cardillo, 1994) process was used to measure student progress towards attaining a self-selected behavior goal linked with the SDLMI intervention. The process involves establishing a behavior goal and specifying a range of outcomes or behaviors that indicate progress in achieving these

goals (Carr, 1979). For the purposes of this study, the goal was implementing on-task behaviors. Based on each student's targeted level of on-task behavior during a five or ten-minute interval, a rubric was created that operationally defined possible outcomes on a five-point scale ranging from the least favorable to most favorable outcome, with the expected outcome of the teacher and the researcher in the middle. For example, an expected outcome for an on-task goal was: Expected level of outcome (0 points): Student will utilize 3 out of 5 on-task behaviors 60-70% of 5-minute intervals over a 60-minute period in math class. Other outcomes ratings are much less than expected (-2), somewhat less than expected (-1), somewhat more than expected (+1), and much more than expected (+2). Each of the two parameters, number of on-task behaviors and percentage of intervals, were increased or decreased based on whether the rating described a more than expected or less than expected outcome. After each observation, the special education teacher and researcher together, and the student independently recorded the level of outcome the student had achieved towards the goal during that class period on a scoring sheet.

All four students learned to utilize the SDLMI to make progress on their self-selected goal related to their on task behavior in the general education classroom as judged by teachers and the students themselves. As shown in Table 11, for the majority of GAS ratings made by teachers, the students met or exceeded expectations. On average, students met or exceeded teacher expectations 86% of the time. The students' ratings of their own behavior were similar to the teachers'. On average, students met or exceeded their own expectations 87% of the time. This supports previous research that used GAS to measure goal attainment (Wehmeyer, et al., 2000). In their study,

Wehmeyer, et al, found that 75% of their participants met or exceeded their goal. However, the present study is the first to have students score their own GAS rubric in a natural setting and use it to evaluate their own progress towards their goal during Phase 3 of the intervention. The finding that there was high correspondence between student and teacher ratings suggests that students can accurately self-report on their goal attainment. The finding provides credibility for using the GAS with students with EBD and their teachers. Further, it suggests that students can use a tool such as the GAS to self-assess and to integrate data into their evaluation of their behavioral standing. Further research is needed on the use of GAS with this population.

Interestingly, all four students reached expected levels on their GAS rubric sooner than might be expected from previous research with other populations. All the students reached their goal of 80% on-task behaviors early in the intervention phase and each participant indicated in their evaluation phase (Phase 3) that they were ready to move on to another goal. Also, during their social validity interviews, all the students reported that the intervention process was too slow. When implementing SDLMI in the future, the data suggest that the intervention could be executed at a faster pace. Data also suggest that the SDLMI may need to be adapted to move at different paces for students with different disability characteristics. This will need to be further evaluated using different goals and different students.

GENERALIZATION

Does using the SDLMI change students' on-task behavior in the general education classroom generalize to other classes?

To assess generalization, each participant's on-task behavior was measured in a second general education classroom (all but one was a core academic classroom, the one exception was a drafting class) once during each phase of the study. All four students substantially increased levels of on-task behaviors between baseline and intervention in the generalization classroom and all were able to maintain the behaviors after the intervention was removed. This shows that the intervention impacted students' on-task behaviors in other non-targeted classrooms. It supports other self-determination research that has demonstrated that students generalized their learned behaviors to other settings (Arndt, et al., 2005; Konrad & Test, 2007; Lancaster, et al. 2002; Snyder & Shapiro, 1997; Test & Neale, 2004)

Generalization was also addressed by replicating the study in two schools (Horner, et al., 2005). This is important for external validity and provides further documentation of the relevance of this study for students with EBD.

GRADES IN TARGETED CLASSES

Does using the SDLMI to change students' on-task behavior in the general education classroom lead to collateral changes in their grades in that class?

Weekly grade reports were collected for each student in their targeted core general education classroom (e.g. math, English, science, or social studies) to determine

if there were collateral changes in grades due to SDLMI. Per school policy, the student's cumulative weekly grade was based on a weighted formula: 20% homework, 20% daily assignments, and 60% tests. Weekly grades were collected continuously through all three experimental conditions.

Examination of students' grades does not suggest a clear relationship between grades and the SDLMI intervention. However, based on anecdotal evidence from the classroom teachers, one cannot draw any conclusions about the effect of behavior on grades. The reliability and validity of the grades entered into the school's electronic database was questionable, per teacher report. The lack of a clear relationship between the SDLMI and grades was similar to the results of Mithaug & Mithaug's (2003) single subject study, in which they found that student directed instruction increased students use of self-management skills but not assignment completion rates. However, they found that the limited number of assignments completed during the student led to issues with drawing conclusions regarding the impact of the intervention on student's academic success. No other studies were found that targeted behavior change but also measured collateral academic effects with students with EBD.

There are a number of reasons why grades of students in this study may not have been a valid and reliable measure of the impact of the SDLMI on academic outcomes and these reasons should be considered in future practice and research. First, the way the grades were recorded made using weekly grades a very limited measure of students' actual academic performance. For example, the participants often failed to turn in work on time, but teachers also often failed to record grades on time or to update students' weekly grades once assignments were completed. This issue was uncovered in the

teacher interviews at the conclusion of the study. The four core general education teachers reported that they recalled significant increases in work completion, participation, and grades. However, when the researcher presented the grade averages from the online electronic system, the teachers were surprised, and in exploring their grade records, found that they had failed to enter grades when students had made up work. One teacher even reported that she had forgotten to change a six-week failing grade for a student who had submitted all of his work and had actually earned a passing grade. This suggests that the grades were not an accurate reflection of students' academic performance. Further research must evaluate other ways to assess the impact of interventions like the SDLMI on student achievement.

Second, the calculation of grades was a problem. Grades were weighted and the weights were mandated by the school district but varied by subject. For example, English was weighted more towards paper assignments while Math was more weighted towards tests. There was a lot more lag time in recording paper grades than test grades. Unfortunately, this lag period made grades insensitive to the intervention.

Third, as mentioned previously, it was difficult to get traction implementing the SDLMI. Students missed a number of class sessions because of personal/behavioral issues and school scheduling. It may have been that the missed time in targeted classes may have led to inaccurate recording of grades (e.g., teachers forgetting to update grades when students returned to class). Additionally, missing class time is linked with students' academic performance. For example, Charles also had specific learning disabilities and reported often becoming overwhelmed with falling behind in class work and academic skills because of missing class. When students miss class, they miss

important information and have assignments that they must make up, and as Charles described, mounting anxiety about being able to make up the assignments. Future intervention studies need to more systematically consider appropriate ways to measure grades as well as the issue of missing class time on academic and behavioral performance.

Fourth, improving classroom on-task behavior uncovered low academic skill levels in three students. Teachers reported that the skill levels were low enough to substantially affect the students' grades. In interviews, however, teachers reported that they were not aware of these skill deficits until students began to increase their on-task behavior, as is commonly cited in the literature; instead, the teachers assumed students had the skills and were just acting out rather than “covering” for a skill deficit. This was underscored by one of the teachers during her interviews. She had believed the target student was capable of doing the work, but was just "acting badly". It was only after he stopped “acting badly” that she was able to see that he did not have the basic skills to complete the assignments. This finding is important for future practice because it speaks to the need for teachers to recognize that behavioral issues may mask academic skill deficits. Also of worthy note is that as teachers became aware of these skill deficits, they immediately implemented remediation for the students. For example, one student was given extra help during class, another student received reading and writing services in a resource classroom, and the third received help on homework in his behavior class. However, while teachers all reported in interviews at the end of the study that after remediation, the student's grades improved, this was not demonstrated in the actual grades reported by the teachers. Further research is needed to explore how to support

teachers in recognizing skill deficits early, even when students have behavioral issues as well, as to better understand the relationship between teacher's perceptions of grades and actual reported grades. Research is also needed to explore the most appropriate remediation strategies when skill deficits are identified. Teaching self-determination skills to improve on-task behavior is not a substitute for teaching academic skills. Teachers reported being ill prepared to deal with the underlying skill deficits that emerged as on-task behavior increased.

