

EFFECTS OF A MULTIMEDIA GOAL-SETTING INTERVENTION ON STUDENTS'  
KNOWLEDGE OF THE SELF-DETERMINED LEARNING MODEL OF  
INSTRUCTION AND DISRUPTIVE BEHAVIOR

By

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## ABSTRACT

VALERIE LEIGH MAZZOTTI. Effects of a multimedia goal-setting intervention on students' knowledge of the Self-Determined Learning Model of Instruction and disruptive behavior. (Under the direction of DR. DAVID W. TEST)

Preadolescence is a critical time in the life of children because during this time individuals experience increased social pressure and make decisions that lead to lasting peer relationships (Farmer et al., 2008). Students at-risk for, or with, emotional disturbance during preadolescence struggle to adjust socially, behaviorally, and academically, and often make choices about relationships that support problem behaviors (Farmer et al., 2008). One of the most difficult challenges classroom teachers confront is dealing with these problem behaviors (Alberto & Troutman, 2009). Research has suggested that incorporating self-determination into the curriculum and explicitly teaching self-determination skills as early as preschool may be one method for preventing ED in children (Clark, Olympia, Jensen, Heathfield, & Jenson, 2004; Forness et al., 2000). When students with ED have limited self-determination skills, behavior problems tend to be more apparent (Pierson, Carter, Lane, & Glaeser, 2008); therefore, teaching self-determination to students with ED has the potential to improve behavior.

This study examined the effects of a computer-assisted multimedia goal-setting intervention on students' knowledge of the Self-Determined Learning Model of Instruction and disruptive behavior. Results indicated a functional relationship between the independent variable and dependent variables. Social validity data suggested that teachers and participants felt the intervention was of social importance. Finally, limitations, suggestions for future research, and implications for practice are provided.

## DEDICATION

I would like to dedicate this dissertation to my wonderful and supportive husband for sticking by my side through it all, putting up with my stress, and being understanding and supportive in all that I have worked to accomplish. Chris, you are my best friend, and we are now onto our next journey in life. I would also like to dedicate this dissertation to my brother, dad, mom, and mother-in-law for always believing in me and knowing that I could attain my goals. Thank you all for your love and support in keeping me grounded and focused on the important things in life.

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## CHAPTER 1: INTRODUCTION

### **Statement of the Problem**

Preadolescence is a critical time in the life of children because during this time students experience increased social pressure and make decisions that lead to lasting peer relationships (Farmer et al., 2008). Students at-risk for, or with, emotional disturbance (ED) during preadolescence struggle to adjust socially, behaviorally, and academically, and often make choices about relationships that support problem behaviors (Farmer et al., 2008). One of the most difficult challenges classroom teachers confront is dealing with these problem behaviors (Alberto & Troutman, 2009). From the time children begin school, they are expected to meet not only teachers' academic expectations, but behavioral expectations as well. When behavioral expectations are not met, students face increased risk for negative outcomes (e.g., poor peer relationships, increased office referrals, suspensions, referral to special education, assignment to self-contained settings, incarceration; Lane, Wehby, & Cooley, 2006). Specifically, data from Wave 4 of the National Longitudinal Transition Study-2 (NLTS2; 2009) indicated: (a) 80.7% of students with ED were suspended or expelled in high school; (b) 23.3% dropped out because of failing grades or low academic achievement; (c) 28.3% dropped out because of contemptible relationships with teachers, staff, or peers; (d) 45.6% had been arrested; and (e) 31.5% had been on probation.

Eventually, these negative outcomes can be detrimental for students at-risk for, or with, ED in that they often lead to poor post-school outcomes. For example, post-school outcomes for youth with ED indicate that 45.6% continue to live at home after high school, only 13.8% have graduated or completed a program at a 2-year college, and only 2.6% were enrolled in a 4-year university (NLTS2, 2009). While post-school employment rates are more promising, indicating that 66% of youth with ED have had a paid job a year or more after high school; only 38.2% have maintained employment for more than 12 months, and 35.2% had been fired from a job since high school (NLTS2, 2009). Because of these poor in-school and post-school outcomes, it becomes increasingly important to address problem behaviors early to prevent students from being identified with ED and improve in-school and post-school outcomes for students with ED. This requires implementation of systematic interventions that reduce or prevent problem behaviors without interrupting delivery of classroom instruction (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004).

### **Self-Determination Interventions**

Research has suggested that incorporating self-determination into the curriculum and explicitly teaching self-determination skills as early as preschool may be one method for preventing ED in children (Clark, Olympia, Jensen, Heathfield, & Jenson, 2004; Forness et al., 2000). When students with ED have limited self-determination skills, behavior problems tend to be more apparent (Pierson, Carter, Lane, & Glaeser, 2008); therefore, teaching self-determination to students with ED has the potential to improve behavior. Additionally, teaching self-determination skills to students with disabilities in-school has been significantly correlated with positive post-school success in the areas of

employment and education (Halpern, Yovanoff, Doren, & Benz, 1995; Wehmeyer & Schwartz, 1997). In order to understand the construct of self-determination, it is important to recognize the components that comprise self-determination: (a) choice-making; (b) decision-making; (c) problem-solving; (d) goal-setting and attainment; (e) independence, risk-taking, and safety; (f) self-regulation/self-management; (g) self-instruction; (h) self-advocacy and leadership; (i) internal locus of control; (j) positive attributions of efficacy and outcome expectancy; (k) self-awareness; and (l) self-knowledge (Wehmeyer & Schalock, 2001).

Self-determination interventions for students with behavior problems have included a variety of strategies, such as self-advocacy (e.g., Test, Fowler, Brewer, & Wood, 2005), goal-setting (e.g., Barry & Messer, 2003; Martin et al., 2003; Mazzotti, Wood, et al., 2009), and choice-making (e.g., Jolivette, Wehby, Canale, & Massey, 2001; Mazzotti, Test, Wood, & Richter, 2009). Unfortunately, research on teaching self-determination skills to students with disabilities has primarily focused on adolescents (i.e., older than 12 years) and is limited for preadolescent and young children (Palmer & Wehmeyer, 2003; Test, Fowler, Brewer, & Wood, 2005).

### **Goal Setting and Self-Determined Learning Model of Instruction**

One component of self-determination that research has demonstrated instructionally effective is goal-setting. Goal-setting has been defined as a self-mediated strategy which allows students to self-select and set personal goals that relate to improving behavior and/or academic outcomes (Mooney, Ryan, Uhing, Reid, & Epstein, 2005; Ryan, Pierce, & Mooney, 2008). Ryan et al. (2008) indicated that self-mediated interventions (i.e., goal-setting, self-monitoring, self-evaluation, self-instruction, and

strategy instruction) are an evidence-based practice for students with ED. Additionally, teaching students with disabilities to self-set goals may promote self-determination skills and increase personal accountability for students' actions (Snyder & Shapiro, 1997).

Research has supported the use of goal-setting as an effective self-determination strategy for improving the academic and behavior skills of students at-risk for, or with, ED. First, Barry and Messer (2003) used a multiple baseline across participants design to determine the effect of a self-management intervention on students' academic performance and on-task behavior. The intervention consisted of the teacher and student identifying problem behaviors and setting behavior goals. Results indicated that when students identified problem behaviors and set behavior goals, academic performance and on-task behavior improved and disruptive behavior diminished. Second, in a literature review conducted by Mooney et al. (2005), self-management interventions for improving academic skills of students with ED were identified. Results indicated that goal-setting was the least used self-management intervention, and only one study used goal-setting independently; however, goal-setting was used in combination with other self-management interventions (e.g., self-instruction, strategy instruction, self-monitoring) and showed positive results for improving academic skills of students with ED. Furthermore, in a literature review conducted by Briesch and Chafouleas (2009), self-management interventions to improve problem behavior of students at-risk for, or with, disabilities were identified. Of the 30 studies reviewed, 16 included students at-risk for, or with, ED. Goal-setting, in combination with other self-management interventions (e.g., self-evaluation, self-monitoring), was used consistently across the studies. Results

showed positive results for improving problem behavior of students at-risk for, or with, ED.

Although goal-setting has been taught using various instructional methods (e.g., small group and one-on-one instruction using a model, lead, test format, self-setting goals based on teacher request and performance feedback, self-management intervention packages), one specific intervention that has been used to teach students goal-setting is the Self-Determined Learning Model of Instruction (SDLMI). The SDLMI is an instructional model that teachers can use to “teach students to become self-regulated problem-solvers, to self-direct instruction toward self-selected goals, and gain enhanced self-determination” (Agran, Blanchard, & Wehmeyer, 2000, p. 353). The model includes three instructional phases that involve students setting a goal, making a plan to address the goal, and making necessary changes to the goal to successfully meet the goal (Agran, Cavin, Wehmeyer, & Palmer, 2006).

Several studies support the use of the SDLMI as an effective model for teaching students with disabilities to self-set goals (Agran et al., 2000; Agran, Blanchard, Wehmeyer, & Hughes, 2002; Agran et al., 2006; Fowler, 2008; McGlashan-Johnson, Agran, Stilington, Cavin, & Wehmeyer, 2004; Palmer & Wehmeyer, 2003). For example, Agran et al. (2000) found when transition-aged students with disabilities were taught the SDLMI process, the mean group performance on targeted behaviors (e.g., academic skills, following directions, responding appropriately to criticism, improving conversational skills) improved. Next, Agran et al. (2002) found when middle school students with autism, intellectual disabilities, or multiple disabilities were taught the SDLMI, students were able to self-set goals and target classroom behaviors (i.e., increase

appropriate touching, follow directions, contribute to class) improved. Additionally, Palmer and Wehmeyer found that teaching elementary students at-risk for or with disabilities to self-set academic and behavior goals (e.g., following directions, writing name, spelling, number concepts) using the SDLMI was effective for improving students' goals based on the *Goal Attainment Scaling* (GAS) completed by teachers.

In all of these studies, the SDLMI was taught using traditional instructional methods, which included teacher directed: (a) large group and one-on-one classroom instruction (Palmer & Wehmeyer, 2003); (b) small group classroom instruction (Agran et al., 2006; Fowler, 2008); (c) small group instruction at job training sites (Agran et al., 2000); (d) one-on-one instruction at job sites (McGlashing-Johnson et al., 2003); or (e) one-on-one classroom instruction (Agran et al., 2002). Even though these methods have been effective for increasing the goal-setting and self-determination of students with disabilities, it may be advantageous to teach the SDMLI using computer-assisted instruction (CAI). However, to date, research involving CAI to teach students goal-setting using the SDLMI is limited to one study (Mazzotti, Wood, et al., 2009).

CAI would allow general education teachers to incorporate self-determination into the curriculum without losing valuable instructional time. CAI has been defined as “the use of a computer and other associated technology with the intention of improving students' skills, knowledge, or academic performance” (Okolo, Bahr, & Rieth, 1993, p. 1) and is synonymous with terms such as computer-based instruction, computer-mediated instruction, interactive hyper-media instruction, and multimedia instruction. CAI offers an interactive format that can provide examples and feedback to students, while including multiple components, such as graphics, photographs, audio, text, and video (Hutcherson,

Langone, Ayres, & Clees, 2004). In addition to inclusion of these components, CAI often incorporates other specific instructional strategies, including: (a) direct instruction (e.g., Ayres, Langone, Boon, & Norman, 2006; Langone, Shade, & Clees, 1999), (b) modeling (e.g., Mechling, 2004; Mechling & Cronin, 2006); (c) corrective feedback (e.g., Ayers et al., 2006; Mechling, Gast, & Cronin, 2006); positive reinforcement (e.g., Mechling et al., 2006; Mechling, Gast, & Krupa, 2007); constant time delay (e.g., Hutcherson et al., 2004; Mechling et al., 2007); and/or least prompts (e.g., Mechling, Gast, & Langone, 2002).

There are several advantages to using CAI as an instructional tool for students at-risk for, or with, ED. First, it can be used as a method for delivering instruction on new skills (Fitzgerald, Koury, & Mitchem, 2008). Second, CAI gives teachers the opportunity to expand traditional modes of delivering instruction (Elder-Hinshaw, Manset-Williamson, Nelson, & Dunn, 2006). In a survey of elementary and secondary teachers about incorporating CAI into classroom instruction, teachers felt CAI was a valuable tool that did not inhibit student performance during traditional instruction (Wozney, Venkatesh, & Abrami, 2006). Other advantages of using CAI include: (a) use as a skill building tool to provide individualized explicit instruction of specific skills (Bender & Bender, 1996; Boon, Fore, Blankenship, & Chalk, 2007); (b) promoting active student engagement (Boon et al., 2007; Hutcherson et al., 2004; Mechling, 2005); and (c) has been shown to increase students' motivation, self-efficacy, and on-task behaviors (Bender & Bender, 1996; Boon et al., 2007; Cumming et al., 2008 ). Finally, research has shown that CAI is an effective strategy for teaching students at-risk for, and with, disabilities various skills such as: (a) life skills (e.g., Mechling et al., 2007; Mechling & Ortega-Hurndon, 2007); (b) social skills (e.g., Sansosti & Powell-Smith, 2008; Simpson,

Langone, & Ayres, 2004); (c) math skills (e.g., Fuchs et al., 2006; Yao, 2006); and (d) reading skills (e.g., Coleman-Martin, Heller, Cihak, & Irvine, 2005; Kim et al., 2006).

Although CAI has been an effective strategy for teaching academic and life skills to students at-risk for, or with, disabilities, teachers frequently fail to provide instruction that increases self-determination skills of students with disabilities. Specifically, in a survey by Wehmeyer, Agran, and Hughes (2000), middle and high school teachers of students with disabilities indicated that the components of self-determination were important in preparing students for post-school life, but the percent of teachers actually teaching self-determination skills ranged from 30% to 70%. Additionally, in a recent survey by Stang, Carter, Lane, and Pierson (2009), general and special education teachers of elementary and middle school students with disabilities indicated that incorporating self-determination into the curriculum was very important and rated goal-setting as an extremely important component to include in the curriculum. Unfortunately, this group of teachers indicated that they rarely taught self-determination skills (Stang et al., 2009). Therefore, finding a convenient and acceptable way to add self-determination to the curriculum is an important goal that may be met through the use of CAI.

### **Computer-Assisted Instruction and Self-Determination**

Several studies have investigated CAI as an effective instructional method for teaching self-determination skills to students with disabilities. First, two studies investigated the use of an interactive hyper-media program to teach students with disabilities self-advocacy skills to promote student involvement in the Individualized Education Program (IEP) process (i.e., Hammer, 2004; Lancaster, Schumaker, & Deshler, 2002). Hammer used a multiple baseline across participants design to teach the

*Self-Advocacy Strategy* via an interactive hyper-media program to three adolescent students with LD and ADD. Results were effective for teaching students to participate in their IEP; however, researchers only collected 2 data points during intervention. Additionally, generalization and maintenance data were not collected. Lancaster et al. (2002) used a multiple probe across participants design replicated across experimental groups to examine the effects of an interactive hyper-media *Self-Advocacy Strategy* program on student's use of the strategy. Results indicated that teacher instructional time was considerably limited when compared to teacher-directed instruction, students were able to learn the skills to participate in their IEP meetings, and the CAI program was effective for teaching students about the concept of self-advocacy. Limitations included lack of maintenance data, and that the intervention was not conducted in a classroom setting.

Second, two studies investigated the use of CAI to teach secondary students with disabilities to make informed choices regarding options for post-school life (i.e., Mazzotti, Test, et al., 2009; Richter, 2008). Richter (2008) used a multiple probe across participants design to investigate the effects of a multimedia social stories intervention on students' knowledge of options for post-school life in the areas of education, employment, independent living, and recreation. The study included three high school students with significant cognitive disabilities, and results indicated that the multimedia social stories intervention was effective for increasing students' knowledge about post-school outcomes and opportunities. Mazzotti, Test, et al. (2009) used a multiple probe across behaviors design replicated across participants to examine the effects of a CAI program on students' knowledge of post-school options and supports in the areas of

education, employment, and independent living. The study included four students with mild or moderate cognitive disabilities participating in a specialized curriculum. Results indicated CAI was effective for teaching students about options for post-school life. Additionally, students were able to generalize the information by articulating choices for life after high school in the areas of education, employment, and independent living.

Finally, two studies have investigated the use of CAI to teach students with behavior problems goal-setting skills to improve aggressive behavior (Fitzgerald & Werner, 1996; Mazzotti, Wood, et al., 2009). First, Fitzgerald and Werner (1996) used an AB design to teach an adolescent male with a mild cognitive disability to self-set behavior goals to reduce aggressive behavior. The intervention included the use of an interactive hyper-media program developed based on a self-management strategy. Results indicated that the interactive hyper-media program was effective for promoting student's awareness of the problem behavior, and the student showed increased ability to use self-monitoring. However, there were several limitations to this study in that it only included one participant and an AB design was used, which does not allow for identification of a functional relationship.

Second, Mazzotti, Wood, et al. (2009) used a multiple probe across participants design to teach preadolescent students with behavior problems to self-set behavior goals to reduce disruptive classroom behavior. Participants included three students with disabilities participating in a general classroom setting, who were identified by the general education teacher as having chronic behavior problems. The intervention used a CAI version of the SDLMI and measured students' knowledge of the SDLMI and students' disruptive behavior. Results indicated a functional relationship between the

computer-assisted SDLMI and students' increased knowledge of the SDLMI and decreased levels of disruptive behavior suggesting the intervention was an effective strategy. However, there were several limitations to this study including: (a) behavior data were only collected in one general classroom setting during one class period, limiting generalizability and social significance of the intervention; and (b) Microsoft Word<sup>®</sup> 2007 was used to record participants responses to the intervention, which was found to be time consuming and laborious for participants. Recommendations for future research included conducting systematic replications of the study, evaluating setting/situation generalization of students' behavior in other classroom settings, and identifying alternative technological methods for recording students' responses during the intervention.

### **Significance and Contributions**

This study will be a systematic replication of Mazzotti, Wood, et al. (2009) and will contribute to the research in the area of self-determination for preadolescent students at-risk for, or with, ED. As a systematic replication of Mazzotti, Wood, et al. (2009), this study will further contribute to the literature by offering a computer-assisted multimedia self-determination intervention that teachers can use to incorporate self-determination into the general education curriculum. While there have been several interventions using the SDLMI to teach students with disabilities to self-set goals (i.e., Agran et al., 2000; Agran et al., 2002; Agran et al., 2006; Agran et al., 2008; Fowler, 2008; McGlashing-Johnson et al., 2004; Palmer & Wehmeyer, 2003), only one study has used CAI to teach the SDLMI to students with behavior problems (Mazzotti, Wood, et al., 2009). Since teachers frequently fail to provide instruction that increases self-determination skills

(Stang et al., 2009; Wehmeyer et al., 2000), finding a convenient and acceptable method for adding self-determination to the curriculum is an important goal that may be met with CAI. Therefore, this systematic replication will address the need to teach self-determination skills to preadolescent students at-risk for, or with, ED, as well as the need for an effective, efficient method for teaching self-determination skills in general education classrooms.

Next, while previous research has used CAI to teach self-determination skills to students with disabilities (i.e., Fitzgerald & Werner, 1996; Hammer, 2004; Lancaster et al., 2002; Mazzotti, Test, et al., 2009; Mazzotti, Wood, et al., 2009; Richter, 2008), only two studies have investigated the use of CAI to teach goal-setting to students with behavior problems (Fitzgerald & Werner, 1996; Mazzotti, Wood, et al., 2009). Because the Fitzgerald and Werner (1996) study included only one participant and did not use a single-subject design that allowed for identification of a functional relationship, this study will contribute to the literature because a multiple probe across participants design was used to teach students at-risk for, or with, ED to self-set behavior goals using CAI to improve disruptive behavior. Furthermore, Mazzotti, Wood, et al. (2009) only collected behavior data in one general education setting limiting generalizability of findings. As a systematic extension of Mazzotti, Wood, et al. (2009), this study will address this limitation by collecting data on participants' behavior in other general education settings to determine the extent to which goal-setting reduces disruptive behavior in non-trained classroom settings. Additionally, Mazzotti, Wood, et al. (2009) suggested that future research use an alternative technological method for recording participant responses during CAI. This study will address this issue because it will use Camtasia Studio<sup>®</sup>, a

screen recording software, to record participant responses. Finally, there has been no research to determine if CAI has an effect on students' level of self-determination. This study will address this need.

### **Purpose**

Based on the lack of research using CAI to teach goal-setting to students at-risk for, or with, ED and the need for an efficient method that can be used by general education teachers to incorporate self-determination into the curriculum, the purpose of this systematic extension will be to examine the effects of a computer-assisted multimedia goal-setting intervention on students' (a) knowledge of the SDLMI, (b) disruptive behavior, and (c) level of self-determination with preadolescent students at-risk for, or with, ED.

**Research questions.** The study sought to answer the following research questions:

1. What is the effect of a computer-assisted multimedia goal-setting intervention on knowledge of the SDLMI for preadolescent students at-risk for, or with, ED?
2. What is the effect of goal-setting on students' disruptive classroom behavior?
3. To what extent does goal-setting reduce disruptive behavior in a second, untrained classroom setting?
4. What is the effect of a computer-assisted multimedia goal-setting intervention on students' level of self-determination?

5. What are teachers' perceptions of the use of the computer-assisted multimedia goal-setting intervention to increase students' ability to self-set behavior goals?
6. To what extent do teachers feel the computer-assisted multimedia goal-setting intervention had an effect on student's disruptive behavior?
7. What are students' perceptions of the computer-assisted multimedia goal-setting intervention as a method for increasing their ability to self-set behavior goals?

### **Limitations/Delimitations**

Because this study will use a single-subject research design, the generalizability of results may be limited due to a small number of participants. However, a multiple-probe across participants design will be used. This will allow for prediction, verification, and replication across participants, which will strengthen experimental control allowing the researcher to determine if a functional relationship exists between the independent variable and dependent variables. Additionally, this study will meet the quality indicator criteria for single-subject research based on recommendations by Horner et al. (2005) and may make a contribution to the research base, which may potentially lead to identification of an evidence-based practice on this topic.

Another limitation may be that this study will be conducted at a school which implements School-Wide Positive Behavioral Interventions and Supports suggesting that behavioral practices and interventions to reduce students' disruptive behavior may already be in place and working to reduce student problem behavior. In addition, this

study will be conducted in a small office next to the general education classroom; therefore, it may be difficult to determine the usefulness of this intervention for teaching self-determination skills in a general education setting. Concomitantly, since students' disruptive behavior will be monitored in two general education settings, this intervention may be effective for reducing disruptive behavior and promoting self-determination skills of students at-risk for, or with, ED in general education settings.

Although, this study has limitations, it may provide researchers with an intervention that can be replicated. Replication of the study may provide an opportunity to determine effectiveness of the intervention across geographic locations and with multiple participants, which may ultimately lead to improved outcomes for students at-risk for, or with, ED.

## Definitions

*At-risk:* At-risk has been defined as: (a) students not identified with a disability, but who are at-risk for school failure due to poor academic performance and disruptive behavior (Alberto & Troutman, 2009); (b) students who participate in general education and are at-risk for being identified for special education service due to poverty, low-income status, English Language Learner status, and/or lack early academic experiences (Coyne, Kame'enui, & Carnine, 2007); and (c) students who “deviate from normative performance” (p. 431) in an academic, behavior, and/or social domain, which results in problems with learning and behavior (Lane & Menzies, 2003).

*Attention Deficit/ Hyperactivity Disorder (ADHD):* A family of related chronic neurobiological disorders that interfere with an individual's capacity to regulate activity level (hyperactivity), inhibit behavior (impulsivity), and attend to tasks (inattention) in developmentally appropriate ways. The term "attention deficit hyperactivity disorder" is abbreviated and usually referred to as ADHD (MedicineNet.com, 2009).

*Computer-assisted instruction (CAI):* CAI has been defined in the literature as “the use of a computer and other associated technology with the intention of improving students’ skills, knowledge, or academic performance” (Okolo, Bahr, & Rieth, 1993, p. 1), and has been identified in the literature as computer-based instruction, computer-mediated instruction, interactive hyper-media instruction, and multimedia instruction (Hutcherson, Langone, Ayres, & Clees, 2004).

*Disruptive behavior:* “a class of behavior that disturbs or disrupts the classroom and interferes with instruction” (Lane, Menzies, Barton-Arwood, Doukas, & Munton, 2005).

*Emotional Disturbance:* “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; and (e) A tendency to develop physical symptoms or fears associated with personal or school problems. Emotional disturbance includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance under this section” (IDEA, 2004)

*Goal-setting:* a self-mediated strategy which allows students to self-select and set personal goals that relate to improving behavior and/or academic outcomes (Mooney, Ryan, Uhing, Reid, & Epstein, 2005).

*Multimedia:* Multimedia refers to “the combination of several different types of media linked together by a computer and produced for viewing on the computer screen. The presentation media usually involved in multimedia are audio, text, videotape, print, and graphics” (Bender & Bender, 1996, p. 103).

*Office discipline referral (ODR)*: ODRs are “widely used by school personnel to evaluate student behavior and the behavioral climate of schools” (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004, p. 131).

*Preadolescence*: “the period of human development just preceding adolescence; specifically, the period between the approximate ages of 9 and 12” (Merriam-Webster’s Medical Dictionary Online, 2009).

*Self-determination*: “a combination of skills, knowledge, and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behavior” (Field, Martin, Miller, Ward, & Wehmeyer, 1998, p.2)

*Self-Determined Learning Model of Instruction (SDLMI)*: “enables teachers to teach students to employ self-regulated problem-solving strategies to achieve self-selected goals using student-directed instructional strategies” (Wehmeyer, Palmer, Agran, Mitaug, & Martin, 2000, p. 441).

## CHAPTER 2: REVIEW OF LITERATURE

Students are expected to meet behavior and academic expectations from the time they start school until exiting their school-age years. For students at-risk for, or with, ED meeting academic and behavior expectations can be challenging and can lead to negative in-school and post-school outcomes (Farmer et al., 2008; Lane, Wehby, & Barton-Arwood, 2005). The Individuals with Disabilities Education Act (IDEA; 2004) mandates that educators of students with disabilities promote and implement academic and behavioral strategies to address inappropriate behavior of students exhibiting behavior problems to avert the likelihood of students being identified with ED. Currently, students with ED are experiencing poor post-school outcomes in all of life's domains (i.e., independent living, employment, and education; Newman, Wagner, Cameto, & Knokey, 2009). If educators fail to implement effective academic and behavioral interventions, students at-risk for, or with, ED will continue to experience negative in-school and post-school outcomes. This review of literature will discuss three major themes, including: (a) students at-risk for, or with, ED, self-determination, and computer-assisted instruction; (b) characteristics, demographics, in-school and post-school outcomes, and interventions for students at-risk for, or with, ED; and (c) self-determination for students at-risk for, or with, ED.

## **Students At-Risk for, or with, ED**

### **Characteristics of Students At-Risk for ED**

Students at-risk are students who participate in general education and are at-risk for being identified for special education service due to poverty, low-income status, English Language Learner status, and/or lack early academic experiences (Coyne, Kame'enui, & Carnine, 2007; Mark & Buck, 2006). In addition, students considered at-risk have not yet been identified as having a disability, but are at-risk for school failure because of poor academic performance and behavior problems (Alberto & Troutman, 2009). Lane and Menzies (2003) described students at-risk, as those who “deviate from normative performance” (p. 431) in an academic, behavior, and/or social domain, which results in problems with learning and behavior. While early intervention strategies have targeted preventing ED in young children, there remains a lack of interventions to support pre-adolescent and adolescent students at-risk for ED (Lane et al., 2005). If students are identified as at-risk in early elementary grades (prekindergarten through third), preventive interventions can be implemented to meet the academic and behavior needs of these students, ultimately reducing the risk of being referred for special education services under the category of ED (Lane & Menzies, 2003; Kamps, Kravits, Stolze, & Swaggart, 1999). However, students at-risk for ED, who enter the preadolescent years (ages 9 through 12), will have increased difficulty with social adjustment and meeting academic and behavior expectations (Farmer et al., 2008). Therefore, it is important for educators to take a proactive intervention approach to reduce the risk of continued behavior problems and identification as ED (Lane, Gresham, & O'Shaughnessy, 2002;

Lane et al., 2005 Tobin & Sugai, 1999). These students may require more intensive individualized support during preadolescent and adolescent years (Lane et al., 2002).

### **Demographics and Characteristics of Students with ED**

Over the years, several definitions of ED have been debated, developed, and revised by the field of special education. Currently, IDEA (2004) defines emotional disturbance as students:

Exhibiting one or more of the following characteristics over a long period of time, to a marked degree, and adversely affecting education performance: an inability to learn which cannot be explained by intellectual, sensory, or health factors; an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; inappropriate types of behavior or feeling under normal circumstances; a general pervasive mood of unhappiness or depression; or a tendency to develop physical symptoms or fears associate with personal or school problems. Emotional disturbance includes schizophrenia. This term does not include children who are socially maladjusted, unless they also display one or more of the listed characteristics (20 U.S.C. § 2781 [300.8] [4]).