Fifth, as discussed previously, on-task behavior cannot directly improve academic skills, but it can provide an environment that may help facilitate effective instruction that eventually improves academic performance. Considering that teachers and students believed that there was some academic improvement despite the poor grade results suggests the possibility that improved behavior may have provided a needed change in the environment for instruction. Evidence of this transformation came from the teachers in the interviews when they revealed that they believed, erroneously, that increased work completion, classroom engagement, and increased on-task behavior was leading to better grades. They all stated that their opinion of their student became more positive and that they had higher expectations for the student. One teacher even reported that the entire classes' academic performance had improved because of the improvement in the target student's behavior. Students also reported feeling more positive about their classroom performance despite unimproved grades. Jack even talked about his parents being happy about the changes in his behavior. Unfortunately, the academic instruction offered by their teachers was not enough to overcome the academic skill deficits in a way that improved the students' grades. It is possible that the positive behavior change may have

created a "halo" that lead to teacher's perceiving academic gains, even if such gains were not present. This "halo effect" could also contribute to an inaccurate assumption of student's academic progress that may have lead to ineffective remediation. For example, teachers may have believed there were changes in academic skills, when only behavioral changes were present, leading them to choose the wrong remediation strategies because of an inaccurate interpretation of student's academic skills or progress. Future research is needed that examines the impact of the SDLMI and behavior change on academic progress, as well as potential "halo effects" that may influence teacher perceptions of student's academic abilities.

Finally, future research must implement academic assessment strategies that are sensitive to students "true" academic standing. Grades will continue to be used in school, but they may not be the most accurate measure to assess academic impacts of an intervention like the SLMI. Other approaches, such as curriculum-based measurement (CBM), which allows for the evaluation of current student levels and the week-by-week assessment of the progress the students are making, may be more appropriate both in research and in practice. In this study, teachers were primarily relying on grades as evidence of a student's academic standing; however, when they further analyzed weekly grades, it was clear that the grades did not match with their perceptions of academic standing. Thus, teachers need to use accurate data-based measures of students' academic standing on an ongoing basis. This may also assist teachers in identifying skill deficits earlier. When a teacher uses CBM, he or she finds out the student's current level of performance and how well the student is progressing in learning the content for the academic year. CBM also monitors the success of the instruction the student is receiving

– if a student's performance is not meeting expectations, the teacher then changes the way of teaching to try to find the type and amount of instruction the student needs to make sufficient progress toward meeting academic goals.

SELF-DETERMINATION

What impact does the SDLMI have on the self-determination of students with EBD?

The *Arc's Self-determination Scale* (SDS; Wehmeyer & Kelchner, 1995) was implemented as a pre/post measure of each student's level of self-determination. The SDS is a 72 -item student self-report measure that contains four subscales, which measure the four essential characteristics of self-determination behavior: autonomy, self-regulation, psychological empowerment, and self-realization (Wehmeyer, 1996a). Each subscale score and a total score were tabulated with higher scores indicating higher levels of self-determination.

The impact of the SDLMI on overall self-determination as measured by the SDS was limited in this study. One student showed slight gains in his total self-determination score from pretest to posttest. He also showed slight gains in two subscales, self-regulation and self-realization. Two of the other three students showed slight gains on the self-regulation subscale. The fourth student's scores showed no change overall or on any subscale.

These findings are similar to two other self-determination studies that included students with EBD and used the SDS to assess changes in self-determination. Both

studies also found minimal impact of the intervention on SDS scores (Test & Neale, 2004; Wehmeyer & Lawrence, 1995). The only exception is a study by Wehmeyer, et al. (2000), where it was found that scores on the SDS improved after students were exposed to the SDLMI. However, this was a group study, with a much larger sample size that included students from multiple disability groups (intellectual disability, learning disability, and EBD).

There are several possibilities for the findings in this study. It is possible that the intervention did not impact students overall self-determination. However, the changes in students' on- and off-task behavior and their statements regarding the changes in their behavior after the intervention was completed do not support this hypothesis. Alternatively, it is possible that the SDS is not sensitive to changes in self-determination expressed by students with EBD. The assessment was developed for students with intellectual disability and researchers have indicated possible ceiling effects when the measure is implemented with students without cognitive disabilities (Shogren, Lopez, Wehmeyer, Little and Pressgrove, 2006). Further, it may have been the period of time between administrations of the SDS was not sufficient to detect changes. For example, in the Wehmeyer et al. (2000) study, the SDS was given at the beginning and end of the school year. In this study, only 25 weeks elapsed.

Whatever the explanation for the lack of results with the SDS, future research needs to explore alternative strategies for measuring changes in student self-determination, particularly given the anecdotal information suggesting that students significantly increased specific skills associated with self-determination (e.g., goal setting, self-evaluation, problem solving) as part of this study. For example, all students

successfully implemented self-management strategies that they developed through the SDLMI process in the classroom, which led to changes in their on and off-task behavior. Two of the students continued to implement these strategies even though significant emotional turmoil occurred in their personal lives during maintenance. Specifically both continued to have anxiety attacks that, according to teacher reports, would have led to significant problem behavior in the past. However, both students maintained their on-task behavior and self-determination skills and did not display the same level of problem behavior, as shown in the maintenance phase data. Also, a third student recovered from a steep decline in on-task behavior (see Figure 4) after the intervention was removed and substantially began applying self-determination skills (according to teacher and student report) to increase his on-task behavior during maintenance back to intervention levels without any outside influence. The fourth student continued to maintain high levels of on-task behaviors and diminished off-task behaviors despite the time gaps that existed for this student between intervention and observations because of poor attendance. Clearly, all of these students demonstrated changes in their ability to apply a number of self-determination skills (e.g., self-regulation, self-management, self-advocacy) to their lives as a result of the intervention, but this study lacked the means to adequately measure them. Future research to explore alternative ways to measure changes in self-determination, particularly with students with EBD, is needed.

CONTRIBUTIONS TO THE FIELD

This research expands findings from previous research regarding the utility of SDLMI and provides important new information on the relationship between self-determination and behavior. In addition, it offers preliminary insight into the relationship between student behavior and academic skills.

This study provides evidence of the success of using the SDLMI to set goals to increase the on-task and off-task behaviors of four Caucasian male high school students with EBD in a classroom setting. The teachers and students reported that they enjoyed the intervention and they would recommend it to others. These results provide further empirical evidence of the utility of using SDLMI and are consistent with previous SDLMI studies.

The establishment of a functional relationship between teaching self-determination skills and behavior is an important finding. Goal setting is a key element of self-determination instruction within the SDLMI. Setting goals and employing GAS to measure goal attainment in this study are consistent with previous SDLMI studies. However, this is the first time goals had been set targeting behavior in the general education classroom and the first time direct observation of behavior was used as a dependent variable in a SDLMI study. Previous research studied academic goals in the classroom and functional goals in non-classroom settings. The functional relationship between SDLMI and improved on-task behavior opens up new areas to explore in the quest to improve the life outcomes for students with EBD. Also, special education students had been included as participants in past studies of SDLMI but this is the first

time research had targeted students with EBD, offered discernable results for individual students, and used observational measures of their general education classroom behavior.

The study also offers preliminary insight into the relationship between behavior and academic outcomes. Since special education was established, there has been an interest in identifying the factors that influence academic achievement and behavior in students with EBD. The results of previous research have demonstrated a small relationship between externalizing behavior and academic skills. However, the direction of the influence is still not clear (Benner, Nelson, Allor, Mooney, & Dai, 2008; Nelson, Benner, Neill, & Stage, 2006). In this study, there was some evidence that suggested low levels of on-task and high levels of off-task behavior in the classroom might have served to mask underlying academic skill deficits. Three of the students were identified as having academic skills deficits (previously unidentified) by their teachers only after their on-task behavior began to increase and their off-task behavior began to decrease during the intervention phase. What is surprising, however, is that on-task behavior continued to improve and off-task behavior continued to decline despite the lack of improved academic skills of the participants. This suggests that while the behavior may have served the function of masking academic skill deficits, it may have also served additional functions for the student, functions that were addressed by the introduction of new skills to manage behavior in the classroom. For example, students may have had deficits in their ability to self-regulate their behavior as well as academic skill deficits, and through learning skills to manage and evaluate their on-task behavior, they were able to improve their behavior in the classroom. Three students showed slight increases in their self-regulation skills on the SDS self-determination assessment. This evidence, along with the

generalization results, and the observation data discussed earlier offers researchers tangible evidence that students can be taught to manage their behavior using the self-regulated problem solving strategy of SDLMI. This ability to regulate their environment may then offer students' with EBD the opportunity to address their academic skill deficits. Future research needs to explore the effects of teaching self-regulation on this possible dynamic relationship between behavior and academic success. That being said, it is also plausible that students may not have ever been taught how to manage their behavior in the classroom. It is also possible that their behaviors were maintained by negative environmental factors such as teacher perceptions, attitudes, and responses to the behavior, which may have changed over the course of the study. Teachers and students reported changes in their attitudes and interactions as a function of the intervention and its impact on on- and off-task behavior, during the social validity interviews.

Because the study was limited in time and because it was not the purpose of this study, it was not possible to explore further the relationship between behavior and academics. However, this study underscores the complexity of the relationship between behavior and academic skills that future research must address. For example, it would have been interesting to test the sustainability of behavioral changes with and without academic skill instruction targeting the newly identified deficit skill areas. In this study, teachers reported implementing instruction to improve the academic skill deficits, but this instruction had no impact on grades. However, as mentioned previously, grades may not have been learning valid and a reliable indicator of student learning. Further research is needed to explore systematically applying academic instruction after behavior has been

impacted by self-determination instruction and to explore alternative ways to measure changes in academic skills (as discussed previously). It is also interesting that all the students generalized increased on-task behaviors to other classes where researcher observation indicated they did not get additional academic assistance; this suggests the need to explore the functions of student on- and off-task behavior in greater depth in future research. Future longitudinal studies are also needed to explore if the students would have continued to sustain their on-task behaviors without improvements in their academic skill level.

LIMITATIONS

This study's data showed that the intervention, SDLMI, improved the on-task and off-task behaviors of students with EBD. However, there are a number of limitations that suggest a need for caution when interpreting these results.

First, only four students participated in this study. Given the small sample size, external validity is limited. However, this caution is somewhat mitigated by the replication of the study across two schools.

Second, the participants were all male Caucasians from two categories of EBD (depression and anxiety). This limits the ability to generalize results to other student populations with disabilities, including other categories of EBD, despite the positive outcomes for these four participants. Students with depression and anxiety tend to demonstrate more internalizing behaviors, as did the participants in this study. Future research is needed to explore the impact of the intervention on students who demonstrate

primarily externalizing behaviors. Students who demonstrate externalizing behaviors may have unique needs and face unique environmental challenges that could impact the success of interventions such as the SDLMI. There is also a need for diversity in the ethnicity, gender, and socioeconomic status of participants in future studies.

Third, intervention instruction was given individually to each student by the researcher in the same classroom where they received behavior support. The significant attention and encouragement provided as part of individualized instruction that focused on the on-task behaviors chosen by the student may have influenced the student's behavior independent of SDLMI instruction. The researcher may have had more time and resources to devote to the student than the teacher had. Relationships between the researcher and student may have been much more relaxed and trust easier and faster to develop because there is not an established history. Further research should explore having teachers implement the instruction and exploring differences in outcomes with other providers of instruction.

Fourth, the researcher's observations in the general education classroom could have also influenced the participants' behavior. I attempted to control for this by observing the student prior to baseline and extending baseline over a long period of time, which allowed the students to become accustomed to my presence in the classroom.

Fifth, because of resource constraints, generalization data were collected only on the on-task behavior in second academic general education classroom during all three conditions. Future research should include off-task behaviors and additional classrooms.

Sixth, attendance and achievement data were not collected. The schools would not provide the researcher access to this information, which could have been helpful in

further understanding the characteristics of the participants and the implementation of the intervention. Future research should explore these issues.

Finally, factors due to David's removal from English class after the intervention began may have diminished experimental control. His behavior in the replacement classroom, World Geography, showed a continuous trend across conditions that could restrict the evaluation of a functional relation between SDLMI and on- and off-task behavior. Nevertheless, there is other information in the graphs that suggests the establishment of the experimental control. For example, David demonstrated a reversal in the baseline trend in the last few data points in both on- and off-task behavior before the phase change. Furthermore, a clear and distinct difference in mean levels of on- and off-task behavior between conditions, the low magnitude of the slopes, the reduction of variability over time, and the maintenance of behaviors after the intervention was removed suggests experimental control was established.

IMPLICATIONS FOR FUTURE PRACTICE

The findings of this study have several implications for practice. First, the results of the study provide teachers of students with EBD evidence of an effective instructional strategy to improve behavior in the classroom. The SDLMI provides a direct instruction strategy that improves key self-regulation skills, an area commonly identified as a weakness for students with EBD. Another advantage of using SDLMI is that it offers a student a self-directed learning framework that can be used as a stand alone program or

can be used to wrap around academic curriculum, functional behavior programs, or, as this study has shown, to change classroom behavior of students with EBD.

Second, these findings suggest the need for the teacher or the person who implements SDLMI to know their student. Understanding the learning needs of EBD students is paramount to getting student buy-in and to effective implementation of the intervention. Sources of information about the student's needs include the student's IEP, tracking teacher, cooperating special education teacher, administration, parents, and especially the student. In this study, the best source was the student himself. Conducting a person centered planning session with each student provided the researcher with the on- and off-task behaviors the student wanted to work on in the classroom and provided ancillary information that was critical for personalizing the instruction and developing a trusting relationship.

Third, in this study the importance of collaboration with other professionals was tantamount for the effective implementation of the intervention. This collaboration does not have to be a tangible or a specific structured unit but it should be flexible and extend from the teacher to administration, to other teachers, and to Licensed Specialist in School Psychology (LSSP). Getting cooperation from other sources provides the teacher resources for feedback, understanding, and back up. In this study, collaboration for each student included an administrator at the district level, administrator at the school level, a special education teacher, two general education teachers, and an LSSP. Their professional assistance was voluntary and was accessed only at their convenience.

Fourth, the intervention was given by the researcher. The overall effectiveness of the intervention hinged on the ability of the researcher to provide all of the elements of

SDLMI instruction. However, with training, teachers can learn to incorporate individual components of self-determination in their curriculum as needed. For example, one of the special education teachers who had prior experience using SDLMI observed the researcher giving instruction on self-monitoring on-task behaviors in the classroom to one of the participants in the study. He incorporated self-monitoring into his social skills instruction for his other students and reported positive results. All it required was learning about the strategy and adding brief instruction to his curriculum. Professional development, preservice, and in-service teacher education should include strategies for incorporating SDLMI instruction into curriculum and the opportunity for supervised practice with these skills.