In the 2006-2007 school year, students with ED represented 6.9% of all students with disabilities (i.e., 464,000 students; Planty et al., 2009). Of those students with ED, 35.1% spent the majority (more than 79%) of their school day in a general education setting, 20.8% spent 21-60% of their day outside of general education settings, 26.6% spent more than 60% of their day outside of general education settings, 6.9% attended separate schools, and 1.3% received a homebound education (Planty et al., 2009). In the 2005-2006 school year, students with ED between the ages of 14 and 21 totaled 47,519,

and 45% (n=21,331) of those students dropped out of school. More importantly, students with ED from minority groups (i.e., African American, Hispanic) have been overrepresented in the special education category of ED (Forness & Kavale, 2000; Mark & Buck, 2006). Specifically, a national health survey conducted by Mark and Buck found that while African American students represented 14.9% of American youth, 21.2% of those youth were identified with ED. Hispanic youth were also found to be overrepresented in that 16% of all youth were identified as Hispanic, but 19.1% of Hispanic youth were identified with ED (Mark & Buck, 2006).

As suggested in the IDEA (2004) definition, students with ED exhibit behavioral problems that significantly affect educational performance (IDEA, 2004; Tobin & Sugai, 1999). Cullinan, Evans, Epstein, and Ryser (2003) identified specific characteristics of students with ED, concluding that preadolescent students with ED (a) were more likely to exhibit anti-social behaviors and (b) had fewer strengths and resources to help them with social adjustment. Additionally, Tobin and Sugai (1999) found that excessive office discipline referrals lead to restrictive placements and drop-out for students with ED.

Furthermore, students with ED can exhibit externalizing behaviors or internalizing behaviors. Students, who exhibit externalizing behaviors, tend to be overactive, impulsive, stubborn, aggressive, fearless, have temper outbursts, and destroy objects (Nelson, Stage, Duppong-Hurley, Synhorst, & Epstein, 2007). Students, who exhibit internalizing behaviors, tend to be shy or timid, fearful, withdrawn socially, cautious, prefer to be alone, and have difficulty sleeping (Nelson et al., 2007). Nelson, Babyak, Gonzalez, and Benner (2003) conducted a cross-sectional study using a randomized sample to determine characteristics of problem behaviors exhibited by

school-age students. Results indicated students with ED were twice as likely to exhibit externalizing behaviors as internalizing behaviors.

### **In-School and Post-School Outcomes for Students with ED**

Historically, students with ED have experienced negative in-school and post-school outcomes. Students with ED are more likely to: (a) have lower grades than students in other disability categories (Wagner, Kutash, Duchnowski, & Epstein, 2005); (b) higher disciplinary rates than students in other disability categories (Achilles, McLaughlin, & Croninger, 2007); (c) increased office referrals and assignment to self-contained settings (Lane, Wehby, & Cooly, 2006); (d) drop-out of school at substantially higher rates than students without disabilities (Sinclair, Christenson, & Thurlow, 2005; Wagner et al., 2005); and (e) be involved with the juvenile justice system (Leone et al., 2003). Nelson et al. (2003) found that students with ED are retained more often and experience academic and language deficits significantly below that of peers without disabilities, and elementary students with ED typically exhibit more behavior problems than adolescent students with ED. The National Longitudinal Transition Study 2 (NLTS2) Wave 4 (2007) data indicated 80.7% of students with ED, compared to 39.4% of students in other disability categories, had been suspended or expelled while in school. Furthermore, while 3.7% of students with disabilities dropped out of school, 8.1% of those students were students with ED (NLTS2, 2009).

Achilles, McLaughlin, and Croninger (2007) investigated factors related to expulsion and suspension of students with ED. Results of their logistic regression analysis indicated that students with ED were more likely than students with attention-deficit hyperactivity disorder (ADHD) and LD to have been expelled or suspended from

school. More importantly, African American males with ED from low income families were more likely to experience suspension and expulsion than other groups. Additionally, results indicated youth who were suspended or expelled were not given opportunities to participate in school or community activities.

In addition to negative in-school experiences for students with ED, post-school experiences are also concerning. NLTS2 Wave 4 (2007) data indicated (a) 25.3% of youth with ED had been arrested in the last 2 years compared to 14.1% of all youth with disabilities, and (b) 12.2% were on parole or probation compared to 5.3% of all youth with disabilities. Post-school employment outcomes for youth with ED are more promising with 63.4% indicating they had a paid job within the past two years; however, students with ED were the largest disability group to have been fired from a job (i.e., 35.2% compared to 19.9% total of youth with disabilities), and 71.6% of youth with ED had two or more jobs ( $M=3$ ) within a two year timeframe (Newman et al., 2009). Only 34% of youth with ED attended postsecondary education, 23.7% received diplomas from a 2-year college, and 16.9% received diplomas from a 4-year college (NLTS2, 2009). Finally, post-school independent living outcomes for youth with ED are dismal. For example, 45.6% of youth with ED continue to live at home after high school graduation, and 86% percent of youth with ED fall under the annual income category of \$25,000 or less with 44.1% of youth with ED have a household income range of \$5,000 or less (NLTS2, 2009). These poor in-school and post-school outcomes make it critical that empirically-based interventions are identified to support the behavioral and academic needs of students with ED.

### **Interventions for Students at-risk for, or with, ED**

Given that students with ED exhibit problem behavior, in addition to academic deficits, numerous types of interventions have been investigated over the years to improve the behavior and academic performance of students at-risk for, or with, ED. Interventions for improving the behavior and academic performance of students with ED have included social skills training (Cook et al., 2008; Maag, 2006), peer-mediated interventions (Ryan, Reid, & Epstein, 2004), teacher-mediated interventions (Pierce, Reid, & Epstein, 2004), cognitive-behavioral interventions (Cobb, Sample, Alwell, & Johns, 2006), and self-management interventions (Briesch & Chafouleas, 2009; Mooney, Ryan, Uhing, Reid, & Epstein, 2005). Lane and Menzies (2003) iterated the importance of using evidence-based practices to promote behavioral, academic, and social achievement of students at-risk for, or with, ED. Recently, peer mediated interventions and self-management interventions have been identified in the literature as evidence-based practices to improve both behavioral and academic outcomes for students with ED (Fitzpatrick & Knowlton, 2009; Ryan, Pierce, & Mooney, 2008).

**Social skills training.** Research on social skills training for students with ED began appearing in the literature more than two decades ago and includes a large body of research (Maag, 2006). Recently, two reviews of social skills training literature have been conducted (Cook et al., 2008; Maag, 2006). First, Maag (2006) conducted a review of literature reviews on social skills training. Thirteen social skills training literature reviews published between 1980 and 2005 were identified, including nine narrative reviews, three meta-analyses, and one systematic review. Of these various reviews, one focused specifically on single-subject research, four focused on group designs, four focused on

single-subject and group designs, and four did not indicate design type. All reviews included children, adolescents, and youth at-risk for, or with, ED. The types of social skills training interventions included: (a) behavioral, cognitive, or cognitive-behavioral interventions (i.e., seven studies); (b) specific behavioral approaches (i.e., social problem-solving interventions, peer-mediated interventions, behavioral approaches, generalization outcomes; four studies); and (c) unspecified social skills training (i.e., two studies). Findings of the review indicated social skills training was an effective method for improving externalizing and internalizing behaviors of students at-risk for, or with, ED. However, it should be noted that of the nine narrative reviews, four did not include results of the efficacy of social skills training.

Second, Cook et al. (2008) conducted a meta-analysis of meta-analytic literature published between 1980 and 2006 related to social skills training for students at-risk for, or with, ED. Specifically, authors extracted studies that included secondary students at-risk for, or with, ED (i.e., middle and high school students) to determine the effect of social skills training on this population. Five meta-analyses were included in the review, and data related to secondary students at-risk for, or with, ED were analyzed. Findings indicated that social skills training was an effective intervention for secondary students at-risk for, or with, ED. The majority (60% to 71%) of participants across reviews improved after interventions were implemented.

**Peer-mediated interventions.** Ryan et al. (2004) conducted a literature review that included 14 studies published between 1970 to 2002 of peer-mediated interventions to improve academic performance of students with ED. Participants included students with ED between the ages of 5 and 11 and adolescents 12 years of age and older. Peer-

mediated interventions included: (a) same-age peer intervention strategies (i.e., six studies); (b) cross-age peer tutoring interventions (i.e., five studies); (c) classwide peer-tutoring (i.e., one study); and (d) cooperative learning interventions (i.e., two studies). Findings indicated that all types of peer-mediated interventions were effective for improving academic outcomes of students with ED. Unfortunately, only 57% of the studies were conducted in public schools and approximately 27% were conducted in general education settings. Therefore, this limits the generalizability of findings to students with ED who participate in general education.

**Teacher-mediated interventions.** Pierce et al. (2004) conducted a literature review of teacher-mediated interventions to improve academic performance of students with ED. Thirty studies published between 1963 and 2004 met inclusion criteria for the review. Participants included elementary students between the ages of 6 and 11 and adolescents aged 12 and older. Teacher-mediated interventions included: (a) twenty-four studies that implemented antecedent strategies (e.g., modeling/rehearsal/feedback, structured academic tasks, previewing, sequential prompting, choice-making opportunities); and (b) six studies that implemented consequence strategies (e.g., token-economy system, academic contracting, written feedback, free time). Findings indicated the majority (90%) of teacher-mediated interventions were effective for improving academic outcomes for students with ED. However, because of the array of teacher-mediated interventions used across studies, authors could not conclude which specific interventions were most effective for improving academic outcomes of students with ED.

**Cognitive-behavioral interventions.** Cobb et al. (2006) conducted a systematic literature review that included 16 studies published between 1990 and 2003 of cognitive-

behavioral interventions to improve problem behavior (e.g., aggression, off-task, disruptive, depression) or drop-out rates (i.e., staying in school, enrollment status). Participants included youth with ED (i.e., 13 studies) and youth with ED, LD, or ADHD (i.e., three studies) ranging in age from 12 to 19-years-old. Fifteen studies in the review used quantitative methods and one study used qualitative methods. Cognitive-behavior interventions included a variety of characteristics. For example, problem-solving communication training, various curricula (e.g., *Adolescent Coping with Depression*, *Check and Connect*), explanations and demonstrations of appropriate social skills and self-management behaviors, role playing, and modeling and behavioral rehearsal. Results indicated cognitive-behavioral interventions were effective for reducing behavior problems and drop-out of youth with ED.

**Self-management interventions.** Two literature reviews have examined self-management interventions for students with ED (Briesch & Chafouleas, 2009; Mooney et al., 2005). First, Mooney et al. (2005) conducted a review of the literature that included 22 experimental studies published between 1970 and 2002 of self-management interventions to improve the academic and behavior performance of students with ED. Participants included students with ED in elementary, middle, and high school. Self-management interventions included self-monitoring, strategy instruction plus self-instruction, self-evaluation, strategy instruction, self-monitoring plus self-evaluation, self-instruction, and self-evaluation plus goal-setting. The majority of the studies investigated the effect of self-management strategies on academic performances; however, three studies (i.e., Carr & Punzo, 1993; McLaughlin, 1984; Prater, Hogan, & Miller, 1992) investigated the effect of self-management strategies on academic

performance and on-task behavior. Findings indicated that academic and behavior performance of students with ED improved when self-management interventions were implemented. Additionally, results indicated that various types of self-management interventions (i.e., self-monitoring, self-evaluation, self-instruction, strategy instruction, multi-component) were effective for improving academic performance of students with ED.

Second, Briesch and Chafouleas (2009) conducted a review of literature that included 30 studies published between 1988 to 2008 of self-management interventions to improve disruptive behavior (e.g., on-task, talk outs, hand raising, aggression, off-task) of students at-risk for, or with, ED. Participants' mean age was 11 years, 7 months. Self-management interventions included self-selecting target behavior, defining target behavior, self-selecting reinforcers, self-setting goals and performance criteria, self-recording, self-evaluation, self-administration of primary and secondary reinforcers, and self-monitoring. Findings indicated that self-management interventions were effective for improving behavioral outcomes of students at-risk for, or with, ED.

### **Summary of Students At-Risk for, or with, ED**

Many students with ED have poor in-school and post-school outcomes that have detrimental effects on them leading high quality, independent lives. Specifically, students with ED experience academic deficits, excessive discipline referrals, assignment to self-contained setting, suspension and expulsion, drop-out, and incarceration in the juvenile justice system (Achilles et al., 2007; Lane et al., 2006; Leone et al., 2003; Sinclair et al., 2005; Wagner et al., 2005). These negative in-school outcomes typically lead to poor post-school outcomes in that youth with ED (a) have difficulty maintaining post-school

employment, (b) are not likely to take advantage of post-school education opportunities, and (c) the majority remain living at home after graduation from high school (Newman et al., 2009).

As students at-risk for, or with, ED progress through their school age years, it is imperative that educators identify effective interventions for promoting the academic and behavioral success of these students. Effective strategies for improving both the academic and behavior skills of students at-risk for, or with ED have been identified throughout the literature, including social skills training, peer-mediated interventions, teacher-mediated interventions, cognitive-behavioral intervention, and self-management intervention. Several literature reviews conducted over the last several years have validated these interventions as effective for improving the behavioral and academic skills of students at-risk for, or with ED (i.e., Briesch & Chafouleas, 2009; Cobb et al., 2006; Cook et al., 2008; Maag, 2006; Mooney et al., 2005; Pierce et al., 2004; Ryan et al., 2004).

Continuing to investigate effective interventions for students at-risk for ED is imperative in order for these students to not be identified as ED. Additionally, using evidence-based practices with this population of students is extremely important to enhance academic, behavior, and social skills (Lane & Menzies, 2003). Therefore, it is necessary for research to continue investigating effective practices for students with ED in order to establish evidence-based practices to meet the needs of this population.

### **Self-Determination**

The theory behind self-determination dates back to the 1970s (Deci, 1971), but was not comprehensively defined until the 1980s (Deci & Ryan, 1985). Self-determination theory suggests that individual belief is inherently proactive and motivated;

but, for an individual to experience life proactively, environmental supports maybe required for the individual to make personal and social achievements in natural environments (Patterson & Joseph, 2008; Ryan & Deci, 2000; Deci & Ryan, 2008). Since the development of the self-determination theory, incorporating self-determination into instruction for students with disabilities has been identified as a critical element of instruction in order for students to obtain a high quality of life (Field, Sarver, & Shaw, 2003; Wehmeyer, 1992). For almost two decades, promoting self-determination of students with disabilities has been an emphasis throughout the field of special education (Wehmeyer, Field, Doren, Jones, & Mason, 2004). Field and Hoffman (1994) defined self-determination as:

A combination of skills, knowledge, and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behavior. An understanding of one's strengths and limitations together with a belief in oneself as capable and effective are essential to self-determination. When acting on the basis of these skills and attitudes, individuals have greater ability to take control of their lives and assume the role of successful adults in our society (p. 2).

Specifically, self-determination includes 12 component skills that are necessary for individuals to learn and acquire to become self-determined, including: (a) choice-making; (b) decision-making; (c) problem-solving; (d) goal-setting and attainment; (e) independence, risk-taking, and safety; (f) self-regulation/self-management; (g) self-instruction; (h) self-advocacy and leadership; (i) internal locus of control; (j) positive attributions of efficacy and outcome expectancy; (k) self-awareness; and (l) self-knowledge (Wehmeyer & Schalock, 2001).

Research on self-determination has ranged across age groups and disability categories and many components of self-determination (e.g., choice-making, goal-setting, self-advocacy) have been demonstrated to be effective interventions for promoting self-determination skills of students with disabilities (Algozzine, Browder, Karvonen, Test, & Wood, 2001; Cobb, Lehmann, Newman-Gonchar, & Alwell, 2009; Konrad, Fowler, Walker, Test, & Wood, 2007). Additionally, teaching self-determination skills have been identified as a secondary transition evidence-based practice and predictor of post-school success for students with disabilities (Test et al., 2009; Test et al., in press).

### **Self-Determination as a Predictor of In-School and Post-School Success**

Self-determination has been identified as a one key element that can promote positive in-school and post-school success for students with disabilities. First, Wehmeyer, Palmer, Soukup, Garner, and Lawrence (2007) conducted a correlational study to determine the relationship between student self-determination and student involvement in the transition planning process. Results of the study indicated that specific components of self-determination (i.e., problem-solving skills, goal-setting skills) were significant predictors of students' knowledge of, and participation, in the secondary transition planning process. This suggests that improved self-determination skills in high school can lead to greater student involvement in the transition planning process, which can ultimately promote in-school success for students with disabilities (Wehmeyer et al., 2007).

Next, self-determination has been identified as a predictor of positive post-school outcomes for students with disabilities. Wehmeyer and Palmer (2003) found that students with cognitive disabilities and learning disabilities, who had high self-determination

skills at high school exit, were more likely to participate in post-school employment and independent living opportunities. In a recent systematic literature review by Test, Mazzotti, et al. (2009), self-determination was found to be a significant predictor of post-school education and employment for students with disabilities based on two high quality correlational studies (i.e., Halpern, Yovanoff, Doren, & Benz, 1995; Wehmeyer & Schwartz, 1997). Specifically, Halpern et al. (1995) found that students with disabilities who participated in goal-setting and problem-solving instruction during high school were more likely to be involved in post-school education opportunities. Finally, Wehmeyer and Schwartz (1997) found that students with learning disabilities and mild cognitive disabilities, who had higher self-determination skills prior to exiting high school, were more likely to be engaged in post-school employment than students with low self-determination skills.

### **Self-Determination Instruction and Educational Implications**

Although self-determination has been identified as an essential skill by the field of special education and a significant predictor of post-school success for students with disabilities, it remains a skill that is rarely taught to students with disabilities at all educational levels (i.e., elementary, middle, high school). The degree to which teachers implement and promote self-determination as a component of the curriculum is limited (Stang, Carter, Lane, & Pierson, 2009; Wehmeyer, Agran, & Hughes, 2000). Several studies have investigated teachers' perceptions and implementation of self-determination as a curricula component. First, Wehmeyer, Agran, et al. (2000) conducted a survey of middle and high school special education teachers to determine perceptions regarding instruction in self-determination. Results indicated: (a) teachers were aware of the

concept and importance of self-determination instruction for secondary students; (b) teachers rated choice-making, goal-setting, self-advocacy, and problem-solving as important self-determination skills; and (c) teachers felt teaching self-determination to students would help improve post-school outcomes and possibly improve in-school success for students with disabilities. Although promising, teachers also identified several barriers to providing self-determination instruction, including (a) lack of training to effectively teach self-determination skills, (b) insufficient time to provide self-determination instruction, and (c) not having the authority to include self-determination in their curriculum (Wehmeyer, Agran, et al., 2000).

Second, Grigal, Newbert, Moon, and Graham (2003) conducted a survey of parents and teachers perceptions of self-determination. Participants included parents and teachers of high school students with high incidence disabilities (i.e., emotional disability, specific learning disability, mild/moderate mental retardation, speech language impairment) and low incidence disabilities (i.e., autism, multiple severe disabilities, severe orthopedic disability, significant mental retardation, visual or hearing impairment, traumatic brain injury). Results indicated the majority of teachers were only slightly familiar with the concept of self-determination. One-third of teachers were unfamiliar with the concept of self-determination, and the majority felt students with disabilities had limited opportunities to gain self-determination skills at school. Additionally, statistically significant differences were found between special education and general education teachers. Special education teachers felt they were more prepared to teach self-determination skills to students with high incidence disabilities than general education teachers. Furthermore, statistically significant differences were found between type of

instructional program, suggesting that teachers providing instruction to students with high incidence disabilities in community-based/life skills programs were more prepared to teach self-determination skills than teachers providing instruction in college preparation/career technical courses.

Third, Carter, Lane, Pierson, and Stang (2008) conducted a survey of high school general and special education teachers to determine the importance of incorporating self-determination, and the extent to which self-determination was being incorporated into the curriculum. Both general and special educators felt incorporating self-determination was important, and specifically identified problem solving, self-management/self-regulation, decision-making, and goal-setting/attainment as the most important self-determination components. Of these components, problem-solving was rated significantly higher than all other self-determination components and was the only component teachers reported incorporating consistently into the curriculum. In addition, a statistically significant relationship was found between the importance of self-determination and classroom instruction across all self-determination components suggesting that general and special education teachers felt infusing self-determination into the high school curriculum was very important. However, special education teachers rated the importance of teaching self-determination significantly higher than general education teachers.

Fourth, Stang et al. (2009) recently surveyed special and general education teachers of elementary and middle school students with disabilities. Results indicated teachers felt that incorporating self-determination into the curriculum was highly important. However, statistically significant differences were found between general and special education teachers. Special education teachers felt teaching self-determination

was more important than general education teachers. All teachers rated all components of self-determination (i.e., problem-solving, self-management, decision-making, goal-setting, self-awareness, choice-making, self-advocacy) as important and rated goal-setting, problem-solving, self-management, and self-advocacy as very important. Problem-solving was found to be the component of self-determination most frequently taught, and more than 50% of teachers indicated they taught problem-solving and self-management more often than the other self-determination components. Lastly, the frequency with which middle school teachers taught self-determination skills was significantly higher than elementary school teachers.

Finally, the previous surveys investigated perceptions of teachers of various disability categories. For purposes of this proposed study, it is important to investigate perceptions of teachers regarding the self-determination of students with ED. In a survey conducted by Carter, Lane, Pierson, and Glaeser (2006), special education teachers, parents, and students' perceptions of the self-determination of youth with ED and LD were examined. Results indicated that high school students with ED were (a) considered by teachers to have less capacity for self-determination and (b) less likely to engage in self-determined behavior with fewer self-determination skills as compared to students with learning disabilities. Specifically, teachers rated students with ED as having significantly less ability to engage in self-determined behavior than students with LD. Equally important, teachers rated students with LD as having significantly higher opportunities to engage in self-determined behavior at school than students with ED. Findings from this survey provide additional support for the lack of promotion and inclusion of self-determination into the curriculum by educators.

### **Self-Determination Interventions for Students At-risk for, or with, ED**

Over the years, research has investigated strategies for promoting self-determination skills of students with disabilities (Algozzine et al., 2001). In particular, self-determination interventions for students with ED have included self-advocacy (Test, Fowler, Brewer, & Wood, 2005); choice-making (Jolivet, Wehby, Canale, & Massey, 2001; Kern et al., 1998); and self-management interventions (Briesch & Chafouleas, 2009; Mooney, Ryan, Uhing, Reid, & Epstein, 2005).

First, Test et al. (2005) conducted a literature review that included 25 studies published between 1972 and 2004 on interventions to teach self-advocacy skills to students with disabilities. Of the 25 empirical studies, 6 included students with ED (i.e., Durlak, Rose, & Bursuck, 1994; Lancaster, Schumaker, & Deshler, 2002; Powers et al., 2001; Snyder & Shapiro, 1997; Test & Neale, 2004; Wehmeyer & Lawrence, 1995). Specifically, 2 studies (i.e., Lancaster et al., 2002; Test & Neale, 2004) taught the *Self-Advocacy Strategy*, 1 study (i.e., Snyder & Shapiro, 1997) taught the *Self-Directed IEP*, one study (i.e., Durlak et al., 1994) combined direct instruction and learning strategies, and 2 studies (i.e., Powers et al., 2001; Wehmeyer & Lawrence, 1995) used published curricula (i.e., *Whose Future is it Anyway?*; *TAKE CHARGE for the Future*). All studies, except for the study that used the published curricula, *Whose Future is it Anyway?*, reported positive results for enhancing self-determination and self-advocacy skills of students with ED.

Second, Kern et al. (1998) conducted a literature review that included 14 studies published between 1975 and 1996 on choice-making interventions to improve behavior

for students with disabilities. Of the 14 studies, 2 involved students with ED (i.e., Cosden, Gannon, & Haring, 1995; Dunlap et al., 1994). One study (i.e., Cosden et al., 1995) evaluated the effect of choice-making on students' ability to complete assignments accurately. The second study (Dunlap et al., 1994) evaluated the effect of choice-making on elementary students' task completion and disruptive classroom behavior. Both studies reported positive results for increasing task completion of students with ED. Additionally, the second study reported students' disruptive classroom behavior decreased as a result of the choice-making intervention.

Next, Jolivet et al. (2001) used a multiple-baseline across participants design with withdrawal-of-treatment component to examine the effects of choice-making on student task-related and social behaviors (i.e., task engagement, off-task behavior, disruption, attempted task problems, math problems correct). Participants included three elementary students between the ages of 6 and 10 years old with ED. The intervention consisted of two conditions. During the choice condition, teachers provided participants with three choices of independent math seatwork, and during the no choice condition, teachers told the students the specific math assignment to complete. Results indicated the choice-making condition was more effective than the no choice condition for increasing two of the three participants' level of appropriate behavior.

More recently, Mooney et al. (2005) conducted a literature review of 22 studies published between 1970 and 2002 using self-management interventions to improve the academic performance of students with ED. Self-management interventions were categorized as: (a) self-monitoring, including student identifying occurrence of target behavior and self-recording occurrence; (b) self-evaluation, including comparing student

performance to established criteria with reinforcement based on meeting criteria; (c) self-instruction, including using self-statements to self-advise behavior; (d) goal-setting, including self-setting behavior goals; and (e) strategy instruction, including teaching students specific steps to problem solve or achieve an outcome. All of the studies in this review sought to enhance the academic performance students with ED. Two studies also investigated on-task behavior. Results indicated that self-management interventions employed across studies were effective for improving academic performance of study participants, and 2 studies which evaluated on-task behavior reported positive results for both academic improvement and increased on-task behavior.

Finally, Briesch and Chafouleas (2009) conducted a literature review of 31 studies published between 1988 and 2008 on self-management interventions designed to improve disruptive classroom behavior of students at-risk for, or with, disabilities in general and special education classrooms. Self-management components included self-selecting target behavior, defining target behavior, self-selecting reinforcers, self-setting goals and performance criteria, self-recording, self-evaluation, self-administration of primary and secondary reinforcers, and self-monitoring behavior. Of the 30 studies, 15 included students with ED and one included students at-risk for ED. Dependent variables for the 16 studies included: (a) on-task; (b) on-task, talk-outs, keeping cool, and hand raising; (c) off-task; (d) task engagement; (e) disruptive behavior; (f) disruptive and on-task; (g) disruptive and aggression; (h) on-task and teacher-pupil interaction; and (i) on-task and study behavior. Results indicated self-management interventions were effective for improving behavior; however, results found self-management interventions continued to

be student and teacher directed suggesting that future research focus primarily on self-management interventions that are fully student-directed.

### **Self-Determined Learning Model of Instruction**

The Self-Determined Learning Model of Instruction (SDLMI) is one intervention that has been effective for promoting self-determination skills of students with disabilities, including students with ED. The SDLMI provides teachers with a method for teaching students a variety of self-determination components (i.e., goal-setting, problem-solving, self-monitoring, self-evaluation; Lee, Palmer, & Wehmeyer, 2009; Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000).

**History of the SDLMI.** The SDLMI was derived from the Adaptability Instruction Model developed by Mithaug, Martin, and Agran (1987). The Adaptability Instruction Model was based on the premise that students with disabilities needed to be prepared for post-school employment; therefore, this model provided a method for teaching students with disabilities to function independently and adapt to new environments by teaching decision-making, problem-solving, and self-evaluation skills (Mithaug et al., 1987). The SDLMI extended this model by including goal-setting to teach students to self-set and achieve goals related to strengths and needs using self-directed instructional strategies (Wehmeyer, Palmer, et al., 2000). As a result, the SDLMI is described as an instructional model that “teaches students to become self-regulated problem-solvers, to self-direct instruction toward self-selected goals, and gain enhanced self-determination” (Agran, Blanchard, & Wehmeyer, 2000, p. 353). The model includes three instructional phases that provide students with opportunities to set a goal, make a

plan to address the goal, and evaluate changes to successfully meet the goal (Agran, Cavin, Wehmeyer, & Palmer, 2006).

**Research to support effectiveness of the SDLMI.** Since the development of the SDLMI, research has been conducted to demonstrate the effectiveness of the model as an intervention to promote self-determination of students with disabilities (Agran et al., 2000; Agran, Blanchard, Wehmeyer, & Hughes, 2002; Agran et al., 2006; Agran et al., 2008; Fowler, 2008; Mazzotti, Wood, et al., 2009; McGlashan-Johnson, Agran, Sitlington, Cavin, & Wehmeyer, 2004; Palmer & Wehmeyer, 2003; Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000). The model has been implemented with students across grade levels (i.e., elementary, middle, high school, college) and has included students with mild, moderate, and severe disabilities (i.e., cognitive disabilities, autism, intellectual disabilities, multiple disabilities, mild/moderate/severe mental retardation, learning disabilities, speech impairment).

First, Wehmeyer, Palmer, et al. (2000) field-tested the SDLMI with 40 students with mental retardation, LD, and ED. Researchers used three measurement instruments. The *Goal Attainment Scale (GAS)* was used to determine the effectiveness of the SDLMI. The *ARC Self-Determination Scale* was used to measure participants' level of self-determination, including problem-solving, goal-setting, task-performance, and self-realization. The third instrument, the *Nowicki-Strickland Internal-External Scale*, was used to determine the degree to which participants felt more control over their lives based on receiving the SDLMI. Results indicated study participants were able to self-regulate learning, attain goals, and showed increased self-determination skills after receiving instruction on the SDLMI. Additionally, teachers indicated participants exceeded goal

expectations, and over 80% of students indicated progress was made towards goals after receiving instruction on the SDLMI.