IMPLICATIONS FOR FUTURE RESEARCH

First, to validate the results of this study, a replication of it is warranted. It is recommended that future research be conducted in a different school setting and with age groups, such as elementary or middle school, with diverse EBD populations. This includes other ethnic groups, categories of EBD, and female participants.

Second, weekly grades were an ineffective means of measuring whether improving on-task behavior had any collateral effects on student academic progress. Unfortunately, how weekly grades are derived proved problematic and as a result, it is not clear whether changing classroom behavior changed students' academic progress. Future research will need to employ more reliable means of measuring changes in content area knowledge and skills.

Third, in this study anecdotal information suggested that improving behavior in the classroom revealed underlying academic skill deficits. The academic skill deficits were not directly addressed in this study, but improvements in on-task behavior were maintained. Because the study was limited in time, it is not clear whether the behavior would have been sustained beyond maintenance if low skills were not addressed. Future longitudinal studies are needed to determine if the students would have continued to sustain their on-task behaviors without improvements in their skill level and the relationship between classroom behavior and academic performance.

Fourth, this study shows that students with EBD can learn behavior skills from explicit instruction in a resource room with one-on-one instruction from a researcher. The individual attention given by the researcher during the intervention and the focus on one independent variable came from a specifically designed instruction. Future research needs to determine if SDLMI can be used to improve behavior in small groups or taken to the classroom and implemented as part of the curriculum designed by teachers.

Fifth, the SDS was used to determine if students' self-determination was impacted by SDLMI. The SDS is standardized measure generally used in large studies where sensitivity to small changes is not an issue. The results were inconclusive. Presently, there is no standard or non-standard measure of global self-determination that is sensitive to small changes in student behavior. Future research needs to focus on designing such an assessment.

Finally, the promising results of this study suggest the need for larger studies that include a control group to further analyze the degree to which the changes result from the intervention or from external factors.

SUMMARY

This study endeavored to determine if adolescent students with EBD could learn self-determination skills focused on increasing on-task behavior in the classroom and if learning these skills would lead to subsequent increases in their on-task behavior, decreases in their off-task behavior, achievement of better grades, realization of self-selected goals, and affect their self-determination. Over a 25-week period between October and April, four high school students between the ages of 14 and 16 with EBD who attended two different high schools were observed in their general education classrooms and received direct instruction in self-determination using the self-regulated, goal setting, and problem solving approach of SDLMI.

The multiple baseline data across participants design demonstrated a functional relation between SDLMI intervention and the on- and off-task behavior of these high school students with EBD. Specifically, all four students significantly increased on-task behaviors and decreased off-task behaviors and all four participants were able to maintain the increase/decrease after the intervention was withdrawn. Moreover, all four students made progress towards their individual goals and generalized the on-task behavior to a second general education classroom. Though the intervention was successful in increasing on- and off-task behavior, no consistent impact on students' grades and self-determination was found.

Despite a small number of limitations, the findings of the study provide important implications for practice and research. The study provides teachers of students with EBD evidence of effective instruction that supported improved behavior performance in the

classroom. Importantly, the SDLMI platform provides the strategy instruction and the framework necessary to support students with EBD to learn self-determination skills and improve their classroom behavior. Future research should focus on replicating the findings of this study and determine if the intervention results will generalize to other EBD populations. In addition, other settings and age groups need to be investigated. Finally, while the results of this study provided preliminary information on the relationship between academics and behavior, future research that addresses the extent of the relationship is needed before definitive statements can be made.

APPENDIX A

Participants' GAS Scoring Rubrics

Charles' Goal Attainment Scale Rubric

Goal: I will focus more in class in order improve my performance as a student in order to make better grades so I can remain on the wrestling team, graduate, and go to college with a wrestling scholarship.

Much more than expected outcome (+2)	Student will utilize 4 out of 5 on-task behaviors (e.g. paying attention to speaker, working on assigned task, self-monitor) 65-80% of 10-minute intervals over a 60-minute period in math class.
Somewhat More than expected outcome (+1)	Student will utilize 4 out of 5 on-task behaviors (e.g. paying attention to speaker, working on assigned task, self-monitor) 50-65% of 10-minute intervals over a 60-minute period in math class.
Expected Level of Outcome (0)	Student will utilize 3 out of 5 on-task behaviors (e.g. paying attention to speaker, working on assigned task, self-monitor) 50-65% of 10-minute intervals over a 60-minute period in math class.
Somewhat Less than expected outcome (-1)	Student will utilize 2 out of 5 on-task behaviors (e.g. paying attention to speaker, working on assigned task, self-monitor) 50-65% of 10-minute intervals over a 60-minute period in math class.
Much less than expected outcome (-2)	Student will utilize 2 out of 5 on-task behaviors (e.g. paying attention to speaker, working on assigned task, self-monitor) 50% or less of 10-minute intervals over a 60-minute period in math class.

Goal Assessment Scoring

Date	GAS Score	T-Scores

Jack's Goal Attainment Scale Rubric

Goal: I want to use more on-task skills/behaviors to increase focus in the classroom to make better grades

Much more than expected outcome (+2)	Student will utilize 4 out of 5 on-task behaviors (e.g. paying attention speaker, following directions, asking for help, complete class-work) 65-80% of 10-minute intervals over a 60-minute period in math class.
Somewhat More than expected outcome (+1)	Student will utilize 4 out of 5 on-task behaviors (e.g. paying attention speaker, following directions, asking for help, complete class-work) 50-65% of 10-minute intervals over a 60-minute period in math class.
Expected Level of Outcome (0)	Student will utilize 3 out of 5 on-task behaviors (e.g. paying attention speaker, following directions, asking for help, complete class-work) 50-65% of 10-minute intervals over a 60-minute period in math class.
Somewhat Less than expected outcome (-1)	Student will utilize 2 out of 5 on-task (e.g. paying attention speaker, following directions, asking for help, complete class-work) 50-65% of 10-minute intervals over a 60-minute period in math class.
Much less than expected outcome (-2)	Student will utilize 2 out of 5 on-task behaviors (e.g. paying attention speaker, following directions, asking for help, complete class-work) 50% or less of 10-minute intervals over a 60 minute period in math class.

Goal Assessment Scoring

Date	GAS Score	T-Score

David's Goal Attainment Scale Rubric

Goal: I want to implement on-task behaviors to make myself a better student and pass my courses

Much more than expected outcome (+2)	Student will utilize 4 out of 5 on-task behaviors (e.g. paying attention to speaker, asking for help, using appropriate materials, self-monitor) 70-80% of 5-minute intervals over a 60-minute period in math class.
Somewhat More than expected outcome (+1)	Student will utilize 4 out of 5 on-task behaviors (e.g. paying attention to speaker, asking for help, using appropriate materials, self-monitor) 60-70% of 5-minute intervals over a 60-minute period in math class.
Expected Level of Outcome (0)	Student will utilize 3 out of 5 on-task behaviors (e.g. paying attention to speaker, asking for help, using appropriate materials, self-monitor) 60-70% of 5-minute intervals over a 60-minute period in math class.
Somewhat Less than expected outcome (-1)	Student will utilize 2 out of 5 on-task behaviors (e.g. paying attention to speaker, asking for help, using appropriate materials, self-monitor) 60-70% of 5-minute intervals over a 60-minute period in math class.
Much less than expected outcome (-2)	Student will utilize 2 out of 5 on-task behaviors (e.g. paying attention to speaker, asking for help, using appropriate materials, self-monitor) 60% or less of 5-minute intervals over a 60 minute period in math class.