Second, Agran et al. (2000) used a delayed multiple-baseline across groups design to investigate the effects of the SDLMI on self-determination skills of transition-aged students with disabilities. The study investigated the effect of the SDLMI on following directions, academic skills, improved job task performance, responding appropriately to criticism, making transportation arrangements, completing job tasks, improving personal hygiene skills, improving budgeting skills, improving conversational skills, using time card appropriately, and/or improving computer skills. The study included 19 transition-aged (i.e., middle school, high school) students with learning disabilities, mental retardation, or multiple disabilities. The SDLMI was delivered via small group instruction by teachers and paraprofessionals. Results indicated mean group performance on target behaviors improved after instruction on the SDLMI. In addition, teachers were asked to complete the *GAS*, which indicated students achieved goals and exceeded teacher expectations.

Third, Agran et al. (2002) used a multiple-baseline across participants design to investigate the effects of the SDLMI on specific classroom behaviors (i.e., inappropriate touching, following directions, contributing to class). Participants included four middle school students with autism, intellectual disabilities, or multiple disabilities participating in general education classes. The SDLMI was delivered through small-group instruction by teachers and paraprofessionals. Additionally, teachers and students completed the *GAS* pre/post intervention to determine students' goal attainment and effectiveness of the SDLMI. Results demonstrated a functional relationship between the SDLMI and

improved classroom behaviors indicating the SDLMI was an effective intervention in that participants were able to self-set goals resulting in improved target behaviors.

Furthermore, results of the *GAS* indicated all participants exceeded goals beyond teacher expectations.

Fourth, Palmer and Wehmeyer (2003) examined the effectiveness of the SDLMI with elementary students with and without disabilities to promote self-determined behavior. Participants included 50 students with LD, mental retardation, speech impairment, gifted, or at-risk for disabilities participating in general education classes and receiving math or reading enrichment instruction. The SDLMI was delivered by teachers via large group and one-on-one instruction. The primary measure of student goal attainment was the *GAS*, which was given to students and teachers to determine students' goal completion and attainment. Results indicated the SDLMI was an effective model for enhancing self-determination of elementary students at-risk for or with disabilities, and elementary students can self-set goals, evaluate progress, and identify potential outcomes. Additionally, the *AIR Self-Determination Scale* was used as a pre/posttest measure to determine if students could identify interests and give examples of a goal prior to and following intervention. Results of the *AIR Self-Determination Scale* indicated students were able to give significantly more goal examples following the SDLMI intervention.

Next, McGlashin et al. (2003) used a multiple-baseline across participants design to examine the effects of the SDLMI on work-related skills (e.g., bus riding, follow directions, look at supervisor, get materials, stop working) of four students with moderate to severe disabilities. Instruction of the SDLMI included one-on-one instruction at job sites using picture symbol cards. Teachers completed the *GAS* to evaluate participants'

ability to progress towards and achieve goals. Results demonstrated a functional relationship between the SDLMI and improved work related skills for three participants indicating these students with moderate to severe disabilities were able to self-set work related goals and target behavior improved after implementation of the SDLMI. However, results for one participant were variable and did not demonstrate a functional relationship.

Agran et al. (2006) used a multiple-baseline across participants design to investigate the effects of the SDLMI on students' academic performance. Participants included three junior high school students with moderate to severe disabilities. The primary purpose of the intervention was to increase students' academic performance and access to the general curriculum. The SDLMI was delivered via small group instruction. Results demonstrated a functional relationship between the SDLMI and improved academic performance. All three participants were able to self-set academic goals and showed increased improvement on academic skills (i.e., physical science lab activities, social studies mapping skills, life science skills).

Further, Agran et al. (2008) used a multiple-baseline across participants design to determine the effect of the SDLMI on students' active classroom participation. Participants included three junior high school students with cognitive disabilities. The SDLMI was delivered by the classroom teacher using small-group instruction and teacher modeling. Results demonstrated a functional relationship between the SDLMI and increased active classroom participation for all participants indicating the SDLMI was an effective intervention for improving classroom participation of students with cognitive

disabilities. Additionally, all participants were able to maintain performance once the SDLMI intervention was removed.

While previous studies investigated the effects of SDLMI on academic performance, classroom participation, disruptive classroom behavior, and work-related skills, none of these studies collected data to document student acquisition of the SDLMI process. Recently, two studies have investigated the effect of the SDLMI on students' knowledge of the steps of the SDLMI process (i.e., Fowler, 2008; Mazzotti, Wood, et al., 2009). First, Fowler (2008) used a multiple-probe across SDLMI phases design replicated across students to investigate the effect of the SDLMI on students' knowledge of the SDLMI process and academic goal attainment. Participants included four elementary students with ED receiving instruction in self-contained classrooms. The SDLMI instruction was provided by the special education classroom teacher through small-group instruction. Results demonstrated a functional relationship between the SDLMI and increased knowledge of the SDLMI process for all participants. Additionally, one participant met the academic writing goal, and three participants made progress towards their goal (i.e., spelling, in-seat during writing) when taught the SDLMI.

Second, Mazzotti, Wood, et al. (2009) used a multiple-probe across participants design to teach students with behavior problems to self-set behavior goals via computer-assisted SDLMI. Participants included three students with disabilities participating in inclusive general education settings. The SDLMI was delivered via computer-assisted instruction, and dependent variables included students' knowledge of the SDLMI process and disruptive behavior. Results indicated a functional relationship between the computer-assisted SDLMI and increased knowledge of the SDLMI process and reduced

disruptive behavior for all three participants. As students' knowledge of the SDLMI process increased, students' disruptive behavior decreased. In addition, students' were able to maintain knowledge of the SDLMI process, while maintaining socially acceptable levels of disruptive classroom behavior.

### **Summary of Self-Determination**

Self-determination has been identified as a key element in the instruction of students with disabilities and enables students to obtain a higher quality of life (Field et al., 2003). Self-determination consists of 12 components (e.g., choice-making, goal-setting, self-advocacy, self-awareness) that are necessary for students to learn in order to become self-determined (Wehmeyer & Schalock, 2001). Additionally, self-determination has been a significant predictor of positive post-school success in the areas of employment and education for transition-aged students with disabilities (Test, Mazzotti, et al., 2009). More importantly, teaching self-determination skills has been identified as an evidence-based practice for students with disabilities (Test, Fowler, et al., 2009). Unfortunately, self-determination is not consistently incorporated into the general or special education curriculum (Carter et al., 2008; Stang et al., 2009), and teachers have indicated they are not prepared to teach self-determination skills (Grigal et al., 2003; Wehmeyer et al., 2000).

Strategies for teaching self-determination skills to students at-risk for, or with ED, have been prevalent throughout the special education literature. Specifically, interventions to teach self-determination skills have included teaching self-advocacy (Test et al., 2005), choice-making (Jolivet et al., 2001; Kern et al., 1998); and self-management skills (Briesch & Chafouleas, 2009; Mooney et al., 2005). Additionally,

research to teach students self-determination skills has included using the SDLMI as a method to promote academic and behavioral skills of students with disabilities (Agran et al., 2000; Agran et al., 2002; Agran et al., 2006, Agran et al., 2008; Fowler, 2008; McGlashan et al., 2004; Mazzotti, Wood, et al., 2009; Palmer & Wehmeyer, 2003; Wehmeyer et al., 2000). However, research is still needed to investigate strategies that provide teachers with methods for teaching self-determination skills along with behavioral and academic skills.

### **Computer-Assisted Instruction**

#### **Defining Computer-Assisted Instruction**

Research on computer-assisted instruction (CAI) as a strategy for improving academic and functional skills of students at-risk for, or with, disabilities has been conducted for over two decades. Initially, computers were used as a reinforcement tool by teachers to reward students for good behavior (Bender & Bender, 1996; Hall, Hughes, & Filbert, 2000). As technology has improved, CAI has become an instructional tool for classroom teachers. CAI has been defined as “the use of a computer and other associated technology with the intention of improving students’ skills, knowledge, or academic performance” (Okolo, Bahr, & Rieth, 1993, p. 1). CAI is synonymous with computer-based instruction, computer-mediated instruction, interactive hyper-media instruction, and multimedia instruction. CAI can involve multiple components, including graphics, photographs, audio, text, and video (Hutcherson, Langone, Ayres, & Clees, 2004). A combination of components can be used with CAI interventions and often includes specific instructional strategies (e.g., direct instruction, modeling, corrective feedback, positive reinforcement, constant time delay). Furthermore, CAI has been used for

individual (e.g., Simpson, Langone, & Ayres, 2004) or group (e.g., Mechling, Gast, & Krupa, 2007) instruction and has typically involved introducing students to new material, providing independent practice, problem solving, and simulated instruction (Bender & Bender, 1996; Lancaster, Schumaker, & Deshler, 2002).

### **Advantages of CAI**

There are several advantages to using CAI as an instructional tool for students at-risk for, or with, disabilities. First, it can be used as a method for delivering instruction on new skills (Fitzgerald, Koury, & Mitchem, 2008). Second, CAI gives teachers the opportunity to expand traditional modes of delivering instruction (Elder-Hinshaw, Manset-Williamson, Nelson, & Dunn, 2006). Additional advantages of using CAI include: (a) using it as a skill building tool to provide individualized explicit instruction of specific skills without teacher involvement (Bender & Bender, 1996; Boon, Fore, Blankenship, & Chalk, 2007); (b) promoting active student engagement (Boon et al., 2007; Hutcherson et al., 2004; Mechling, 2005; Mechling, 2008); and (c) increasing students' motivation, self-efficacy, and on-task behaviors (Bender & Bender, 1996; Boon et al., 2007; Cumming et al., 2008 ). Additionally, CAI has been effective for teaching students at-risk for, or with, disabilities various skills, including academic skills (e.g., Coleman-Martin, Heller, Cihak, & Irvine, 2005; Fuchs et al., 2006; Higgins, Boone, & Lovitt, 1996; Kim et al., 2006) and instructional strategies (e.g., Boon, Burk, Fore, & Spencer, 2006; Lancaster, Lancaster, Schumaker, & Deshler, 2006; Mechling, Gast, & Cronin, 2006).

As a result, CAI holds promise as a teaching tool that can be used in place of, or in addition to, traditional teacher-led instruction for students at-risk for, or with,

disabilities. Two studies have investigated teachers' perceptions of using CAI in the classroom (Dexter, Anderson, & Becker, 2000; Wozney, Venkatesh, & Abrami, 2006). First, Wozney et al. (2006) examined the perceptions of elementary and secondary teachers about implementing CAI in the classroom. Results indicated that 91% of teachers surveyed felt CAI was a "valuable instructional tool" (p. 188). In addition, teachers felt that CAI did not inhibit student performance during traditional instruction activities, and it was an effective tool for students of various ability levels. Second, Dexter et al. (2000) conducted a survey of elementary, middle, and high school teachers' perceptions of CAI. Teachers indicated they used CAI in their classrooms, and word processing and multimedia formats were most beneficial to students.

### **CAI and Traditional Teacher-Led Instruction**

Four literature reviews have been conducted to summarize research on using CAI as an instructional tool for teaching various skills to students at-risk for, or with, disabilities (Boon et al., 2007; Fitzgerald et al., 2008; Fulk & Stormont-Spurgin, 1995; Hall et al., 2000). Specifically, several studies within each review found CAI to be as effective as traditional teacher-led instruction methods or more effective when paired with traditional teacher-led instruction methods.

First, Fulk and Stormont-Spurgin (1995) conducted a review of 38 studies published between 1985 and 1994 on spelling interventions for students with LD. Of the 38 studies, 9 were related to CAI as an instructional tool to teach spelling skills to students with LD (i.e., Hasselbring, 1982; Hasselbring, 1984; Kinney, Stevens, & Schuster, 1988; MacArthur, Haynes, Malouf, Harris, & Owings, 1990; Margalit & Roth, 1989; McDermott & Watkins, 1983; Rieth, Polsgrove, & Eckert, 1984; Stevens,

Blackhurst, & Slaton, 1991; Watkins, 1989). Of these 9 studies, 3 (i.e., MacArthur et al., 1990; McDermott & Watkins, 1983; Watkins, 1989) compared CAI to traditional teacher-led instruction methods (i.e., drill and practice, modeling and feedback, paper/pencil practice). Among these three studies, CAI involved a (a) computer spelling program that included visual and audio components to provide modeling and feedback or (b) computer spelling drill and practice. Results of 1 study (i.e., Watkins, 1989) found CAI was as effective as traditional instruction methods for teaching spelling (i.e., student achievement under CAI=77%; student achievement under teacher=74%). Results of a second study (i.e., MacArthur et al., 1990) indicated using CAI to teach spelling skills was more effective than traditional instruction methods. Specifically, students who participated in computer spelling practice made significant improvements on weekly spelling tests as compared to students who participated in pencil/paper practice. The third study (i.e., McDermott & Watkins, 1983) found no significant difference in achievement between students who participated in the computer spelling drill and practice group and those who participated in the paper/pencil group. Finally, all studies reported high on-task behavior for students participating in CAI.

Second, Hall et al. (2000) conducted a review of 17 empirical studies published between 1980 and 1997 that used CAI to provide reading instruction and practice to students with LD. CAI interventions included instruction on new reading skills or drill and practice of previously taught skills. Of the 17 studies, 6 (i.e., Baer, Kinzer, & Rieth, 1991; Harper & Ewing, 1986; Jones, Torgeson, & Sexton, 1987; Keene & Davey, 1987; Lin, Podell, Rein, 1991; VanDaal & Van der Leig, 1992) compared CAI to traditional instruction methods (i.e., teacher-led, textbook work). Four of the studies (i.e., Baer et al.,

1991; Jones et al., 1987; Keene & Davey, 1987; Lin et al., 1991) found significant differences between CAI and traditional teacher-led instruction suggesting CAI was more effective than traditional modes of instruction. Two of the studies (i.e., Harper & Ewing, 1986; VanDaal & Van der Leig, 1992) reported no significant differences between groups. Findings of the review indicated CAI was a promising instructional method for providing explicit instruction in reading to students with LD and suggested that CAI be used in combination with traditional reading instruction to teach and practice specific skills (e.g., decoding, phonemic awareness, comprehension).

Third, Boon et al. (2007) conducted a review of 18 studies published between 1980 and 2006 that investigated the use of CAI social studies instruction for students at-risk for, or with, mild disabilities participating in general education settings. Of the 18 studies, 8 (i.e., Boon, Burke, Fore, & Spencer, 2006; Boon, Burke, Fore, & Hagan-Burke, 2006; Higgins & Boone, 1990; Higgins & Boone, 1992; Higgins, Boone, & Lovitt, 1996; Horton & Lovitt, 1994; Horton, Lovitt, Givens, & Nelson, 1989; Horton, Lovitt, & Slocum, 1988) compared the use of CAI to traditional instruction methods (e.g., note-taking with paper and pencil, lecture, teacher-led instruction, guided notes). Of the 8 studies, 5 (i.e., Higgins & Boone, 1990; Higgins & Boone, 1992; Higgins et al., 1996; Horton & Lovitt, 1994; Horton et al., 1989) used computerized study guides to enhance students' social studies skills, one (i.e., Horton et al., 1988) used computer map tutorials to enhance students' mapping skills, and two (i.e., Boon, Burke, Fore, & Spencer, 2006; Boon, Burke, Fore, & Hagan-Burke, 2006) used computerized concept mapping to improve students' comprehension and content knowledge in social studies. Results of the eight studies indicated students who participated in CAI instruction did better than

students receiving traditional instruction methods. Results of one study (i.e., Higgins & Boone, 1990) found that CAI was more effective than a teacher-led lecture format and as effective as CAI plus teacher-led lecture. Overall, findings indicated that CAI was an effective instructional tool for improving student performance and achievement in social studies content for students at-risk for, or with, disabilities across grade levels.

In 2008, Fitzgerald et al. conducted a review of 34 studies published between 1996 and 2007 that investigated the use of computer-mediated instruction for students with high-incidence disabilities (i.e., learning disabilities, emotional/behavioral disorders, mental retardation, other health impaired). Studies reviewed used quantitative, single-subject, or qualitative research methods. The authors examined the use of CAI across the five academic areas of reading, writing, math, social studies, and science. Of the 34 studies, 10 (i.e., Blankenship, Ayers, & Langone, 2005; Bottge, Heinrichs, Chan, & Serlin, 2001; Calhoon, Fuchs, & Hamlett, 2000; Englert, Manalo, & Zhao, 2004; Hasselbring & Moore, 1996; Howell, Erickson, Stanger, & Wheaton, 2000; Irish, 2002; Langone, Levine, Clees, Malone, & Koorland, 1996; MacArthur, 1999; Marston, Deno, Dongil, Diment, & Rogers, 1995; Mastropieri, Scruggs, & Shiah, 1997) compared the use of CAI to other traditional instructional methods (e.g., teacher-led, independent practice, paper and pencil). Three of the 10 studies (i.e., Blankenship et al., 2005; Howell et al., 2000; Marston et al., 1995) focused on using CAI interventions to teach reading skills (i.e., decoding, word recognition, comprehension) to students at-risk for, or with, mild disabilities. In these three studies, CAI was described as: (a) CAI, (b) a computer decoding, comprehension, and writing program; or (c) an interactive hypermedia program. Results indicated CAI was more effective than traditional instruction methods

for teaching reading, and one study (i.e., Howell et al., 2000) found CAI paired with traditional teacher-led instruction was more effective than CAI only or teacher-led instruction only.

Furthermore, 3 of the 10 studies (i.e., Englert et al., 2004; Langone et al., 1996; MacArthur, 1999) focused on using CAI interventions to teach writing skills (i.e., paragraph completion, spelling, grammar, punctuation) to students at-risk for, or with, mild disabilities. CAI interventions were described as: (a) a typing tutor program; (b) computer-mediated instruction program that included word processors, spell checkers, grammar checkers, and speech synthesizers; and (c) a computer program with embedded scaffolds. Results of two studies (i.e., Englert et al., 2004; MacArthur, 1999) indicated CAI was more effective than traditional writing instruction, and results of one study (i.e., Langone et al., 1996) found no clear advantage to using CAI over traditional instruction methods for teaching writing.

Finally, 4 of the 10 studies (i.e., Bottge et al., 2001; Calhoon et al., 2000; Hasselbring & Moore, 1996; Mastropieri et al., 1997) focused on using CAI interventions to teach math skills (i.e., fact fluency, word problem solving) to students at-risk for, or with, mild disabilities. CAI interventions were described as (a) computer tutorial and assessment program, (b) video anchors and multimedia presentations, (c) computer and video vignettes, and (d) video-based anchors to teach problem solving. Results of two studies (i.e., Hasselbring & Moore, 1996; Mastropieri et al., 1997) indicated that students who participated in CAI made significantly higher gains on problem-solving skills than those in the traditional instruction group. One study found that CAI was comparable to traditional instruction methods (i.e. Bottge et al., 2001), and one study found traditional

teacher-led instruction was more effective than CAI (i.e., Calhoon et al., 2000). Findings indicated CAI was an effective method for providing explicit instruction to promote learning and achievement of students at-risk for, or with, disabilities. The authors made the recommendation that rigorous research continue to be conducted on CAI to examine effects and benefits for students with disabilities.

### **CAI and Functional Life Skills**

While CAI has been an effective method for teaching students various academic skills, research has also investigated CAI as a method for teaching independent living skills to students with disabilities (Ayres, Langone, Boon, & Norman, 2006; Hutcherson et al., 2004; Mechling, 2004; Mechling & Cronin, 2006; Mechling, Gast, & Langone, 2002). Specifically, Mechling et al. (2002) used a multiple-probe across behaviors replicated across participants design to investigate the effects of computer-assisted video instruction on students' ability to read grocery aisle signs and locate store items. Participants were four students between the ages of 9 and 17 with moderate intellectual disabilities. The CAI intervention was presented via laptop computer and consisted of: (a) an interactive format that promoted active student response; (b) still photographs of aisle signs and aisle locations of grocery items; and (c) video recordings of students moving through the actual grocery store locating aisles, locating items, and selecting items. Results demonstrated a functional relationship between computer-assisted video instruction and students' increased ability to read grocery aisle signs and locate grocery items for all participants. Additionally, participants were able to generalize information to actual grocery store settings. Suggestions for future research included investigating CAI with multiple components (e.g., active student response, photographs, video, audio,

feedback) to teach students with disabilities independent living skills and promote interaction with natural environments.

Similarly, Mechling (2004) used a multiple-probe across participants design to examine the effects of a multimedia computer-based instructional program on grocery shopping fluency for students with mild to moderate disabilities. Participants were three students between the ages of 13 and 19. CAI consisted of an interactive format presented via laptop computer and included video simulations, still photographs, text, audio, constant time delay, and corrective and positive feedback. During intervention, students were presented with actual video of a grocery store, video navigation down grocery store aisles, still photographs of grocery aisle signs, and still photographs of grocery items. Students navigated through the program using touch screen or a hand-held mouse. Students were able to practice generalization in actual grocery store settings. Results demonstrated a functional relationship between the multimedia CAI program and increased grocery shopping fluency. Results supported the use of a multimedia CAI program for effectively increasing grocery shopping skills of students with mild to moderate disabilities. Researchers suggested that teacher-created CAI programs provide opportunities for teachers to individualize instruction for students with disabilities.

Hutcherson et al. (2004) used a multiple-probe across behaviors replicated across students design to investigate the effects of CAI on selection of grocery store items. Participants were four middle school students with moderate to severe disabilities. The interactive CAI program was presented via desk-top computer and consisted of (a) photographs of grocery items and a grocery cart and (b) an audio component (i.e., narrating, task directions, corrective feedback, positive feedback). Specifically, the

computer displayed photos of grocery store items as they appeared in grocery stores, and students were required to match items to types of food (e.g., soups, cereals, pizzas).

Results demonstrated a functional relationship between the interactive CAI program and students' selection of grocery store items for all participants. CAI was an effective strategy for teaching students to accurately and correctly select grocery store items.

Researchers suggested that CAI is an alternative to traditional instruction methods that can be used to teach students with disabilities specific skills.

Mechling and Cronin (2006) used a multiple-probe across participants design to investigate the effects of computer-based video instruction to teach students with moderate to severe disabilities to use an augmentative/alternative communication device to order at fast-food restaurants. Participants were three high school students between the ages of 17 and 21 with moderate to severe intellectual disabilities. The computer-based video instruction was presented via laptop computer and consisted of (a) still photographs of food items and cashiers and (b) simulated video and audio recordings of ordering at fast-food restaurants. Computer-based video instruction involved presenting students with actual video of an individual ordering at a fast food restaurant, still photographs of specific food items, voice recordings describing the items, and a prompt to place an order. Students were to touch the correct picture on the augmentative/alternative communication device as instructed by the computer-based video instruction program. Results demonstrated a functional relationship between the computer-based video instruction program and students' ability to order independently at fast-food restaurants using an augmentative/alternative communication device for all students. Researchers

stated that the study supports using computer-based video instruction to teach students with disabilities functional life skills.

Finally, Ayres et al. (2006) used a multiple-probe across participants design to investigate the use of computer-based instruction to teach students with intellectual disabilities to purchase grocery store items using the one-more-than strategy. An additional purpose of the study was to promote generalization of skills to community settings (i.e., paying for items at a grocery store). Participants were four 14-year-old middle school students with intellectual disabilities. Interactive computer-based instruction was delivered via desktop computer and consisted of (a) video of a store cashier and (b) audio, which included prompts to pay for random items, instructional feedback on navigating through the program, and corrective feedback. Results for three participants demonstrated a functional relationship between the CAI one-more-than strategy and students' ability to make grocery item purchases. Additionally, students were able to generalize the skill to local grocery store settings. Results for the fourth participant were variable for intervention and generalization phases and did not demonstrate a functional relationship. Since this intervention only included video and audio components of CAI, the authors suggested that future research be conducted using multiple components of CAI (e.g., instructional strategies, photographs).

### **Computer-Assisted Instruction and Self-Determination Interventions**

In addition to being an effective instructional tool for teaching academic and functional skills to students with disabilities, CAI has been an effective instructional method for teaching self-determination skills to students with disabilities. Specifically, CAI has been used to teach specific self-determination components to students with

disabilities, including: (a) self-advocacy (Hammer, 2004; Lancaster et al., 2002); (b) choice-making (Richter, 2008; Mazzotti, Test, et al., 2009); and (c) goal-setting (Fitzgerald & Werner, 1996; Mazzotti, Wood, et al., 2009).

**Self-advocacy skills.** Two studies investigated the use of technology to teach self-advocacy skills to students with disabilities (Hammer, 2004; Lancaster et al., 2002). First, Lancaster et al. (2002) examined the effects of an interactive hypermedia program on student participation in the IEP. Specifically, the *Self-Advocacy Strategy* was taught (a) using an interactive hypermedia program plus role-play and (b) traditional teacher-led instruction plus role play. Two designs were used to evaluate the effects of the intervention. A multiple-probe across participants replicated across experimental groups design was used to evaluate the effects of instruction on students' use of the *Self-Advocacy Strategy* (VanReusen, Bos, & Schumaker, 1994). A posttest only comparison group design was used to compare specific intervention components. Students were randomly assigned to one of three groups (i.e., no instruction, traditional teacher-led instruction, interactive hypermedia instruction). Additionally, participants were paid \$6.00 per hour to participate. The CAI intervention included six lessons related to teaching students the *Self-Advocacy Strategy* in order to take an active role in the IEP and transition planning process. CAI was delivered via desktop computer and consisted of (a) video clips, (b) audio components, (c) matching text, and (d) embedded assessment. Dependent variables were (a) students' knowledge of strategy components, (b) students' use of the strategy during IEP meetings, and (c) number of goals and objectives developed by the student. Results indicated students in both groups showed an increased ability to use the strategy (e.g., articulate strengths, needs, goals) from baseline to

intervention. Statistically significant differences were found between the experimental groups and the comparison group in that students in both experimental groups gained increased knowledge of the strategy as compared to students in the no instruction group. Students, who participated in the interactive hypermedia group, showed a significantly higher ability to set goals and objectives as compared to students in the traditional teacher-led instruction group. Finally, students in both intervention groups were able to generalize knowledge of the strategy to live IEP meetings. While researchers concluded that the interactive hypermedia intervention was as effective as the teacher-led instruction, they noted that, although both instructional methods were effective, the interactive hypermedia intervention required a minimal amount of teacher time and produced similar effects as teacher-led instruction.

In an effort to replicate the Lancaster et al. (2002) study, Hammer (2004) examined the effects of a *Self-Advocacy Strategy* interactive hypermedia program (Lancaster et al., 2002) on students' participation in IEP meetings. A multiple-baseline across participants design was used to evaluate effects of the intervention. Participants included three middle school students with mild disabilities enrolled in a private school for students with learning disabilities. The study took place in a self-contained classroom. Students were taught the *Self-Advocacy Strategy* via CAI which consisted of six lessons lasting approximately 40 min. CAI was delivered via desktop computer and consisted of video clips, audio components, matching text, and embedded assessment. Following CAI, students participated in role play activities to practice their role in the IEP conference. The dependent variable was a 10-item probe to evaluate the students' participation in IEP meetings based on relevant positive (e.g., "I do not read well"), relevant negative (e.g., "I

do not know”), and irrelevant (e.g., “I do not want to work on my reading skills”) comments to questions (e.g., “Can you tell me what you think are your weakest study or learning skills?”) posed during IEP conferences (Hammer, 2004, p. 297). Results indicated that relevant positive comments increased from baseline to intervention across students; irrelevant and negative comments remained low across students. Only two data points were collected during intervention; therefore, a functional relationship was not demonstrated and confidence in the true effects of the intervention are questionable.

**Choice-making.** Two studies have used CAI to teach choice-making to students with disabilities. First, Richter (2008) examined the effects of a multimedia social stories intervention on students’ knowledge of adult outcomes and opportunities in the areas employment, education, independent living, and recreation. Participants included three high school students with significant cognitive disabilities who attended a public, separate school for students with moderate to severe disabilities. A multiple-probe across participants design was used to evaluate the effects of the intervention. Students were taught a multimedia social stories intervention, which included (a) visual picture symbols of outcome areas and opportunities, (b) audio recordings explaining outcome areas and opportunities with related picture symbols and text explanations, and (c) visual picture symbols of outcome areas and opportunities. Dependent variables were: (a) knowledge of four adult outcome areas (i.e., education, employment, independent living, recreation) and opportunities (e.g., working in an enclave, continuing education, going to the movies, living in a group home); and (b) a setting/situation generalization measure at an informal transition planning meeting. Results demonstrated a functional relationship between the multimedia social stories intervention and increased knowledge of adult outcomes and

opportunities in employment, education, independent living, and recreation across all participants. Additionally, a measure of setting/situation generalization indicated participants were able to generalize knowledge learned to an informal transition planning meeting.

Next, Mazzotti, Test, et al. (2009) examined the effects of CAI on students' knowledge of post-school options in the areas of employment, education, and independent living. Participants included four students with mild and moderate cognitive disabilities, who participated in specialized functional curriculum at a private school for students with cognitive disabilities. A multiple probe across behaviors design replicated across participants was used to evaluate the effects of the intervention. CAI was used to teach students about options (i.e., education, employment, independent living) and supports (e.g., mobile work crew, compensatory education, group home) for post-school life in order to enhance their ability to make informed choices. The CAI program was delivered via desktop computers and consisted of (a) explicit instruction, (b) still photographs, (c) audio recordings, (d) text, and (e) corrective and positive feedback. Dependent variables included students' knowledge of options and supports measured by a 30-point probe and a setting/situation generalization measure to determine students' ability to make informed choices about options and supports. Results indicated a functional relationship between CAI and increased knowledge of post-school options across outcome areas for all participants. Additionally, students were able to generalize the information learned by articulating choices for their lives after high school in the areas of education, employment, and independent living.

**Goal-setting.** Two studies investigated the use of CAI to teach students goal-setting skills (Fitzgerald & Werner, 1996; Mazzotti, Wood, et al., 2009). First, Fitzgerald and Werner (1996) examined the effects of a goal-setting interactive hypermedia instructional computer program on student's aggressive behavior. The participant was a 12-year-old male with mild mental retardation and autism, who attended a separate school for students with disabilities. The study employed an AB design to evaluate the effects of the intervention. An interactive hypermedia computer program developed based on a self-management strategy (i.e., Stop-Think-Act-Results) was used to teach the student to self-set goals to improve his disruptive classroom behaviors (i.e., humming, talk-outs). The program included a series of screens that involved the student (a) choosing a disruptive behavior to focus on, (b) choosing one direction that he could use as a "self-control cue" (p. 131), and (c) choosing a replacement behavior. Once the student completed the three screens, a self-monitoring chart was generated by the computer for the student to use during independent seat work. At the end of independent seat work, the student would return to the computer program and enter the results from the self-monitoring chart. If the results reflected the expected goal set for self-monitoring, the student would print a coupon for free-time activities. If the expected goal was not met, the student would return to the computer and begin a new plan. Although, results indicated the CAI program was effective in promoting student awareness of problem behaviors and increasing students' ability to use self-monitoring as a strategy to improve problem behavior, a functional relationship could not be determined because an AB design was used. Additionally, the study only included one participant.

Next, Mazzotti, Wood, et al. (2009) examined the effects of CAI on students' knowledge of the SDLMI process and disruptive behavior. Participants included three students with behavior problems participating in an inclusive general education setting. A multiple-probe across participants design was used to evaluate the effects of the intervention. The CAI SDLMI program was developed by the researcher. The program included eight lessons and taught students to self-set behavior goals and monitor progress towards the goal. The eight lessons were divided into three parts (i.e., part one – set a goal, part two – make a plan, part three – adjust the goal). The CAI program was delivered via laptop computer and used an interactive, explicit instruction format, which consisted of still photographs and comics representing appropriate behavior, audio recordings, text, and positive and corrective feedback. Dependent variables were (a) students' knowledge of the SDLMI process measured by a 27-point probe, and (b) disruptive behavior measured using a partial-interval recording system. Although, results indicated a functional relationship between CAI and increased knowledge of the SDLMI and reduced disruptive behavior for each participant, limitations included not evaluating setting/situation generalization for students' disruptive behavior, and using Microsoft Word© 2007 as a method for recording students' responses, which was time consuming and difficult for study participants.

### **Summary of CAI**

Research has suggested that CAI is an effective instructional tool for delivering instruction to students at-risk for, or with, disabilities. CAI has several advantages in that it can: (a) be a method for teaching students new skills (Fitzgerald et al., 2008); (b) give teachers opportunities to expand on traditional instruction methods (Elder-Hinshaw et al.,

2006); (c) be used as a skill-building tool (Bender & Bender, 1996; Boon et al., 2007); (d) promote active student engagement (Boon et al., 2007; Hutcherson et al., 2004; Mechling, 2005; Mechling, 2008); and (e) has the potential to increase student motivation, self-efficacy, and on-task behaviors (Bender & Bender, 1996; Boon et al., 2007; Cumming et al., 2008). Additionally, several literature reviews conducted over the last 13 years have indicated that CAI is more, or as, effective as traditional instruction for teaching academic skills to students at-risk for, or with, disabilities (i.e., Boon et al., 2007; Fitzgerald et al., 2008; Fulk & Stormont-Spurgin, 1995; Hall, Hughes, & Filbert, 2000).

In addition to CAI being an effective method for teaching academic skills to students at-risk for, or with, disabilities, research has suggested that CAI has been an effective method for teaching students with mild, moderate, and severe disabilities independent living skills (Mechling et al., 2002; Mechling, 2004; Hutcherson et al., 2004; Mechling & Cronin, 2006; Ayres et al., 2006). Specifically, CAI, which has included multiple components (e.g., video, audio, photographs), has been effective for teaching students to select items in grocery stores, make food orders at fast-food restaurants, and purchase items using the one-more-than strategy.

Finally, there is limited research that suggests CAI is an effective method for teaching self-determination skills to students with disabilities. Specifically, interventions have focused on teaching specific self-determination components (i.e., self-advocacy, choice-making, goal-setting) via CAI to students with mild, moderate, and severe disabilities (Fitzgerald & Werner, 1996; Hammer, 2004; Lancaster et al., 2002; Mazzotti, Test, et al., 2009; Mazzotti, Wood, et al., 2009; Richter, 2008). Although the results of

these studies are promising, further research is needed to investigate the effects of CAI as a method for teaching students at-risk for, or with, ED self-determination skills and demonstrate the promise that CAI holds as a teaching tool for teaching self-determination skills that can be used in place of, or in addition to, traditional teacher-led instruction.

### **Summary of Literature Review**

Students at-risk for, or with, ED, who exhibit behavior problems at school, may ultimately experience poor in-school and post-school outcomes. Research indicates that students at-risk for ED may face difficulty with social adjustment and meeting the academic and behavior demands set by teachers, if interventions are not put in place (Farmer et al., 2008). Additionally, students with ED face negative in-school outcomes in that they are more likely to face discipline referrals, be placed in self-contained settings, experience suspension or expulsion, drop-out of school, and are likely to face incarceration at some point in their school-age lives (Achilles et al., 2007; Lane et al., 2006; Leone et al., 2009; NLTS2, 2007). Experiencing poor in-school outcomes may lead to poor post-school outcomes. Newman et al. (2009) indicated that students with ED continue to have difficulty maintaining post-school employment, rarely attend postsecondary education, and are not likely to live independently.

One method for improving post-school outcomes for students with ED is to teach students self-determination skills. Research has indicated teaching self-determination skills to students at-risk for, or with, ED may be an effective method for improving problem behavior. Specifically, self-management interventions, such as goal-setting, self-monitoring, self-evaluation, and self-instruction have been effective for improving problem behavior of students at-risk for, or with, ED (e.g., Mooney et al., 2005; Briesch

& Chafouleas, 2009). Another intervention that has been instructionally effective for improving problem behavior and increasing self-determination of students at-risk for, or with ED, is the SDLMI (Mazzotti, Wood, et al., 2009; Palmer & Wehmeyer, 2003; Wehmeyer et al., 2000). Unfortunately, teachers have indicated that they do not have the skills or time to incorporate self-determination instruction into the curriculum (e.g., Carter et al., 2008; Stang et al., 2009).

Since teachers frequently fail to provide instruction to increase students' self-determination skills, finding a convenient and acceptable method for adding self-determination to the curriculum is an important goal that can be met through CAI. Recently, several studies have used CAI to teach self-determination skills to students with disabilities (i.e., Mazzotti, Test, et al., 2009; Mazzotti, Wood, et al., 2009; Richter, 2008). Two studies specifically have used CAI to teach students goal-setting (i.e., one component of self-determination) to improve students' disruptive classroom behavior (i.e., Fitzgerald & Werner, 1996; Mazzotti, Wood, et al., 2009). Both studies were effective for improving students' disruptive behavior. However, given the lack of research to support CAI as a method for teaching students' self-determination skills, it is important that research continue to be conducted to determine if CAI is truly an evidence-based method for teaching self-determination skills to improve students disruptive behavior.

## CHAPTER 3: METHOD

The purpose of this study was to examine the effects of a computer-assisted multimedia goal-setting intervention on students' (a) knowledge of the SDLMI process, (b) disruptive behavior, and (c) level of self-determination for preadolescent students at-risk for, or with, ED. The study focused on teaching students to self-set classroom behavior goals using the SDLMI as a tool to manage disruptive behavior. A multiple probe across participants design was used to determine if students gained knowledge of the SDLMI process and showed improved behavior as a result of the intervention. Additionally, a pre/posttest was used to determine if participants showed increased levels of self-determination as a result of the intervention. Social validity and generalization data were also collected.

### **Institutional Review Board**

Prior to data collection, approval to conduct the study was obtained by the researcher from the University of North Carolina at Charlotte (UNC Charlotte) Institutional Review Board (IRB) for research with human subjects. The researcher obtained written consent from the school's principal, parents or guardians, and students indicating willingness to participate in the study. Informed consent was obtained using a parent or guardian consent form. Consent was requested of each participant and the parent/guardian without undue inducement, force, fraud, duress, or any form of constraint or coercion. Once parent consent forms were signed, students were asked to complete

assent forms indicating their willingness to participate in the study. Only students, for which parent consent forms were signed, were presented with student assent forms.

### **Participants**

Participants for this study included four preadolescent students at-risk for ED between the ages of 10 and 11. Participants met the following inclusion criteria for participation in the study: (a) were in the fourth or fifth grade; (b) participated in the general education classroom setting; and (c) were identified by the classroom teacher as a student at-risk for, or with, ED based on teacher knowledge of student behavior and the *Student Risk Screening Scale (SRSS)* (Lane et al., 2009). The researcher met with classroom teachers prior to the start of the study to discuss inclusion criteria. The researcher asked teachers to identify a minimum of five students who consistently exhibited disruptive classroom behavior. Once teachers had identified five students, they were asked to complete the *SRSS* (Lane et al., 2009) on each student. Students identified as moderate or high risk were included in the study.

**Student Risk Screening Scale (SRSS).** The *SRSS* is a screening tool used to identify students at-risk for ED. The instrument is a teacher rating scale with seven items used to evaluate student classroom behavior concerns and includes: (a) stealing; (b) lying, cheating, sneaking; (c) behavior problems; (d) peer rejection; (e) low academic achievement; (f) negative attitude; and (g) aggressive behaviors (Lane & Menzies, 2003). The items are scored using a 4-point Likert rating scale (i.e., never=0, occasionally=1, sometimes=2, frequently=3) and scores can range from 0 to 21 with 21 indicating the highest level of risk (i.e., 0 to 3=low risk, 4 to 8=moderate risk, 9 to 21=high risk; Lane

& Menzies, 2003). Lane, Kalberg, Parks, and Carter (2008) found the *SRSS* has strong test-retest reliability and convergent validity.

**Darius.** Darius was an 11-year-old, African American male, who participated in a fifth grade inclusion general education classroom setting. Darius had been expelled from his previous school for disruptive/aggressive behavior. The classroom teacher indicated that Darius exhibited several disruptive classroom behaviors, including (a) excessive talking, (b) beating on the desk, and (c) drawing or looking around during instruction. Based on results of the *SRSS* (Lane et al., 2009), Darius was identified as high risk for ED. Table 1 presents results of the *SRSS*.

**Eboney.** Eboney was a 10-year-old, African American female, who participated in a fifth grade inclusion general education setting. At the start of the study, Eboney had been referred for special education services to the school's intervention team for behavior and academic problems. The classroom teacher indicated that Eboney exhibited several disruptive classroom behaviors, including (a) excessive talking and playing with various items during instruction, (b) eating/chewing gum in class, (c) refusal to obey teacher directions, and (d) incomplete class work. Based on results of the *SRSS* (Lane et al., 2009), Eboney was identified as high risk for ED. Table 1 presents results of the *SRSS*.

**Danilo.** Danilo was an 11-year-old, Bosnian male, who participated in a fifth grade inclusion general education setting. The classroom teacher indicated that Danilo exhibited several disruptive classroom behaviors, including (a) excessive talking, (b) constant arguing when asked to comply with teacher instructions, (c) annoying other students when working in groups, (d) getting out of his seat without permission, and (e)

day dreaming. Based on results of the *SRSS* (Lane et al., 2009), Danilo was identified as high risk for ED. Table 1 presents results of the *SRSS*.

**Jarrett.** Jarrett was an 11-year-old, African American male, who participated in a fifth grade inclusion general education setting. At the start of the study, Jarrett had been referred for special education services to the school's intervention team for behavior and academic problems. The classroom teacher indicated that Jarrett exhibited several disruptive classroom behaviors, including (a) excessive talking and playing with various items during instruction, (b) annoying other students, (c) disinterest in work resulting in incomplete class work, and (d) not paying attention during instruction. Based on results of the *SRSS* (Lane et al., 2009), Jarrett was identified as moderate risk for ED. Table 1 presents results of the *SRSS*.

Table 1: *Results of the SRSS for each Participant*

Participant	Stealing	Lying, Cheating, Sneaking	Behavior Problems	Peer Rejection	Low Academic Achievement	Negative Attitude	Aggressive Behaviors	Total
Darius	0	2	3	0	3	3	2	13
Eboney	0	3	3	2	2	0	0	10
Danilo	0	2	3	0	3	1	2	11
Jarrett	0	0	2	2	3	1	0	8

### Setting

All training and intervention sessions were conducted in a public, urban elementary school located in the southeast United States. The school followed a school-wide model of Positive Behavioral Interventions and Supports. The study was conducted during the fall and winter semesters of the 2009-2010 school year. Intervention sessions and data collection for the SDLMI process occurred in a small office next to the general

education classroom. The reason for selection of this setting was to prevent pre-exposure to the intervention by study participants, primarily because three participants were in the same general education classroom. The researcher conducted intervention sessions daily, 5 days per week during the first morning block at 7:30 a.m. The length of intervention sessions ranged from 8 min 22 s to 13 min 46 s (M= 10 min 42 s).

### **Researcher**

The researcher was a fourth year doctoral student in special education at UNC Charlotte. She has a Master's of Education in Special Education. She was a teacher of elementary students with mild disabilities, including students with ED, learning disabilities, and mild cognitive disabilities. Prior to becoming a classroom teacher, she was employed for 3 years as an instructional/administrative assistant in a group home, where she worked with young adults with moderate and severe disabilities. She has co-authored several manuscripts that have been published in peer-reviewed special education journals and a book chapter on secondary transition for students with severe disabilities. The researcher was the interventionist and primary data collector for the first dependent variable (i.e., knowledge of SDLMI process), second dependent variable (i.e., disruptive classroom behavior), and the third dependent variable (i.e., level of self-determination). She was responsible for training one outside observer to collect interrater reliability data on the second dependent variable (i.e., students' disruptive classroom behavior). She was responsible for training a second outside observer to collect interrater reliability data on the primary dependent variable (i.e., students' knowledge of SDLMI process). The researcher was responsible for (a) gaining IRB approval, (b) coordinating agreement with the school district to conduct the study, (c) developing the multimedia goal-setting

intervention and materials, and (d) communicating plans and progress with her dissertation committee.

### **Outside Observers**

A doctoral student from the Department of Special Education and Child Development at UNC Charlotte was trained to collect interrater reliability data on the first primary dependent variable (i.e., students' knowledge of the SDLMI process) for all phases of the intervention. Additionally, a second observer, an undergraduate research assistant from the Department of Special Education and Child Development at UNC Charlotte, was trained to collect interrater reliability data on the second dependent variable (i.e., students' disruptive behavior) for all phases of the intervention. The second observer was trained on appropriate data collection and observation procedures targeted for the second dependent variable (i.e., students' classroom disruptive behavior) for all phases of the intervention.

### **Materials**

Eight computer-assisted multimedia goal-setting lessons were adapted from the SDLMI and developed by the researcher. The lessons covered the three parts of the SDLMI (i.e., set a goal, make a plan, adjust your goal). A laptop computer equipped with Microsoft PowerPoint<sup>®</sup> was used to present lessons. Microsoft PowerPoint<sup>®</sup> was used to create the visual and audio components of the intervention. Participants navigated through the lessons using an external mouse. The length of each lesson ranged from 8 min 22 s to 13 min 46 s ( $M = 10$  min 42 s) and included 14 to 22 PowerPoint slides. Appendix A includes the content of each lesson, and Appendix B includes examples of the intervention.

Additionally, cartoons were created using the ToonDoo<sup>®</sup> website and were downloaded using SNAGIT<sup>®</sup>. ToonDoo<sup>®</sup> allowed the researcher to create cartoons for the first intervention lesson to provide participants with examples of strengths and needs. The search engine, Google Images<sup>®</sup>, was used to retrieve stock photographs to demonstrate appropriate classroom behavior in the lessons, and photographs were downloaded using SNAGIT<sup>®</sup>. SNAGIT<sup>®</sup> is a screen capture software program that allowed the researcher to capture images from the computer screen and web pages. Once images were captured they were sized to fit into the PowerPoint<sup>®</sup> slides. Cartoons and photographs were inserted into the PowerPoint<sup>®</sup> slides.

Next, Camtasia Studio<sup>®</sup> was used as a method for collecting treatment integrity on the intervention and recording students' responses to questions embedded within each lesson. Camtasia Studio<sup>®</sup> is a computer program that allowed the researcher to create video and audio recordings of each lesson as the student navigated through the PowerPoint<sup>®</sup> slides. Video recordings were used by the researcher to conduct treatment integrity on the intervention procedures. Audio recordings were used by the researcher to identify participants' answers to questions embedded as instruction during each lesson.

Finally, a digital voice recorder was used for data collection. The digital voice recorder was used to record student answers to the 27-point probe (i.e., first primary dependent variable) and was used by the first outside observer for interrater reliability on the first primary dependent variable. Other materials included data collection sheets (i.e., pre/posttests, probes, partial-interval recording, treatment integrity checklists, interrater reliability checklists), a clipboard, and pencils for scoring.

## **Dependent Variables**

### **Primary Dependent Variables**

Data were collected on three dependent variables in the study. The first primary dependent variable was students' knowledge of the SDLMI process as measured by a 27-point probe. The SDLMI has three parts, including (a) set a goal, (b) make a plan, and (c) adjust your goal. Knowledge of the SDLMI process was defined as students' ability to orally define the three basic part questions and 12 supporting questions (4 questions per part). The researcher measured the student's response item-by-item based on student's oral response to the questions. The number of points on the 27-point probe (i.e., 9 points for set a goal; 9 points for make a plan; 9 points for adjust your goal) were calculated and converted to a percentage. This allowed the researcher to compare participants' knowledge of the SDLMI process to the second dependent variable (i.e., participants' disruptive behavior), when data were graphed.

The probes for students' knowledge of the SDLMI process were administered following each intervention session and included five questions (one question with possibility of 1 point; four with possibility of 2 points) per SDLMI part. The questions for the SDLMI probe were adapted from Fowler (2008) and Palmer and Wehmeyer (2003). The probes were read aloud to the participant, and the participant provided answers orally. The researcher scored items using the probe checklist by circling incorrect or correct for the three questions that required the participant to provide a single response and rating answers for the 12 questions that required a partial or totally correct response using a 3-point Likert rating scale (i.e., 0 = incorrect; 1 = partially correct; 2 = correct; see Appendix C).

The second dependent variable was a measure of students' disruptive behavior. Disruptive behavior was defined as: (a) talking or conversing off-topic during teacher instruction; (b) annoying other students (i.e., making faces, giggling, touching, making noises, tapping or hitting on desk, throwing or manipulating objects); (c) paying attention to other stimuli (i.e., playing or attending to objects in desk or other instructional items); (d) scribbling or picture drawing; (e) note writing; (f) spitting; (g) finger sucking; (h) getting out of seat without permission (i.e., leaving assigned area); (i) tipping or moving chair to bring legs off floor; and (j) calling out (i.e., not raising hand when teacher asks a question, before another student responds, or before teacher answers question; Lambert et al., 2006). Disruptive behavior was measured using a 16 s partial-interval recording system. In using a partial-interval recording system, the observer recorded whether or not the target behavior occurred at anytime within the interval using a behavior recording form (Cooper, Heron, & Heward, 2007). To cue observers when to record whether or not the target behavior occurred, an audio recording of intervals (i.e., observe, record) were provided to observers via a digital voice recorder. The purpose of partial-interval recording is to identify whether the behavior occurred during the interval and does not measure how often the behavior occurred or how long the behavior lasted (Cooper et al., 2007). Disruptive behavior data were collected daily 5 days per week from a small office through a two-way mirror from which all participants could be viewed in the general education classroom setting. Three participants (i.e., Darius, Eboney, Danilo) were observed during a 12 min observation period, and observations for each participant were rotated after every 16 s interval (10 s observe, 6 s record). The fourth participant (i.e., Jarrett) was observed during a 12 min observation period using the same observation

method used for the other three participants. Each participant was observed for 15 intervals during one 12 min observation period (see Appendix D). The percent of total intervals in which the disruptive behavior occurred were graphed.

Additionally, setting/situation generalization data (Cooper et al., 2007) were collected on students' disruptive behavior. Setting/situation generalization is "the extent to which a learner emits the target behavior in a setting or stimulus situation that is different from the instructional setting" (Cooper et al., 2007, p. 617). This measure of generalization was important because in order to produce socially significant behavior change the intervention should produce generalized outcomes in other settings. Therefore, students were observed in one classroom setting different from the students' primary general education setting (i.e., science, music, technology). The generalization measure was a measure of students' disruptive behavior in an untrained setting and was obtained using the partial-interval recording system used to collect data on the disruptive behavior dependent variable. Data were collected (a) once during baseline, (b) once per week during intervention, and (c) once per week during maintenance. Data collection followed the same procedures as the second dependent variable.

The third dependent variable was a measure of students' level of self-determination. This was measured using a pretest to determine students' level of self-determination prior to the intervention, and a posttest to determine if students showed increased self-determination after the intervention. Students and students' classroom teachers were administered the pre/posttest. Questions for pre/posttests were adapted from the *AIR Self-Determination Educator and Student Scales* (Wolman, Campeau, Dubois, Mithaug, & Stolarski, 1994). The *Air Self-Determination Scales* measure two

broad components of self-determination, capacity and opportunity, which enable a student to act in a self-determined manner. The *AIR Self-Determination Scales* measure two broad components of self-determination, capacity and opportunity (Wolman et al., 1994). The capacity component includes three sections: (a) knowledge, which refers to a student's level of understanding regarding self-determination including understanding how to set goals, make choices, and plan to meet goals; (b) ability, which refers to students being able to understand interests and needs, including the ability to make choices, set goals, plan for goals, and take action to meet goals; and (c) perception, which refers to student's perceptions regarding self-determination, including students being able to set goals, achieve goals, and adjust goals (Wolman et al., 1994). Next, the opportunity component of the *Educator Scale* includes one section, opportunities at school, which refers to opportunities and resources students have at school that provide students with the opportunities to be self-determined (Wolman et al., 1994). The researcher chose to use the *AIR Self-Determination Scales* because the instrument questions directly relate to goal-setting and planning.

The *AIR Self-Determination Scales* have commonly been used as a measure of students' level of self-determination in the field of secondary transition. Additionally, Palmer and Wehmeyer (2003) used the scale to measure level of self-determination for elementary students with disabilities ranging in age from 5 to 9 years. The *AIR Self-Determination Scales* were chosen as a measure of self-determination for this proposed study because the questions in the instrument directly relate to goal-setting and planning to meet goals. Reliability and validity tests of the instrument have been conducted with approximately 70 schools in the southwest and northeast United States. Tests were

conducted with 450 students with and without disabilities from diverse backgrounds (i.e., 33% African American, 22% Caucasian, 39% Hispanic, 3% Asian Pacific Islander, 3% other) and special and general education teachers. The instrument has strong evidence of reliability for item consistency, instrument consistency, stability of results over time, and demographic relationships (i.e., gender, ethnicity, socioeconomic status). Additionally, strong positive correlations for construct and item-score validity of the instrument were identified (Wolman et al., 1994).

The *Air Self-Determination Scales* include a student form, educator form, and parent form. For purposes of this study, only the student and educator forms were used, and the *Air Self-Determination Scales* were adapted for each. First, pre/posttest items for the *AIR Self-Determination Scale Student Form* assessed three areas, including (a) things I do, (b) how I feel, and (c) what happens at school. The area, what happens at home, was not assessed (see [http://education.ou.edu/zarrow/files/AIR\\_S-D\\_Student.pdf](http://education.ou.edu/zarrow/files/AIR_S-D_Student.pdf)). Next, pre/posttest items for the *AIR Self-Determination Scale Educator Form* assessed four areas, including (a) knowledge of self-determination behaviors, (b) ability to perform self-determination behaviors, (c) perception of knowledge and ability to perform self-determination behaviors, and (d) opportunity to perform self-determination behaviors at school. The area, opportunity to perform self-determination behaviors at home, was not assessed (see [http://education.ou.edu/zarrow/files/AIR\\_S-D\\_Educator.pdf](http://education.ou.edu/zarrow/files/AIR_S-D_Educator.pdf)).

Prior to collecting baseline data for the primary dependent variable and second dependent variable, teachers and students completed the *AIR Self-Determination Scale* pretests. The researcher explained answer choices and read each item aloud to students. Students were given the opportunity to circle the response. Teachers completed the form

as a paper-pencil survey. The *AIR Self-Determination Scale* posttests were given at the conclusion of the study following collection of maintenance data. The same procedures for completion of pretests were used for completion of posttests.

**Analysis of students' level of self-determination.** To analyze pre/posttest results of the *AIR Self-Determination Scales*, descriptive statistics were used. Specifically, the researcher reported scores for each area of the *AIR Self-Determination Educator and Student Scales*, capacity and opportunity scores, total level of self-determination, and total percent of level of self-determination for each participant to determine if an increase in level of self-determination occurred between pre- and posttest.

### **Interrater Reliability**

Interrater reliability data were collected for students' knowledge of the SDLMI for all sessions, including baseline, intervention, and maintenance. Interrater reliability is the extent to which two observers report the same results when measuring the same event (Cooper et al., 2007). By collecting interrater reliability, the researcher has assurance that the target behaviors were clearly defined, data are believable and accurate, and measures were consistent (Cooper et al., 2007). Interrater reliability data were collected on 30% of the probes using item-by-item scoring and by listening to an audio recording of probe sessions. The researcher trained the second outside observer (i.e., doctoral student in special education at UNC Charlotte) to collect interrater reliability data. A copy was made of the probe checklist prior to scoring participant responses. An agreement was recorded if both observers identically scored the answer as correct or incorrect. A disagreement was recorded if questions were not scored identically. Percent agreement

for each probe was calculated by dividing the number of agreements by the number of agreements plus disagreements multiplied by 100.

In addition, interrater reliability data were collected on the second dependent variable (i.e., students' disruptive behavior) for all sessions, including baseline, intervention, and maintenance. The first outside observer collected data using the behavior recording form at the same time the researcher collected data for a minimum of 30% of observations conducted for each participant. Interval-by-interval comparison was used to determine agreements and disagreements. An agreement was recorded if both observers identically scored the interval as off or on. A disagreement was recorded if intervals were not scored identically. Percent agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements multiplied by 100 for a minimum of 30% of the 12 min observation periods.

Finally, interrater reliability data were collected on the generalization variable (i.e., students' disruptive behavior in other classroom settings). The first outside observer collected data using the behavior recording form at the same time the researcher collected generalization data in the untrained setting. Interrater reliability data were collected on the generalization variable for 30% of observations. The same method used for calculating interrater reliability for the second dependent variable was used for the generalization variable. If at any point interrater reliability fell below 80%, the researcher conducted retraining with observers to ensure interrater reliability stayed consistently above 80% for the dependent variables (i.e., students' knowledge of the SDLMI, disruptive behavior) and the generalization variable.

### **Social Validity Data**

Collecting social validity data can help identify the social importance of behavior change goals, the social acceptance of the intervention, and/or the social importance of behavior change (Cooper et al., 2007; Wolf, 1978). Additionally, Horner et al. (2005) suggested that social validity is one of the necessary components in identifying whether a research study is a “credible example of single-subject research” (p. 173). Specifically, this study assessed the social acceptability of the intervention and outcomes based on teacher and participant perceptions. At the conclusion of the study, participants’ classroom teachers were given a questionnaire to assess their perceptions of the (a) social importance of behavior change of study participants (3 questions) and (b) the social acceptability of the intervention (3 questions). The questionnaire consisted of six open-ended questions (see Appendix E). Participants (students) were also given a 4-point Likert rating scale (i.e., 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree) questionnaire to assess their perceptions of the acceptability of the computer-assisted multimedia goal-setting intervention and the effect on behavior change. Specifically, 3 items evaluated the social acceptance of the intervention, and 2 items evaluated the social importance of behavior change (see Appendix F).

**Social comparison data.** In addition to collecting social validity data on the social acceptability of the intervention and outcomes, social comparison data were also collected. Kazdin (1977) suggested that “behavior changes can be viewed as clinically important if the intervention has brought the client’s performance within the range of socially acceptable levels” (p. 436). With social comparison, data are collected on the behavior of a normative sample and compared to the participant’s behavior (Brulle,

Barton, & Repp, 1984; Cooper et al., 2007). For the study, the participants' classroom teachers were asked to identify the three "best behaved" students in the general education classroom. Social comparison data were collected on the three "best behaved" students in the participants' general education classroom and compared to the behavior of the study participants. This allowed for determining whether or not change in the participants' behavior based on effects of the intervention was in a socially acceptable range within the general education classroom. Data were collected daily using partial-interval recording. Three "best behaved" students were observed during a 12 min observation period following observations of 3 study participants (i.e., Darius, Eboney, Danilo), and 3 "best behaved" students were observed during a 12 min observation period following observations of the fourth student (i.e., Jarrett). Observations for each "best behaved" student were rotated after every 16 s interval (10 s observe, 6 s record) for 15 intervals during a 12 min observation period. Range and mean of social comparison data for the "best behaved" students were graphed.