Goal Assessment Scoring

Date	GAS Score	T-Score

George's Goal Attainment Scale Rubric

Goal: I want to use more on-task behaviors to become a better student in the classroom so I can have a better future

Much more than expected outcome (+2)	Student will utilize 4 out of 5 on-task behaviors (e.g. seated facing teacher making eye contact, working on assigned tasks, asking for help) 65-80% of 5-minute intervals over a 60-minute period in math class.
Somewhat More than expected outcome (+1)	Student will utilize 4 out of 5 on-task behaviors (e.g. seated facing teacher making eye contact, working on assigned tasks, asking for help) 50-65 % of 5-minute intervals over a 60-minute period in math class.
Expected Level of Outcome (0)	Student will utilize 3 out of 5 on-task behaviors (e.g. seated facing teacher making eye contact, working on assigned tasks, asking for help) 50-65% of 5-minute intervals over a 60-minute period in math class.
Somewhat Less than expected outcome (-1)	Student will utilize 2 out of 5 on-task behaviors (e.g. seated facing teacher making eye contact, working on assigned tasks, asking for help) 50-65% of 5-minute intervals over a 60-minute period in math class.
Much less than expected outcome (-2)	Student will utilize 2 out of 5 on-task behaviors (e.g. seated facing teacher making eye contact, working on assigned tasks, asking for help) 50% or less of 5-minute intervals over a 60 minute period in math class.

Goal Assessment Scoring

Date	GAS Score	T-Score

APPENDIX B

The Arc's Self-Determination Scale

(Wehmeyer & Kelchner, 1995)

Student's name _____ Date _____

School _____ Teacher's name _____

Section I

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

1. I make my own meals or snacks.

I do not do even
if I have the chance

I do sometimes when I
have the chance

I do most of the time
I have the chance

I do every time
I have the chance

2. I care for my own clothes.

I do not do even
if I have the chance

I do sometimes when I
have the chance

I do most of the time
I have the chance

I do every time
I have the chance

3. I do chores in my home.

I do not do even
if I have the chance

I do sometimes when I
have the chance

I do most of the time
I have the chance

I do every time
I have the chance

4. I keep my own personal items together.

I do not do even
if I have the chance

I do sometimes when I
have the chance

I do most of the time
I have the chance

I do every time
I have the chance

5. I do simple first aid or medical care for myself.

I do not do even
if I have the chance

I do sometimes when I
have the chance

I do most of the time
I have the chance

I do every time
I have the chance

6. I keep good personal care and grooming.

I do not do even
if I have the chance

I do sometimes when I
have the chance

I do most of the time
I have the chance

I do every time
I have the chance

7. I make friends with other kids my age.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance
8. I use the post office.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance
9. I keep my appointments and meetings.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance
10. I deal with salespeople at stores and restaurants.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance
11. I do free time activities based on my interests.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance
12. I plan weekend activities that I like to do.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance
13. I am involved in school-related activities.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance
14. My friends and I choose activities that we want to do.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

16. I listen to music that I like.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

17. I volunteer in things that I am interested in.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

18. I go to restaurants that I like.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

19. I go to movies, concerts, and dances.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

20. I go shopping or spend time at shopping centers or shopping malls.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

21. I take part in youth groups (like 4-H, scouting, church groups)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

22. I do school and free time activities based on my career interests.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

23. I work on school work that will improve my career chances.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

24. I make long-range career plans.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not do even if I have the chance	I do sometimes when I have the chance	I do most of the time I have the chance	I do every time I have the chance

25. I work or have worked to earn money.
 I do not do even if I have the chance I do sometimes when I have the chance I do most of the time I have the chance I do every time I have the chance
-
26. I am in or have been in career or job classes or training.
 I do not do even if I have the chance I do sometimes when I have the chance I do most of the time I have the chance 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.
 I do not do even if I have the chance I do sometimes when I have the chance I do most of the time I have the chance I do every time I have the chance
-
28. I choose my clothes and the personal items I use every day.
 I do not do even if I have the chance I do sometimes when I have the chance I do most of the time I have the chance I do every time I have the chance
-
29. I choose my own hair style.
 I do not do even if I have the chance I do sometimes when I have the chance I do most of the time I have the chance I do every time I have the chance
-
30. I choose gifts to give to family and friends.
 I do not do even if I have the chance I do sometimes when I have the chance I do most of the time I have the chance I do every time I have the chance
-
31. I decorate my own room.
 I do not do even if I have the chance I do sometimes when I have the chance I do most of the time I have the chance I do every time I have the chance
-
32. I choose how to spend my personal money.
 I do not do even if I have the chance I do sometimes when I have the chance I do most of the time I have the chance I do every time I have the chance

Section II

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

33. **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.

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

Middle: _____

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

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

Middle: _____

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

36. **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.

37. **Beginning:** You are in a club at school. The club advisor announces that the club members will need to elect new officers at the next meeting. You want to be the president of the club.

Middle: _____

Ending: The story ends with you being elected as the club president.

38. **Beginning:** You are at a new school and you don't know anyone. You want to have friends.

Middle: _____

Ending: The story ends with you having many friends at the new school.

Section III

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.

39. Where do you want to live after you graduate?

I have not planned for that yet.

I want to live _____

List four things you should do to meet this goal:

1) _____

2) _____

3) _____

4) _____

40. Where do you want to work after you graduate?

I have not planned for that yet.

I want to work _____

List four things you should do to meet this goal:

1) _____

2) _____

3) _____

4) _____

41. What type of transportation do you plan to use after graduation?

I have not planned for that yet.

I plan to use _____

List four things you should do to meet this goal:

1) _____

2) _____

3) _____

4) _____

Section IV

Directions: Check the answer that BEST describes you. There are no wrong answers.

-
- | | | |
|--|----|---|
| 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. |
| 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. |
| 44. <input type="checkbox"/> I usually agree with people when they tell me I can't do something. | or | <input type="checkbox"/> I tell people when I think I can do something that they tell me I can't. |
| 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. |
| 46. <input type="checkbox"/> I can make my own decisions. | or | <input type="checkbox"/> Other people make decisions for me. |
| 47. <input type="checkbox"/> Trying hard at school doesn't do me much good. | or | <input type="checkbox"/> Trying hard at school will help me get a good job. |
| 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. |
| 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. |
| 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. |
| 51. <input type="checkbox"/> I don't know how to make friends. | or | <input type="checkbox"/> I know how to make friends. |
| 52. <input type="checkbox"/> I am able to work with others. | or | <input type="checkbox"/> I cannot work well with others. |
| 53. <input type="checkbox"/> I do not make good choices. | or | <input type="checkbox"/> I can make good choices. |
| 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. |
| 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. I will be able to work with others if I need to. or I will not be able to work with others If I need to.

57. My choices will not be honored. or I will be able to make choices that are important to me.

Section V

Directions: Tell whether each of these questions describes you or not. There are no right or wrong answers. Choose the one that BEST fits you.