### **Experimental Design**

The experimental design was a multiple-probe across participants design (Tawny & Gast, 1984) to evaluate the effects of a computer-assisted multimedia goal-setting intervention on students' (a) knowledge of the SDLMI process and (b) on disruptive behavior. In a multiple-probe across participants design, baseline data are collected initially on all participants, and the participant with the lowest (or highest for behavior targeted for reduction), most stable baseline data enters intervention first. Data are collected daily/repeatedly for the participant in intervention, but for the other participants, probes are conducted intermittently providing the basis for behavior change (Cooper et

al., 2007). For this design a functional relationship between the independent variable and change in behavior has been demonstrated if baseline levels remain stable and low, and participants show a change in level and trend only as a result of the targeted intervention (Tawney & Gast, 1984).

During baseline, a minimum of three data points for the 27-point probe (i.e., students' knowledge of the SDLMI process) and disruptive behavior data were collected on each participant to determine level of performance prior to the intervention. The participant with the lowest, most stable baseline data for knowledge of the SDLMI process and highest level of problem behavior entered the intervention phase first. Once the first participant showed an increase on probes for three consecutive sessions during intervention, another baseline data probe was administered to the remaining participants to determine if their levels of performance have remained stable and low for knowledge of the SDLMI process and disruptive behavior had not decreased. Based on this baseline probe, the participant with the lowest level of performance and highest level of disruptive behavior entered the intervention phase. The remaining two participants entered intervention phase using the same method as the second participant.

## **Procedures**

### **General Procedures**

Students participated in the intervention for approximately five 15 min sessions per week. After every intervention session, probes were conducted to evaluate students' knowledge of the SDLMI process. Following the probe, participants returned to the general classroom setting, and the researcher used the partial-interval recording to collect data on students' disruptive behavior from a small office through a two-way mirror from

which all participants could be viewed in the general education classroom setting.

Setting/situation generalization data were collected one time per week by the researcher and first outside observer in the untrained classroom settings (i.e., science, music, technology).

### **Baseline**

Prior to collecting baseline data on students' knowledge of the SDLMI process and disruptive behavior, the researcher collected data using the *AIR Self-Determination Scales* to determine students' level of self-determination prior to beginning intervention. Once *AIR* pretest data were collected, the researcher began collecting baseline data on all participants for students' knowledge of the SDLMI process and disruptive behavior. Participants were administered probes to determine knowledge of the SDLMI prior to the intervention, and the researcher collected disruptive behavior data using the behavior recording form.

### **Computer-Assisted Multimedia Goal-Setting Instruction**

**Multimedia package training procedures.** Prior to starting instruction on the SDLMI process, participants received step-by-step instructions on how to navigate through the computer-assisted multimedia goal-setting computer program. Training was conducted using a training module developed by the researcher. Specifically, participants were trained on how to use the mouse to navigate through the program and respond to the visual and audio components of the intervention. First, participants watched a demonstration of the procedures. Second, participants practiced the procedures with the researcher. Finally, participants were given an opportunity to practice the procedures

independently until mastery (i.e., 100% on treatment integrity checklist; Appendix G) was obtained.

**Intervention procedures.** The intervention was presented in three parts. Intervention procedures included visual and audio components of the intervention presented in the following sequence (see Appendix A and B for teaching procedures and examples of intervention slides). Part One involved three lessons: (a) Lesson 1 – *Identify Strengths and Needs* included instruction on what a goal is, class expectations, and examples of strengths and needs. During the lesson, students identified strengths and needs using the Camtasia Studio<sup>®</sup> recording system; (b) Lesson 2 – *Expected Behavior* included instruction on what a goal is, comparison of student’s current behavior to class expectations, examples of appropriate behavior, and changing self or surroundings. During the lesson, students identified changes to self and surroundings using the Camtasia Studio<sup>®</sup> recording system; and (c) Lesson 3 – *Setting a Behavior Goal* included instruction of what a goal is and identifying what the student wants to accomplish in terms of behavior. During the lesson, students answered questions and set a behavior goal using the Camtasia Studio<sup>®</sup> recording system. At the end of Part One, each student began working on self-selected behavior goals in the general classroom setting.

Next, Part Two involved three lessons: (a) Lesson 4 – *Barriers and Solutions* included instruction of barriers and solutions and identifying barriers and solutions to meet goals. During the lesson, students identified barriers and solutions using the Camtasia Studio<sup>®</sup> recording system; (b) Lesson 5 – *Identifying Supports to Achieve Goals* included instruction on supports for goal success and tools for achieving behavior goals (e.g., cue cards, self-monitoring checklist). During the lesson, students self-selected a tool

for success using the Camtasia Studio<sup>®</sup> recording system; and (c) Lesson 6 – *Finalize the Plan* included identifying specific steps to meet the behavior goal and supports required for meeting the goal were provided. During the lesson, a plan was developed and finalized using the Camtasia Studio<sup>®</sup> recording system. At this point, each student began monitoring their self-selected behavior in the general classroom setting.

Finally, Part Three involved two lessons: (a) Lesson 7 – *Progress Monitoring* included instruction on progress since students began learning to self-set behavior goals, students graphed progress towards the behavior goal and review the plan, and completed steps were identified; and (b) Lesson 8 – *Adjusting the Goal* included identifying whether the behavior goal was met, identifying changes to participant's behavior goal, and examples of how and why changes may need to be made to goal were included. During the lesson, students answered questions about progress towards goal using the Camtasia Studio<sup>®</sup> recording system. Computer-assisted multimedia goal-setting instruction followed the same format for each SDLMI part and included a model-lead-test format.

Several generalization strategies were used in the computer-assisted multimedia goal-setting instruction. First, because the intervention was intended to help students self-set behavior goals to improve their disruptive classroom behavior, it is likely that there were natural contingencies of reinforcement; therefore, if students' classroom behavior improved, teachers were more likely to give positive reinforcement (e.g., praise) in the natural environment because the students' were exhibiting desirable behavior (Alberto & Troutman, 2009). Second, the intervention included general case programming by training sufficient exemplars (Alberto & Troutman, 2009). Specifically, examples of appropriate classroom behaviors were provided throughout the intervention. By

providing, multiple examples during instruction, students were more likely to respond in untrained settings. Third, program common stimuli was used as a generalization strategy because simulated examples of appropriate classroom behaviors and situations were included in the intervention (Alberto & Troutman, 2009). Finally, the last strategy to facilitate generalization was mediating generalization. Students (a) self-set behavior goals in Part One, (b) were taught to self-monitor their behavior in Part Two, and (c) reported on their behavior during Part Three of the intervention. According to Alberto and Troutman (2009), the fundamental goal of the researcher is “to bring behavior under control of self-monitoring, self-administered contingencies, and even self-selected goals and procedures” (p. 362).

Lessons for each intervention part (i.e., set a goal, make a plan, adjust your goal) were presented sequentially daily (i.e., 5 days per week), and probes were conducted at the end of each lesson. Mastery criteria for student responses to the probes was set based on number of points for each SDLMI part. Students remained in intervention for each part of the SDLMI until they scored 7 out of 9 possible points (78%) on each part for 2 consecutive days; however, if a student met mastery criteria prior to completion of lessons for each part of the SDLMI, instruction and probes continued until all lessons were taught.

Additionally, the researcher recorded students’ disruptive behavior daily using a partial-interval recording system. Once a participant in intervention met the criteria for all three parts of the SDLMI, the intervention was stopped, and the participant entered the maintenance phase. The same measure was used to determine when other participants

exited intervention phase. For generalization purposes, the researcher collected disruptive behavior data one time per week in untrained classroom settings.

**Booster sessions.** If a student did not meet mastery criteria, booster sessions were conducted for the part of the SDLMI the student was having difficulty mastering. Two types of booster sessions were used in this study. The booster sessions included booster 1 and booster 2.

**Booster 1.** Booster 1 was conducted using the final lesson for a specific part of the SDLMI if the student was having difficulty reaching mastery criteria. Each one of the SDLMI lessons builds on the other, in that each day there was a review of the prior day's lesson. The final lesson for each part of the SDLMI (i.e., set a goal, make a plan, adjust your goal) reviewed what was taught during that part.

**Booster 2.** Booster 2 included all the components of Part One of lesson 3 plus two additional PowerPoint® slides. The first additional slide included: (a) review of the definition of *goal* using a model-lead-test format; and (b) examples (e.g., staying in seat during instruction, raising hand quietly) and non-examples (e.g., becoming a famous football player, making a million dollars) of behavior goals. The second additional slide included opportunities for Jarrett to practice distinguishing between examples and non-examples of classroom behavior goals.

### **Response Maintenance**

When participants met mastery criteria on the probes for all three SDLMI parts, the intervention was stopped, and maintenance data were collected on students' knowledge of the SDLMI process, disruptive behavior, and the generalization variable once per week for three weeks. Cooper et al. (2007) defined response maintenance as

“the extent to which a learner continues to perform the target behavior after a portion or all of the intervention responsible for the behavior’s initial appearance in the learner’s repertoire has been terminated” (pp. 615, 617). Response maintenance data were collected to determine if participants maintained gains from the intervention once the intervention was removed. Additionally, participants’ disruptive behavior was monitored during the maintenance phase both in the general classroom setting and generalization settings once per week.

### **Treatment Integrity**

Treatment integrity was measured for the intervention. Treatment integrity, also known as procedural fidelity, refers to the extent that intervention procedures are implemented as intended (Cooper et al., 2007). A treatment integrity checklist was used for the intervention procedures. Treatment integrity data were collected by calculating the percentage of items on the treatment integrity checklist presented correctly by participants during the intervention. The researcher observed a minimum 25% of sessions distributed evenly across participants and across conditions (i.e., baseline, intervention [Parts One, Two, Three], maintenance; see Appendix G).

## CHAPTER 4: RESULTS

Findings of the study are presented below. Results for interrater reliability and treatment integrity are presented first followed by results for each research question.

### **Interrater Reliability**

#### **Students' Knowledge of the SDLMI Process**

The second outside observer collected interrater reliability data on 31.3% of the probes for the first primary dependent variable (i.e., students' knowledge of the SDLMI process) using item-by-item scoring. Overall interrater reliability ranged from 88.8% to 100% with a mean of 98.1%. During baseline, interrater reliability ranged from 92.6% to 100% with a mean of 97.8%. During intervention, interrater reliability ranged from 92.6% to 100% with a mean of 98.8%. During maintenance, interrater reliability ranged from 88.8% to 100% with a mean of 95.4%.

#### **Students' Disruptive Behavior**

The first outside observer collected interrater reliability data for 44.7% of the behavior observations for the second dependent variable (i.e., students' disruptive behavior). Overall interrater reliability ranged from 80% to 100% with a mean of 96.7%. During baseline, interrater reliability ranged from 80% to 100% with a mean of 94.5%. During intervention, interrater reliability ranged from 80% to 100% with a mean of 97.7%. During maintenance, interrater reliability ranged from 93.3% to 100% with a

mean of 98.3%. Finally, interrater reliability for setting/situation generalization ranged from 93.3% to 100% with a mean of 95.5%.

### **Treatment Integrity**

To ensure intervention procedures were implemented as intended, treatment fidelity data were collected for 29.7% of all computer-assisted multimedia goal-setting lessons distributed evenly across participants. Camtasia Studio<sup>®</sup> was used as a method for collecting treatment integrity. Treatment integrity ranged from 91% to 100% with a mean of 97.5%. Item 7 on the treatment integrity checklist was: “Student navigates correctly through the program”. The reason treatment integrity was not consistently 100% for all sessions is the result of one student not navigating correctly through the computer-assisted multimedia goal-setting intervention because the student was playing with the mouse during Part One. Additionally, there were a few instances of the computer program malfunctioning.

### **Dependent Variables**

**Research Question 1: What is the effect of a computer-assisted multimedia goal-setting intervention on knowledge of the SDLMI for preadolescent students at-risk for, or with, ED?**

**Research Question 2: What is the effect of goal-setting on students’ disruptive classroom behavior?**

Results for each participant are presented in Figure 1. Each graph shows participant results across baseline, computer-assisted multimedia goal-setting intervention, and maintenance. Data for students’ knowledge of the SDLMI and disruptive behavior are presented as percentages. Results indicated a functional

relationship between the computer-assisted multimedia goal-setting intervention and students' increased knowledge of the SDLMI and decreased disruptive behavior for all students.

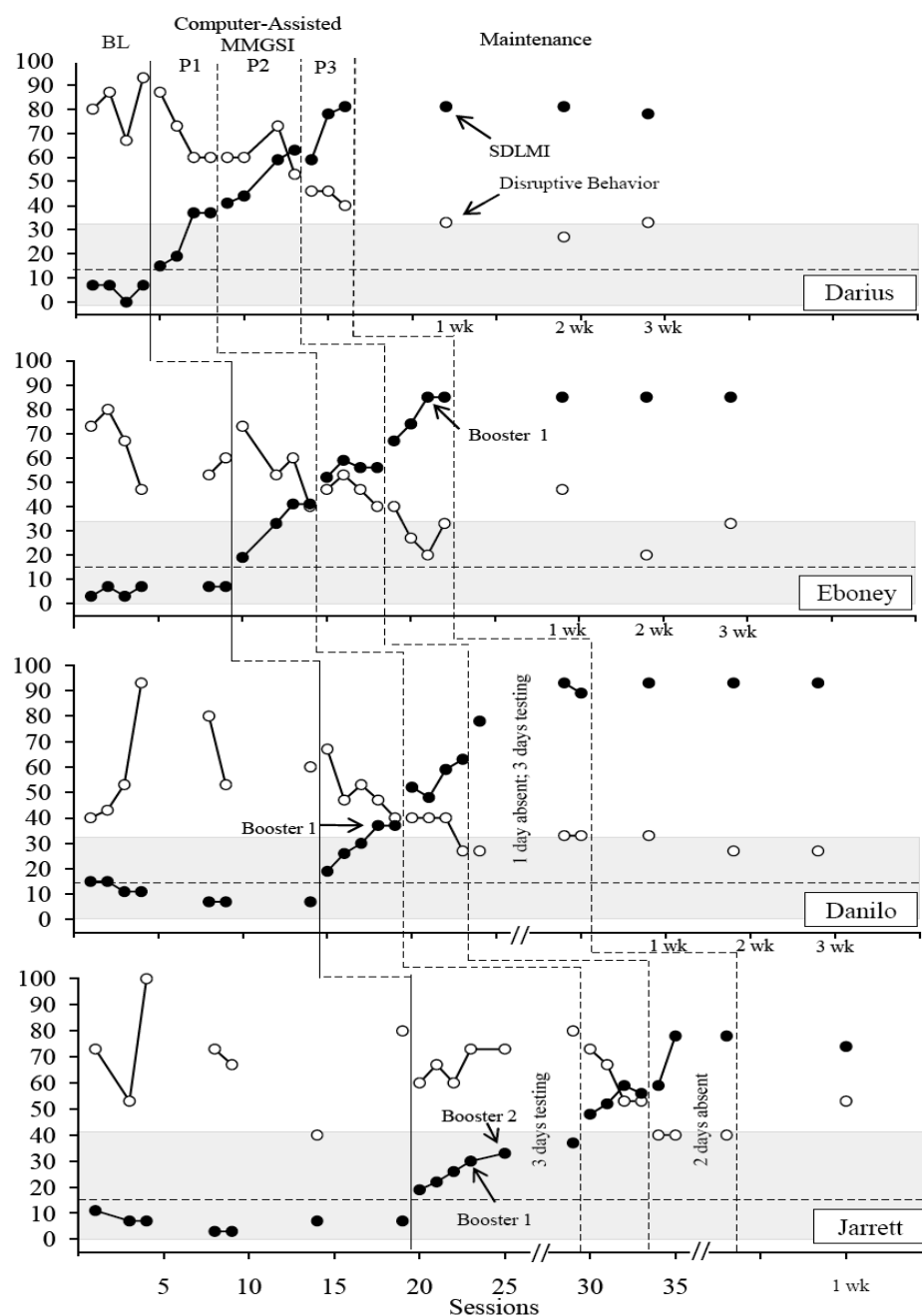


Figure 1. Percent of Students' Knowledge of the SDLMI and Disruptive Behavior  
*Note.* P1, P2, P3 = Three part intervention using computer-assisted multimedia goal-setting intervention; grey area indicates range and dashed line indicates mean of social comparison data for "best behaved" students in class (n=3)

**Darius.** During baseline, Darius' performance on the SDLMI probe was stable with scores ranging from 0% to 7% correct with a mean of 5.3%. Darius' disruptive behavior during baseline indicated high variability ranging from 67% to 93% with a mean of 81.8%. During Part One of the computer-assisted multimedia goal-setting intervention, Darius' performance on the SDLMI probe indicated an increasing trend with scores ranging from 15% to 37% correct with a mean of 27%. Darius' disruptive behavior during Part One indicated a decreasing trend with scores ranging from 60% to 87% with a mean of 70%. After lesson 3, Darius met mastery criteria of 7 out of 9 possible points for Part One for 2 consecutive days.

During Part Two, Darius' performance on the SDLMI probe continued to show an increasing trend with scores ranging from 41% to 63% correct with a mean of 51.8%. Darius' disruptive behavior during Part Two was initially stable, but became variable ranging from 53% to 73% with a mean of 61.5%. After lesson 6, Darius met mastery criteria of 7 out of 9 possible points for Part Two for 2 consecutive days.

During Part Three, Darius' performance on the SDLMI probe indicated an increasing trend with scores ranging from 59% to 81% correct with a mean of 72.7%. Darius' disruptive behavior during Part Three indicated a stable, decreasing trend ranging from 40% to 46% with a mean of 44%. After lesson 8, Darius met mastery criteria of 7 out of 9 possible points for Part Three for 2 consecutive days.

During maintenance, Darius' performance on SDLMI probes remained stable and high and disruptive behavior remained low for 3 consecutive weeks. Finally, Darius' level of disruptive behavior moved into the socially acceptable range during maintenance.

**Eboney.** During baseline, Eboney's performance on the SDLMI probe was stable with scores ranging from 3% to 7% correct with a mean of 5.7%. Eboney's disruptive behavior during baseline indicated high variability ranging from 47% to 80% with a mean of 63.3%. During Part One of the computer-assisted multimedia goal-setting intervention, Eboney's performance on the SDLMI probe showed an increasing trend with scores ranging from 19% to 41% correct with a mean of 33.5%. Eboney's disruptive behavior during Part One showed a decreasing, variable trend with scores ranging from 40% to 73% with a mean of 56.5%. After lesson 3, Eboney met mastery criteria of 7 out of 9 possible points for Part One for 2 consecutive days.

During Part Two, Eboney's performance on the SDLMI probe increased and was stable with scores ranging from 52% to 59% correct with a mean of 55.8%. Eboney's disruptive behavior during Part Two showed a decreasing trend ranging from 40% to 53% with a mean of 46.8%. After lesson 6, Eboney met mastery criteria of 7 out of 9 possible points for Part Two for 2 consecutive days.

During Part Three, Eboney's performance on the SDLMI probe indicated an increasing trend with scores ranging from 67% to 85% correct with a mean of 77.8%. Eboney's disruptive behavior during Part Three indicated a decreasing trend ranging from 20% to 40% with a mean of 30%. Eboney's disruptive behavior moved into the social comparison range during lesson 8 of Part Three and remained at a socially acceptable level for the remainder of the intervention. After lesson 8, Eboney did not meet mastery criteria of 7 out of 9 possible points for Part Three; therefore, a booster session (i.e., booster 1) was conducted. After participating in booster 1, Eboney met mastery criteria of 7 out of 9 possible points for Part Three for 2 consecutive days.

During the maintenance phase, Eboney's performance on SDLMI probes remained stable and high, and disruptive behavior data were variable and low for 3 consecutive weeks. Finally, Eboney's level of disruptive behavior did not remain at the socially acceptable range during week 1 of maintenance; however, during week 2 and week 3, Eboney's disruptive behavior data were within the socially acceptable range.

**Danilo.** During baseline, Danilo's performance on the SDLMI probe indicated a slightly decreasing trend with scores ranging from 7% to 15% correct with a mean of 11%. Danilo's disruptive behavior during baseline indicated high variability ranging from 40% to 93% with a mean of 60.33%. During Part One of the computer-assisted multimedia goal-setting intervention, Danilo's performance on the SDLMI probe indicated an increasing trend with scores ranging from 19% to 37% correct with a mean of 29.8%. Danilo's disruptive behavior during Part One indicated a decreasing, variable trend with scores ranging from 40% to 67% with a mean of 50.8%. After lesson 3, Danilo did not meet mastery criteria of 7 out of 9 possible points for Part One; therefore, Danilo participated in a booster session (i.e., booster 1) for Part One. After participating in booster 1, Danilo met mastery criteria of 7 out of 9 possible points for Part One for 2 consecutive days.

During Part Two, Danilo's performance on the SDLMI probe continued to show an increasing trend with scores ranging from 48% to 63% correct with a mean of 55.5%. Danilo's disruptive behavior during Part Two indicated a stable, decreasing trend ranging from 53% to 73% with a mean of 61.5%. Danilo's disruptive behavior moved into the social comparison range following participation in lesson 6 of Part Two and remained at

a socially acceptable level for the remainder of the intervention. After lesson 6, Danilo met mastery criteria of 7 out of 9 possible points for Part Two for 2 consecutive days.

During Part Three, Danilo's performance on the SDLMI probe indicated an increasing trend with scores ranging from 78% to 93% correct with a mean of 86.7%. Danilo's disruptive behavior during Part Three was stable ranging from 27% to 40% with a mean of 36.8%. After lesson 8, Danilo met mastery criteria of 7 out of 9 possible points for Part Three for 2 consecutive days.

During the maintenance phase, Danilo's performance on SDLMI probes remained stable and high, and disruptive behavior data remained low for 3 consecutive weeks. Finally, Danilo's level of disruptive behavior remained at the socially acceptable range during maintenance.

**Jarrett.** During baseline, Jarrett's performance on the SDLMI probe was stable with scores ranging from 3% to 11% correct with a mean of 6.4%. Jarrett's disruptive behavior during baseline indicated high variability ranging from 40% to 100% with a mean of 69.4%. During Part One of the computer-assisted multimedia goal-setting intervention, Jarrett's performance on the SDLMI probe indicated an increasing trend with scores ranging from 19% to 37% correct with a mean of 27.8%. Jarrett's disruptive behavior during Part One indicated a variable, increasing trend with scores ranging from 60% to 80% with a mean of 68.8%. After lesson 3, Jarrett did not reach mastery criteria of 7 out of 9 possible points and exhibited difficulty mastering the concept of setting a classroom behavior goal. Since Jarrett did not reach mastery or set a classroom behavior goal, a booster session (i.e., booster 1) was conducted. After participating in booster 1, Jarrett still did not reach mastery criteria for Part One of the computer-assisted

multimedia goal-setting intervention and did not master the concept of setting a classroom behavior goal. Therefore, an additional booster session (i.e., booster 2) was developed that included all of the components of lesson 3 plus two additional PowerPoint® slides to provide additional practice. After participating in booster 2, Jarrett met mastery criteria of 7 out of 9 possible points for Part One for 2 consecutive days and set a classroom behavior goal.

During Part Two, Jarrett's performance on the SDLMI probe indicated an increasing trend with scores ranging from 48% to 59% correct with a mean of 53.8%. Jarrett's disruptive behavior during Part Two indicated a decreasing trend ranging from 53% to 73% with a mean of 61.5%. After lesson 6, Jarrett met mastery criteria of 7 out of 9 possible points for Part Two for 2 consecutive days.

During Part Three, Jarrett's performance on the SDLMI probe indicated an increasing, stable trend with scores ranging from 59% to 78% correct with a mean of 71.7%. Jarrett's disruptive behavior during Part Three were stable and low remaining at 40% for lessons 7 and 8. Jarrett's disruptive behavior moved into the social comparison range during lesson 7 of Part Three and remained at a socially acceptable level for the remainder of the intervention. After lesson 8, Jarrett met mastery criteria of 7 out of 9 possible points for Part Three for 2 consecutive days.

During the maintenance phase, Jarrett's performance on SDLMI probes remained high, and disruptive behavior data were low for 1 week. Finally, Jarrett's level of disruptive behavior did not remain at the socially acceptable range during maintenance.

**Research Question 3: To what extent does goal-setting reduce disruptive behavior in a second, untrained classroom setting?**

To assess setting/situation generalization, participants' disruptive behavior was observed in a classroom setting different than the participants' primary general education setting. Three participants (i.e., Darius, Eboney, Danilo) were observed during science, two participants (i.e., Eboney, Danilo) were observed during music, and one participant was observed during technology (i.e., Jarrett). Because these data were not collected repeatedly across all conditions (i.e., baseline, intervention, maintenance), a functional relationship could not be determined between the computer-assisted multimedia goal-setting intervention and students' disruptive behavior for setting/situation generalization. However, results indicated that two of three participants' showed lower levels of disruptive behavior in science during intervention and maintenance when compared to baseline. Two participants showed lower levels of disruptive behavior in music during intervention and maintenance when compared to baseline, and one participant showed lower levels of disruptive behavior from baseline in technology during intervention and maintenance when compared to baseline. Table 1 provides descriptive results of setting/situation generalization.

Table 1: *Setting/Situation Generalization for Students' Percent of Disruptive Behavior*

Participant	Baseline		Computer-Assisted Multimedia Goal-Setting		Maintenance	
	Science	Music	Science	Music	Science	Music
Darius	67	—	40 33	—	27 47	—
Eboney	47	40	73 20 60	20	13	20
Danilo	53	47	13 20 47	33 20	27	33
Jarrett	Technology 67		Technology 40		Technology 33	

**Darius.** Darius' disruptive behavior in science during baseline was high (67%) and decreased during the computer-assisted multimedia goal-setting intervention Part Two and continued to decrease as Darius moved into the intervention phase. Darius maintained low levels of disruptive behavior in science after the intervention was removed.

**Eboney.** Eboney's disruptive behavior in science during baseline was 47%. During Part One of the computer-assisted multimedia goal-setting intervention, Eboney's disruptive behavior exceeded baseline levels, during Part Two fell below baseline levels, and during Part Three exceeded baseline levels. Additionally, Eboney's disruptive behavior in music during baseline was 40% and decreased during the computer-assisted multimedia goal-setting intervention. Eboney maintained low levels of disruptive behavior in music and science after the intervention was removed.

**Danilo.** Danilo's disruptive behavior in science during baseline was 53%. During Part One of the computer-assisted multimedia goal-setting intervention, Danilo's disruptive behavior decreased and remained low through Part Two of the intervention; however, during Part Three, Danilo's disruptive behavior increased to a level close to baseline. Additionally, Danilo's disruptive behavior in music during baseline was 46% and decreased during the computer-assisted multimedia goal-setting intervention. Danilo maintained low levels of disruptive behavior in music and science after the intervention was removed.

**Jarrett.** Jarrett's disruptive behavior in technology during baseline was high (67%) and decreased during the computer-assisted multimedia goal-setting intervention Part Two. Jarrett maintained low levels of disruptive behavior in technology after the intervention was removed.

**Research Question 4: What is the effect of a computer-assisted multimedia goal-setting intervention on students' level of self-determination?**

Participants and participants' classroom teachers responded to a pre/posttest measure based on the *AIR Self-Determination Educator and Student Scales* (Wolman et al., 1994) to determine if the computer-assisted multimedia goal-setting intervention had an effect on students' level of self-determination. Table 2 provides overall pre/posttest results of the *AIR Self-Determination Educator and Student Scales* (Wolman et al., 1994).

**AIR Self-Determination Educator Scale**

Overall results of the *AIR Self-Determination Educator Scale* indicated an increased level of self-determination for all participants from pretest to posttest. In

addition, results indicated increased levels of self-determination for each of the four areas (i.e., knowledge of self-determination behaviors, ability to perform self-determination behaviors, perception of knowledge and ability to perform self-determination behaviors, opportunity to perform self-determination behaviors at school) of the *AIR Self-Determination Educator Scale* for two participants (i.e., Darius, Eboney). For Danilo and Jarrett, results indicated increased levels of self-determination in three areas (i.e., knowledge of self-determination behaviors, ability to perform self-determination behaviors, perception of knowledge and ability to perform self-determination behaviors), and decreased levels of self-determination in one area (i.e., opportunity to perform self-determination behaviors at school). Table 2 provides detailed pre/posttest results for the four areas of the *AIR Self-Determination Educator Scales* (Wolman et al., 1994).

Table 2: *Results of the AIR Self-Determination Educator Scale*

Area	Darius	Eboney	Danilo	Jarrett
Pre-Knowledge	16	13	16	15
Post-Knowledge	26	20	18	19
Pre-Ability	13	14	17	11
Post-Ability	28	21	22	17
Pre-Perception	9	14	11	13
Post-Perception	28	26	24	15
Pre-Opportunity	26	28	30	29
Post-Opportunity	30	30	29	27
Pretest Total	64 (44%)	69 (47%)	74 (49%)	68 (47%)
Posttest Total	102 (67%)	97 (65%)	93 (63%)	78 (54%)

**Darius.** Based on results of the pretest *AIR Self-Determination Educator Scale*, Darius' level of self-determination for capacity and opportunity totaled 64 indicating his level of self-determination was approximately 44%. In comparing Darius' pretest scores

for capacity and opportunity, the capacity scores were consistently lower than the opportunity score. Based on posttest results of the *AIR Self-Determination Educator Scale*, Darius' level of self-determination increased. Darius' scores for capacity and opportunity totaled 102 indicating his level of self-determination was approximately 67%. In comparing Darius' posttest scores for capacity and opportunity, the capacity scores remained lower than the opportunity score. The greatest change in Darius' level of self-determination (i.e., 19 point increase) was indicated in the capacity section of perception.

**Eboney.** Based on findings of the pretest *AIR Self-Determination Educator Scale*, Eboney's level of self-determination for capacity and opportunity totaled 69 indicating her level of self-determination was approximately 47%. In comparing Eboney's pretest scores for capacity and opportunity, the capacity scores were consistently lower than the opportunity score. Based on posttest results of the *AIR Self-Determination Educator Scale*, Eboney's level of self-determination increased. Eboney's scores for capacity and opportunity totaled 97 indicating her level of self-determination was approximately 65%. In comparing Eboney's posttest scores for capacity and opportunity, the capacity scores remained lower than the opportunity score. The greatest change in Eboney's level of self-determination (i.e., 12 point increase) was indicated in the capacity section of perception.

**Danilo.** Based on findings of the pretest *AIR Self-Determination Educator Scale*, Danilo's level of self-determination for capacity and opportunity totaled 74 indicating his level of self-determination was approximately 49%. In comparing Danilo's pretest scores for capacity and opportunity, the capacity scores were consistently lower than the opportunity score. Based on posttest results of the *AIR Self-Determination Educator*

*Scale*, Danilo's level of self-determination increased. Danilo's scores for capacity and opportunity totaled 93 indicating his level of self-determination was approximately 63%. In comparing Danilo's posttest scores for capacity and opportunity, the capacity scores remained lower than the opportunity score. The greatest change in Danilo's level of self-determination (i.e., 12 point increase) was indicated in the capacity section of perception.

**Jarrett.** Based on findings of the pretest *AIR Self-Determination Educator Scale*, Jarrett's level of self-determination for capacity and opportunity totaled 68 indicating his level of self-determination was approximately 47%. In comparing Jarrett's pretest scores for capacity and opportunity, the capacity scores were consistently lower than the opportunity score. Based on posttest results of the *AIR Self-Determination Educator Scale*, Jarrett's level of self-determination for capacity and opportunity totaled 78 indicating his level of self-determination was approximately 54%. In comparing Jarrett's posttest scores for capacity and opportunity, the capacity scores remained lower than the opportunity score. The greatest change in Jarrett's level of self-determination (i.e., 6 point increase) was indicated in the capacity section of ability.

### **AIR Self-Determination Student Scale**

Overall results of the *AIR Self-Determination Student Scale* indicated an increase in level of self-determination for three participants from pretest to posttest. In addition, results indicated an increase in level of self-determination for each of the three areas (i.e., Things I do, How I feel, What Happens at School) of the *AIR Self-Determination Educator Scale* for Eboney. Results for Darius and Jarrett indicated an increase in level of self-determination for two areas (i.e., This I do, How I feel) and a decrease in level of self-determination for one area (i.e., What Happens at School). Results for Danilo

indicated an increase in level of self-determination for two areas (i.e., Things I do, What Happens at School), and a decrease in level of self-determination for one area (i.e., How I Feel). Table 3 provides detailed pre/posttest results for the four areas of the *AIR Self-Determination Educator Scales* (Wolman et al., 1994).

Table 3: *Pre/Posttest Results for Each Area of the AIR Self-Determination Student Scale*

Area	Darius	Eboney	Danilo	Jarrett
Pre-Things I do	23	17	19	18
Post-Things I do	26	23	25	21
Pre-How I feel	19	18	26	20
Post-How I feel	22	20	25	22
Pre-What Happens at School	20	11	20	21
Post-What Happens at School	16	14	29	9
Pretest Total	62 (52%)	46 (38%)	65 (55%)	59 (49%)
Posttest Total	64 (54%)	57 (47%)	79 (66%)	52 (44%)

**Darius.** Based on findings of the pretest *AIR Self-Determination Student Scale*, Darius' level of self-determination for capacity and opportunity totaled 64 indicating his level of self-determination was approximately 52%. In comparing Darius' pretest scores for capacity and opportunity, the scores were similar for both capacity and opportunity. Based on posttest results of the *AIR Self-Determination Student Scale*, Darius' level of self-determination showed minimal increase. Darius' posttest scores for capacity and opportunity totaled 64 indicating his level of self-determination was approximately 54%. In comparing Darius' posttest scores for capacity and opportunity, the capacity scores were higher than the opportunity score, and the opportunity score was 4 points lower than the pretest opportunity score.

**Eboney.** Based on findings of the pretest *AIR Self-Determination Student Scale*, Eboney's level of self-determination for capacity and opportunity totaled 46 indicating her level of self-determination was approximately 38%. In comparing Eboney's pretest scores for capacity and opportunity, the opportunity score was substantially lower than the capacity scores. Based on posttest results of the *AIR Self-Determination Student Scale*, Eboney's level of self-determination increased. Eboney's posttest scores for capacity and opportunity totaled 57 indicating her level of self-determination was approximately 47%. In comparing Eboney's posttest scores for capacity and opportunity, the capacity scores were higher than the opportunity score.

**Danilo.** Based on findings of the pretest *AIR Self-Determination Student Scale*, Danilo's level of self-determination for capacity and opportunity totaled 65 indicating his level of self-determination was approximately 55%. In comparing Danilo's pretest scores for capacity and opportunity, the scores were similar for both capacity and opportunity. Based on posttest results of the *AIR Self-Determination Student Scale*, Danilo's level of self-determination increased. Danilo's posttest scores for capacity and opportunity totaled 79 indicating his level of self-determination was approximately 66%. In comparing Danilo's posttest scores for capacity and opportunity, the capacity scores were lower than the opportunity score.

**Jarrett.** Based on findings of the pretest *AIR Self-Determination Student Scale*, Jarrett's level of self-determination for capacity and opportunity totaled 59 indicating his level of self-determination was approximately 49%. In comparing Jarrett's pretest scores for capacity and opportunity, the scores were similar for both capacity and opportunity. Based on posttest results of the *AIR Self-Determination Student Scale*, Jarrett's level of

self-determination decreased. Jarrett's posttest scores for capacity and opportunity totaled 52 indicating his level of self-determination was approximately 44%. In comparing Jarrett's posttest scores for capacity and opportunity, the opportunity score was lower than the capacity scores. More specifically, Jarrett's rating for the area, What Happens at School, was 12 points lower on the posttest than on the pretest.

Based on cross-comparison analysis of the *AIR Self-Determination Educator and Student Scales* pre/posttest scores, the teacher ratings for all students indicated that change from pre- to posttest was larger than the change indicated by student ratings. Specifically, the mean change in student ratings from pre- to posttest was approximately 6.8% with a range of 2% to 11%. The mean change in teacher ratings from pre- to posttest was approximately 15.5% with a range of 7% to 23%. Additionally, Darius, Danilo, and Jarretts' ratings on the pretest were higher than teacher ratings; however, Ebony's rating was lower than the teacher rating. For the posttest, overall student ratings were lower than teacher ratings. For Darius, the teacher rated his total level of self-determination at posttest at approximately 67%, a 23% change from pretest. Darius rated his total level of self-determination at approximately 54%, a 2% change from pretest. For Ebony, the teacher rated her total level of self-determination at posttest at approximately 65%, an 18% change from pretest. Ebony rated her total level of self-determination at approximately 38%, a 9% change from pretest. For Danilo, the teacher rated his total level of self-determination at posttest at approximately 49%, a 14% change from pretest. Danilo rated his total level of self-determination at approximately 55%, an 11% change from pretest. For Jarrett, the teacher rated his total level of self-determination at posttest at approximately 54%, a 7% change from pretest. Jarrett rated his total level of self-

determination at approximately 52%, which was lower than the pretest and indicated a 5% decrease from pretest. Finally, when comparing student and teacher ratings on the opportunity area of the *AIR Self-Determination Rating Scales*, all students rated their opportunities at school much lower than teachers rated their opportunities at school.

### **Social Validity**

**Research Question 5: What are teachers' perceptions of the use of the computer-assisted multimedia goal-setting intervention to increase student's ability to self-set behavior goals?**

**Research Question 6: To what extent do teachers feel the computer-assisted multimedia goal-setting intervention had an effect on student's disruptive behavior?**

This study also assessed the social validity of the intervention and outcomes based on teacher and participant perceptions. First, participants' classroom teachers were asked to respond to three questions related to the social importance of behavior change of the study participants. Results are presented in Table 4. Additionally, teachers were asked to explain the response to each of the three questions.

Table 4: *Teacher Perceptions of the Social Importance of Behavior Change*

Question	Number of Yes Responses by Teachers ( $n=2$ )
Did you feel the computer-assisted multimedia goal-setting intervention helped students acquire self-determination skills?	2
Do you think the computer-assisted multimedia goal-setting intervention helped students to self-set behavior goals?	2
Do you feel the computer-assisted multimedia goal-setting intervention had a positive effect on students' disruptive classroom behavior?	2

Based on responses to the three questions, teachers felt the computer-assisted multimedia goal-setting intervention helped students acquire self-determination skills. Specifically, one teacher indicated she saw “substantial improvement” in one student’s self-determination skills. Jarrett’s teacher indicated that Jarrett “became aware of his off-task behavior during this time and was able to set his own goals”. Teachers felt the intervention helped students to self-set behavior goals and indicated they saw improvement in all students’ disruptive behavior. One teacher indicated that the intervention helped students “to set realistic goals that were very specific to the problem behaviors.” Additionally, teachers felt the intervention had a positive effect on students’ disruptive classroom behavior. Jarrett’s teacher indicated that the intervention made Jarrett more aware of his inappropriate behavior, but felt he was having “trouble following through on his behavior goal”.

Second, teachers were asked to respond to three questions related to the social acceptability of the intervention. Results are presented in Table 5. Based on responses, teachers indicated they would be willing to try implementing the computer-assisted multimedia goal-setting intervention in their classrooms. Also, teachers indicated they would use the intervention as a supplement to instruction to help students attain self-determination skills and set-goals for behavior and/or academics if they were provided training on the computer program. Additionally, one teacher felt that the strategy seemed practical in terms of time, and she would be willing to use the intervention as a supplement to instruction; however, she indicated that she would need to be sure that the intervention did not take away from required instructional time.

Table 5: *Teacher Perceptions of the Social Acceptability of the Intervention*

Question	Number of Yes Responses by Teachers ( $n=2$ )
How willing would you be to implement this intervention in your classroom?	2
Would you use the computer-assisted multimedia goal-setting intervention as a supplement to your instruction in order to help students attain self-determination skills and set-goals for behavior? academics?	2
Do you feel this strategy is practical in terms of time for supplementing classroom instruction?	2

**Research Question 7: What are students' perceptions of the computer-assisted multimedia goal-setting intervention as a method for increasing their ability to self-set behavior goals?**

Students were provided a questionnaire to assess their perceptions of the acceptability of the intervention and the effect on behavior change. Three items evaluated the social acceptance of the intervention. Students had the opportunity to respond to a 4-point Likert rating scale (i.e., 1=strongly disagree; 2=disagree; 3 = agree; 4 = strongly agree). Results are presented in Table 6. Based on participants' responses regarding the social acceptance of the intervention, two students strongly agreed that the computer program helped them learn how to set goals for their behavior, and two students agreed that the computer program helped her learn how to set goals for her behavior. Two students strongly agreed that the computer program was easy to use, and two students agreed that the computer program was easy to use. Next, three students strongly agreed that they liked learning how to set goals for their behavior, and one student agreed that he liked learning how to set goals for his behavior.

Table 6: *Student Perceptions of the Intervention*

Question	Student Rating				Mean
	Darius	Eboney	Danilo	Jarrett	
The computer program helped me learn how to set goals for my behavior.	4	3	4	3	3.5
The computer program was easy to use.	3	4	4	3	3.5
I liked learning how to set goals for my behavior.	4	4	4	3	3.8

*Note:* Based 4-point Likert rating scale. 1=strongly disagree, 2=disagree, 3 = agree, 4 = strongly agree.

The final two questions evaluated student perceptions of the social importance of behavior change. Results are presented in Table 7. Based on participants' responses regarding the social importance of behavior change, three students strongly agreed that the computer program taught them how to set goals and helped them focus on the goals needed to improve their behavior, and one student agreed the computer program taught him how to set goals and helped him focus on the goals needed to improve his behavior. Three students strongly agreed that their behavior improved because they set their behavior goals, and one student agreed that her behavior improved because she set her behavior goal.

Table 7: *Student Perceptions of the Social Importance of Behavior Change*

Question	Student Rating				Mean
	Darius	Eboney	Danilo	Jarrett	
The computer program taught me how to set goals and helped me focus on the goals I needed to improve for my behavior.	3	4	4	4	3.8
My behavior improved because I set my behavior goal.	4	3	4	4	3.8

*Note:* Based 4-point Likert rating scale. 1=strongly disagree, 2=disagree, 3 = agree, 4 = strongly agree.

### **Social comparison data**

Finally, this study collected a form of social validity data called social comparison data on the “best behaved” students in the general education classroom to evaluate whether or not each participant’s percent of disruptive behavior was in a socially acceptable range within the general education classroom by the end of the intervention. Social comparison data ranged from 0% to 33% with a mean of 15.3% for the “best behaved” students in Darius, Eboney, and Danilos’ general classroom setting. For the

“best behaved” students in Jarrett’s general classroom setting, social comparison data ranged from 0% to 40% with a mean of 14.7%. Social comparison data are displayed in Figure 1. The mean is the dashed horizontal line, and the range is the light grey bar.

**Darius.** Although Darius’ disruptive behavior data decreased as knowledge of the SDLMI increased during computer-assisted multimedia goal-setting instruction, Darius’ performance did not reach a socially acceptable range during intervention. Darius’ disruptive behavior decreased from baseline mean of 81.8% to mean of 47.1% (34.7% change) during the computer-assisted multimedia goal-setting intervention. Darius’ lowest level of disruptive behavior during intervention was 40% indicating that his disruptive behavior came within 7% of reaching the social comparison range. During the maintenance phase, Darius’ disruptive behavior moved into the social comparison range; however, since this occurred after the intervention was removed, the effects cannot necessarily be attributed to the intervention.

**Eboney.** Eboney’s disruptive behavior data decreased as knowledge of the SDLMI increased during computer-assisted multimedia goal-setting instruction. During Part Three lesson 8, Eboney’s disruptive behavior reached a socially acceptable range and remained in the socially acceptable range for the remainder of the intervention. Eboney’s disruptive behavior decreased from baseline mean of 63.3% to mean of 48.5% (14.8% change) during the computer-assisted multimedia goal-setting intervention. Eboney’s lowest level of disruptive behavior during intervention was 20%, which reached the social comparison range. During maintenance, Eboney’s disruptive behavior increased to 14% above the social comparison range for week one of maintenance;

however, during weeks two and three, Eboney's disruptive behavior was within the social comparison range for 3 consecutive weeks following removal of the intervention.

**Danilo.** Danilo's disruptive behavior data decreased as knowledge of the SDLMI increased during computer-assisted multimedia goal-setting instruction. During Part Two lesson 6, Danilo's disruptive behavior reached a socially acceptable range and remained in the socially acceptable range for the remainder of the intervention. Danilo's disruptive behavior decreased from baseline mean of 60.1% to mean of 41.2% (18.9% change) during the computer-assisted multimedia goal-setting intervention. Danilo's lowest level of disruptive behavior during intervention was 27%, which reached the social comparison range. During maintenance, Danilo's disruptive behavior remained within the social comparison range for 3 consecutive weeks following removal of the intervention.

**Jarrett.** Jarrett's disruptive behavior data decreased as knowledge of the SDLMI increased during computer-assisted multimedia goal-setting instruction. During Part 3 lesson 7, Jarrett's disruptive behavior reached a socially acceptable range and remained in the socially acceptable range for the remainder of the intervention. Jarrett's disruptive behavior decreased from baseline mean of 69.4% to mean of 59.9% (9.5% change) during the computer-assisted multimedia goal-setting intervention. Jarrett's lowest level of disruptive behavior during intervention was 40%, which reached the social comparison range during Part Three of the intervention. During the maintenance phase, Jarrett's disruptive behavior did not remain within the social comparison range for 1 week following removal of the intervention.

## CHAPTER 5: DISCUSSION

The purpose of this study was to examine the effects of a computer-assisted multimedia goal-setting intervention on students' (a) knowledge of the SDLMI, (b) disruptive behavior, and (c) level of self-determination with preadolescent students at-risk for, or with, ED. A multiple-probe across participants design was used to determine the impact of the independent variable (i.e., computer-assisted multimedia goal-setting intervention) on the dependent variables (i.e., students' knowledge of the SDLMI, disruptive behavior). The intervention was implemented with four 5<sup>th</sup> grade students at-risk for ED. Results indicated a functional relationship between the computer-assisted multimedia goal-setting intervention and students' increased knowledge of the SDLMI and decreased levels of disruptive behavior. Three participants maintained knowledge of the SDLMI and low levels of disruptive behavior for 3 consecutive weeks and one participant maintained knowledge of the SDLMI and low levels of disruptive behavior for 1 week following removal of the intervention. Additionally, all participants' disruptive behavior improved in a second untrained setting. Pre/posttest *AIR Self-Determination Educator Scales* indicated all participants' level of self-determination increased following participation in the computer-assisted multimedia goal-setting intervention. Pre/posttest *AIR Self-Determination Student Scales* indicated three participants' level of self-determination increased following participation in the

computer-assisted multimedia goal-setting intervention. Finally, teachers and students felt the intervention socially acceptable improvement in participants' disruptive behavior. Findings and discussion points are presented in this chapter organized by the seven research questions. Finally, limitations of the study, suggestions for future research, and implications for practice are discussed.

### **Effects of Intervention on Dependent Variables**

**Research Question 1: What is the effect of a computer-assisted multimedia goal-setting intervention on students' knowledge of the SDLMI for preadolescent students at-risk for, or with, ED?**

**Research Question 2: What is the effect of goal-setting on students' disruptive classroom behavior?**

Findings indicated a functional relationship between the computer-assisted multimedia goal-setting intervention and students' knowledge of the SDLMI and disruptive behavior for all participants. All participants showed an immediate increasing trend for knowledge of the SDLMI when presented with the intervention and mastered knowledge of the SDLMI process after participating in each intervention part (i.e., Part One, Part Two, Part Three). Three participants (i.e., Darius, Eboney, Danilo) showed a decreasing trend for disruptive behavior when presented with Part One of the intervention. However, one participant (i.e., Jarrett) did not show a change in trend or level for disruptive behavior until Part Two of the computer-assisted multimedia goal-setting intervention. Three participants (i.e., Darius, Eboney, Danilo) maintained knowledge of the SDLMI and low levels of disruptive behavior for 3 consecutive weeks

after the intervention was removed. Jarrett maintained knowledge of the SDLMI and low level of disruptive behavior for 1 week after the intervention was removed.

Two participants, Darius and Eboney, mastered Part One in the four sessions. However, Danilo needed booster session one, and Jarrett needed booster sessions one and two to master the content of the computer-assisted multimedia goal-setting intervention Part One. It was apparent that Jarrett needed additional repetition and review in order to master the content of Part One of the intervention before moving into Part Two. Coyne, Kame'enui, and Carnine (2007) defined two elements of instructional design including: (a) judicious review as the “sequence and schedule of opportunities learners have to apply and develop mastery of new knowledge” (p. 16); and (b) mediated scaffolding as “temporary support for students to learn new material” (e.g., model-lead-test; p. 13). The computer-assisted multimedia goal-setting lessons incorporated these two key elements of instructional design (i.e., mediated scaffolding, judicious review; Kame'enui & Simmons, 1999) during each part of the intervention. Although these elements were included, Jarrett needed additional repetition and practice to learn the information being taught during Part One.

Overall, results of this study support previous research related to self-determination and CAI. Specifically, the literature includes several examples of studies (Agran et al., 2000; Agran et al., 2002; Agran et al., 2006; Agran et al., 2008; Fowler, 2008; Mazzotti, Wood, et al., 2009; McGlashing-Johnson et al. , 2004; Palmer & Wehmeyer, 2003; Wehmeyer, Palmer, et al., 2000) that found the SDLMI to be an effective method for teaching students at-risk for, or with, disabilities specific self-determination skills (i.e., goal-setting) to improve academic and/or problem behavior.

This study supports using the SDLMI to teach students at-risk for, or with, ED goal-setting skills to increase students' knowledge of the SDLMI and reduce disruptive classroom behavior. Additionally, the CAI literature provides several examples of studies (Fitzgerald & Werner, 1996; Hammer, 2004; Lancaster et al., 2002; Mazzotti, Test, et al., 2009; Mazzotti, Wood, et al., 2009; Richter, 2008) which used CAI to teach self-determination skills (e.g., self-advocacy, choice-making, goal-setting) to students. This study supports the CAI literature because it used CAI as a method for delivering instruction on the SDLMI to teach students at-risk for, or with, ED goal-setting skills.

More importantly, this study contributes to the literature because it (a) taught preadolescent students at-risk for, or with, ED the self-determination skill of goal-setting, (b) used a computer-assisted multimedia intervention as a method for delivering instruction on the SDLMI, (c) used CAI to teach goal-setting to students with behavior problems, (d) measured students' disruptive classroom behavior as a dependent variable which is unique to the SDLMI literature, and (d) incorporated a measure of setting/situation generalization to measure participants' disruptive behavior in untrained settings.

First, participants in this study were preadolescent students at-risk for ED based on results of the SRSS (Lane & Menzies, 2003). Farmer et al. (2008) indicated that preadolescent students at-risk for ED tend to exhibit difficulty adjusting socially and face both academic and behavior challenges while in school. Unfortunately, Lane et al. (2005) suggested that there have been a limited number of interventions designed to support preadolescent students at-risk for ED. Therefore, there is a need for specific interventions to support these students to reduce the risk of continued behavior problems and

identification as ED (Lane et al., 2002; Lane et al., 2005; Tobin & Sugai, 1999). This study addressed this need because it incorporated a computer-assisted multimedia goal-setting intervention that taught preadolescent students at-risk for ED to self-set behavior goals, make a plan to reach the behavior goal, and adjust the behavior goal to reduce disruptive behavior in the general education classroom.

Second, research to improve academic performance and/or reduce problem behavior of students at-risk for, or with, ED has included a variety of interventions, including providing social skills training (Cook et al., 2008; Maag, 2006), peer mediated interventions (Ryan et al., 2004), teacher-mediated interventions (Pierce et al., 2004), cognitive-behavioral interventions (Cobb et al., 2006), and self-management interventions (Briesch & Chafouleas, 2009; Mooney et al., 2005). Based on findings of the literature review conducted by Briesch and Chafouleas (2009), self-management interventions (e.g., self-setting goals, self-recording, self-evaluation) were found to be effective for improving students' disruptive behavior (e.g., talk outs, hand raising, aggression). The current study extends findings of Briesch and Chafouleas (2009) in that the intervention used several self-management procedures (e.g., goal-setting, self-recording, self-evaluation; Alberto & Troutman, 2009) and was effective in teaching participants to self-set behavior goals and monitor progress towards the behavior goals to reduce participants' disruptive behavior.

Third, self-determination has been identified as an essential skill that should be incorporated into the curriculum in early grades (Clark et al., 2004; Forness et al., 2000; Palmer & Wehmeyer, 2003). Recently, self-determination has emerged as an evidence-based practice (Test, Fowler, et al., 2009) and a predictor of post-school employment and

education success (Test, Mazzotti, et al., 2009) for students with disabilities. Several surveys regarding general and special education teachers' perceptions of self-determination have indicated that teachers felt self-determination was an important skill and identified goal-setting/attainment, problem-solving, self-management/self-regulation, choice-making, and self-advocacy as important self-determination skills for student success (Carter et al., 2008; Grigal et al., 2003; Stang et al., 2009; Wehmeyer, Agran, et al., 2000). Unfortunately, teachers also indicated that they rarely incorporated self-determination into the curriculum, were unprepared to teach self-determination skills, and had insufficient time to teach self-determination skills (Carter et al., 2008; Grigal et al., 2003; Stang et al., 2009; Wehmeyer, Agran, et al., 2000). Based these findings, it becomes increasingly important to identify effective methods for incorporating self-determination into general and special education curricula throughout elementary, middle, and high school. This study addressed the need for an effective and efficient intervention that teachers can use to incorporate self-determination into the curriculum. The computer-assisted multimedia goal-setting intervention was time efficient and required minimal teacher involvement.

Fourth, self-determination interventions for students' at-risk for, or with, ED have involved teaching students self-advocacy skills (Test et al., 2005), choice-making skills (Jolivet et al., 2001; Kern et al., 1998), and self-management skills (Briesch & Chafouleas, 2009; Mooney et al., 2005). One specific intervention used to teach self-determination skills has been the SDLMI. Previous research has supported the use of the SDLMI as one method for teaching self-determination skills to students at-risk for, or with, disabilities (e.g., Agran et al., 2002; Agran et al., 2006; Agran et al., 2008; Fowler

2008; Mazzotti, Wood et al., 2009). For example, Wehmeyer, Palmer, et al. (2000) found that students with mental retardation, LD, and ED showed increased self-determination skills after receiving instruction on the SDLMI. Next, Agran et al. (2002) found that the SDLMI was an effective intervention for teaching students with disabilities (i.e., autism, intellectual disabilities, multiple disabilities) to self-set goals to improve specific classroom behaviors (i.e., inappropriate touching, following directions, contributing to class). Also, Fowler (2008) found that teaching students with ED to self-set academic goals improved students' knowledge of the SDLMI process and academic goal attainment. Finally, Mazzotti, Wood, et al. (2009) found that teaching students with behavior problems to self-set goals via computer-assisted SDLMI was effective for increasing students' knowledge of the SDLMI and improving disruptive behavior in one general education setting. Unlike previous SDLMI studies, this study specifically targeted students at-risk for, or with, ED for participation in the intervention. Furthermore, since only two studies (i.e., Fowler, 2008; Mazzotti, Wood, et al., 2009) have investigated the effect of the SDLMI on students' knowledge of the SDLMI process, this study adds to previous research findings because it demonstrated positive results based on effects of the computer-assisted multimedia goal-setting intervention and students' knowledge of the SDLMI. As a systematic replication of Mazzotti, Wood, et al. (2009), this study extends previous SDLMI literature in that it used computer-assisted instruction rather than teacher-directed instruction to teach the SDLMI. Finally, this study extends findings of Mazzotti, Wood, et al. (2009) because students were not only taught the SDLMI process, but data on disruptive classroom behavior were collected in one general education classroom setting and an untrained setting (i.e., science, music, technology).

Next, CAI has been used as an alternative to traditional teacher-led instruction (Elder-Hinshaw et al., 2006) and has several advantages for students, including promoting active student involvement (Boon et al., 2007; Hutcherson et al., 2004; Mechling, 2005, 2008) and increasing student motivation and on-task behavior (Bender & Bender, 1996; Boon et al., 2007; Cumming et al., 2008). Wozney et al. (2006) conducted a survey to determine teachers' perceptions of CAI and found that teachers felt CAI was a valuable instructional tool that was effective for students of various ability levels. Additionally, several research studies have found CAI to be more effective than traditional teacher-led instruction (e.g., Blankenship et al., 2005; Howell et al., 2000; Jones et al., 1997). Others have found CAI to be as effective as teacher-led instruction (Bottge et al., 2001; Langone et al., 1996; VanDaal & Van der Leig, 1992; Watkins, 1989), and several studies found CAI in combination with traditional teacher-led instruction to be effective (e.g., Harper et al., 1986; Howell et al., 2000). Although CAI has been used to teach various skills (e.g., academic, life), literature has emerged recently that indicates that CAI may be an effective, efficient, and important supplemental instructional tool for teaching self-determination skills to students with disabilities (Mazzotti, Test, et al., 2009; Mazzotti, Wood, et al, 2009; Richter, 2008). This study extends the CAI literature because it provided a computer-assisted multimedia goal-setting intervention that improved students' disruptive behavior, was time efficient, and required no teacher-directed instruction. Therefore, the results of this study provide additional evidence that computer-assisted multimedia goal-setting intervention is a promising intervention that can be used as a supplemental instructional tool to facilitate instruction related to self-determination without losing valuable instructional time while

at the same time promoting active student engagement and reducing students' disruptive classroom behavior.

Furthermore, previous research has supported the use of CAI as one method for delivering instruction on self-determination to students at-risk for, or with, disabilities (i.e., Fitzgerald & Werner, 1996; Hammer, 2004; Lancaster et al., 2002; Richter, 2008; Mazzotti, Test, et al., 2009; Mazzotti, Wood, et al., 2009). Of these studies, two investigated the use of CAI as a method for teaching goal-setting skills to students with behavior problems (i.e., Fitzgerald & Werner, 1996; Mazzotti, Wood, et al., 2009). First, Fitzgerald and Werner (1996) found that a goal-setting interactive hypermedia instructional computer program was effective for reducing aggressive behavior of a 12-year-old male with disabilities. Next, Mazzotti, Wood, et al. (2009) found that using a computer-assisted SDLMI program was effective for reducing disruptive behavior of three elementary students with behavior problems. This study adds to previous CAI research as an effective intervention for teaching self-determination skills to preadolescent students at-risk for, or with, ED. As a systematic replication of Mazzotti, Wood, et al., (2009) this study addressed specific limitations of Mazzotti, Wood, et al. (2009) in that it used Camtasia<sup>®</sup> instead of Microsoft Word 2007<sup>®</sup> to record participant responses to the intervention and collect treatment integrity data and evaluated setting/situation generalization for students' disruptive behavior.