58. I do not feel ashamed of any of my emotions. Agree Don't Agree

59. I feel free to be angry at people I care for. Agree Don't Agree

60. I can show my feelings even when people might see me. Agree Don't Agree

61. I can like people even if I don't agree with them. Agree Don't Agree

62. I am afraid of doing things wrong. Agree Don't Agree

63. It is better to be yourself than to be popular. Agree Don't Agree

64. I am loved because I give love. Agree Don't Agree

65. I know what I do best. Agree Don't Agree

66. I don't accept my own limitations. Agree Don't Agree

67. I feel I cannot do many things. Agree Don't Agree

68. I like myself. Agree Don't Agree

69. I am not an important person. Agree Don't Agree

70. I know how to make up for my limitations. Agree Don't Agree

71. Other people like me. Agree Don't Agree

72. I am confident in my abilities. Agree Don't Agree

APPENDIX C

Interval Recording Data Sheet

(G. Narcisse, 2007)

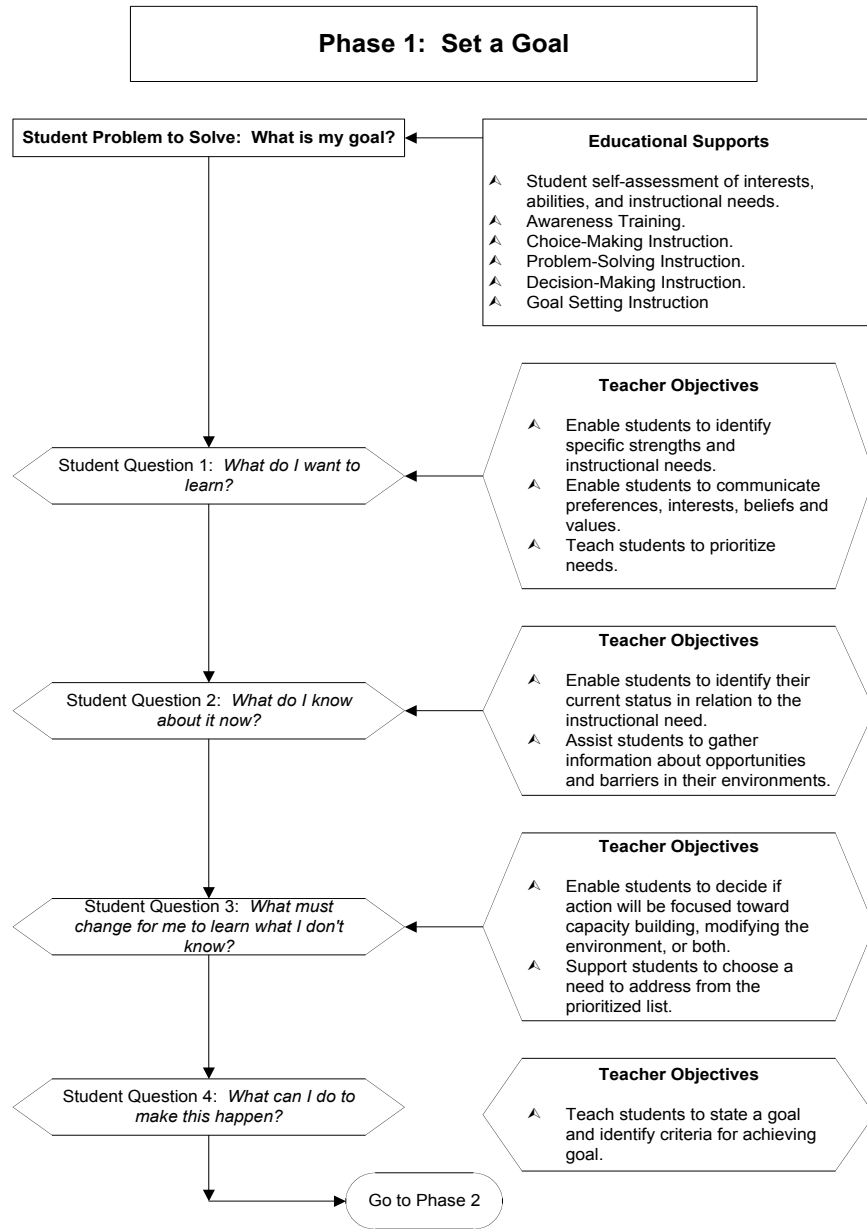
Student: _____ Date: _____
Behaviors: Challenging _____ Appropriate _____
Time Start: _____ Setting: _____
Observer: _____ Time End: _____
(Length of Intervals in Seconds) _____ 10 _____

Session #	10'	20'	30'	40'	50'	60'
C						
A						
C						
A						
C						
A						
C						
A						
C						
A						
C						
A						
C						
A						
C						
A						
C						
A						

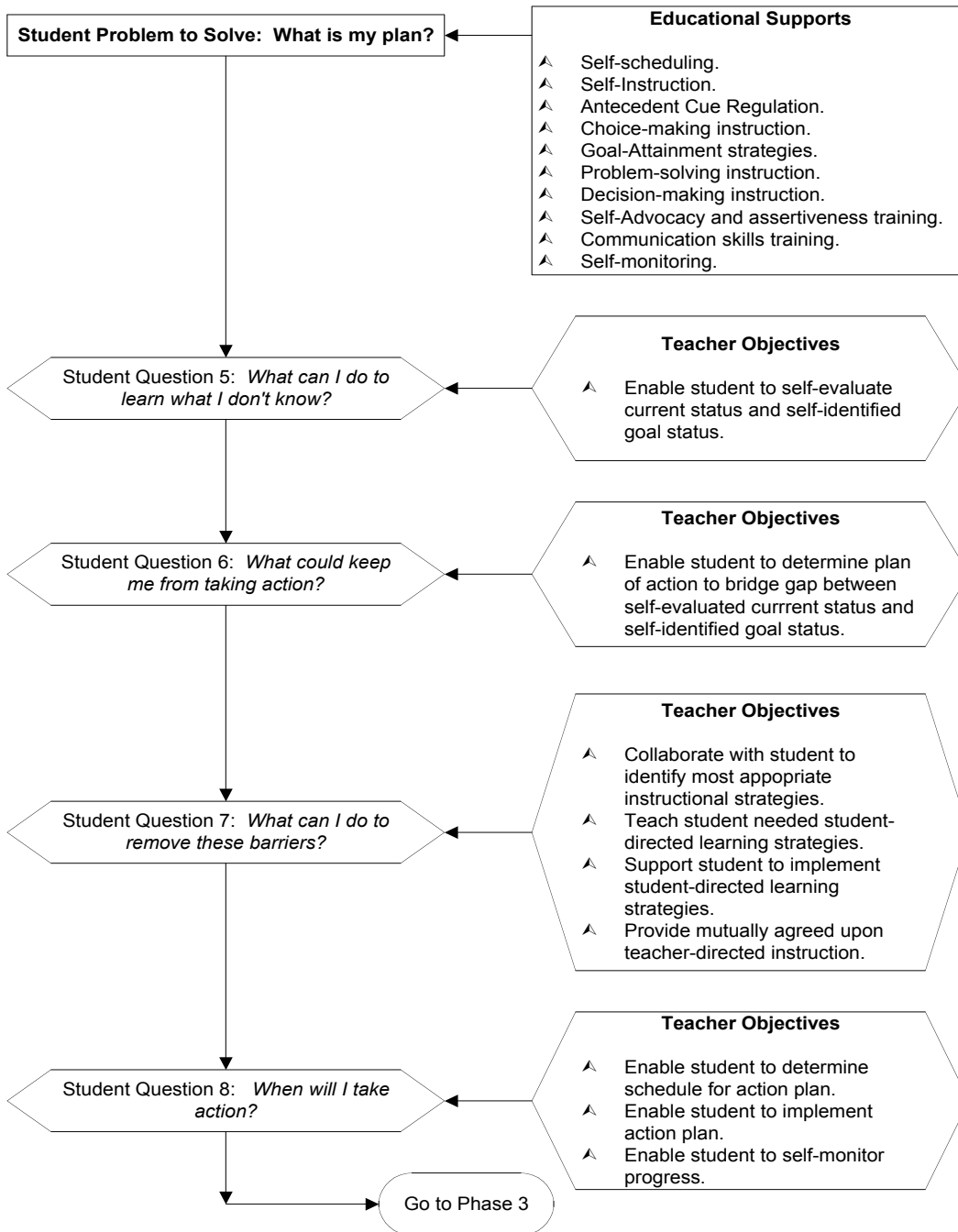
APPENDIX D

Phase Questions, Teacher Objectives, and Educational Supports

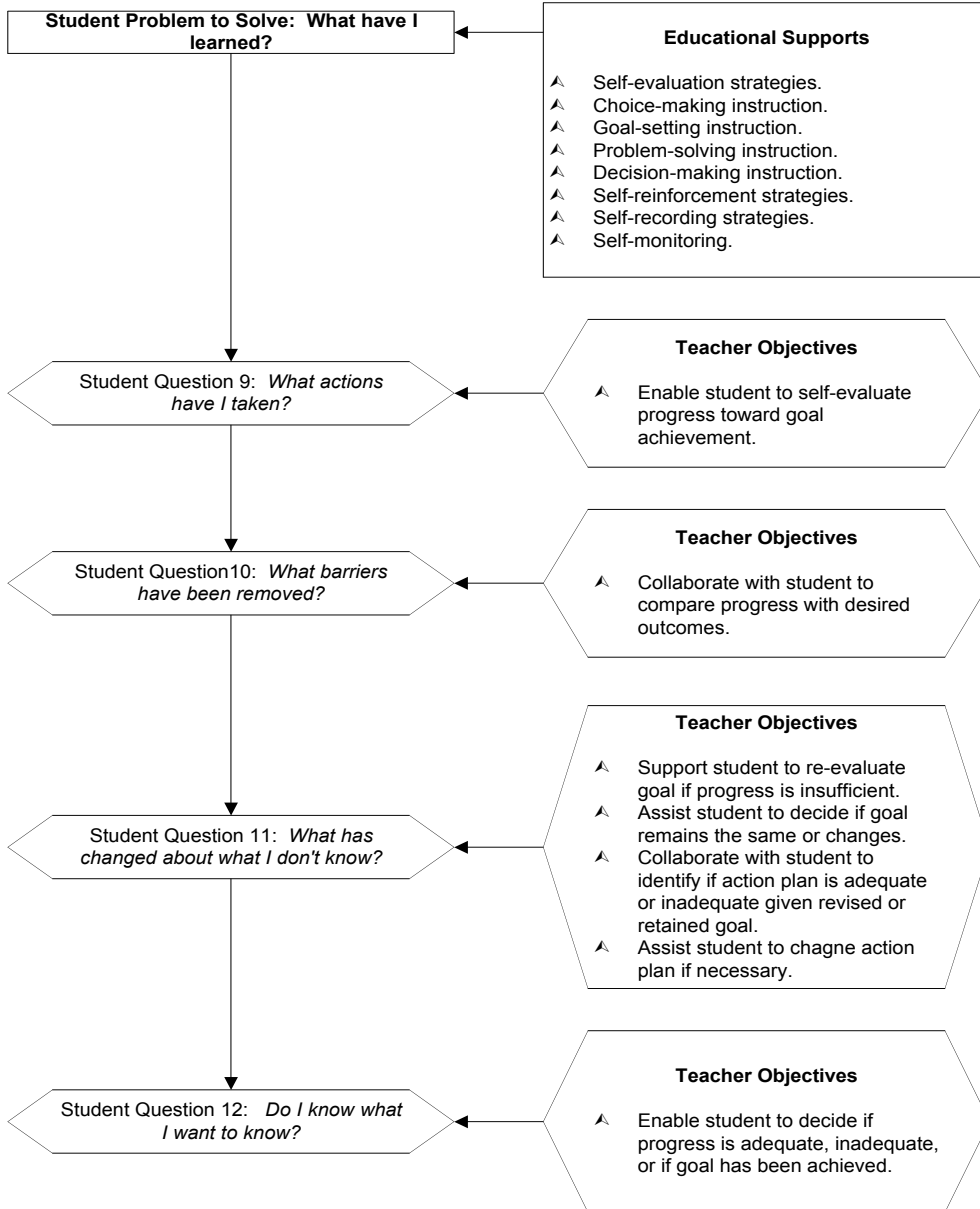
(Wehmeyer et al., 2004)



Phase 2: Take Action



Phase 3: Adjust Goal or Plan



APPENDIX E

Student Response Worksheets

The Self-Determined Learning Model of Instruction: Student Questions – Phase 1 – Set a Goal

(Wehmeyer et al., 2004)

Name _____

Date _____

(Date Phase 1 Began)

School _____

What is my goal? 🖱️ Let's try to identify something that you want to learn or improve on.



🖱️ Please answer the questions below.

1. What do I want to learn or improve on?

2. What do I know about it now?




3. What must change for me to learn what I don't know?





4. What can I do to make this happen?

☛ *I have listed a specific, measurable activity for student question 4 . This is my goal, the activity I will be working on during Phase 2 and Phase 3.*

End of Phase 1  **Go on to Phase 2**

**The Self-Determined Learning Model of Instruction:
Student Questions – Phase 2 –Take Action**

Name _____

Date _____

(Date Phase 2 Began)

School _____

What is my plan? 🖱️ Let's think about how to achieve the goal that you set.



🖱️ Please answer the questions below.

5. What can I do to learn what I don't know?



6. What could keep me from taking action?



7. What can I do to remove these barriers?



8. When will I take action?

🖱️ End of Phase 2. I will start working on my Plan and then go on to Phase 3.

End of Phase 2



Go on to Phase 3

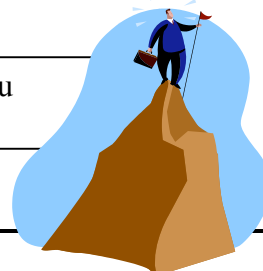
**The Self-Determined Learning Model of Instruction:
Student Questions – Phase 3 – Adjust Goal or Plan**

Name _____

Date _____
(Date Phase 3 Began)

School _____

What have I learned? 🖱️ Let's think about whether or not you achieved your goal



9. What actions have I taken?



10. What barriers have been removed?



11. What has changed about what I don't know?

12. Do I know what I want to know?



Did I finish my goal? Please mark in the bubble Yes No

If YES 🖱️ How did I feel about the results? _____

🖱️ **Now I will go back to Phase 1 and set a new goal.**

If NO 🖱️ I will look back at Phase 1 again. If the goal is still a good one for me, I will move on to **Phase 2** to revise my plan **OR** I can rewrite my goal or change it to a new goal.

Jack's Goal Setting & Attainment Monitoring

My Goal: I want to use more on-task skills/behaviors to increase focus in the classroom to make better grades

- Action Plan:
- 1) Talk with teacher about using IPOD and Drawing
 - 2) Use materials (IPOD & Drawing) appropriately
 - 3) Put into action on-task behaviors
 - 4) Complete Self-Monitoring sheet
 - 5) Score GAS Scale

Date: _____	None	Some	Most		
Use IPOD & Drawing appropriately?	0	1	2	3	4 %
Paying attention to speaker?	0	1	2	3	4 %
Following directions?	0	1	2	3	4 %
Asking for help?	0	1	2	3	4 %
Complete class-work?	0	1	2	3	4 %
% of time in a 60 minute period	25%	50%	75%	100%	

David's Self Monitoring Sheet

Date:

Class:

Goal: I want to implement on-task behaviors to make myself a better student and pass my courses

- Action Plan:
- 1) Talk with teacher about today's expectations
 - 2) Get Materials needed
 - 3) Determine when assignments are due
 - 4) Get out Timer and turn it on
 - 5) Review Your On-Task List and Begin Scoring

Score On-task Behaviors	5 min.	5 min.	5 min.	5 min.	5 min.	5 min.
1. Self Monitor On-Task Behaviors	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
2. Paying attention to speaker	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
3. Working on assigned tasks	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
4. Using appropriate materials	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
5. Asking for help	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
<hr/>						
	5 min.	5 min.	5 min.	5 min.	5 min.	5 min.
1. Self Monitor On-Task Behaviors	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
2. Paying attention to speaker	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
3. Working on assigned tasks	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
4. Using appropriate materials	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off
5. Asking for help	On / Off	On / Off	On / Off	On / Off	On / Off	On / Off

George's Goal Setting & Attainment Monitoring

My Goal: I want to use more on-task behaviors to become a better student in the classroom so I can have a better future

- Action Plan:
- 1) Talk with teacher about today's expectations
 - 2) Get Materials needed
 - 3) Use materials appropriately
 - 4) Complete Self-Monitoring sheet
 - 5) Score GAS Scale

Date: _____	None	Some	Most		
Self-Monitor On-task Behaviors?	0	1	2	3	4 %
Seated facing teacher/eye contact?	0	1	2	3	4 %
Working on assigned tasks?	0	1	2	3	4 %
Asking and answering questions?	0	1	2	3	4 %
Asking for help?	0	1	2	3	4 %
Complete class-work?	0	1	2	3	4 %
% of Time in 60 Minute period		25%	50%	75%	100%

APPENDIX G

Self-Monitoring Protocol

(C. Grimm, 2008)

Goal-setting Journal

Write **what** you are doing to meet your goal.

My Goal: _____

Date: _____ Am I working my goal? (Circle one) Yes or No

Date: _____ Am I working my goal? (Circle one) Yes or No

Date: _____ Am I working my goal? (Circle one) Yes or No

Date: _____ Am I working my goal? (Circle one) Yes or No


APPENDIX H

Treatment Fidelity Protocols

**The Self-Determined Learning Model of Instruction:
Teacher Objectives and Educational Supports – Phase 1 – Set a Goal**
(Wehmeyer et al., 2004)

Teacher Name: _____ Date _____
(Date Phase 1 Began)

Student Name: _____

 Please mark (✓) any Teacher Objectives that you met or targeted.

Student Question 1: What do I want to learn? – Teacher Objectives

- 1.1 Enable students to identify specific strengths and instructional needs
- 1.2 Enable students to communicate preferences, interests, beliefs and values
- 1.3 Teach students to prioritize needs



Student Question 2: What do I know about it now? – Teacher Objectives

- 2.1 Enable students to identify their current status in relation to the instructional need
- 2.2 Assist students to gather information about opportunities and barriers in their environments



Student Question 3: What must change for me to learn what I don't know? – Teacher Objectives

- 3.1 Enable students to decide if action will be focused toward capacity building, modifying the environment, or both
- 3.2 Support students to choose a need to address from the prioritized list



Student Question 4: What can I do to make this happen? – Teacher Objectives

- 4.1 Teach students to state a goal and identify criteria for achieving goal.

End of Phase 1  **Go on to Phase 2**

**The Self-Determined Learning Model of Instruction:
Teacher Objectives and Educational Supports – Phase 2 – Take Action**

Teacher Name: _____

Date _____
(Date Phase 2 Began)

Student Name: _____

☛ Please mark (✓) any Teacher Objectives that are met or targeted.

Student Question 5: What can I do to learn what I don't know? – Teacher Objectives

- 5.1 Enable students to self-evaluate current status and self-identified goal status.



Student Question 6: What could keep me from taking action? – Teacher Objectives

- 6.1 Enable students to determine plan of action to bridge gap between self-evaluated current status and self-identified goal status.




Student Question 7: What can I do to remove these barriers? – Teacher Objectives

- 7.1 Collaborate with student to identify most appropriate instructional strategies
- 7.2 Teach student needed student-directed learning strategies
- 7.3 Support student to implement student-directed learning strategies
- 7.4 Provide mutually agreed upon teacher-directed instruction



Student Question 8: When will I take action? – Teacher Objectives

- 8.1 Enable student to determine schedule for action plan
- 8.2 Enable student to implement action plan
- 8.3 Enable student to self-monitor progress

End of Phase 2  **Go on to Phase 3**

**The Self-Determined Learning Model of Instruction:
Teacher Objectives and Educational Supports – Phase 3 – Adjust Goal or Plan**

Teacher Name: _____

Date _____
(Date Phase 3 Began)

Student Name: _____

☛ Please mark (✓) any Teacher Objectives that you met or targeted.

Student Question 9: What actions have I taken? – Teacher Objectives

- 9.1 Enable students to self-evaluate progress toward goal achievement



Student Question 10: What barriers have been removed? – Teacher Objectives

- 10.1 Collaborate with student to compare progress with desired outcomes



Student Question 11: What has changed about what I don't know? – Teacher Objectives

- 11.1 Support student to re-evaluate goal if progress is insufficient
 11.2 Assist student to decide if goal remains the same or changes
 11.3 collaborate with student to identify if action plan is adequate or inadequate given revised or retained goal
 11.4 Assist student to change action plan if necessary



Student Question 12: Do I know what I want to know? – Teacher Objectives

- 12.1 Enable student to decide if progress is adequate, inadequate, or if goal has been achieved

☛ **Did the student finish their goal?** Please mark in the bubble Yes No

The student can now go back to Phase 1 and set a new goal (if they finished this goal) or revise their goal or action plan if they did not achieve their goal.

APPENDIX I

Social Validity Questions for Students

(Wehmeyer & Shogren, 2009)

- 1) Did you meet your goal?
- 2) What did you learn about setting goals?
- 3) How did setting goals help you in your regular classes?
- 4) Did setting a goal help you focus academically?
- 5) How did you feel when you successfully completed the goal?
- 6) Will you continue to use goal setting in your classes or at home to be more successful?
What goals will you set next?
- 7) How quickly did you achieve your goals with the goal setting sheets?
- 8) Do you feel the goals you set yourself were easier or harder to reach than the goals your teachers or parents set for you? Why or why not?
- 9) Was the instruction in setting goals too slow, too fast, or just right?
- 10) Would you recommend goal setting to other students?

APPENDIX J

Social Validity Questions for Teachers

(Wehmeyer & Shogren, 2009)

- 1) How did the process of using the SDLMI intervention (goal setting using self-monitoring and timer) work for your students? Describe how students reacted to the use of the intervention. Did you see evidence of the intervention such as the timer and the self-monitoring?

- 2) Remember last semester when I interviewed you concerning the behaviors of the student and we discussed behaviors you would like the student to exhibit in the classroom. Did you notice any changes in these behaviors? Did it seem like the intervention was connected to those changes?

- 3) Did the student show any changes in any other behaviors (better attendance, focus more on class work, completion of assignments, self-confidence, self-advocacy, interaction with peers) while he was participating in the intervention?

- 4) Were there any changes in the classroom as a result of the changes in the student's behavior? For example, did your perceptions of the student change? Did his/her peer's perceptions change?

- 5) Did the goals the student was working on, to be on-task in class, fit with the goals you have as a teacher for student learning? Would you be interested in learning more about the use of this SDLMI intervention (goal setting with self-monitoring) with students next year? Do you see any potential long-term benefits for students who learn these skills?

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