**Research Question 3: To what extent does goal-setting reduce disruptive behavior in a second untrained classroom setting?**

This study collected setting/situation generalization (Cooper et al., 2007) on student's disruptive behavior in untrained classroom settings. Three participants' (i.e.,

Darius, Eboney, Danilo) disruptive behavior was observed during Science, two participants' disruptive behavior was observed during music (i.e., Eboney, Danilo), and one participant's (i.e., Jarrett) disruptive behavior was observed during technology. First, two participants (i.e., Darius, Danilo) showed decreased levels of disruptive behavior in science during the computer-assisted multimedia goal-setting intervention and maintained low levels of disruptive behavior during science once the intervention was removed. Although data are only descriptive, Darius and Danilo were able to generalize goal-setting to the science classroom. Second, Eboney' disruptive behavior during science was variable across all phases (i.e., baseline, intervention, maintenance). Therefore, it seems likely that Eboney was having difficulty generalizing goal-setting to this untrained setting (i.e., science). Third, two participants (i.e., Eboney and Danilo) showed decreased levels of disruptive behavior in music during the computer-assisted multimedia goal-setting intervention and maintained low levels of disruptive behavior during music once the intervention was removed. Finally, Jarrett showed decreased levels of disruptive behavior in technology during the computer-assisted multimedia goal-setting intervention and did maintain low levels of disruptive behavior during technology once the intervention was removed. Although the setting/situation generalization data are descriptive, all participants showed decreased levels of disruptive behavior during the computer-assisted multimedia goal-setting intervention in an untrained setting. Therefore, it is promising that teaching students goal-setting skills may reduce disruptive behavior in a second untrained setting.

This study contributes to the literature by incorporating a measure of setting/situation generalization. Fowler (2008) incorporated a setting/situation

generalization measure to determine if the SDLMI process generalized to a new academic skill for study participants and found that all participants were able to generalize the SDLMI process to a new skill. This study extends Fowler's (2008) findings because it included a measure of setting/situation generalization to determine if students generalized goal-setting behavior to a setting different from the general education classroom setting. This study extends Mazzotti, Wood, et al. (2009) because it also incorporated an additional dependent variable, which was a measure of students' level of disruptive behavior in three untrained settings (i.e., science, music, technology). Finally, this study extends previous SDLMI research (e.g., Agran et al., 2002; Fowler, 2008; McGlashan et al., 2003; Palmer & Wehmeyer, 2003) because it appears to be the first SDLMI study to include a measure of participants' disruptive behavior in an untrained setting.

**Research Question 4: What is the effect of a computer-assisted multimedia goal-setting intervention on students' level of self-determination?**

Participants and participants' classroom teachers responded to a pre/posttest measure based on the *AIR Self-Determination Educator and Student Scales* (Wolman et al., 1994) to determine if the computer-assisted multimedia goal-setting intervention had an effect on students' level of self-determination. The *AIR Self-Determination Scales* measure two broad components of self-determination, capacity and opportunity (Wolman et al., 1994). Results of the *AIR Self-Determination Educator Scales* showed an increased change in level of self-determination from pre/posttests for all participants in this study. Specifically, results of the *AIR Self-Determination Educator Scales* indicated a mean increase in participants' level of self-determination of approximately 15.5%. Results of the *AIR Self-Determination Student Scales* indicated a mean increase in participants'

level of self-determination of 6.8% for three participants (i.e., Darius, Eboney, Danilo), and a decrease of 5% in level of self-determination for one participant (i.e., Jarrett).

Fowler (2008) used the AIR Self-Determination Scales to measure participants' level of self-determination pre/post instruction on the SDLMI. Findings from this study extend findings from Fowler (2008) in that there were notable changes in participants' level of self-determination following the intervention. Although Fowler (2008) showed gains in total raw scores on the *Educator Scale* for three participants from pre- to posttest, the differences were minimal in comparison to this study. In the Fowler (2008) study, results of the *Student Scale* showed change in only one student's level of self-determination from pre-to posttest, whereas this study showed gains for three students.

Additionally, three other studies (Palmer & Wehmeyer, 2003; Wehmeyer, Palmer, et al., 2000; Palmer et al., 2004) used the *AIR Self-Determination Scales* to measure students' level of self-determination. Of these three studies, one (i.e., Palmer et al., 2004) did not report results of the *AIR*; however, the other two studies (i.e., Palmer & Wehmeyer, 2003; Wehmeyer, Palmer, et al., 2000) found statistically significant differences between pre/posttest scores for the participants in each of the studies. Specifically, Palmer and Wehmeyer (2003) used the *AIR Self-Determination Student Scale* and found that elementary students had significantly higher levels of self-determination following the intervention. This study also used the *AIR Self-Determination Student Scale* to measure elementary students' level of self-determination. Additionally, this study went one step further and included the *AIR Self-Determination Educator Scales* to obtain teacher ratings of elementary students' level of self-determination pre/post intervention. Although the results of the *AIR Self-Determination*

*Educator and Student Scales* used in this study showed an increase between pre- and posttest, it is difficult to compare results from this study to results from Palmer and Wehmeyer (2003) because they used a statistical test to analyze results of the *AIR Self-Determination Student Scales*, and this study only provided descriptive results of the *AIR Self-Determination Educator and Student Scales*.

Furthermore, findings from this study indicated that student ratings in the area of opportunity (i.e., What Happens at School) on the *AIR Self-Determination Student Scales* were lower than teacher ratings in the area of opportunity (i.e., Opportunities at School) on the *AIR Self-Determination Educator Scales* for pre- and posttest. The difference between teacher and students ratings between pre/posttest may be attributed to social desirability bias. Tan and Hall (2005) defined social desirability bias as a person's "tendency to present themselves in a favorable light" (p. 1892). Therefore, because the questions related to the area of *Opportunities at School* directly reflected on teacher performance/instruction, teacher responses to this area of the *AIR Self-Determination Educator Scales* may have been biased resulting in inflated scores. Additionally, the difference between teacher and student posttest ratings may also be attributed to the fact that teachers were not directly involved in the intervention process. Although teachers were aware that students were setting behavior goals and monitoring progress towards those goals, they may have not been talking to students about their goals and progress towards those goals. Therefore, students may have rated their opportunities at school lower than the teachers rated their opportunities at school.

Finally, in cross-comparison analysis of the *AIR Self-Determination Educator and Student Scales* pre/posttest scores, teacher ratings indicated a

greater change from pretest to posttest than student ratings. This may be attributed to the teacher's perceptions of student behavior change in the classroom. For three students, one teacher indicated that she saw a substantial change in students' disruptive behavior in the classroom. Therefore, this may have attributed to the higher ratings on the posttest for Darius, Eboney, and Danilo. Additionally, Darius' level of self-determination showed the greatest increase from pre- to posttest based on the teacher's rating. This may also be attributed to the teacher's perception of Darius as being a "success" story. Although results of the *AIR Educator Scale* for Jarrett increased, the increase was less than the other participants. Jarrett's teacher indicated that the intervention made Jarrett more aware of his inappropriate behavior, but felt he was having "trouble following through on his behavior goal". This may indicate why his gains in level of self-determination from pre- to posttest on the *Educator Scale* were less than the other participants' gains.

### **Discussion of Social Validity Findings**

**Research Question 5: What are students' perceptions of the multimedia goal-setting intervention as a method for increasing their ability to self-set behavior goals?**

**Research Question 6: What are teachers' perceptions of the use of the multimedia goal-setting intervention to increase students' ability to self-set behavior goals?**

**Research Question 7: To what extent will teachers feel the multimedia goal-setting intervention had an effect on students' disruptive behavior?**

This study assessed the social validity of the computer-assisted multimedia goal-setting intervention and outcomes based on the perceptions of participants and

participants' classroom teachers. Social validity data were collected to evaluate the social importance of the intervention and the social importance of behavior change based on effects of the intervention (Wolf, 1978; Cooper et al., 2007). The social validity questionnaires assessed teachers' perceptions of the acceptability of the intervention and the effect the intervention had on participants' behavior change. Additionally, participants were asked to evaluate the social acceptance of the intervention and the social importance of behavior change.

**Teachers' perceptions of the effect of the intervention.** Participants' classroom teachers indicated that the computer-assisted multimedia goal-setting intervention helped students acquire self-determination skills. Additionally, teachers felt the intervention helped students self-set behavior goals and had a positive effect on students' disruptive behavior. Specifically, one teacher indicated that she saw "marked improvement" in Darius' disruptive behavior, and "positive improvement" in Danilo and Eboney's disruptive behavior. Jarrett's teacher indicated that Jarrett "became aware of his off-task behavior" and was "able to set a realistic behavior goal". These results are consistent with social validity findings from previous research (i.e., Mazzotti, Test, et al., 2009; Mazzotti, Wood, et al., 2009) in which teachers felt CAI was an effective method for teaching students self-determination skills. More specifically, these findings are consistent with Mazzotti, Wood, et al. (2009) in that teachers also felt the intervention was effective for improving students' disruptive behavior.

**Teachers' perceptions of the acceptability of the intervention.** Participants' classroom teachers indicated they would use the computer-assisted multimedia goal-setting intervention as a supplement to instruction to help students attain self-

determination skills. Equally important, teachers felt it was practical in terms of time for supplementing classroom instruction. These results are consistent with social validity findings from Mazzotti, Wood, et al. (2009) in that teachers indicated the intervention would be a time efficient supplement to instruction. Additionally, previous survey research (Carter et al., 2008; Stang et al., 2009; Wehmeyer, Agran, et al., 2000) indicated that teachers felt they did not have the time or skills to incorporate self-determination into the curriculum. These findings begin to address the need identified in previous survey research because teachers felt the intervention would be a time efficient method for incorporating self-determination into instruction.

Finally, related to the feasibility of using the computer-assisted multimedia goal-setting intervention in general and/or special education classrooms, classroom teachers felt the computer-assisted multimedia goal-setting intervention was effective in teaching students to self-set behavior goals and felt the intervention may be an efficient method for incorporating self-determination into the curriculum. Therefore, results of this study may indicate that the CAI intervention for teaching self-determination skills to students may be an effective and efficient strategy for teaching students' self-determination skills and incorporating self-determination into the curriculum.

**Students' perceptions of the acceptability of the intervention.** Participants in this study either agreed or strongly agreed that the computer-assisted multimedia goal-setting intervention helped them learn how to set goals for their behavior, was easy to use, and enjoyed learning how to set goals for their behavior. These findings are consistent with social validity findings from Mazzotti, Wood, et al. (2009).

### **Students' perceptions of the social importance of behavior change.**

Participants in this study either agreed or strongly agreed that the computer-assisted multimedia goal-setting intervention taught them how to set goals, helped them focus on the goals needed to improve their behavior, and felt their behavior improved because they set behavior goals. These findings are also consistent with social validity findings from Mazzotti, Wood, et al., (2009).

### **Limitations and Implications for Future Research**

This study has several limitations and implications for future research which should be considered. First, as with most studies using a single-subject research design, this study included a small number of participants (i.e., four preadolescent students at one elementary school). While this limits generalizability of findings, future research should continue to investigate CAI as a method for teaching self-determination skills to students at-risk for, or with, disabilities to build generality via systematic replications. Future research should be conducted with various student populations in other geographic locations to determine if the computer-assisted multimedia goal-setting intervention is an effective intervention for teaching self-determination skills to students at-risk for, or with, ED and eventually may become an evidence-based practice.

Second, no long-term maintenance data were collected in this study. Specifically, maintenance data for this study were collected for three weeks after each student exited the intervention phase. Response maintenance refers to “the extent to which a learner continues to perform the target behavior after a portion or all of the intervention responsible for the behavior’s initial appearance in the learner’s repertoire has been terminated” (Cooper et al., 2007, pp. 615, 617). Although, three study participants

maintained knowledge of the SDLMI and low levels of disruptive behavior for three consecutive weeks, it is unknown whether students would maintain the knowledge of the SDLMI and low levels of disruptive behavior for a longer, extended period of time. Future research should consider collecting maintenance data over an extended period of time (e.g., 1 month, 3 months, 6 months).

Third, setting/situation generalization data were only collected occasionally for this study, and descriptive data were reported; therefore, a functional relationship could not be determined between the computer-assisted multimedia goal-setting intervention and students' ability to generalize the appropriate classroom behavior to untrained settings. Setting/situation generalization is important because the intervention should produce generalized outcomes in other settings in order to produce socially significant behavior change (Cooper et al., 2007). However, since this study collected setting/situation generalization data occasionally instead of repeatedly, it makes a limited contribution to the literature related to setting/situation generalization because there was no reliable indication of behavior change in untrained settings based on the effects of the intervention (Cooper et al., 2007). Future research should focus on collecting setting/situation generalization data repeatedly as a dependent variable across all phases (i.e., baseline, intervention, maintenance) to determine if a functional relationship exists between the computer-assisted multimedia goal-setting intervention and students' disruptive behavior in untrained settings.

Fourth, because the computer-assisted multimedia goal-setting intervention was implemented in a contrived setting (i.e., small office next to the general education classroom), it is difficult to determine how useful this intervention may be for use in the

general education classroom setting. Although teachers reported that the procedures were reasonable and would be willing to use the program as a supplement to their instruction, the researcher implemented the intervention and data collection procedures. The effects of the intervention may be more meaningful if the classroom teachers actually implemented the computer-assisted multimedia goal-setting intervention in the general or special education classroom setting as a supplement to instruction. Future research should focus on implementing the computer-assisted multimedia goal-setting intervention in the general and/or special education classroom.

Additionally, this study did not incorporate any traditional teacher-led instruction with the computer-assisted multimedia goal-setting instruction. Although, previous research has indicated that CAI alone has been an effective instructional tool for students (e.g., Blankenship et al., 2005; Howell et al., 2000; Jones et al., 1997), findings from several studies are inconsistent regarding CAI and traditional instructional methods. First, several studies (e.g., Harper et al., 1986; Howell et al., 2000) indicated CAI in combination with teacher-led instruction has been effective. Second, one study (Watkins, 1989) found CAI to be as effective as traditional teacher-led instruction. Third, Langone et al. (1996) found CAI had no clear advantage over traditional instructional methods. Finally, one study (Calhoon et al., 2000) found traditional teacher-led instruction to be more effective than CAI. Therefore, future research should compare the computer-assisted multimedia goal-setting intervention to traditional teacher-led instruction on the SDLMI to determine which method has more positive results for students obtaining knowledge of the SDLMI and reducing disruptive behavior.

Next, this study used the *AIR Self-Determination Educator and Student Scales* (Wolman et al., 1994) as a measure of students' level of self-determination. This is similar to other studies (e.g., Fowler, 2008; Palmer & Wehmeyer, 2003; Wehmeyer, Palmer, et al., 2000). However, all of these studies used statistical analysis to determine if statistically significant differences existed between pre- and posttest scores on the *AIR Self-Determination Scales*. This study did not conduct statistical analysis because of the limited number of participants. Although this study found an increase in students' level of self-determination from pre-to posttest on the *AIR Educator and Student Scales*, findings are limited because statistical analysis was not conducted to determine if statistically significant differences existed between pre- and posttest scores. Future research should include using statistical analysis to determine if statistically significant differences between pre- and posttest scores when scores from pre/posttest show a large increase in level of self-determination.

Finally, this study used CAI to teach students at-risk for, or with, ED to self-set behavior goals to improve disruptive classroom behavior. Future research should focus on using the computer-assisted multimedia goal-setting intervention to teach students to set goals for behavior and academics to determine if the intervention is effective for not only improving student behavior, but academic skills as well.

### **Implications for Practice**

There are several implications for practice based on findings from this study. First, elementary, middle, and high school general and special education teachers have identified self-determination as an important skill for students to learn, but have also indicated not having the time to incorporate self-determination into daily instruction

(Carter et al., 2008; Stang et al., 2009). Additionally, teachers have indicated that students with ED tend to have less capacity for self-determination and are less likely to engage in self-determined behavior (Carter et al., 2006). Given the results of this study, the computer-assisted multimedia goal-setting intervention may provide general and special education teachers with a method for incorporating self-determination into the curriculum, as well as a method for promoting the self-determination skills of students at-risk for, or with, ED. However, teachers may need to be prepared to make some minor modifications to the intervention. For example, when Jarrett had difficulty mastering the concept of setting a classroom behavior goal during Part One of the computer-assisted multimedia goal-setting intervention, an additional booster session (i.e., booster 2) was developed that included all the components of Part One lesson 3 plus two additional PowerPoint® slides. The first additional slide included: (a) review of the definition of *goal* using a model-lead-test format; and (b) examples (e.g., staying in seat during instruction, raising hand quietly) and non-examples (e.g., becoming a famous football player, making a million dollars) of behavior goals. The second additional slide included opportunities for Jarrett to practice distinguishing between examples and non-examples of classroom behavior goals. Adding the additional slides to the intervention was not time consuming and may be a feasible option for teachers when working with a student who may need additional practice to effectively master specific components of the computer-assisted multimedia goal-setting intervention.

Second, this study used the SDLMI to teach students self-determination skills via computer-assisted instruction. Research has shown that the SDLMI has been an effective intervention for teaching students at-risk for, or with, disabilities to self-set various goals

related to behavior and academics (e.g., Agran et al., 2000; Agran et al., 2002; Fowler, 2008; Mazzotti, Wood, et al., 2009). This intervention may provide teachers with an alternate method for teaching the SDLMI that may be more time efficient than using traditional teacher-led instruction.

Third, self-determination comprises 12 components skills that individuals must learn and acquire in order to become self-determined (Wehmeyer & Schalock, 2001). This study provides teachers with a method for teaching one component of self-determination (i.e., goal-setting) to students at-risk for, or with, ED. Specifically, this intervention may provide teachers with a method for teaching students how to self-set behavior goals, plan for behavior goals, and adjust progress towards meeting behavior goals.

Finally, since self-determination has been identified as a predictor of post-school success for secondary students with disabilities (Test et al., 2009), it is important for teachers to have a method for teaching self-determination skills to students starting at a young age so students have strong self-determination skills when they exit high school. This study sought to teach preadolescent students goal-setting skills. As general and special education teachers design instruction to teach self-determination skills to students, the computer-assisted multimedia goal-setting intervention may be a promising intervention for teaching self-determination skills. Teachers may find it to be an effective instructional tool because of the positive effect it had on the study participants' ability to self-set behavior goals and work towards those goals, which in turn reduced disruptive behavior. Although results of this study are promising, this is only the second study that has used CAI to teach the SDLMI to students at-risk for, or with, ED. Therefore, research

is still needed to determine if the intervention can be considered an evidence-based practice.

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## Appendix A: Computer-Assisted Multimedia Goal-Setting Intervention Narrative

Slide Number	Lesson 1: Identify Strengths and Needs
1	<p>Are you ready to Learn how to Set Goals for School Success?</p> <p>Let's Begin.</p> <p>Click to move to the Next Slide</p>
2	<p>Welcome to your Goal Setting Lessons</p> <p>Goal setting lessons have three parts: Part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal</p> <p>Now, click on the blue box to practice</p> <p>Let's Practice:</p> <p>The 3 parts of the Goal Setting Lessons are: Part 1 – Set a GOAL, Part 2 –</p> <p>Make a PLAN, Part 3 – Adjust your GOAL (model-lead)</p> <p>Great job!</p>
3	<p>For the next couple of days, we are going to focus on goal setting lesson part 1 – set a goal</p> <p>Go ahead and move to the next slide</p>
4	<p>The question I ask myself to set a goal is “What is my GOAL?”</p> <p>Let's Practice: The question I ask myself to set a goal is “What is my GOAL?” (model-lead)</p>
5	<p>What question do you need to ask yourself to set a goal?</p> <p>Choose a or b: a “what is my goal?” or b “what is my name?”</p> <p>Based on student response if:</p> <p>a is chosen - great job a is the correct answer, the question I ask myself to set a goal is “what is my goal?”</p> <p>b is chosen – oops wrong answer, nice try, but try again</p>
6	<p>Let's define goal:</p> <p>A goal is something I want to achieve. When I set a goal, I set out to do something.</p> <p>Let's Practice:</p> <p>A GOAL is something I want to achieve. When I set a goal, I set out to do something. (model-lead-test)</p>
7	<p>At school, I am expected to achieve behavior goals like:</p> <ul style="list-style-type: none"> <li>• Following Teacher Directions</li> <li>• Completing My Assignments</li> <li>• Raising My Hand to Answer</li> <li>• Staying in My Seat During Instruction</li> </ul>

- Keeping My Hands to Myself
  - Being Prepared & Focusing on My Work
- 8 Now it's time to start setting your behavior goals by identifying your strengths and needs
- 9 What are strengths?  
 Strengths are things I am good at  
 Cartoon 1: one of my strengths is keeping my hands to myself  
 Cartoon 2: one of my strengths is listening to the teacher and raising my hand to answer  
 Cartoon 3: Sara's strength is completing assignments on time
- 10 What are needs?  
 Needs are things I need to do better  
 Cartoon 1: I need to follow teacher directions  
 Cartoon 2: I need to stay in my seat during instruction  
 Cartoon 3: I need to not play with objects or make sounds during class
- 11 Now It's Your Turn to Identify 2 of your Strengths at school and 2 of your Needs for improving your behavior  
 Remember:  
 Strengths are things you are good at and needs are things you need to do better
- 12 Strengths are things I am good at.  
 Some of your strengths might be:
  - Following directions
  - Reading
  - Being a good friend
  - Doing your homework
 I want you to tell me what 2 of your strengths are.  
 Go ahead and say 2 of your strengths (student name strengths and strengths will be recorded through Camtasia Studio)
- 13 Needs are things you need to do better.  
 Some of your needs might be:
  - To not talk out in class
  - To follow teacher directions
  - To not talk to others
 I want you to tell me 2 of your needs for improving your behavior.  
 Go ahead and say 2 of your needs (student name needs and needs will be recorded through Camtasia Studio)
- 14 To Work on My Needs, I can...  
 Change my behavior  
 For example:

If I am not doing my homework, then I need to do it  
 Change my surroundings  
 For example:  
 If I don't understand my assignment, then I need to ask the teacher for help

- 15 Great Job!  
 You are getting to think about what you are good at and what you might need to improve. Being able to explain these things about yourself can help you make better decisions.  
 Let's review:  
 1. The 3 parts of the Goal Setting Lessons are:  
 Set a GOAL, Make a PLAN, Adjust your GOAL  
 2. The question I ask myself to set a goal is  
 "What is my GOAL?"  
 (model-lead)
- 16 Great Job! That is all for Today!

Slide Number	Lesson 2: Expected Behavior
1	Are you ready to figure out how to work on getting better at your needs? Let's Begin. Click to move to the Next Slide
2	Welcome back to your Goal Setting Lessons Goal setting lessons have three parts: Part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal Now, click on the blue box to practice Let's Practice: The 3 parts of the Goal Setting Lessons are: Part 1 – Set a GOAL, Part 2 – Make a PLAN, Part 3 – Adjust your GOAL (model-lead) Great job!
3	For the next couple of days, we are going to focus on goal setting lesson part 1 – set a goal Go ahead and move to the next slide
4	The question I ask myself to set a goal is "What is my GOAL?" Let's Practice: The question I ask myself to set a goal is "What is my GOAL?" (model-lead)
5	What question do you need to ask yourself to set a goal? Choose a or b: a "what is my goal?" or b "what is my name?" Based on student response if: a is chosen - great job a is the correct answer, the question I ask myself

to set a goal is “what is my goal?”

b is chosen – oops wrong answer, nice try, but try again

- 6 Let’s define goal:  
A goal is something I want to achieve. When I set a goal, I set out to do something.  
Let’s Practice:  
A GOAL is something I want to achieve. When I set a goal, I set out to do something. (model-lead-test)
- 7 Last time, you identified ...  
2 Strengths - things I am good at  
2 Needs - things I need to do better  
Today, you will figure out how to get “better” at your needs.
- 8 When we talk about getting “better” at something, it could mean:  
“I want to be the best”  
“I want to do as well as my friends do”  
“I want to do better than I did last time”
- 9 When we talk about  
getting “better” at something,  
It could mean:  
Completing all my assignments  
Turning in my homework everyday  
Not talking to others when I should be doing my work  
Raising my hand to answer a question
- 10 Knowing exactly what to do about your needs helps you get better at your “needs”  
In order to get better at your “needs” you need to know what the classroom expectations are for behavior and compare them to your strengths and needs.
- 11 Let’s compare your “strengths” to the class expectations  
Remember: strengths are things you are good at  
Your class expectations, which are the same as class rules are:
  1. Following teacher directions
  2. Completing assignments
  3. Staying in seat during instruction
  4. Focusing on school work
  5. Being prepared for class
  6. Raising hand to answer
  7. Respecting others
 Now, let’s compare your strengths to the class expectations  
Yesterday, you identified 2 strengths.

You said ...(will include recording of strengths identified by student)

- 12 Let's compare your "needs" to the class expectations  
Remember: needs are things you need to do better  
Your class expectations, which are the same as class rules are:
  1. Following teacher directions
  2. Completing assignments
  3. Staying in seat during instruction
  4. Focusing on school work
  5. Being prepared for class
  6. Raising hand to answer
  7. Respecting others
 Now, let's compare your needs to the class expectations  
Yesterday, you identified needs.  
You said ...(will include recording of needs identified by student)
- 13 To improve your needs:  
Changes need to happen  
For example - to change your behavior so that you complete your assignments, you need to change what you do by having materials ready and focusing on your work  
Or if you don't understand your assignment, you could raise your hand and ask the teacher for help
- 14 Remember: To Work on My Needs, I can...  
Change my behavior  
For example:  
If I am not doing my homework, then I need to do it  
Change my surroundings  
For example:  
If I don't understand my assignment, then I need to ask the teacher for help
- 15 Listen and practice:  
To improve my behavior, I ask myself 2 questions:
  1. Do I need to change something that I do?
  2. Do I need to have something change AROUND me? (model-lead)
- 16 You might answer the question:
  1. Do I need to change something that I do?
    - To change my behavior to complete my assignments, I need to change what I do by having my materials ready and focusing on my work.
  2. Do I need to have something change AROUND me?
    - To improve my behavior to complete my assignment and listen more, I need to raise my hand and ask the teacher for help with

focusing (examples will be provided based on student needs)

- 17 Now, it is your turn to practice  
I want you to identify two ways that you can change your behavior  
(two more examples will be provided based on student needs; student  
will name changes and changes will be recorded through Camtasia  
Studio)
- 18 This was hard. It's never easy to look at what we're not doing very well.  
Now, we can start thinking about what you need to do to improve your  
behavior. Don't forget about things you do well and like to do.
- 19 Next time, we are going to set goals based on the needs you identified.  
Great Job! That is all for today!

Slide Number	Lesson 3: Setting a Behavior Goal
1	Are you ready to set a behavior goal? Let's Begin. Click to move to the Next Slide
2	Welcome back to your Goal Setting Lessons Goal setting lessons have three parts: Part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal Now, click on the blue box to practice Let's Practice: The 3 parts of the Goal Setting Lessons are: Part 1 – Set a GOAL, Part 2 – Make a PLAN, Part 3 – Adjust your GOAL (model-lead) Great job!
3	For the next couple of days, we are going to focus on goal setting lesson part 1 – set a goal Go ahead and move to the next slide
4	The question I ask myself to set a goal is "What is my GOAL?" Let's Practice: The question I ask myself to set a goal is "What is my GOAL?" (model-lead)
5	What question do you need to ask yourself to set a goal? Choose a or b: a "what is my goal?" or b "what is my name?" Based on student response if: a is chosen - great job a is the correct answer, the question I ask myself to set a goal is "what is my goal?" b is chosen – oops wrong answer, nice try, but try again
6	Let's define goal:

A goal is something I want to achieve. When I set a goal, I set out to do something.

Let's Practice:

A GOAL is something I want to achieve. When I set a goal, I set out to do something. (model-lead-test)

- 7 Now it's your turn:  
What is the definition of goal?  
Choose a or b: a - Something I want to achieve; or b - something I did yesterday  
Based on student response if:  
a is chosen - great job a is the correct answer, a goal is something I want to achieve  
b is chosen – oops wrong answer, nice try, but try again
- 8 Over the last couple of days, you identified 2 Strengths things I am good at  
(list student strengths) – my strengths are...
- 9 You also identified 2 Needs things I need to do better  
(list student needs) – my needs are...
- 10 You also found out that your behavior does not meet class expectations based on your “needs” - (comparison of needs to class expectations)
- 11 You also identified changes that need to happen, so you can meet class expectations  
1. I need to change my behavior by \_\_\_\_\_ and \_\_\_\_\_.  
(insert student responses from lesson 2)  
2. I need to change my surroundings by \_\_\_\_\_, so I can \_\_\_\_\_. (insert student responses from lesson 2)
- 12 Today, you are going to use your strengths, needs, and changes you need to make to set your behavior goal (includes strengths, needs, and changes)
- 13 Now, you are going to answer some questions to help you set your behavior goal.  
Question 1 is What do you want to do to improve your behavior?  
(provide examples to student)  
Now, I want you to say what you want to do to improve your behavior.  
(student answers recorded through Camtasia Studio)
- 14 Question 2 is What do you know about your behavior now?  
(provide examples to student)  
Now, I want you to say what you know about your behavior now.

(student answers recorded through Camtasia Studio)

- 15      Question 3 is What needs to change for you to improve your behavior?  
 (provide examples to student)  
 Now, I want you to say what needs to change for you to improve your behavior.  
 (student answers recorded through Camtasia Studio)
- 16      Question 4 is What can you do to make the changes happen?  
 (provide examples to student)  
 Now, I want you to say you can do to make the changes happen.  
 (student answers recorded through Camtasia Studio)
- 17      Setting your Goal  
 Remember:  
 A Goal is Something You Want to Achieve  
 What goal do you want to set to improve your behavior?  
 (provide examples to student)  
 Now, I want you to set your behavior goal. What goal do you want to set to improve your behavior?  
 (student answers recorded through Camtasia Studio)  
 Great job!
- 18      Let's Review  
 Listen:  
 What are the 3 parts of the goal setting lessons?  
 The 3 parts of the goal setting lessons are part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal (model-lead)
- 19      Let's Review  
 Listen:  
 What is the question you ask yourself to set a goal?  
 The question I ask myself to set a goal is “What is my Goal? (model-lead)  
 What Goal did you set for yourself? Say your Goal  
 (student will say goal)
- 20      You did great today!!!  
 You should feel proud because you set your behavior goal!  
 Next time, we are going to make a plan for you so you can meet your goal.

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Slide Number	Lesson 4: Barriers and Solutions
1	Are you ready to learn how to plan for your behavior goal? Let's begin. Click to move to the Next Slide

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- 2     Let's review  
       Goal setting lessons have three parts: Part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal  
       Now, click on the blue box to practice  
       Let's Practice:  
       The 3 parts of the Goal Setting Lessons are: Part 1 – Set a GOAL, Part 2 –  
       –  
       Make a PLAN, Part 3 – Adjust your GOAL (model-lead)  
       Great job!
- 3     The question I ask myself to set a goal is “What is my GOAL?”  
       Let's Practice: The question I ask myself to set a goal is “What is my GOAL?” (model-lead)
- 4     You just finished part 1 of your goal setting lessons. For the next couple of days, we are going to focus on goal setting lesson part 2 – make a plan  
       Go ahead and move t o the next slide
- 5     The question I ask myself to make a plan is “What is my PLAN?”  
       Let's Practice: The question I ask myself to make a plan is “What is my PLAN?” (model-lead)
- 6     What question do you need to ask yourself to make a plan?  
       Choose a or b: a “what is my job?” or b “what is my plan?”  
       Based on student response if:  
       a is chosen – oops wrong answer, nice try, but try again  
       b is chosen - great job a is the correct answer, the question I ask myself to make a plan is “what is my plan?”
- 7     A GOAL is something you want to achieve.  
       Last time, You set your behavior goal:  
       (include student behavior goal; model-lead-test)  
       Sometimes things get in the way of reaching your goal – those things are called barriers
- 8     Let's Define Barriers:  
       A barrier is something that gets in the way of reaching my goal.  
       Let's Practice:  
       A barrier is something that gets in the way of reaching my goal. (model-lead)
- 9     Barriers that might get in the way of you reaching your behavior goal might be:  
       (provide examples of barriers based on student goal)

- 10 Let's talk about ways to remove BARRIERS  
List barrier  
What can I do about it (provide example of way to remove barrier)
- 11 Let's talk about another way to remove BARRIERS  
List barrier  
What can I do about it (provide example of way to remove barrier)
- 12 Now It's Your Turn to Practice  
Let's think about the goal you've been working on since last time we met.  
Your goal is: (list student behavior goal)  
Now, I want you to think about:  
Barriers that might keep you from reaching your goal and what you could do to move those barriers out of your way.
- 13 I want you to answer two questions:  
1. What is going to get in the way of my behavior goal?  
Say your answer  
2. What am I going to do about it?  
Say your answer
- 14 Today, you told me about barriers that you will need to remove or get out of your way to meet your behavior goal.  
Before our next lesson,  
I want you to think about steps you can take to meet your goal  
Now, say your goal one more time.  
(student repeats behavior goal)
- 15 Great Job! That is all for Today!

Slide Number	Lesson 5: Identifying Supports to Achieve Goals
1	Are you ready to learn about tools to help you achieve your goal? Let's Begin. Click to move to the Next Slide
2	Let's review Goal setting lessons have three parts: Part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal Now, click on the blue box to practice Let's Practice: The 3 parts of the Goal Setting Lessons are: Part 1 – Set a GOAL, Part 2 – Make a PLAN, Part 3 – Adjust your GOAL (model-lead) Great job!

- 3 The question I ask myself to set a goal is “What is my GOAL?”  
Let’s Practice: The question I ask myself to set a goal is “What is my GOAL?” (model-lead)
- 4 You just finished part 1 of your goal setting lessons. For the next couple of days, we are going to focus on goal setting lesson part 2 – make a plan  
Go ahead and move t o the next slide
- 5 The question I ask myself to make a plan is “What is my PLAN?”  
Let’s Practice: The question I ask myself to make a plan is “What is my PLAN?” (model-lead)
- 6 What question do you need to ask yourself to make a plan?  
Choose a or b: a “what is my job?” or b “what is my plan?”  
Based on student response if:  
a is chosen – oops wrong answer, nice try, but try again  
b is chosen - great job a is the correct answer, the question I ask myself to make a plan is “what is my plan?”
- 7 Today, we are going to:  
Make a plan, so you can achieve your goal  
Let’s review your behavior goal :  
(include student behavior goal; model-lead-test)
- 8 Yesterday, you identified 2 barriers – things that get in the way of your goal  
The 2 barriers you identified were:  
(include student barriers; model-lead-test)
- 9 Yesterday, you also identified 2 ways to remove barriers, so you can achieve your goal  
The 2 ways to remove barriers were:  
(include student response; model-lead-test)
- 10 Today, we are going to identify STEPS you can take so you can achieve your goal
- 11 Some steps you might take to achieve your goal are:  
(provide examples based on student goal)  
I want you to think about the steps you can take to achieve your goal and when you might start working on those steps.
- 12 Let’s create a timeline for your goal. A timeline let’s you know when you want to start working on your goal and when you might reach your goal.

For example, you might decide to start working on your goal today, or maybe you have already been working on your goal. So you would say something like “I will start working on my goal today and I want to reach my goal in 2 weeks.

(calendar of month provided, so student can identify dates to start and dates to reach goal)

Say the day you want to start or did start working on your goal.

Say the day you think you might want to reach your goal

- 13 Now that you have identified a timeline to achieve your goal, we are going to review some TOOLS to help you achieve your goal.

Tool #1 is a cue card reminder.

Provide explanation of tool and example

- 14 Another TOOL you could use is a self-directed contract  
Provide explanation of tool and example

- 15 Another TOOL you could use is a self-monitoring contract  
Provide explanation of tool and example

- 16 Now It's Your Turn to Choose a Tool  
I want you to choose at least one of these tools to use to help you improve your behavior to work toward your goal.  
Do you want to use a cue card reminder, a self-directed contract, or a self-monitoring checklist to help you improve your behavior to work toward your goal?  
Choose your answer by clicking on the picture of the tool you want to use.

- 17 You have done a great job today!!!  
You are on your way to meeting your goal!!!  
You are going to be able to use these tools to reach your goal:  
Now, say your goal  
(student says behavior goal)

- 18 Great Job! That is all for Today!

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Slide Number	Lesson 6: Finalize Plan
1	Are you ready to finalize your plan to achieve your goal? Let's begin. Click to move to the Next Slide
2	Let's review Goal setting lessons have three parts: Part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal Now, click on the blue box to practice

---

Let's Practice:

The 3 parts of the Goal Setting Lessons are: Part 1 – Set a GOAL, Part 2

–

Make a PLAN, Part 3 – Adjust your GOAL (model-lead)

Great job!

- 3 The question I ask myself to set a goal is “What is my GOAL?”  
Let's Practice: The question I ask myself to set a goal is “What is my GOAL?” (model-lead)
- 4 You just finished part 1 of your goal setting lessons. For the next couple of days, we are going to focus on goal setting lesson part 2 – make a plan  
Go ahead and move to the next slide
- 5 The question I ask myself to make a plan is “What is my PLAN?”  
Let's Practice: The question I ask myself to make a plan is “What is my PLAN?” (model-lead)
- 6 What question do you need to ask yourself to make a plan?  
Choose a or b: a “what is my job?” or b “what is my plan?”  
Based on student response if:  
a is chosen – oops wrong answer, nice try, but try again  
b is chosen - great job a is the correct answer, the question I ask myself to make a plan is “what is my plan?”
- 7 Today, we are going to:  
Finalize your plan, so you can achieve your goal  
Let's review your behavior goal :  
(include student behavior goal; model-lead-test)
- 8 Over the last couple of days you have identified:  
your goal (list goal)  
barriers to reaching your goal (list barriers)  
ways to overcome those barriers (list)  
your timeline for reaching your goal (list)  
and you have chosen the tool that is going to help you reach your goal
- 9 You are going to use all of those things to help you answer 4 questions and finalize your plan to overcome barriers and reach your behavior goal (students will be provided with list of the above plus goal setting worksheet)  
Question 1:  
What can you do to improve your behavior?  
You might say something like:  
Use my tool to \_\_\_\_\_or use my tool to \_\_\_\_\_(provide examples)

Now, I want you to answer the question “what can you do to improve your behavior?”

Say your answer

- 10      Question 2:  
What barriers could keep you from improving your behavior?  
You might say something like:  
(provide examples; remind students to refer to list)  
Now, I want you to answer the question “What barriers could keep you from improving your behavior?”  
Say your answer
- 11      Question 3:  
What can you do to remove these barriers?  
You might say something like:  
(provide examples; remind students to refer to list)  
Now, I want you to answer the question “What can you do to remove these barriers?”  
Say your answer
- 12      Question 4:  
When will you begin?  
Say when you will begin working on your plan (remind student about timeline)
- 13      You have done a great job today!!!  
You now have a plan to achieve your goal  
And I know you can meet the goal in about another few weeks.  
Next time, we will take a look at how to record your progress towards your goal and we will review your plan.
- 14      Great Job! That is all for Today!

Slide Number	Lesson 7: Progress Monitoring
1	Are you ready to track your progress toward your goal? Let’s begin. Click to move to the Next Slide
2	Let’s review Goal setting lessons have three parts: Part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal Now, click on the blue box to practice Let’s Practice: The 3 parts of the Goal Setting Lessons are: Part 1 – Set a GOAL, Part 2 – Make a PLAN, Part 3 – Adjust your GOAL (model-lead)

Great job!

- 3 The question I ask myself to set a goal is “What is my GOAL?”  
Let’s Practice: The question I ask myself to set a goal is “What is my GOAL?” (model-lead)
- 5 The question I ask myself to make a plan is “What is my PLAN?”  
Let’s Practice: The question I ask myself to make a plan is “What is my PLAN?” (model-lead)
- 6 You just finished part 1 and part 2 of your goal setting lessons. For the next couple of days, we are going to focus on goal setting lesson part 3 – adjust your goal  
Go ahead and move t o the next slide
- 7 The question I ask myself to adjust my goal is “What have I learned?”  
Let’s Practice: The question I ask myself to make a plan is “What have I learned?” (model-lead)
- 8 What question do you need to ask yourself to adjust your goal?  
Choose a or b: a ““What game do I play?” or b “what have I learned?”  
Based on student response if:  
a is chosen – oops wrong answer, nice try, but try again  
b is chosen - great job a is the correct answer, the question I ask myself to adjust my goal is “what have I learned?”
- 9 For this last part,  
You’ll be thinking about:  
how you’re doing toward meeting your goal and how well your plan is working  
Let’s review your behavior goal and timeline for reaching your goal:  
(include student behavior goal plus timeline; model-lead-test)
- 10 Today, you are going to learn how to graph your behavior as it improves, so you can reach your goal  
This is a graph of your behavior since I have been working with you  
This helps me see how you’re doing with learning how to set and meet your behavior goal and how you are doing in class
- 11 This is a graph of your behavior since I have been working with you  
This is where you started  
The dots have gotten lower on the graph.  
This means your behavior has improved since you started working on the computer and using your tool to monitor your behavior
- 12 Now you are going to get to graph your own behavior using your self-

monitoring checklist and a graph.

You are going to record your information every day. We will review your performance every day, and I will give you feedback and help you with monitoring your behavior

(interactive graph for student to record behavior; instruction will be provided)

- 13      You have done a great job today!!!  
 You now know how to graph your progress toward your behavior goal and I know you can meet the goal in about another week.  
 Next time, we will take a look at your progress towards your goal and see what you have done to improve your behavior.
- 14      Great Job! That is all for Today!

Slide Number	Lesson 8: Adjusting the Goal
1	Are you ready to think about adjusting your goal? Let's begin. Click to move to the Next Slide
2	Let's review Goal setting lessons have three parts: Part 1 – set a goal, part 2 – make a plan, part 3 – adjust your goal Now, click on the blue box to practice Let's Practice: The 3 parts of the Goal Setting Lessons are: Part 1 – Set a GOAL, Part 2 – Make a PLAN, Part 3 – Adjust your GOAL (model-lead) Great job!
3	The question I ask myself to set a goal is “What is my GOAL?” Let's Practice: The question I ask myself to set a goal is “What is my GOAL?” (model-lead)
5	The question I ask myself to make a plan is “What is my PLAN?” Let's Practice: The question I ask myself to make a plan is “What is my PLAN?” (model-lead)
6	You just finished part 1 and part 2 of your goal setting lessons. For the next couple of days, we are going to focus on goal setting lesson part 3 – adjust your goal Go ahead and move to the next slide
7	The question I ask myself to adjust my goal is “What have I learned?” Let's Practice: The question I ask myself to make a plan is “What have I learned?” (model-lead)

- 8      What question do you need to ask yourself to adjust your goal?  
Choose a or b: a ““What game do I play?” or b “what have I learned?”  
Based on student response if:  
a is chosen – oops wrong answer, nice try, but try again  
b is chosen - great job b is the correct answer, the question I ask myself  
to adjust my goal is “what have I learned?”
- 9      Today, we are going to review what you’ve been working on for the  
past few weeks.  
You’re going to be able to make some decisions about what you need to  
do differently to reach the goal you set –  
Let’s review your goal.  
(include student behavior goal plus timeline; model-lead-test)
- 10     This is a graph of your behavior since I have been working with you  
This is where you started  
The dots have gotten lower on the graph.  
This means your behavior has improved since you started working on  
the computer and using your tool to monitor your behavior
- 11     Now let’s graph your behavior using your self-monitoring checklist and  
the graph you started yesterday.  
I want you to think about whether or not your tool is helping you reach  
your goal
- 12     This is your goal setting worksheet. During part 1 of your goal setting  
lessons – set a goal, you answered the question “what is my goal?”  
(include student goal).  
In part 2 of your goal setting lessons – make a plan, you answered the  
question what is my plan (include student plan)
- 13     Now, we are going to answer 2 questions:  
1. What have you done to improve your behavior?  
Your answer might be something like:  
(provide examples based on student goal and plan)  
Now, I want you to answer the question “what have you done to  
improve your behavior?”  
Say your answer
- 14     Question #2  
2. Which barriers have been moved out of the way?  
Your answer might be something like:  
(provide examples based on student goal and plan)  
Now, I want you to answer the question “which barriers have been  
moved out of the way?”

Say your answer

- 15 Let's compare your behavior before you started your goal setting lessons  
To your behavior now  
As you can see, your behavior improved since you started your goal setting lessons  
(this slide may change based on whether student has improved behavior to include how and why changes may need to be made to goal)
  - 16 Now, Let's answer another question  
3. What has changed about your behavior?  
Your answer might be something like:  
(provide examples based on student goal and plan)  
Now, I want you to answer the question "what has changed about your behavior?"  
Say your answer
  - 17 Now, let's answer one more question  
4. Have you reached your behavior goal?  
Say your answer  
Maybe you haven't reached your goal yet, so you will need to continue to work hard to achieve your goal
  - 18 You have done a great job today!!!  
Today was the last day of our Goal Setting Lessons, but you will still have to work on your behavior goal.  
You will keep working on your behavior by using your self-monitoring checklist and graphing your behavior each day over the next couple of weeks.  
So, even though we won't talk about it as much, you should keep working toward your goal and track your progress.  
Great Job! Thanks for Participating and Keep Working on your Behavior Goal!
-

## Appendix B: Examples of Computer-Assisted Multimedia Goal-Setting Intervention PowerPoint® Slides

### Part One

#### Lesson 1: Identify Strengths and Needs

Are you ready to Learn how to Set Goals for School Success?



Let's Begin...  
Click on the green arrow to move to the Next Slide

Welcome to your Goal Setting Lessons



Let's Practice:  
The 3 parts of the Goal Setting Lessons are:

- Part 1 – Set a GOAL
- Part 2 – Make a PLAN
- Part 3 – Adjust your GOAL

Part 1: Set a GOAL

"What is my GOAL?"

Let's Practice:  
The question I ask myself to set a goal is "What is my GOAL?"

What are strengths?

Strengths are things I am good at



What are needs?

Needs are things I need to do better



Strengths are things I am good at. Some of your strengths might be:

- Following Directions
- Reading
- Being a good friend
- Doing your homework

Now, I want you to tell me what 2 of your strengths are. Go ahead and say 2 of your strengths.

#### Lesson 2: Expected Behavior

Are you ready to figure out how to work on getting better at your needs?



Let's Begin...  
Click on the green arrow to move to the Next Slide

Let's define GOAL:

A GOAL is something I want to achieve. When I set a GOAL, I set out to do something.




Let's Practice:  
A GOAL is something I want to achieve. When I set a GOAL, I set out to do something.

When we talk about getting "better" at something, It could mean:

- Completing all my assignments → Turning in my homework everyday
- Not talking to others when I should be doing my work → Raising my hand to answer a question

#### Lesson 3: Setting a Behavior Goal

Are you ready to set a goal?



Let's Begin...  
Click on the green arrow to move to the Next Slide

Today, you are going to use...

Your Strengths: Things you are good at


Your Needs: Things you need to do better

To SET A GOAL!!!!  
So you can make Changes to Improve your behavior

Road to Success

Now it's your turn, To SET YOUR BEHAVIOR GOAL

What behavior goal do you want to set to Improve your behavior over the next two weeks? Say your Behavior GOAL



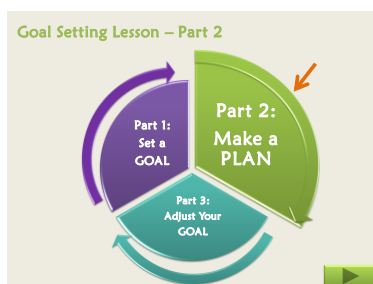
## Part Two

### Lesson 4: Barriers and Solutions

Are you ready to learn how to plan for your behavior goal?



Let's Begin...  
Click to move to the Next Slide



Part 2: Make a Plan

**"What is my PLAN?"**

Let's Practice:  
The question I ask myself to make a plan is "What is my PLAN?"

Let's Define Barriers:

A **BARRIER** is something that gets in the way of reaching my goal.




Let's Practice:  
A **BARRIER** is something that gets in the way of reaching my goal.

Let's talk about ways to remove BARRIERS

**BARRIER**  
You don't understand the assignment, so you get out of your seat to avoid working on it

**What can I do about it...**  
You could raise your hand and ask the teacher for help and then work on the assignment



Now, I want you to think about:  
Barriers that might keep you from meeting your behavior goal and what you could do to remove those barriers out of your way.

It's your turn to name 2 barriers that might get in your way. Name 2 barriers that could get in the way of your behavior goal?  
Say your answer

Name 2 ways you might remove those barriers.  
Say your answer

## Lesson 5: Identifying Supports to Achieve Goals

Are you ready to learn about tools to help you achieve your goal?



Let's Begin...  
Click to move to the Next Slide

Today,  
We are going to identify **STEPS** you can take so you can Achieve your goal

Some steps you might take to achieve your goal are:

1. If you are playing with something in your desk, you can give it to the teacher and focus on your work
2. You could raise your hand and ask the teacher to move you or the person who is talking to you

I want you to think about the steps you can take to achieve your goal and when you might start working on those steps.

Now that you have identified a timeline to achieve your goal,  
We are going to review some **TOOLS** to help you achieve your goal.

**CUE CARD REMINDER**


My Goal:  
I will follow teachendirections and listen when my teacher is talking during reading in the next two weeks.

Steps I can take to achieve my goal are:

- Focus on work
- Use hands for class work
- Have materials ready
- Raise hand and ask for help

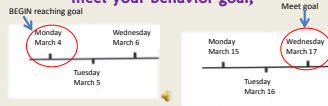
## Lesson 6: Finalize Plan

Are you ready to finalize your plan to achieve your goal?



Let's Begin...  
Click to move to the Next Slide

You also identified when and how you will meet your behavior goal,



**SELF-MONITORING CHECKLIST**

	7:30	8:00	8:30	9:00
Have my materials ready				
Focus on my Work				

**Question # 1**

**What can you do to improve your behavior?**

You might say something like:

Use my tool to remind me to have my materials ready at the beginning of class and complete my assignments  
Or  
Use my tool to help me improve my behavior

Now it is your turn:

**What can you do to improve your behavior?**  
Say your answer

## Part Three

### Lesson 7: Progress Monitoring

Are you ready to track your progress toward your goal?



Let's Begin...

Click to move to the Next Slide

Goal Setting Lesson – Part 3



Part 3: Adjust Your Goal



Let's Practice:  
The question I ask myself to adjust my goal is  
"What have I learned?"

For this last part,  
You'll be thinking about:  
how you're doing toward meeting your goal  
and  
how well your plan is working

Let's review your behavior goal:

Let's Practice & Review:  
I will follow teacher directions and listen when  
my teacher is talking  
during reading in the next two weeks.

Now you are going to get to graph your own  
behavior using your self-monitoring checklist  
and a graph.

My Behavior Graph

You are going to record your information everyday.  
We will review your performance everyday, and I  
will give you feedback and help you with  
monitoring your behavior


You have done a great job today!!!  
You now know how to graph your progress toward  
your behavior goal

And I know you can meet the goal in about another  
week.

Next time, we will take a look at your progress  
towards your goal and see what you have done  
to improve your behavior.

## Lesson 8: Adjusting the Goal

Are you ready to think about  
adjusting your goal?



Let's Begin...

Click to move to the Next Slide

Today, we are going to review what you've  
been working on for the past few weeks.

You're going to be able to make some decisions  
about what you need to do differently to reach  
the goal you set –  
Let's review your goal.

Let's Practice & Review:  
I will follow teacher directions and listen when  
my teacher is talking  
during reading in the next two weeks.

Goal Setting Worksheet

What is my Goal?  
I will follow  
teacher  
directions and  
listen when my  
teacher is talking  
during reading in  
the next two  
weeks.

What have I learned?

Part 1: Set a GOAL

Part 2: Make a PLAN

What is my Plan?

- On March 2, 2015, I will start working on my goal to follow teacher directions and listen when my teacher is talking during reading.
- I will use a self-monitoring checklist to help measure my behavior.
- I will meet my goal to follow teacher directions and listen when my teacher is talking during reading by March 17.

Part 3: Adjust Your GOAL

## Appendix C: Probe Checklist for SDLMI Responses

SDLMI Questions	Student Response	Score		
Part 1: Set a Goal				
What question do you ask yourself to set a goal?	“What is my goal?”	Incorrect 0		Correct 1
		Incorrect	Partially Correct	Totally Correct
What do you want to do to improve your behavior?	Example: I need to not call out in class. I need to not talk to others.	0	1	2
What do you know about your behavior now?	Example: I know it does not meet my teacher’s expectations/class expectations/rules.	0	1	2
What needs to change for you to improve your behavior?	Example: I need to change my behavior by not talking to others or raising my hand.	0	1	2
What can you do to make this happen?	Example: I can raise my hand when I want to say something in class. I can ask my teacher for a quiet place to work.	0	1	2
Total Possible Points: 9		Student Score: /9 = ____%		
Part 2: Make a Plan				
What question do you ask yourself to make a plan?	“What is my plan?”	Incorrect 0		Correct 1
		Incorrect	Partially Correct	Totally Correct
What can you do to improve your behavior?	Example: Listen and focus on my work/raise my hand and ask teacher for a quiet place to work/keep my hands off objects during instruction	0	1	2
What barriers could keep you	Example: someone might talk to me/I have objects	0	1	2

from improving your behavior?	in my desk/ my desk is not organized/don't understand my assignment			
What can you do to remove these barriers?	Use a tool to help me improve my behavior/ignore others when they talk to me/ask for help when I don't understand	0	1	2
When will you begin doing that?	Provides a day they will begin their plan	0	1	2
Total Possible Points: 9		Student Score: /9 = ____%		
Part 3: Adjust your Goal				
What question do you ask yourself to adjust your goal?	"What have I learned?"	Incorrect 0	Correct 1	
		Incorrect	Partially Correct	Totally Correct
What have you done to improve your behavior?	Example: I didn't talk to other when I was supposed to be working on my assignment/I used my checklist to monitor my behavior, so I would complete my assignment	0	1	2
Which barriers have been moved out of the way?	Example: I ignored others when they talked to me/I organized my desk so I could complete my assignment/ I raised my hand instead of calling out	0	1	2
What has changed about your behavior?	I am doing something about it by using my checklist/I ask the teacher for a quiet place when others are talking to me/I am completing my assignments	0	1	2
Did you reach your goal?	Yes/ not yet, I am adjusting my goal	0	1	2
Total Possible Points: 9		Student Score: /9 = ____%		

**Three basic part questions:**

**Correct** = accurately recited question, using the terms “goal”, “plan”, or “learned” in reciting the question, asked question in first person; **Incorrect** = did not meet the criteria above.

**Twelve supporting questions:**

**0 (incorrect)** = answer not related to the identified goal area; barriers or supports identified are unrelated to goal area or plan; statements are unrelated to goal area or plan;

**1 (partially correct)** = response is relevant to goal area, but incomplete; response is on topic, but limited in specificity regarding goal area, plan, or person responsible; **2 (totally correct)** = relevant, complete, accurate response; response is on topic and includes

enough specifics to identify a goal, take steps toward goal, and progress made towards goal; student maintains consistency in response regarding goal; student uses person first language and refers to self as responsible person for goal and behavior change.

## Appendix D: Behavior Observation Form

16-second Intervals	Student 1		Student 2		Student 3	
1	Off	On				
2			Off	On		
3					Off	On
4	Off	On				
5			Off	On		
6					Off	On
7	Off	On				
8			Off	On		
9					Off	On
10	Off	On				
11			Off	On		
12					Off	On
13	Off	On				
14			Off	On		
15					Off	On
16	Off	On				
17			Off	On		
18					Off	On
19	Off	On				
20			Off	On		
21					Off	On
22	Off	On				
23			Off	On		
24					Off	On
25	Off	On				
26			Off	On		
27					Off	On
28	Off	On				
29			Off	On		
30					Off	On
31	Off	On				
32			Off	On		
33					Off	On
34	Off	On				
35			Off	On		
36					Off	On
37	Off	On				
38			Off	On		
39					Off	On
40	Off	On				
41			Off	On		
42					Off	On
43	Off	On				
44			Off	On		
45					Off	On
Totals						
% Intervals on task	%		%		%	

*Note.* *Off* indicates the student exhibited disruptive behavior during the interval; *On* indicates the student did not exhibit disruptive behavior during the interval.

## Appendix E: Teacher Social Validity Questionnaire

Teacher \_\_\_\_\_ Date \_\_\_\_\_

1. Did you feel the computer-assisted multimedia goal-setting intervention helped students acquire self-determination skills? Why or why not?
2. Do you think the computer-assisted multimedia goal-setting intervention helped students to self-set behavior goals? Why or why not?
3. Do you feel the computer-assisted multimedia goal-setting intervention had a positive effect on students' disruptive classroom behavior? Why or why not?
4. How willing would you be to implement this intervention in your classroom?
5. Would you use the computer-assisted multimedia goal-setting intervention as a supplement to your instruction in order to help students attain self-determination skills and set-goals for behavior? academics? Why or why not?
6. Do you feel this strategy is practical in terms of time for supplementing classroom instruction? Why or why not?

## Appendix F: Student Social Validity Questionnaire

Student \_\_\_\_\_ Date \_\_\_\_\_

Questions		Responses			
1.	The computer program helped me learn how to set goals for my behavior.	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
2.	The computer program was easy to use.	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
3.	I liked learning how to set goals for my behavior.	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
4.	The computer program taught me how to set goals and helped me focus on the goals I needed to improve for my behavior.	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
5.	My behavior improved because I set my behavior goal.	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree

## Appendix G: Treatment Integrity Checklist

Date: \_\_\_\_\_ Participant: \_\_\_\_\_ Session Length \_\_\_\_\_

Checklist completed by \_\_\_\_\_

Step		
Researcher ensures proper functioning of computer.	Yes	No
Researcher ensures proper functioning of computer program.	Yes	No
Researcher tells student to sit at computer.	Yes	No
Student activates Camtasia recording	Yes	No
Student activates computer assisted instruction program.	Yes	No
Computer-assisted instruction program plays on the screen.	Yes	No
Student navigates correctly through the program.	Yes	No
Student responds to questions throughout computer-assisted instruction program	Yes	No
Researcher does not provide feedback to student during computer assisted instruction	Yes	No
Student views entire computer assisted instruction program.	Yes	No
Student ends program	Yes	No

Number of YES circled or N/A Marked: \_\_\_\_\_  $\div 11 =$  \_\_\_\_\_  $\times 100 =$  \_\_\_\_\_ %

Notes: