THE IMPACT OF THE CAREER AND SELF-ADVOCACY PROGRAM
ON THE SELF-DETERMINATION SKILLS OF YOUTH WITH DISABILITIES

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The purpose of this study was to measure the impact of the Career and Self-Advocacy Program (CASAP) on students’ level of self-determination and attainment of transition related goals. A Goal Attainment Scaling (GAS) process measured how well participants achieved their goals and the AIR Self-Determination Scale served to measure the students’ self-determination skills.

A total of ten students with learning disabilities and cognitive disabilities participated in this study. Parents and educators provided input for the students’ goals and rated the students after the program concluded. Parents, educators, and students completed the AIR Self-Determination scale. Descriptive statistics, analysis of variance, and correlation methods were applied to the data in order to address the questions of interest.

Overall, a majority of the students achieved their transition related goals as assessed through the GAS. Pre and post program differences were found for capacity for self-determination, but not for opportunity for self-determination, however opportunities at school were more easily connected to teaching self-determination to students with disabilities.
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CHAPTER I

INTRODUCTION

Over the past few decades, there were extensive efforts from the federal, state, and local levels to improve the post-school outcomes of students with disabilities. The Individuals with Disabilities Education Act of 1990 and its amendments of 1997 and 2004 demonstrate a legislative commitment to improving access to the general education curriculum, high academic standards, goal-oriented transition planning, and accountability for results with students with disabilities. Since the early 1980s, transition became a major priority at all levels of policy and programs. These policy initiatives were intended to improve the lives of youth with disabilities.

Transition services are defined in the IDEIA 2004 as:

A coordinated set of activities for a child with a disability that:

(1) is designed to be within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child’s movement from school to post-school activities, including postsecondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation;

(2) is based on the individual child’s needs, taking into account the child’s strengths, preferences and interests; and
(3) includes instruction, related services, community experiences, the
development of employment and other post-school adult living objectives,
and, when appropriate, acquisition of daily living skills and functional
vocational evaluation (Section 602).

The transition services definition provides a framework of four essential elements that
include: (a) determining student strengths, needs, interests, and preferences; (b) results
and outcome-oriented planning; (c) a coordinated set of activities; and (d) promoting
movement to post-school activities. These four essential elements include a range of best
practices in transition including person-centered planning (i.e., outcome oriented
process), interagency collaboration (i.e., a coordinated set of activities), follow-up and
follow along services (i.e., activities that promote movement from school to post-school
activities), and self-determination (i.e., based on students’ strengths and needs, taking
into account students’ preferences and interests; Flexer & Baer, 2008).

Statement of the Problem

Even though there is a great deal of progress helping students with disabilities
transition to an improved quality of life, the outcomes of students with disabilities are
still not comparable to their non-disabled peers. Follow-up and follow along studies since
the late 1980s until today consistently find that youth with disabilities are less successful
in key outcomes such as employment and income than their non-disabled peers (Hanley-
Maxwell, Szymanski, & Owens-Johnson, 1998). However, research is steadily accruing
that suggests that enhanced self-determination skills may help improve student outcomes,
including academic performance (J. E. Martin et al., 2003), postsecondary participation (Field, Sarver, & Shaw, 2003), and quality of life (Wehmeyer & Schwartz, 1997).

The practice of self-determination in educational programs is a significant focus in the special education and transition literature, even though this idea originated two decades prior. In 1989, The Office of Special Education and Rehabilitation Services (OSERS) sponsored a conference on “self-determination” to focus on activities that would assist individuals with disabilities having more input into decisions that affect their own lives. More than half of the 60 people who attended this conference had disabilities. The conference generated a report containing 29 recommendations for promoting self-determination across federal agencies (Ward, 2005). Between 1990 and 1996, the United States Department of Education’s Office of Special Education Programs (OSEP) funded 26 model demonstration projects intended to develop self-determination programs and practices for youths with disabilities. These programs were designed to assist students in the development of specific self-determination skills such as self-awareness, decision making, goal setting and attainment, assertive communication, negotiation, conflict resolution, and reflection (Mason, Field, & Sawilowsky, 2004). Ward and Kohler (1996) analyzed the applications of the 26 projects and found that most of the curricula focused on skills related to self-advocacy, decision making and goal setting, use of community resources, creativity and self-expression, assertiveness and self-actualization, and empowerment and social independence. These projects also developed new materials that taught students about the IEP process as well as activities that are related to post-school outcomes.
Along with the emphasis on self-determination skills and strategies in policy and practice, legislation began to include specific references to self-determination. The IDEA Amendments of 1997 and 2004 provided further support for self-determination by including provisions intended to strengthen the involvement of students by stating that “students with disabilities be invited to any IEP [individualized education program] meetings for which a purpose is the consideration . . . of transition services” (p. 12440), and that the “transition services provided to each student be . . . based on the individual needs, taking into account the student’s preferences and interests” (p. 12475). The language of this legislation indirectly supports self-determination and the individual choices that are a big part of this movement.

The Rehabilitation Act of 1992 (P.L. 102-569) also specifically recognizes self-determination in its language: Disability is a natural part of the human experience and in no way diminishes the rights of individuals to live independently, enjoy self-determination, make choices, contribute to society, pursue meaningful careers, and enjoy full inclusion and integration in the economic, political, social, cultural, and educational mainstream of American society [Sec. 2 (a) (3) (A-F)].

Significance and Rationale

Despite this recent legislation and initiatives, many youth and adults with disabilities remain ill prepared to exercise their rights and participate in decisions affecting their lives. Parents and professionals still make many major life decisions for people with disabilities. To actualize the concept of self-determination requires that we spend considerable effort training children, youth, and adults with disabilities along with
parents and professionals in specific self-determination strategies. For this reason a great deal of attention continues to focus on developing ways to promote self-determination skills and outcomes, and to conduct studies to determine the effectiveness of programs for self-determination.

One program that was developed through a model demonstration grant was The Career and Self-Advocacy Program (CASAP). The CASAP was established in 1999 through grant funding from the United States Department of Education. It was designed to work with local middle and high schools to help facilitate and improve the self-determination skills of youths with disabilities as well as provide a program for teachers to use within the classroom.

The CASAP is a self-determination curriculum that is designed to assist adolescents with mild to moderate disabilities who are planning on attending some type of postsecondary institution or specific training program after graduation. The CASAP is designed for students to be able to relate postsecondary options to specific career choices. It also explores certain self-advocacy topics and how those topics relate to the secondary experience and specifically the IEP process and setting goals. The CASAP was developed around three themes or units. The three units are: (a) self-awareness and advocacy, (b) postsecondary options, and (c) goal setting and IEPs.

Since self-determination is considered both a process and an outcome, it is often difficult to quantify and measure. Although the literature on self-determination is extensive, a good portion of it is not empirically based. As part of a national synthesis project on self-determination, Wood, Test, Karvonen, Browder, and Algozzine (1999)
located 450 articles, on the topic of self-determination from 1972 to 2000. Out of those published articles, Algozzine, Browder, Karvonen, Test, and Wood (2001) found that only 51 group and single subject studies (9.5% of the total published literature) met the inclusion criteria for the literature review. Of those studies, 26 were group whereas 25 were single subject studies. The research focused on choice making (38%), self-advocacy (37%), decision making (20%), and problem solving (20%). Although all components of self-determination were reflected, most of the studies focused on teaching choice-making to individuals with moderate and severe mental retardation or self-advocacy to individuals with learning disabilities or mild mental retardation. Most of the studies included transition aged students (29 studies) or adults (24 studies). Self-determination intervention studies typically demonstrated improvement in self-determination skills. However data on the application of these skills were limited.

The professional literature base on the topic of self-determination has been expanding rapidly in the past 15 years. A good portion of this writing has focused on the “why” of self-determination, including the underlying principle that it is a basic civil right, and a legislative mandate. The framework of self-determination has also been thoroughly addressed through the development of definitions, conceptual models, theories, and the categorization of specific components that exemplify self-determined behavior.

Self-Determination Models and Definitions

Various models and theories have provided the framework for the self-determination process. Self-determined learning theory (Mithaug, Mithaug, Agran,
Martin, & Wehmeyer, 2003) is based upon the claim that learning is adjustment. This theory of learning explains why, how, and what people learn. People learn when they are provoked by an event that interrupts their goal pursuits—the why of learning. They engage the event by altering their expectations, choices, and actions to control the event—the how of learning. And they adjust by altering their beliefs and patterns of responding to an event—the what of learning.

The Self-Determined Learning Model of Instruction (Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000) is a model of teaching designed to teach students a self-regulated problem solving process with three basic steps: First, students set their own goals based on their preferences, wants, and needs. Second, they develop and implement action plans to help achieve their goals. Finally the students self-evaluate their progress with achieving their goals. The students learn to regulate their learning and possibly revise their goals or action plans if needed.

Field and Hoffman (1994) designed a self-determination model with five major components: Know Yourself, Value Yourself, Plan, Act, and Experience Outcomes and Learn. The first two components describe the internal processes that provide the foundation for self-determination, whereas the final three components describe specific skills associated with self-determination. Wolman, Campeau, DuBois, Mithaug, and Stolarski (1994) designed a model using three major components: Thinking, Doing, and Adjusting. These three components can be found in all the theories and models described above.
Models of self-determination are based on specific definitions. Many definitions of self-determination have been offered in the literature (e.g., Field & Hoffman, 1994; J. E. Martin & Marshall, 1995; Ward, 1996). Field, Martin, Miller, Ward, and Wehmeyer (1998) provided a summary of several of those definitions. Their consensus definition stated that:

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

Specific components of self-determination follow this definition and have also thoroughly been researched and addressed. Wehmeyer, Agran, and Hughes (1998) described 12 component skills necessary for self-determined behavior. These include: (a) choice making; (b) decision making; (c) problem solving; (d) goal setting and attainment; (e) independence, risk taking, and safety skills; (f) self-observation, evaluation, and reinforcement skills; (g) self-instruction; (h) self-advocacy and leadership skills; (i) internal locus of control; (j) positive attributes of efficacy and outcome expectancy; (k) self-awareness; and (l) self-knowledge.

Wehmeyer (1994) considered goal attainment as the most important self-determination component. However youth who receive special education services possess far fewer goal attainment and other self-determination skills than their non-disabled peers
Goal-oriented performance involves a two-step process where students first set goals based upon their interests, skills and limits, and second, develop plans and take action to achieve those goals (J. E. Martin, Marshall, & DePry, 2008). Goal attainment scaling provides a researched based framework which can enhance this process.

**Goal Attainment Scaling**

Goal Attainment Scaling (GAS) is a measurement strategy that is rarely seen within the self-determination literature base. Goal attainment scaling (GAS) provides an individualized, criterion-referenced approach to measure change and evaluate intervention outcomes. Goal attainment scaling was originally developed by Kiresuk and Sherman (1968) as a method to evaluate individual treatment outcomes as well as overall program effectiveness of a mental health center in Minneapolis, Minnesota.

Basically, GAS involves establishing goals and specifying a range of outcomes or behaviors that would indicate progress toward those goals. The specified outcomes are placed on a five point continuum. These outcomes range from much less than expected (-2 on the scale), less than expected (-1 on the scale), the expected outcome (0 on the scale), somewhat more than expected (+1 on the scale), or much more than expected (+2 on the scale). Kiresuk and Sherman (1968) developed a formula that converts raw scores to T-scores. A score of 50 indicates that the expected level was achieved, a score of 40 indicates less than expected attainment, and a score of 30 indicates much less than the expected outcome. A score of 70 indicates much more than expected attainment, whereas a score of 60 represents somewhat more than expected achievement.
Since this development, GAS is being used by researchers and practitioners in a variety of disciplines for a number of applications. Goal attainment scaling was used with many individuals to evaluate different types of programs. In counseling, GAS was used to improve treatment outcomes (D. L. Smith, 1976), to evaluate client outcomes and performance of elementary school counselors (Keelin, 1977), and to assist counselors in building relationships with their pregnant or parent teenage clients in a short period of time (Moyer & Rosenroll, 1984). In the field of early intervention, GAS was used as a planning and evaluation tool to document intervention outcomes for infants and their families (Simeonsson, Bailey, Huntington, & Brandon, 1991). In social work, GAS was used to measure change for clients at the time of treatment termination and at follow-up (Rock, 1987). In conjunction with reality therapy, GAS was used to help athletes set and meet goals (S. B. Martin & Thompson, 1995). In the behavioral consultation literature, GAS was used with school aged children in a psychiatric hospital to evaluate the effects of behavioral consultation in improving educational recommendations (Iverson & Lee, 1991).

In the field of special education, GAS has been used to demonstrate accountability (Carr, 1979), and the effectiveness of special education programs (Maher, 1983). GAS has also been used to evaluate the progress of individuals with severe and profound mental retardation (Bailey & Simeonsson, 1988). It has also been applied to evaluate students with autism (Oren & Ogletree, 2000). Recently, Goal Attainment Scaling has been used to study the impact of self-determination strategies on students
with disabilities (J. E. Martin et al., 2003; Wehmeyer, Hughes, Agran, Garner, & Yeager, 2003).

Overall, GAS was used in a variety of fields and for a number of purposes, but there is limited use within the field of special education. GAS provides a flexible and highly individualized system to evaluate progress. The use of GAS may encourage family participation as a student with a disability transitions to the next phase of their life. GAS is a method that evaluates and enhances a student’s ability to set and achieve individual goals. As such, it is an evaluation method that fosters the core components of self-determination.

AIR Self-Determination Scale

The AIR Self-Determination Scale (Wolman et al., 1994) is an assessment instrument designed to measure students’ capacity for and opportunity to engage in self-determined behavior. The development of this scale was guided by the theory that prospects for self-determination are influenced by both the students’ skills, knowledge, and beliefs (capacities) and by opportunities in the environment. Three major components: Thinking, Doing, and Adjusting, provide the framework for the scale. The AIR Self-Determination Scale provides information on students’ capacity and opportunities to self-determine within each of the components. Capacity refers to students’ knowledge, abilities, and perceptions that enable them to be self-determined. Opportunity refers to students’ chances at school or at home to use their knowledge and abilities. It assesses how individuals interact with opportunities to improve their quality
of life. The specifics and reliability of the AIR Self-Determination Scale is addressed in chapter 3.

Purpose

The purpose of this study was to measure the impact that the Career and Self-Advocacy Program has on student’s individual goals and level of self-determination. A Goal Attainment Scale served to measure individual and group progress on goals related to the three major themes of the Career and Self-Advocacy Program (Self-Awareness and Advocacy, Postsecondary Options, and Goal Setting and IEPs). The AIR Self-Determination Scale provided information on perceived levels of self-determination from the parents’, teachers’, and students’ viewpoint. The following questions were addressed in this study.

Research Questions

1. What is the impact of the CASAP on goal attainment as assessed by parents and teachers?

2. What are the differences of perceived levels of self-determination (as assessed by the AIR Self-Determination Scale) among parents, teachers, and students after program participation?

3. What is the relationship between the attainment of transition related goals and self-determination skills as assessed by the AIR Self-Determination Scale?
CHAPTER II
REVIEW OF THE LITERATURE

Self-determination is a complicated construct but one that is considered a “promising practice” in the special education and transition literature today. Specific movements, initiatives, and models have helped to develop what constitutes “promising practices” in transition today. There are differing opinions of what constitutes promising practices in transition. Not all transition practices are good for students all the time. However researchers, advocates, and policymakers all agree that self-determination is critical for students with disabilities. Every list of promising practices or guiding principles contains self-determination and components related to this concept (Baer, Flexer, & McMahan, 2005; Greene, 2003; Rusch & Millar, 1998; Wehman, 1996). Self-determination has also become a priority for grant competitions since 1989. Recent legislation includes language that supports the idea of self-determination. Since the focus on self-determination is relatively recent, it is still unclear what effect self-determination has on individuals with disabilities.

The professional literature base on the topic of self-determination has grown over the past decade. Three primary focal points in the self-determination literature emerged from this base: (a) the importance and rationale of self-determination, (b) definitions and conceptual models of self-determination, and (c) effectiveness of strategies for promoting self-determination. These focal points provided the framework for this self-determination
aspect of this literature review. Finally, Goal Attainment Scaling and its applications within the special education and self-determination literature were reviewed.

The Importance and Rationale of Self-Determination

A great number of articles describe why self-determination should be considered a central concept in special education practice and policy. Wehmeyer, Field, Doren, Jones, and Mason (2004) described two perspectives coming out of the literature: (a) a civil rights, empowerment, and self-advocacy perspective and (b) and educational effectiveness perspective. The self-determination movement and initiative set the foundation for current policy, practice, and procedures for what has become one of the most important concepts in special education today.

The Self-Determination Movement and Initiative

The self-determination movement is an extension of the “disability rights,” and the “self advocacy” movements of the 1960s and 1970s (Ward, 1996). As racial minorities and women came together to challenge discrimination in the 1960s so did individuals with disabilities. One specific self-advocate was Ed Roberts, who is considered the father of the independent living movement and one of the first disability rights activists. Severely disabled from polio, which he contracted as a teenager, Ed had virtually no functional movement and was dependent on a respirator to breath. In addressing rights, he was a principle organizer of a group known as The Rolling Quads at the University of California at Berkeley. This group exerted pressure on the university to become more accessible and began seeking funding to develop a student organization to work for barrier removal and support services. The Berkeley self-advocates emphasized
the connection between the struggles of other minorities for equality and the marginal status of people with disabilities, defining independence in terms of the control people with disabilities have over their lives (Shapiro, 1993). Like many others, Ed’s advocacy emphasized that all citizens, including those with disabilities, should have access to community participation and social institutions, and promoted the idea of quality of life (Flexer & Baer, 2008).

A parallel strain of self-advocacy began in 1968 in Sweden when Bengt Nirjie, the director of the Swedish Parents Association for Mentally Retarded Children, began asking young adults with mental retardation what they liked and disliked. From those causal conversations came an epiphany: That people with mental retardation could and should have a role in their own choices. Today this principle looks obvious; however, 40 years ago, this practice rarely occurred especially for people with developmental disabilities. Nirjie realized that with support and teaching, people with disabilities could make decisions on their own (Shapiro, 1993). In 1972, Nirjie authored the normalization principle. This principle stated the importance of “making available to [people with mental retardation] the patterns and conditions of everyday life which are as close as possible to the norms and patterns of the mainstream society” (1976, p. 363).

In the United States, self-advocacy for people with developmental disabilities crystallized in 1974, when the first “People First” convention met in Oregon. Originally 200 self-advocates were expected, but over 500 attended (Shapiro, 1993). The purpose of this convention was to discuss housing, business, and equality in society. Over time, People First was successful in helping the deinstitutionalization throughout Oregon,
while the number of members, chapters, and other self-advocacy groups increased and rapidly spread throughout the country (Ward, 1996). Central to the People First movement was the idea of control over choices and options. People with disabilities did not want to be seen as passive recipients of care, but rather as people who are able to make their own decisions and advocate for their rights. Thus the idea of self-determination began to form (Shapiro, 1993).

Central to the self-advocacy movement is the idea that the right to make decisions about life and the future is viewed as an inalienable right as a citizen of the United States with recognition of this right for citizens with disabilities being fairly recent. Evidence of this overdue recognition is the fact that instrumental pieces of legislation date only to 1990, including the Individuals with Disabilities Education Act (IDEA) of 1990, 1997, and 2004; The Americans with Disabilities Act of 1990; and the Rehabilitation Act Amendments of 1992 and 1998.

The U.S. Department of Education identified self-determination as an important outcome for youths and adults with disabilities following the conference on self-determination in 1989. Between 1990 and 1996, the U.S. Department of Education’s Office of Special Education Programs (OSEP) funded 26 model demonstration projects intended to develop programs and practices that would support self-determination (Ward & Kohler, 1996). The Rehabilitation Services Administration has also funded seven choice demonstration projects following the passage of the 1992 Rehabilitation Act Amendments. Choice and self-determination are also encouraged through grant funding of the Administration on Developmental Disabilities (ADD; Algozzine et al., 2001).
Despite this recent legislation and initiatives, many youth and adults with disabilities remain ill prepared to exercise their rights and participate in decisions affecting their lives. Parents and professionals still make many major life decisions for people with disabilities. Research and training needs to not only focus on the student with a disability, but with parents and professionals who are supporting the students as they transition from high school.

*Educational Effectiveness of Self-Determination*

Research has supported the view that self-determination in high school is related to positive transition outcomes. Wehmeyer and Schwartz (1997) conducted a follow-up study with a group of students with mental retardation or learning disabilities. The study included 80 students ages 17 to 22 who had graduated from high school. Using The Arc’s Self-Determination Scale (Wehmeyer & Kelchner, 1995), self-determination data were collected prior to their high school exit. The ARC is a 72-item self-report measure that includes a score for global self-determination and subscales for individual autonomy, self-regulation, psychological empowerment, and self-realization. Parents completed a separate scale to assess adult outcomes. Nearly one year after graduation, findings showed that students whose scores in high school indicated a higher level of self-determination were more likely to have experienced a greater number of positive adult outcomes, including a higher likelihood of being employed and earning more per hour than those who were not self-determined. Students with higher self-determination scores were more likely to have expressed a preference of living outside of the family home, having a checking or savings account, and having paid employment. Specifically, 80% of
the students in the high self-determination group had paid employment one year after graduation, whereas only 43% of the students with low self determination scores had paid employment. Among the school leavers who were employed, the youth with the high self-determination scores earned significantly more per hour ($M = 4.26$) than those in the low self-determination group ($M = 1.93$).

Wehmeyer and Palmer (2003) replicated the 1997 study and had similar results. They found that students with learning disabilities and mental retardation who had higher levels of self-determination in high school had better post-school outcomes than students with lower self-determination scores. They also found that from the first to the third year following graduation, students with higher levels of self-determination experienced additional positive outcomes more so than those who had lower scores.

Gerber, Ginsberg, and Reiff (1992) interviewed a group of adults who had been identified as having a learning disability in high school to determine why some participants were “successful” whereas others were not. They found that those who were successful had (a) control of their lives and surroundings, (b) a desire to succeed, (c) well thought out goals, (d) persistence, (e) adapted to their environment, and (f) built a social support network that facilitated their success. After the interviews were conducted Gerber et al. realized that the individuals decided, long before they became successful, that they were going to be successful. These findings strongly suggest the beneficial outcome of increased self-determination skills.

Given the acceptance of self determination as a positive educational outcome and the political climate of an appropriate education for everyone, it should follow that
teacher practices in the classroom would reflect the current self-determination theories and knowledge base. However despite this current interest in promoting self-determination, the extent to which students are taught these skills still remains uncertain.

Agran, Snow and Swaner (1999) conducted a statewide survey in Utah that examined: teacher attitude about self-determination, the importance with which teachers regard self-determination, and the specific skills taught. These authors also examined the degree to which teachers developed self-determination related IEP goals and objectives. A majority of the respondents (77%) felt that self-determination was an important or very important curricular area. Only 3% of teachers rated it as a low priority. According to 55% of the teachers, self-determination skills were either not included in the IEPs or appeared in only some. In addition, 59% of the respondents indicated that discussing the need to be self-determined with their pupils was not at all too moderately important. Overall, Agran et al. found that teachers of students with disabilities felt self-determination was important but did not place significant emphasis on this area in curricular and planning activities.

Wehmeyer and Schwartz (1998) found similar outcomes in reviewing the content of transition goals in IEPs. Out of nearly 900 transition related goals for students with mental retardation or other developmental disabilities, there were none that indicated that students were being taught self-determination skills such as making choices, solving problems, making decisions, setting and achieving goals, or understanding themselves. The majority of goals pertained to competitive employment and independent living outcomes.
Wehmeyer, Agran, and Hughes (2000) completed a national survey with educators to determine the degree to which teachers were aware of the principles of self-determination and to what extent self-directed learning strategies were included in instruction. This study also examined whether the classroom setting or the type of disability influenced teachers promotion of self-determination strategies. Respondents to the survey were secondary level teachers serving students with a variety of disabilities. Out of 1,219 surveys, 1,159 indicated that they were trained as a special educator.

Teachers were asked to rate the importance of the instructional domains which were drawn from the component elements. These consisted of (a) choice making, (b) decision making, (c) problem solving, (d) goal setting and attainment, (e) self-advocacy, (f) self-management and self-regulation skills, (g) self-awareness and self-knowledge. The results indicated that all domains were rated as moderately important or very important. Decision making, problem solving, and choice making received the highest ranking. The most frequently identified strategies taught were self-reinforcement ($N = 894$), self-evaluation ($N = 833$), and goal setting ($N = 793$). The most frequently cited barrier to providing self-determination instruction was teachers did not believe that their students would benefit from student directed learning strategies or from other strategies that promote self-determination ($N = 517$). The second biggest reason was that teachers did not have sufficient training/information to support these strategies ($N = 501$). A majority of the teachers ($N = 851$) indicated that they involved their students in educational planning meetings, whereas 683 educators structured the classroom environment to support student directed learning. Another 579 educators provided
instructional activities in non-school settings, and 280 teachers implemented mentoring programs (Wehmeyer, Agran, et al., 2000).

Analysis of variance comparing the ratings of teachers who exclusively taught students with mild cognitive disabilities or exclusively severe cognitive disabilities on the importance of teaching the various self-determination domain areas yielded significant differences across all seven domains. In all domain areas except choice making, teachers of students with mild disabilities rated instructional efforts as more important to their students than did the teachers of students with severe disabilities (Wehmeyer, Agran, et al., 2000). Significantly more teachers of students with severe disabilities responded “yes” to the “no benefit” option ($N = 198$) than expected ($N = 124$). Far fewer teachers of students with mild disabilities said “yes” than expected. This study concluded that there was a need to move beyond pronouncements of the importance of the concept of self-determination to specifically offering teachers specific methods, materials, and instructional strategies that can enhance self-determination instruction.

In a similar study conducted by Thoma, Nathanson, Baker, and Tamura (2002), the authors surveyed 243 special education teachers in the following domains: (a) familiarity with self-determination, (b) where do teachers learn about self-determination, and (c) what strategies/tools do teachers know about self-determination. A majority (75%) of the respondents reported that they were familiar with the term self-determination. However when asked whether the training was adequate for proper implementation, only 33% said that it was. The teachers responded that they learned about self-determination in graduate level courses (33%), journal articles (25%),
workshop/conference presentations (23%), books (11%), undergraduate courses (16%), and school district in-services (14%).

Teachers were asked about some of the most widely used self-determination assessments and/or curricula. Some common tools and the percentage of teachers who had heard of them are: The McGill Action Planning System (Forest & Pearpoint, 1992; 4.7%), Personal Futures Planning (Mount & Zwernick; 9.3%), Planning Alternative Tomorrows with Hope (PATH; Pearpoint, Obrien, & Forest, 1993; 2.3%), Group Action Planning System (Turnbull, Anderson, Turnbull, Seaton, & Dinns, 1996; 2.3%), Circles of Support (Forest & Lusthaus, 1989; 4.7%), Whose Future Is It Anyway (Wehmeyer & Lawrence, 1995; 7%), Next STEP (Student Transition and Educational Planning; Halpern et al., 1997; 2.3%), and Choicemaker (Martin & Marshall, 1995; 0%).

Thoma, Held, and Saddler (2002) conducted a transition assessment survey in Nevada and Arizona. Part of the survey asked about student involvement in transition assessment and planning. A majority (68%) of the teachers indicated that the IEP process is explained prior to the meetings and 50% indicated that students are taught to participate in their meetings. Less than half (44%) of the students had developed goals prior to the meeting with only 5% planning and leading their IEP meetings. Some of the specific self-determination strategies such as role playing prior to the IEP meeting, having students develop portfolios of their work, and student centered planning strategies were not used by many of the respondents.

Mason et al. (2004) found that only 8% of teachers, administrators, and related services professionals were satisfied with the level of student involvement in IEP
meetings. These professionals were also dissatisfied with their district’s approach to self-
determination (42% were somewhat to very dissatisfied; 8% were somewhat to very satisfied). They were more satisfied with their district’s general approach to IEPs than they were with either student involvement in IEPs or with their district’s approach to self-
determination (65% were somewhat to very satisfied; 23% were somewhat to very dissatisfied). Overall special educators placed a very high value on both self-
determination and student involvement in the IEP process. The instruction regarding self-
determination tended to be unsystematic and informal and that the district wide leadership was rare.

Teachers indicated they were more prepared to teach self-determination skills than instruct their students about participating in the IEP process. Mason et al. (2004) found that students were not very involved in the IEP process. The students were much more likely to attend their meetings but play a passive role rather than actively participate in the process. Only 28% of the respondents indicated that students received instruction about IEPs prior to the IEP meeting and most of the student preparation occurred in as little as 1 to 3 hours.

A good portion of the research on teacher perceptions on self-determination has been conducted with teachers of special education (Agran et al., 1999; Thoma et al., 2002; Wehmeyer, Agran, et al., 2000). However, there is limited research on the knowledge of self-determination of regular education teachers or parents. Grigal, Neubert, Moon, and Graham (2003) conducted separate surveys of parents and teachers (general and special education) of high school students with both high and low incidence
disabilities concerning their views of self-determination. A total of 234 parents and 248 teachers responded to the survey. Slightly more than half ($N = 131$) were general educators whereas 36% ($N = 90$) were special education teachers. The remaining 11% ($N = 27$) rated themselves as vocational educator or “other.” Factor analyses were conducted to establish the factor structure of the two self-determination instruments. The three factors (i.e., Student Participation in IEP Meeting, Student Expression of Choice and Interest, and Teaching Self-Determination Skills) accounted for 57% of the variance in the parent survey. Two factors (i.e., Student Opportunity to Learn and Practice Self-Determination Skills, and Teacher Familiarity with Self-Determination) accounted for 65% of the variance.

Parents agreed that students should be informed and skilled participants in IEP meetings with 96% of the respondents indicating some level of agreement. Parents also agreed that students with disabilities should be taught self-determination skills at school with 98% of the respondents indicating some level of agreement. Finally a majority of parents (78%) had some level of agreement that their child had the opportunity to apply self-determination skills at school (Grigal et al., 2003).

A four way analysis of variance was run for each factor. These independent variables included: incidence level of their child with a disability (high vs. low), respondent’s relationship to the child (mother vs. other family member), type of instructional program (college preparation, career/technology vs. community based/life skills), and time spent in general education (5 hours or more per day vs. less than 5 hours per day). A significant main effect was found between student participation in IEP
meetings and the type of instructional program meetings. Parents of students who attended college prep or career technology were more likely than parents of students who attended community-based life skills classes to believe that youths with disabilities should participate in IEP meetings (Grigal et al., 2003).

Teachers only slightly agreed that they were familiar with self-determination and how to teach it with 63% of the respondents indicating some level of agreement. More importantly, greater than one third of the teachers indicated that they were not familiar with the concept. The majority of teachers (84%) indicated some level of agreement that students with disabilities had the opportunity to learn and practice self-determination skills at their school (Grigal et al., 2003).

A four way analysis of variance was run for each factor. These variables included: the incidence level of their students with disabilities (high vs. low), the teacher’s position (special vs. general education), type of instructional program (college preparation, career/technology vs. community based/life skills), and teaching experience (10 years or more teaching in the system vs. less than 10 years). The interaction of the four variables indicates that the teachers’ familiarity with the construct of self-determination was complex (Grigal et al., 2003).

First, special education teachers were more familiar than general education teachers with the concept of self-determination when both types of teachers taught students with high incidence disabilities and when both taught in college preparation or career technology programs. Second, teachers working with students with high incidence disabilities were more likely to be familiar with self-determination when they worked in a
community-based/life skills program versus a college preparation or career technology program. Third, teachers with greater teaching experience (i.e., 10 or more years in their current school system) were more likely to believe they were familiar with self-determination if they worked with students with high incidence versus low incidence disabilities. Fourth, teachers who worked with students with low incidence disabilities were more likely to believe that they were familiar with the construct of self-determination when they had taught less than 10 years in their current school system versus teachers with 10 or more years in more than one school system (Grigal et al., 2003).

The teacher’s position (general vs. special education) and teaching experience affected their perceptions about students’ opportunities to learn and practice self-determination. For example, general education teachers who had taught less than 10 years in their present school district were less likely to indicate that their school provided self-determination opportunities when compared to special educators with the same amount of experience or general educators with more experience.

Zhang, Katsiyannis, and Zhang (2002) investigated teachers’ and parents’ practices in fostering self-determination skills of high school students with mild disabilities. Three questions were asked: (a) How frequently do parents and teachers of high school students with mild disabilities engage in recommended practice for fostering students’ self-determination? (b) Are there any differences between parents and teachers in terms of how frequently they engage in those recommended practices? (c) Do student demographic variables affect parents’ and teachers’ ratings of their practices? Participants
included parents and special education teachers of 58 high school students with
disabilities. Students attended four public high schools and one special high school in two
southeastern states. Participants rated how frequently they engaged in each of eight
behaviors that foster self-determination skills. The rating scale was based on the
recommended practices for parents and teachers by Doll, Sands, Wehmeyer, and Palmer
(as cited in Zhang et al.). The eight activities included (a) provide opportunities that
impact academic goals, (b) provide opportunities that impact career goals, (c) provide
opportunities that impact schedules at home and at school, (d) help the student link goals
to daily decisions made, (e) provide guidance in breaking long-term goals into a number
of objectives (f) determine steps to progress towards goals, (g) assist with the recognition
and acceptance of weaknesses in key skills, (h) assist with requesting academic and social
supports from teachers.

Respondents used a four-level rating scale to rate how (frequently, occasionally,
rarely, and never) they engaged in the activity described in the eight items. The results
indicated 34% of the parents engaged in the recommended behaviors frequently and 36%
did it occasionally. Twenty-two percent of the parents rarely engaged in the self-
determination activities, whereas 8% never engaged in these activities. Teacher ratings
were generally higher than parents’ ratings. Fifty-four percent of the teachers engaged in
the recommended behaviors frequently and 30% did it occasionally. Fourteen percent of
the teachers rarely engaged in the self-determination activities, whereas only 2% never
engaged in these activities. Student demographic variables did not significantly impact
the participants’ ratings. The results were more encouraging for teachers than parents.
Some of these activities appear more appropriate for teachers and school and parents traditionally are less prepared and willing to complement skills taught at school (Zhang et al., 2002). However home settings provide realistic opportunities to generalize self-determination skills.

Overall self-determination continues to be one of the most important concepts in the field of special education today. Studies show that increased self-determination skills lead to better outcomes for youths with disabilities. However there is a significant gap between research and implementation of self-determination strategies at school and home. Part of the problem is a lack of understanding and training for teachers, professionals, and parents in this area. Teachers believe that self-determination is an important process but lack familiarity and understanding of specific methods. Field and Hoffman (2002) believed that teachers who are self-determined are better able to promote self-determination. Parents want their students to engage in self-determination activities at school but rarely engage in these activities at home. One way to bridge this gap is a greater understanding of specific models, definitions, and components considered to be essential for self-determined behavior.

Definitions and Conceptual Models

The purpose of a model is to describe complicated phenomena in a manner that makes it useful in an applied setting. Self-determination is a complicated construct and process. One way to better understand it is through models. Field and Hoffman (1994) developed the Self-Determination Model. This model was the result of a 3-year process that included the following steps: (a) review the literature, (b) conduct interviews, (c)
observe, (d) consider internal expertise, and (e) consider external expertise. This model development process included more than 1,500 observations and more than 200 interviews with individuals with and without disabilities. This model was reviewed by a panel of experts including parents, teachers, consumers, and adult service providers from three states. Additionally a national panel reviewed and provided insight on this model and its development.

This model is based on a definition of self determination as “one’s ability to define and achieve goals based on a foundation of knowing and valuing yourself” (Field & Hoffman, 1994). This model embraces the notion that self-determination is promoted or inhibited by factors within the individual’s control (e.g., knowledge, values, and skills) and by environmental variables that are less within the individual’s control (e.g., opportunities for making choices, and support of significant others). This model recognizes the importance of environmental factors but focuses its attention primarily on factors within the individual’s control. This model has five major components: (a) know yourself, (b) value yourself, (c) plan, (d) act, and (e) experience outcomes and learn. The first two components, know yourself and value yourself, describe the internal development that provides a foundation for self-determination. The final three components describe specific skills that constitute the action stage of this model. Both processes are necessary for an individual to be self-determined. Both stages are without meaning, or incomplete without the other.
Another model developed by Wolman et al. (1994) broke down the self-determination process into three components: Thinking, Doing, and Adjusting. Each of those components has two steps (See Figure 1).

<table>
<thead>
<tr>
<th>Three Self-Determination Components</th>
<th>Steps</th>
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<tbody>
<tr>
<td>Thinking</td>
<td>Identify and express own needs, interests, and abilities</td>
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<tr>
<td></td>
<td>Set expectations and goals to meet these needs and interests</td>
</tr>
<tr>
<td>Doing</td>
<td>Make choices and plans to meet goals and expectations</td>
</tr>
<tr>
<td></td>
<td>Take actions to complete plans</td>
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<tr>
<td>Adjusting</td>
<td>Evaluate the results of actions</td>
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<td></td>
<td>Alter plans and actions, if necessary, to meet goals more effectively</td>
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</table>

*Figure 1. Self-determination components*

People who are self-determined know and can express their own needs, interests, and abilities. They have the ability to set appropriate expectations and goals for themselves. A self-determined person makes choices and plans in pursuit of their goals. They follow through with actions and make adjustments, if necessary, to achieve their desired goals effectively. People who are self-determined tend to act more independently in pursuit of their goals than others who are not as self-determined. They are less influenced by other people and by their environments in choosing what goals to pursue and how to pursue them (Wolman et al., 1994).

The Adaptability Instruction Model was designed to teach students with disabilities adaptability skills for use during school to work transitions. This model
includes four parts: (a) decision making to identify interest, abilities, and needs and to set goals based on available alternatives; (b) independent performance based on action plans and follow through using self-monitoring strategies; (c) self-evaluation to monitor and compare their performance outcomes against performance expectations; and (d) adjustments to review previous performance outcomes and to set goals and plans accordingly (Mithaug, Martin, & Agran, 1987).

Studies conducted since the development of this model added self-determination to its structure. This addition reflected a theoretical shift from adaptability to self-determined learning. The purpose of this change was to take into account the possibility that adapting to existing circumstances might not lead to goal attainment. By individuals taking action and adjusting the goal or plan, goal attainment should improve. The result was The Self-Determined Learning Model of Instruction (Wehmeyer, Palmer, et al., 2000).

The Self-Determined Learning Model of Instruction expands the Adaptability Instruction Model by recognizing that students need to learn how to advocate their own needs and interests by taking action to change circumstances that may be barriers to their pursuits. It recognizes that “success in life involves altering those circumstances to make them more favorable for a self-selected pursuit” (Wehmeyer, Palmer, et al., 2000, p. 440). The Self-Determined Learning Model of Instruction identifies skills that are necessary for an individual to act on the environment in order to achieve goals based on interests and needs. This model allows teachers to teach students to use student directed instructional strategies to achieve self-selected goals.
The Self-Determined Learning Theory extends The Self-Determined Learning Model of Instruction and postulates that learning is adjustment and that people learn when attempts to attain goals are blocked (Martin et al., 2003). This theory of learning explains:

Why, how, and what people learn. People learn when they are provoked by an event that interrupts their goal pursuits—the why of learning. They engage the event by altering their expectations, choices and actions to control the event—the how of learning. And they adjust by altering their beliefs and patterns of responding to an event—the what of learning. (Mithaug et al., 2003, p. ix)

According to this theory people learn by adjusting and adjust in order to learn. All student engagement self as well as other-determined leads to new adjustments and therefore new learning, given that the event that provokes it is favorable enough to satisfy a valuable interest or need. The claim that learning is adjustment also indicates functional relationships between a student choosing, taking action on the choice, and learning. The Self-Determined Learning Theory justifies arguments advanced to promote student-directed learning in order to increase self-determination (J. E. Martin et al., 2003).

Specific components of self-determination have been thoroughly addressed in the literature. J. E. Martin and Marshall (1996) conducted thorough interviews, a comprehensive literature review, and a national survey to derive seven self-determination constructs. These include: (a) self-awareness, (b) self-advocacy, (c) self-efficacy, (d) decision making, (e) independent performance, (f) self evaluation, and (g) adjustment.
Wehmeyer et al. (1998) described 12 component skills necessary for self-determined behavior. These include: (a) choice making; (b) decision making; (c) problem solving; (d) goal setting and attainment; (e) independence, risk taking, and safety skills; (f) self observation, evaluation, and reinforcement skills; (g) self-instruction; (h) self-advocacy and leadership skills; (i) internal locus of control; (j) positive attributes of efficacy and outcome expectancy; (k) self-awareness; and (l) self-knowledge.

Finally, Field et al. (1998) further described the common components of self-determined behavior identified across multiple models of self-determination. These include: (a) awareness of personal preferences, interests, strengths, and limitations; (b) ability to (i) differentiate between wants and needs; (ii) make choices based on preferences, interest, wants and needs; (iii) consider multiple options and anticipate consequences for decisions; (iv) initiate and take action when needed; (v) evaluate decisions based on the outcomes of the previous decision and revise future decisions accordingly; (vi) set and work toward goals; (vii) regulate behavior; (viii) use communication skills such as negotiation, compromise, and persuasion to reach goals; and (ix) assume responsibility for actions and decisions; (c) skills for problem solving; (d) a striving for independence with others; (e) self-advocacy and self-evaluation skills; (f) independent performance and adjustment skills; (g) persistence; (h) self-confidence, (i) pride; and (j) creativity.

Each model described above is unique but there are common themes and components throughout each model. Thinking, Doing, and Adjusting are evident in all the models and provide the framework for developing, implementing, and adjusting
specific goals. Not every skill or component will be applicable for each student all the time. However, through these components, the effectiveness of specific strategies and outcomes of those strategies can be thoroughly addressed.

Effectiveness of Strategies for Promoting Self-Determination

Since 1989, many resources and strategies have been developed to promote or enhance self-determination for students with disabilities. The literature includes many “recommended” but not empirically-demonstrated strategies for promoting self-determination. These resources vary on the different components that are emphasized as well as on the population for which they are geared. Some of these resources have been empirically validated whereas others have not. Test, Karvonen, Wood, Browder, and Algozzine (2000) in a survey of existing curricula, categorized them into eight topic areas: choice/decision making, goal setting/attainment, problem solving, self-evaluation, self-advocacy, IEP planning, relationships with others, and self-awareness. Sixty-one curricula were analyzed to see which of the eight topics were addressed by each curriculum. None of the curricula had all eight areas as a focus. In addition, only 33% (20/61) were field-tested to produce data concerning the effects of results.

Algozzine et al. (2001) identified 51 articles published from 1972-2000 that met the criteria that they established for data based, peer reviewed studies on interventions that promoted one or more component elements of self-determined behavior. Of those, 9 group studies and 13 single subject studies were included in the meta-analysis. The additional 29 studies were not included because they used a qualitative research approach, had no experimental design, or did not provide adequate description of the data
to be able to compute an effect size. The major intervention themes found in the 51 studies are self-advocacy and choice making. The most common interventions teach choice making to individuals with mental retardation ($N = 15$ studies) or self-advocacy to individuals with learning disabilities or mild mental retardation ($N = 19$).

Overall, the majority of intervention research in the area of self-determination has included individuals with mental retardation ($N = 18$) or learning disabilities ($N = 12$) with most of those studies conducted with adolescents ($N = 29$) or adults ($N = 24$). The components of self-determination that are least studied are self-advocacy knowledge ($N = 5$), and self-efficacy knowledge ($N = 2$). The single-subject studies tended to focus on teaching one particular skill to individuals with more severe disabilities and the group studies tended to focus on teaching multiple skills to individuals with mild disabilities. However, the impact of self-determination still remains unclear.

Durlak, Rose, and Bursuck (1994) examined the impact of a self-determination curriculum and instructional process on students with learning disabilities. They studied whether a student could acquire specific self-determination skills through acknowledging his or her disability. They also reported the instructional accommodations their teachers used, as well as the strategies for arranging those accommodations. Students were assessed on a continuous assessment system, a teacher rating scale, and a pre-post test. The continuous measure was based on behavioral observations of each individual’s mastery of seven target skills. Training proceeded for four students across the seven target skills and the training of the other four subsequently followed. This multiple baseline design determined that all eight students acquired self-determination skills from
the direct instruction. All eight responded correctly on 42% of the steps over all seven tasks during baseline. After the direct instruction students responded correctly on 82% of the tasks following one training session. After one week on the maintenance check a 100% performance rate was achieved. Some of the challenges that the authors discussed were generalizing these skills to other settings. Specifically, discussing their disability and accommodations to general education teachers was a challenge.

Two approaches primarily are being used to promote better self-determination skills and outcomes for youth with disabilities. One approach is classroom-based curriculum that teaches specific skills that are considered essential to becoming a self-determined individual. The second approach is student involvement in educational planning. This would include person centered planning strategies (Algozzine et al., 2001). One classroom based curriculum that has been empirically validated is the Steps to Self-Determination curriculum (Field & Hoffman, 1996). The Steps to Self-Determination is an 18-session curriculum based on a self-determination model that includes five major components: (a) know yourself, (b) value yourself, (c) plan, (d) act, and (e) experience outcomes and learn. Each session and activity is related to one or more of those components of the model and each of the components are taught in the curriculum. Ten cornerstones are essential to the Steps curriculum: (a) establishing a co-learner role for teachers, (b) emphasizing modeling as an instructional strategy, (c) using cooperative learning, (d) promoting experiential learning, (e) using integrated or inclusive environments, (f) accessing support from family and friends, (g) emphasizing the
importance of listening, (h) incorporating interdisciplinary teaching, (i) appropriately using humor, and (j) capitalizing on teachable moments.

In the Steps curriculum, students establish and work toward goals as they learn self-determination knowledge and skills. It was designed for students with and without disabilities and can be taught in separate environments. The Steps curriculum can be included in existing courses or taught as a separate class or extracurricular activity. Teachers are considered co-learners with the students and are supposed to be good role models and create a collaborative classroom environment. Parents or other significant persons in the students’ lives are also hopefully involved, to support the students’ progress.

Hoffman and Field (1995) field tested the Steps curriculum in two Midwestern high schools with varying socioeconomic settings. One school was in a large industrial urban area with primarily low socioeconomic status, with a diverse racial makeup. The other school was in a suburban, upper middle class residential area. Out of both schools, 42 males and 35 females with an age range of 15 to 25 participated in this study. The field test consisted of a treatment group which received the Steps to Self-Determination curriculum and a control group which did not. Two instruments were used in this study: the Self-Determination Knowledge Scale (SDKS) and the Self-Determination Observation Checklist (SDOC). A $t$-test between the treatment and the control group indicated a significant increase ($p = .002$) in the correct responses on the SDKS, with an effect size of 1.02. This effect size is considered to be a very large treatment effect (Cohen, 1988). The main effect of a pretest-posttest treatment versus control group of the
effectiveness of the curriculum using the SDOC scores, showed a significant increase ($p = .000$) in student behaviors considered to be components of self-determination. The results of the study indicate that the participants were able to learn and apply the core concepts of the curriculum.

The Self-Determined Learning Model of Instruction (SDLMI) was designed to facilitate educators to teach students with disabilities to self-direct the instructional process and at the same time enhance students’ self-determination skills. This model involves three basic steps. First, students set their own goals based on their preferences, wants, and needs. Second, they develop and implement action plans to help achieve their goals. Finally, the students self-evaluate their progress with achieving their goals. The students learn to regulate their learning and possibly revise their goals or action plans if needed. Wehmeyer, Palmer, et al. (2000) conducted a field test of this model. Participants in this study included 21 teachers and 40 students. Of the student participants, 13 were identified as having mental retardation, 17 were identified as having a learning disability, and 10 were identified as having an emotional or behavioral disorder. Research staff provided training to teachers on self-determination, student directed learning, and the SDLMI itself. Ongoing technical assistance and support were given throughout the study. This field test was implemented to answer two questions. First, will students achieve educationally relevant goals using the SDLMI; and second does the SDLMI have a secondary effect of promoting self-determination? The Goal Attainment Scaling (GAS) process was used to answer the first question. Once students had identified a goal, working through the first phase of the model, the teacher met with a project staff member.
to identify five possible goal outcomes for each goal using a 5-point continuum ranging from the most unfavorable possible outcome to the most favorable possible outcome. At the end of the study, teachers selected the outcome that best described the student’s progress on the goal.

Three measures were used to determine if the method enhanced the students’ self-determination. The Arc’s self-determination scale (Wehmeyer & Kelchner, 1995) was used to measure four essential characteristics of self-determination. These included autonomy, self-regulation, psychological empowerment, and self-realization. The second measure was the adult version of the Nowicki-Strickland Internal-External Scale (ANS-IE; Nowicki & Duke, 1974). This was used to measure the degree to which student perceptions of control in their lives changed as a result of instruction in the model. The last indicator was a questionnaire examining student goal orientation. This questionnaire was adapted from the American Institutes for Research (AIR) Self-Determination Scale. Six questions related to goal-oriented behavior were selected from this scale.

Student GAS scores were calculated using a raw score conversion key developed by Cardillo (1994). These raw scores were converted to a standardized T-score (Kiresuk, Smith, & Cardillo, 1994) with a mean of 50 and a standard deviation of 10. The converted T-score value of 50 represents an acceptable outcome whereas a score of 40 or below indicate that a student did not achieve an acceptable outcome. Scores of 60 and above indicate that a student’s progress exceeded expectations. The GAS score for students who worked on more than one goal were calculated by averaging the standardized scores from the two goals. Analysis of variance by disability label was
conducted on GAS scores to examine differences in model efficacy by disability category and by the type of goal (academic, social, or behavioral). Scores form the Arc’s scale and the ANS-IE were analyzed using a paired-sample T-test.

Analysis of variance indicated no significant differences on GAS scores between the student’s disability or by the type of goal. The mean GAS score for the entire sample was 49.13 ($SD = 14.06$). From a total of 43 distinct goals, educators rated 55% of the goals as having been achieved as expected or more than expected. Educators rated 25% of the goals at the expected level and 30% of the goals were above the expected level. A total of 30% of the goals were at the less than expected level and 20% were at the much less than expected level.

Paired-sample $t$-tests examining pre- and post-intervention differences on self-determination and perceptions of control indicated significant differences with The Arc’s self-determination scale ($p = .046$) and the ANS-IE ($p = .029$). In both cases mean scores were more adaptive after instruction. The mean score for the ARC increased from 94 (pre-instruction) to 99 (post-instruction) and the mean score on the ANS-IE decreased (lower scores are considered more adaptive) from 15.8 (pre-instruction) to 14.1 (post-instruction). This field test indicated that the model was effective in enabling students to attain educationally valued goals.

Agran, Blanchard, and Wehmeyer (2000) also field tested the SDLMI. They used a multiple baseline across three groups design to examine the efficacy of the program. A total of 19 adolescents with severe disabilities participated in this study. Using the IEP and the teacher’s assistance, each student targeted a behavior on which he or she wanted
to focus. The target behaviors included work, social, academic, and community living skills.

During baseline, a GAS was established and completed by the teachers. After each student identified a goal by working through the first phase, the teacher met with a project staff member to identify five possible goal outcomes for each goal. A 5-point continuum ranging from the most unfavorable possible outcome to the most favorable possible outcome was identified. Each outcome was assigned a value beginning with -2 for the least favorable outcome, -1 for the less than expected outcome, 0 for the expected outcome, +1 for a favorable outcome, and +2 for the most favorable outcome. At the end of the study, the teachers selected the outcome that best described the participants’ progress on the goal. Raw scores were converted to standardized T-scores with 50 representing an acceptable outcome. The mean GAS score for the total sample was 60. Eighty nine percent of the students achieved their goals at or above the teacher-rated expected outcome levels, with only 10% of the students not meeting the expected outcome level. Overall, the results indicate that 17 out of 19 students improved their performance of target behaviors after receiving instruction in the SDLMI. For most of the students there was a dramatic change between baseline and intervention. Theses changes were also maintained during the post-training procedures.

Martin et al. (2003) conducted a study using self-determination contracts to regulate the correspondence between students’ plans, work, self-evaluation, and adjustment on academic tasks. This study was conducted with eight 9- to 10-year-old boys with severe behavior issues. These boys functioned in the average to above average
intellectual range and academically tested one to three years below grade level. These students were placed in a residential treatment facility for behaviors ranging from fire setting, out of control tantrums, pet killings, and inability to function in a public school setting. The students participated in a daily special education class housed in their dormitory building.

This study utilized an interrupted, time-series, action research design with three phases. First, the teacher introduced self-determination contracts with minimal instruction. Each contract contained four sections: (a) plan, (b) work, (c) evaluate, and (d) adjust. Second, students recorded bonus points in the teacher’s grade book for completion of their entire contracts. Third, the teacher explained how the students should complete the adjustment section of the contract (Martin et al., 2003).

Two sets of dependent variables were used in this study. The first set included the percentage of correspondence between (a) plan and work, (b) work and self-evaluation, (c) self-evaluation and adjustment statements, and (d) adjustment statements and the students plan for the next day. The percentage of correspondence measured the relationship between two chronological sections. For instance, if a student planned to complete 30 math problems in 30 minutes and after the time elapsed the student only completed 15 problems, this would be 50% correspondence. If the student made an adjustment statement to increase the time needed to complete the task by five minutes, then the next day’s plan task completion time should increase by five minutes for a 100% correspondence. The second set consisted of pre- and post-Woodcock-Johnson Psychoeducational Battery scores.
Analysis of students’ daily self-determination contract produced the correspondence scores. An in-depth rubric was used to score each contract. One-way repeated ANOVAs were conducted to determine if there were significant differences between pre-intervention and intervention scores across the four corresponding variables.

The results indicate that the combination of straightforward instruction, the use of bonus points for contract completion, and detailed adjustment instruction taught students to use their contracts to self-direct completion of their independent work.

Wehmeyer et al. (2003) evaluated student-directed learning strategies on student progress on goals. GAS was used to monitor the achievement of specified goals. Study participants were four students with significant intellectual disabilities. The design was a cross subjects A-B design with five phases: goal setting, baseline data collection, training students to use the self monitoring procedure, implementation of the self monitoring procedure to address the self-selected goal, and maintenance. Before the baseline data collection, the student, special educator, and the research associate met to select a specified goal that could be self-monitored.

Once the students identified a goal, the special education teacher met with project staff to identify five possible outcomes for each goal using a 5-point continuum ranging from the most unfavorable possible outcome to the most favorable possible outcome. At the end of the study, special education teachers selected the outcome that best described the student’s progress on his or her goal. Wehmeyer et al. (2003) used a raw score conversion key for GAS developed by Cardillo (1994). The raw scores were converted to standardized $t$ scores with a mean of 50 and a standard deviation of 10. The mean $t$ score
of 50 represented the expected level of outcome. Standardized scores of 40 or below indicated that the student did not achieve the expected outcome, and scores of 60 and above indicated that the students achieved more than the expected outcome. The results indicated that two students were rated as achieving more than expected (GAS = 70, 60), and two students attained the expected outcome as identified by the teacher (GAS = 50).

The other approach is student involvement in educational planning which includes the use of Person Centered Planning (PCP) strategies. PCP strategies are an approach that ensures the students set their goals and dreams for the future. It also encourages the significant people around those students to support them in achieving those chosen goals and dreams. Self-determination strategies such as the McGill Action Planning system (MAPS; Vandercook, York, & Forest, 1989) and outcome-based planning (Steere, Wood, Pancsofar, & Butterworth, 1990) are approaches that are designed to meet the specific needs of the individual with a disability.

Cross, Cooke, Wood, and Test (1999) compared the effects of the McGill Action Planning System (MAPS) and the Employment Goals strand of the Choicemaker curriculum for increasing self-determination skills with high school students with mental retardation. The study included 10 students who were assigned to a self-contained special education classroom. The students were split into two groups who were taught separately. While one group received the intervention, the other group received instruction in basic academic skills in another classroom.

Four measures of self-determination were used in this study. First, the Arc’s self-determination scale: Adolescent Version (Wehmeyer & Kelchner, 1995) was
administered orally to the full group of students. This instrument is a student self-rating scale with items that focus on autonomy, psychological empowerment, self-realization, and self-regulation. Second, the Choicemaker Self-Determination Assessment was used to rate each student’s ability, and the opportunities at school for students to engage in three areas: choosing goals, expressing goals, and taking action related to goals. Third, individual interviews were conducted with students to evaluate their knowledge of transition planning needs related to four goal areas: employment, education, residential, and recreation/leisure. Finally, data were collected at the students’ IEP meetings to see whether or not students indicated a personal preference for any of the post-school goals. These data were gathered using a simple tally format (Cross et al., 1999).

Once all pre-testing was completed, students were assigned to one of two instructional groups: MAPS or Choicemaker. Instructional sessions were held each day. Interviews were held the day after a goal area unit was completed. Each instructional program included four goal area units: (a) employment, (b) education, (c) residential choices, and (d) recreation/leisure. Instruction occurred during 50-minute class periods. The instruction in Choicemaker lessons totaled 770 minutes across 16 class sessions, and the MAPS lessons required a total of 830 minutes across 18 class sessions.

The MAPS curriculum involves having a facilitator pose a series of questions to the target individual and support group. The support group is typically composed of parents, teachers, non-disabled peers, and others significant to the individual in achieving goals. The questions help define the individual’s goals, related strengths, and challenges. For the purpose of this study, the support group was composed of the other classmates
with disabilities. The questions used in this study were modified versions of the original MAPS questions.

Lessons 1 through 3 of the Choicemaker curriculum were used in this study (Cross et al., 1999). Lesson 1 introduced the students to the process of choosing goals by considering their interests, skills, and limits through a videotape and example worksheet. In lessons 2 and 3 the focus was limited to helping students identify transition goals through a series of questions. Worksheet questions prompted students to consider interests, requirements related to this interest, self-evaluation of skills needed for success, and current limits that might interfere with attaining the goal.

ANOVAs were run on the ARC’s self-determination scale and the Choicemaker self-determination assessment. A single-subject, multiple baseline design across goal areas was used to measure changes in the clarity and specificity of student responses to interview questions regarding goals addressed by the four instructional units. Effect sizes were calculated for the Choicemaker and MAPS groups to examine the magnitude of change from pretest to posttest. The results of the study indicated no difference between the groups who participated in the study. There were significant pre/posttest effects for the Self-Determination Total Score $F(1, 8) = 18.87$ and pre/posttest for the Autonomy score $F(1, 8) = 15.37$. No other significant effects were found.

The previous self-determination studies addressed students and classroom-based curriculum and specific strategies that promote student involvement in educational planning. Karvonen, Test, Wood, Browder, and Algozzine (2004) studied schools that supported self-determination. They conducted a qualitative cross site analysis of six
schools that supported self-determination practices. Certain themes and generalizations can be taken from their study. Student participation in some form of educational or personal planning was found at all of the sites. Specific self-determination curricula such as The Self Advocacy Strategy (Van Reusen, Bos, Schumaker, & Deschler, 1994), Become Your Own Expert (Carpenter, 1995), and parts of the Choicemaker Curriculum series (J. E. Martin & Marshall, 1995) were utilized at these schools. Several sites also used informal interactions to enhance students’ decision-making skills.

According to Karvonen et al. (2004), students are initially resistant to some self-determination practices such as learning about their disability, talking about it with others, and taking responsibility for their actions. However, if they stayed in a program long enough they often became the biggest supporters for the development of self-determination skills. One condition that supported self-determination interventions was the presence of an individual with a philosophy and motivation to see self-determination practices implemented within his or her school or district. This person could be a classroom teacher, transition coordinator, guidance counselor, or a district level administrator. This “impetus person” positively influenced other educators with his or her philosophy or demonstrating practices that enhanced student self-determination. As one administrator described the self-determination practices in his district, “I don’t know that there’s anything, of huge magnitude, that we’re doing or, magic, by any means. But rather that it’s kind of pervasive. It’s an attitude. It’s a belief.” One important finding was that each site’s impetus person also had close linkages to a local university with a special education teacher training program.
Karvonen et al. (2004) found several barriers to implementing self-determination practices at each site. First, if there was limited administrative support, the programs that supported self-determination practices were limited to a handful of classrooms where the teachers provided the resources and self-determination instruction. Secondly, certain student characteristics were also sometimes a barrier. For instance, students who had reached a stage of “learned helplessness” after years of academic failure or who were reluctant to admit they had a disability, also had a difficult time with self-determination programs. Finally, there was evidence across most of the sites that many students were initially resistant to learning about their respective disability, talking about it with other people, and taking responsibility for their actions. However if they stayed in the program long enough they often became the strongest voices of support for self-determination skills.

The effects of self-determination have been promising. All types of students with disabilities have participated and benefited from these strategies. Different types of strategies based on the models have been utilized with a great deal of success. However more research needs to be conducted in this area. Institutions that foster self-determination strategies have also proven to be effective for a great number of their students. Goal Attainment Scaling has recently been introduced in the self-determination literature as a method to evaluate specific strategies. Goal Attainment Scaling provides proven individualized means to develop and assess the goal attainment of students with disabilities.
Goal Attainment Scaling

Kiresuk and Sherman (1968) originally developed Goal Attainment Scaling (GAS). Since that time GAS has been used in a variety of different settings for a number of reasons. Goal Attainment Scaling has been used predominately in the human services field. A few empirical studies in the special education literature have been reported but with limited results. Carr (1979) introduced the concept of GAS to the special education field. It was presented as a student centered tool that could be used to measure individual progress and program progress at the same time. He developed this method from the original design of Kiresuk and Sherman (1968). His method involved devising a set of goals with input from key individuals, assigning weights to those goals, developing a set of expected outcomes for each goal, scoring the outcomes, and calculating a summary score of the outcomes across the goals. Mutual determination of goals and their weightings ensures relevance and meaning to parents, teachers, and the students themselves.

Carr’s proposal discussed that the education system of 1979 was primarily method centered and only secondarily concerned with students. Today the educational system can be characterized as achievement oriented with the local and state standards defining curriculum and teaching methodology. Student centered is still not the primary focus of education. In the field of special education student centered is considered “promising practice” and is part of the transition definition of IDEA; however, with the increased focus on standards and assessment of general academics, student centered education and planning is becoming more difficult to achieve. Special education services
and IDEA require systematic evaluation of student and program goals. Goal Attainment Scaling provides a metric that can be used to measure both process and outcome goals. It also provides parents a strong voice in prioritizing goals and objectives for their child. The use of GAS also provides a common framework for the parents and practitioners to develop and identify progress toward meeting those goals (Oren & Ogletree, 2000).

Maher (1983) used Goal Attainment Scaling with 16 students and 4 counselors in a regular high school setting. The students were classified under special education regulations as socially maladjusted but were mainstreamed into the regular education system. These students exhibited a variety of conduct problems, including: absenteeism, fighting with peers, and noncompliance with teacher requests. Goals were set using the five point scale developed by Kiresuk and Sherman (1968). All goals were equally weighted. Goals set were ones such as: improved interpersonal relationships with peers or teachers, increased completion of schoolwork, and improved class or school attendance. One GAS score, obtained using the formula derived by Kiresuk and Sherman (1968), was obtained for all the students. The students’ scores ranged from 40.7 to 70 with an average score of 52.5 (SD = 11.8). The counselors’ scores ranged from 30.1 to 71.2 with an average score of 50.5 (SD =11.4). Overall the behavioral progress was as expected and there was no significant difference between student scores and counselor scores.

Maher (1982) used the Goal-Oriented Approach to Learning (GOAL), a method to actively involve students with disabilities in the mainstreaming process. This procedure consists of four steps: (a) Goal Setting, (b) Goal Attainment Scaling, (c) Selection of Classroom Instructional Strategies, and (d) Evaluation of Goal Attainment.
A total of 11 students with learning disabilities participated in this study. All students received special education services and were mainstreamed into regular classes for certain subjects. A total of seven students participated in regular education language arts, and four students participated in regular education mathematics. A total of 11 different teachers participated. They were randomly assigned to, and trained in, one of two mainstreaming procedures: (a) the GOAL procedure (three language arts teachers, two mathematics teachers); and (b) the district’s traditional mainstreaming procedure which consisted of steps 2 and 4 of the GOAL procedure but without student involvement (four language arts teachers and two mathematics teachers). Goals were set using the standard 5-point scale developed by Kiresuk and Sherman (1968). Two dependent measures were used in this study: The first measure, degree of goal attainment, was the mean goal attainment score of classroom instructional goals for students involved in both procedures. The second measure was the range of classroom instructional strategies. Teachers were required to submit weekly lesson plans with a list of the instructional strategies used for each student with a disability. At the conclusion of the grading period the instructional strategies were categorized by two graduate students.

The results indicate that the GOAL procedure was a more effective approach than the traditional method. The GOAL procedure seemed to enhance regular classroom instructional processes. The mean score of the students involved in the GOAL procedure was 58.0, compared to 33.3 for the students involved in the traditional procedure. Of the five goals set by students in the GOAL procedure, four goals (88%) were accomplished
at the expected outcome level. Of the six goals set by the pupils in the traditional method, no goals (0%) were accomplished at the expected level.

The instructional strategies that were employed by the teachers using the GOAL procedures included: didactic presentations, small-group discussions, utilization of programmed instructional materials, small-group projects, and peer tutoring. The instructional strategies employed by the teachers using the traditional approach included: didactic presentations for all six students and small-group discussions for two students. Structured interviews of the students involved in the GOAL procedure indicated that they met weekly with the regular classroom teachers, and that they saw their involvement with the teachers as worthwhile because it made them aware of what was expected of them in the class. Structured interviews of the teachers suggested that they considered the procedure to be worthwhile.

Bailey and Simeonsson (1988) investigated the use of Goal Attainment Scaling to evaluate the progress of individuals with severe disabilities. A total of 32 residents and personnel from a state institution participated in this study. The researchers were interested to see how long the GAS process would take, and how it would be received by staff. They were also interested in the accuracy of goal setting as a function of duration of intervention and domain of assessment. As part of the Individualized Program Plan (IPP), a Goal Attainment Scale was developed for each individual by one staff member who was trained and experienced in the GAS process and another member of the individual’s team.
These teams were asked to develop a scale for either a 1 year or 6 month intervention period. In order to determine staff perceptions of the process, a questionnaire was distributed after each meeting. At the end of the designated intervention period (6 months or 1 year) goal attainment levels were assessed. A total of 118 goals were identified across all clients with the mean number of goals being 2.7 (range, 1 to 7). Each goal was weighted by the team as either: 1, important (30%); 2, very important (40%); or 3, essential. Goals fell into one of seven categories: behavior reduction (12%), adaptive daily living/self-help (27%), compliance (12%), communication (13%), motor (14%), cognitive (17%), or weight management (5%).

The performance levels in this study were somewhat different than what has previously been addressed. In most cases a -2 indicated the worst expected outcome, which was maintenance at present level of functioning. Of the 118 goals of all the participants, 56 (47%) were assessed at -2, 49 (42%) at -1, and 13 (11%) at 0. The mean length of time required in the first meeting was 49 minutes (range, 30 to 80). The average length of the fifth through the eighth meeting was 13.4 minutes (range, 7 to 20). Finally, the results of the questionnaire indicated a general positive, yet reserved, attitude toward Goal Attainment Scaling. The results indicated that the GAS process can be applied to this setting and population with minimal expense of staff time. The authors noted that the limited expertise and experience of team members limited its use as a primary form of evaluation. They also agreed that further research using GAS with other forms of assessment could enhance its validity.
Goal attainment scales provide an individualized, student centered approach, to describing changes in the performance of students. They can provide accurate and efficient assessments of academic and behavioral progress. GAS ratings are relatively easy-to use and understand, making them an appropriate tool for consulting with general education teachers, paraprofessionals, and parents. Goal attainment scales can be an effective means of conceptualizing and communicating change over the course of a multi-week intervention (Roach & Elliott, 2005). Therefore, the GAS provides the potential to be an effective means of monitoring student progress and self-determination within the Career and Self-Advocacy Program.

Self-determination is a complex construct that is recently gaining recognition within the field of special education. Various models, and components have been researched and strategies have been assessed in a variety of ways. In order to improve the outcomes of students with disabilities, more information is needed from the various stakeholders such as students, parents, and educators to see if these models and strategies are promoting better outcomes. Those stakeholders also need a greater awareness of specific self-determination strategies that can be utilized both in school and home settings.
CHAPTER III

METHODOLOGY

General Overview

The purpose of this study was to measure the impact of the Career and Self-Advocacy program on students’ level of self-determination. This program provided students an opportunity to further develop their transition goals and activities. Information from the students’ current Individualized Education Program (IEP), input from teachers, parents, and students helped to formulate the students’ individual goals. The general themes of the Career and Self-Advocacy Program (Awareness and Self-Advocacy, Postsecondary Options, and Goal Setting and IEPs) provided the framework for the students’ goals. A Goal Attainment Scaling process was used to measure how well the participants achieved their goals (Kiresuk & Sherman, 1968). The AIR Self-Determination Scale served to measure the students’ self-determination skills (Wolman et al., 1994).

The Career and Self-Advocacy Program

The Career and Self-Advocacy Program (CASAP) program was developed to help increase the self-determination skills of youths with mild to moderate disabilities. It has been implemented within various school settings and as a 3-week summer program since its inception. The CASAP is developed around three themes or units. Each unit builds off of the previous unit’s ideas and concepts. The purpose of the first unit, postsecondary options, is to get students thinking about all the possibilities upon
graduating from high school. Students research various career interests (e.g., education needed, working conditions and demands of job), labor market demands, and school options. Topics include: adult training and educational opportunities, criteria for admissions, the application process, money sources, student support services, and preparing for postsecondary education. The second unit, self-awareness and advocacy, addresses students’ communication of individual interests, needs, and rights. Topics include: the importance of self-advocacy, self-awareness and disability knowledge, disability and civil rights laws, ability and need awareness, communication skills, and personal responsibilities concerning advocacy. The final unit, goal setting and IEPs, helps educate students to participate in their educational planning and IEPs. The topics of the final unit include: understanding transition, writing postsecondary goals, understanding the purpose of the IEP and transition page, writing annual goals and objectives, and participating in IEP meetings.

The CASAP has, within its curriculum, seven out of the eight curricular components which were discussed in chapter 2. Table 1 represents the CASAP and how it compares it to some other curricula that serve populations of students with similar disabilities.

Specific activities were developed to enhance program topics, such as: writing journals, Internet inquiries, speakers and panels, PowerPoint® presentations, and college tours. Students start each day with a journal entry on a specific topic (e.g., differences between high school and college, money sources, careers, self advocacy, disability, self-awareness, accommodations, IEPs, transition, and goal setting). Each morning, students
### Curricular Components

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<th>Choice/Decision Making</th>
<th>Goal Setting/Attain</th>
<th>Problem Solving</th>
<th>Self-Eval</th>
<th>Self-Adv</th>
<th>IEP Plan</th>
<th>Relations w/Others</th>
<th>Self-Aware</th>
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<td>Students aged 14-22 with mild moderate disabilities</td>
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<td>Minority youth with learning, cognitive, physical, or emotional disabilities</td>
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<td>Study guide Video</td>
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### Curricular Components

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<td>Student manual with coach’s guide</td>
<td>Middle school and transition aged students with mild to moderate cognitive, developmental or learning disabilities</td>
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were asked: *What do I know about the topic?* and *What do I want to know about the topic?* The students finished the day with: *What I learned about the topic* and *What was helpful about the topic.* Internet inquiries were used to document specific websites students visited concerning careers and potential schools and if the website was helpful in their search. Students put together a binder and a diskette that contained the various lessons, journals, PowerPoint® presentations, and Internet inquiries. Students kept this binder and diskette upon completion of the program.

**Participants**

Students were referred to participate in the CASAP by transition coordinators or intervention specialists from a large urban district in Northeast Ohio. A total of 10 students with mild to moderate disabilities participated in this study. The participants were in their sophomore through senior year of high school. All the participants had a current IEP and had been diagnosed as having either a specific learning disability or a cognitive disability. All the participants were physically healthy and participated in some regular education classes with special education services and accommodations.

**Instruments**

*Goal Attainment Scale*

The first instrument used in this study was the Goal Attainment Scale (GAS; Kiresuk & Sherman, 1968). The GAS provided an individualized, criterion-referenced approach to measure individual change and evaluate intervention outcomes. The basic methodology of goal attainment scaling involves the following steps: (a) select a targeted behavior, (b) describe the desired behavior or academic outcome in objective terms, and
(c) develop three to five descriptions of the probable outcomes from “least favorable” to “most favorable” (Elliot, Sladeczek, & Kratochwill, 1995). The GAS for this study consisted of a 5-point scale ranging from “much more than expected outcome” (+2) to “much less than expected outcome” (-2). Goal Attainment Scaling allows individual progress and program progress to be assessed at the same time. Kiresuk and Sherman (1968) developed a formula that generates a goal attainment score. Raw goal attainment scores were converted to standardized T-scores, which had a mean of 50 and a standard deviation of 10. Conversion to T-scores allowed for comparison between the raters as well as between the three units of the CASAP. A t-score of 50 was the expected level of outcome. Scores of 40 or less were below the expected level of outcome and scores of 60 or more were above the expected level of outcome. The change scores or overall improvement scores are independent of the specific goals chosen or the methodological approaches taken.

The AIR Self-Determination Scale

The second instrument used in this study was the AIR Self-Determination Scale (Wolman et al., 1994). The AIR Self-Determination Scale provides information on students’ capacity and opportunities to self-determine. Capacity refers to students’ knowledge, abilities, and perceptions that enable them to be self-determined. The capacity section is designed to assess students’ adjustment capability by evaluating the extent to which students connect beliefs about what they need, want, and could do with their expectations, choices, actions, and results. Eighteen items make up the capacity section and are divided into three subscales (i.e., Ability, Perceptions, and Knowledge).
The Ability section considers whether students are able to demonstrate that he or she can act upon the knowledge to set goals. It also assesses whether students make choices, decisions, and plans, and can follow up with actions to meet those goals (n = 6 items). The Perceptions subscale considers whether students feel confident in their own knowledge and ability. It also assesses students’ motivation to set goals, the degree of optimism of being able to achieve goals, and the willingness to take risks (n = 6 items). The Knowledge section addresses the level of understanding a student has about self-determination and the skills it requires (n = 6 items).

The Opportunity section is designed to measure the opportunities students have to engage in self-determined behavior at school and at home. Twelve items comprise the Opportunity section. These sections are divided into two scales addressing opportunities at school (n = 6 items) and at home (n = 6 items). Respondents were asked to rate each questionnaire item on a 5-point Likert type scale to see how frequently the student engaged in self-determined behavior. The scale ranged from never (1) to always (5).

The format of the AIR Self-Determination Scale varies for each respondent (educators, students, parents). All three versions contain Opportunities at School, and Opportunities at Home. The educators’ version (AIR-E) is comprised of three sections to measure capacity for self-determination (Ability, Perceptions, Knowledge). The students’ version (AIR-S) includes only two subsections for Capacity (Ability and Perceptions). The parents’ version (AIR-P) only includes items from the Ability scale. Scores on the AIR Self-Determination Scale can be reported in several ways, including raw scores (n = 30 possible points for each section) and percentage of the total possible score. Raw scores
were used in analysis of the separate subsections while percentages were used to
determine an overall self-determination rating. All the educators, parents, and students
filled out a pre- and post-test. Three teachers purposely did not fill out the What Happens
at Home subsection on both pre- and post-tests because of lack of information about what
happens at home and one parent purposely did not fill out the pre-test section of What Happens at School because of lack of information of what happens at school.

The AIR Self-Determination Scale has strong reliability and validity. It was
originally field tested in 72 schools and programs in San Jose, California, and New York
City, New York. Educators including special education teachers, resource specialists, and
regular education teachers assessed more than 450 students with and without disabilities. The educators’ ages ranged from 20 to 67 years with the majority between the ages of 25-
49 (See Table 2).

Wolman et al. (1994) conducted reliability tests on the AIR. They used an
alternative-item correlation for item consistency, a split-half test for the internal
consistency of the instrument, and a test-retest measure of results over time. A field test
instrument included duplicate items for each of the six self-determination variables
comprising the capacity component of the instrument. These included: (a) knowing and
expressing one’s needs, interests, and abilities; (b) setting expectations and goals; (c)
making choices and plans; (d) acting on plans; (e) evaluating results of actions; and (f)
altering plans and actions to meet goals more effectively.
Table 2

*AIR Self-Determination Scale Field Test*

<table>
<thead>
<tr>
<th>Teachers</th>
<th>Gender</th>
<th>Age Range</th>
<th>Enrollment</th>
<th>Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education (11%)</td>
<td>Female (39%)</td>
<td>6-9 yrs (12%)</td>
<td>Special Education (82%)</td>
<td>Mild Moderate (79%)</td>
</tr>
<tr>
<td>Resource Room (6%)</td>
<td>Male (61%)</td>
<td>10-12 yrs (17%)</td>
<td>Regular Education (18%)</td>
<td>Moderate to Severe (21%)</td>
</tr>
<tr>
<td>Self-Contained Special Education (33%)</td>
<td></td>
<td>13-15 yrs (12%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transition Teachers (29%)</td>
<td></td>
<td>16-17 yrs (15%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Teachers and Aides (11%)</td>
<td></td>
<td>18-19 yrs (23%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other School Related Personnel (10%)</td>
<td></td>
<td>20-25 yrs (20%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The *alternative-item* test correlated scores on the duplicate items to yield an alternative item test of consistency. The results produced correlation coefficients ranging from .91 to .98. The *split-half* test for internal consistency compared even-numbered items of the instrument with odd numbered items. This test yielded a correlation of .95. The *test-retest* measure of consistency was conducted over a period of 3 months separating the first and second test administrations of the instrument. This test yielded a correlation of .74 (Wolman et al., 1994).

The AIR Self-Determination Scale is intended to assess the capacity and opportunity to self-determine. A factor analysis indicated the presence of four factors...
which explained 74% of the variance of the 30 item instrument (See Table 3). Overall, the four factors explained most of the variance in the item scores and the instrument measured what it was purported to measure, students’ capacity and opportunity to self-determine (Mithaug et al., 2003).

Table 3

AIR Self-Determination Scale Components

<table>
<thead>
<tr>
<th>Factors</th>
<th>Capacity</th>
<th>Opportunity</th>
<th>School</th>
<th>Home</th>
<th>Knowledge</th>
<th>Ability</th>
<th>Perception</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item numbers</td>
<td>1-18</td>
<td>19-30</td>
<td>19-24</td>
<td>25-30</td>
<td>1-6</td>
<td>7-12</td>
<td>13-18</td>
</tr>
<tr>
<td>% of Variance</td>
<td>42.4%</td>
<td>10.3%</td>
<td>17.2%</td>
<td></td>
<td>4.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlations</td>
<td>Positive</td>
<td>Modest Positive</td>
<td>Positive</td>
<td>Negative</td>
<td>Weak Positive</td>
<td>Weak Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.68 to .82)</td>
<td>(.40 to .54)</td>
<td>(.59 to .66)</td>
<td>(.65 to -.68)</td>
<td>(.22. to .29)</td>
<td>(.25 to -.34)</td>
<td>(-.39%)</td>
</tr>
</tbody>
</table>

Specific Procedures

The AIR Self-Determination Scale was administered to parents, teachers, and students. All educators, students, and parents completed the pre-test scales, although three teachers could not answer the Opportunities at Home section. A parent orientation meeting before the program began gave the parents an opportunity to complete the AIR scale. Seven out of the 10 participants’ parents attended the meeting. The other three AIR scales were sent home and returned the next day. One parent did not answer the Opportunities at School section. During the orientation, the researcher explained the program and
procedures as well as gained input for the goals and expected outcomes for the GAS. Individual meetings with the educators before the program began gave them an opportunity to complete the AIR scale and provide input for the goals and expected outcomes for the GAS. Students completed the AIR on the first day. They were also given an overview of Goal Attainment Scaling by the researcher on the first day of the program. Goals were developed during the first few days by the researcher taking into account the input given from the parents and teacher. These goals were confirmed by other instructors and the students themselves.

A Goal Attainment Scaling process within the framework of The Career and Self-Advocacy was used for this study. Goal attainment scaling provides step by step procedures for developing and scaling goals. A. Smith (1994) outlined the following steps which were adhered to in this study:

1. **Identify the issues that will be the focus of treatment.**

   The issues and goals were based on the three themes of The Career and Self-Advocacy Program (CASAP). As such, the goals selected were based on topics covered in this curriculum. GAS focuses on only those problems or issues that the intervention is expected to change.

2. **Translate the selected problems into at least three goals.**

   The researcher and the students met individually during the first few days to discuss what he or she hoped to accomplish in relation to the three themes. At least three goals were established at this time. Goals were set by the researcher with input from the students, parents, and educators. A concerted effort was made to ensure that these goals were well
defined and achievable. The researcher and student discussed whether the student had the
capacity and opportunity to meet each goal.

3. Choose a brief title for each goal.

The researcher selected a briefly worded label that conveyed the intent of the goal. Some examples of goal titles were: save money, career planning, or postsecondary education. The descriptive title for each goal was placed in the title box at the top of each scaled goal on the GAS.

4. Select an indicator for each goal.

The indicator in this case is the skill that most clearly represents the goal and can be used to indicate progress in meeting the goal. The following characteristics or indicators were used in developing the descriptions for the following GAS rating points (Roach & Elliott, 2005):

- Frequency (Never–Sometimes–Very Often–Almost Always–Always)
- Development (Not Present–Emerging–Developing–Accomplished–Exceeding)
- Accuracy (Totally Incorrect–Partially Correct–Totally Correct)
- Effort (Not Attempted–Minimal Effort–Acceptable Effort–Outstanding Effort)
- Engagement (None–Limited–Acceptable–Exceptional)

5. Specify the expected level of outcome for the goal.

The researcher tried to make an accurate prediction of the status of the student on the selected goal at the end of the intervention. The process or status specified for the
expected level of outcome was as precise as possible. Using the indicators, the researcher wrote the nature and parameters of the expected outcome.

6. **Review the expected level of outcome.**

The expected outcome was consistent with the goal title. The outcome was measurable and specific. The expected outcome was stated so that an independent observer could agree on whether it has been obtained.

7. **Specify the somewhat more or somewhat less than expected levels of outcome for the goal.**

Once the expected level of outcome was set, it was possible to envision outcomes that were somewhat better and somewhat worse than the expected level of outcome. The boxes immediately below and immediately above were filled in with descriptions of outcomes that were respectively, more and less favorable than the expected outcome and less likely to occur for this student. They were realistically attainable outcomes. These also were stated so that an independent observer could agree on the level of outcome.

8. **Specify the much more and much less than expected levels of outcome.**

The extreme levels of the scale were filled in with descriptions of the indicators that are the “much more” and the “much less” favorable outcomes that can be realistically envisioned for the student. These also were stated so that an independent observer could agree on the level of outcome.
9. Repeat these scaling steps for each of the three or more goals.

Each of the goals had five levels of outcome indicated. No levels were skipped. The scaled goals were conveniently recorded on the Goal Attainment Scale. Figure 2 illustrates a prototypical GAS for a student in this study.

<table>
<thead>
<tr>
<th>Seymour Smith</th>
<th>Goal Area: Career Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most unexpected outcome (-2)</td>
<td>No career planning</td>
</tr>
<tr>
<td>Less than expected outcome (-1)</td>
<td>Identifies three careers of interest</td>
</tr>
<tr>
<td>Expected outcome (0)</td>
<td>Understands skills needed for chosen careers</td>
</tr>
<tr>
<td>Most expected outcome (+1)</td>
<td>Compares their skills and skills needed for career choice</td>
</tr>
<tr>
<td>More than expected outcome (+2)</td>
<td>Justifies chosen careers based on their skills and skills needed</td>
</tr>
</tbody>
</table>

Figure 2. Prototypical Goal Attainment Scale

The Goal Attainment Scales and post AIR Self-Determination Scales were sent home to the parents during the first month of the school year. All of the AIR scales were returned with every section complete. One parent (Katie) failed to fill out the GAS worksheet but had moved and was unable to be located. The mean score of all the parents’ scores was 50, which was substituted for the missing score. Educators were given the AIR scale and GAS worksheets during the first month of school. All of the educators completed the GAS and AIR, but the same three educators did not fill out the *Opportunities at Home* section. T-scores were calculated using the Goal Attainment Score Conversion Table (Cardillo, 1994). This table is based on the formula derived by Kiresuk and Sherman (1968).
Scores of the GAS and the AIR were placed and analyzed in SPSS. The research questions as listed in the following section were addressed through different statistical analysis.

Research Questions

The first question in this investigation was: What is the impact of the CASAP on goal attainment as assessed by parents and teachers? For Research Question #1, a one way analysis of variance (ANOVA) was conducted to see if there was any difference between the raters for the average T-scores of the Goal Attainment Scale. A two-way ANOVA with repeated measures was conducted to evaluate the difference between the three themes (i.e., Postsecondary Options, Goal Setting and IEPs, and Awareness and Self-Advocacy) and rater (i.e., educator, parent). An alpha level of .05 was used to determine significance for all analysis of variance procedures. Frequency data were also used to compare the scores of the GAS.

The second question in this investigation was: What are the differences of perceived levels of self-determination (as assessed by the AIR) among parents, teachers, and students after program participation? For Research Question #2, separate two-way mixed analyses (ANOVAs) with repeated measures were conducted to test for rater differences among four of the subscales (i.e., Ability, Perception, School, and Home and between pre- and post-tests and rater (i.e., Educator, Student, Parent). A one way analysis of variance was conducted for the knowledge subscale since there was only one rater (Educator).
The third question in this investigation was: What is the relationship between the attainment of transition related goals and self-determination skills as assessed by the AIR? In order to address Research Question #3, separate bivariate correlations were run between the Goal Attainment Scale average T-scores of the educators and parents, and the 12 subscales of the AIR Self-Determination Scale by the educators, students, and parents. Pearson’s product-moment correlation was used.
CHAPTER IV
RESULTS

The purpose of this study was to measure what impact the Career and Self-Advocacy Program had on students’ goal attainment and on perceived level of self-determination through the perspectives of the students, parents, and teachers. It also studied the relationships between the attainment of transition related goals and self-determination skills. Descriptive statistics, analysis of variance, and correlation methods were applied to the data in order to address the questions of interest.

Impact of CASAP on Goal Attainment

The first question in this investigation was: What is the impact of the CASAP on goal attainment as assessed by parents and teachers? For Research Question #1, Goal Attainment Scale (GAS) worksheets were administered to parents and teachers of the participants. Raw goal attainment scores were converted to standardized T-scores, which had a mean of 50 and a standard deviation of 10. Conversion to T-scores allowed for comparison between the raters as well as between the three units of the CASAP. A t-score of 50 was the expected level of outcome. Scores of 40 or below were below the expected level of outcome and scores of 60 or more were above teacher expectations. Table 4 shows the number of goals and average T-scores for each participant as rated by parents and teachers. A mean score of 50 was included for Kate since her Goal Attainment Scale worksheet was not returned by her parents.
Table 4

*Goal Attainment Score for Parents and Educators*

<table>
<thead>
<tr>
<th>Name</th>
<th># of goals</th>
<th>T-score Parent</th>
<th>T-score Educator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leonard</td>
<td>4</td>
<td>54</td>
<td>61</td>
</tr>
<tr>
<td>Isabelle</td>
<td>4</td>
<td>39</td>
<td>61</td>
</tr>
<tr>
<td>Eric</td>
<td>4</td>
<td>54</td>
<td>50</td>
</tr>
<tr>
<td>Neil</td>
<td>3</td>
<td>64</td>
<td>68</td>
</tr>
<tr>
<td>Nancy</td>
<td>5</td>
<td>53</td>
<td>65</td>
</tr>
<tr>
<td>Linda</td>
<td>3</td>
<td>32</td>
<td>55</td>
</tr>
<tr>
<td>Jane</td>
<td>3</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>Kenny</td>
<td>3</td>
<td>77</td>
<td>64</td>
</tr>
<tr>
<td>Kate</td>
<td>3</td>
<td>50</td>
<td>77</td>
</tr>
<tr>
<td>Stan</td>
<td>6</td>
<td>24</td>
<td>53</td>
</tr>
</tbody>
</table>

Of the total number of ratings \((n = 19)\), nine (47\%) of the T-scores were at the *expected level of outcome*, five (26\%) were above the *more than expected level*, and two (11\%) scored above the *much more than expected level*. Two (11\%) scored below the *expected level of outcome* and one (0.05\%) scored below the *much less than expected level of outcome*. All of the scores below the *less than expected levels of outcome* were scored by the parents. Sixteen out of 19 (84\%) of the ratings were at or above the *expected level of outcome*.

The average goal attainment T-score rated by the parents was 50.22 with a standard deviation of 16.25, whereas the average goal attainment score by the educators was almost
one level higher with an average of 59.99 with a standard deviation of 9.39. The mean score of both parents and educators was 55.05 ($SD = 13.33$). Two educators scored the student two levels higher than the parent (i.e., Isabelle and Linda) and two educators scored the student at least one level higher than the parent (i.e., Leonard and Nancy). Only one parent scored their child one level higher than the educator (i.e., Kenny). Overall the parents scored their child at the expected level of outcome ($\approx 50$) whereas the educators rated the participants at the more than expected level of outcome ($\approx 60$).

Table 5 indicates the total number of goals within the different goal areas and respective units of the CASAP. Participants had the most number of goals in the Postsecondary Options unit ($N = 18$), followed by Goal Setting and IEPs ($N = 12$) and Awareness and Self-Advocacy ($N = 8$).

The means and standard deviations for the three units of the CASAP (i.e., Postsecondary Options, Goal Setting and IEPs, and Awareness & Self-Advocacy) and for each of the rater groups (i.e., Parents and Educators) are shown in Table 6. Overall, the average parents’ scores of Postsecondary Options ($M = 45.88$), Goal Setting and IEPs ($M = 53.64$) and Awareness and Self-Advocacy ($M = 54.290$) fell within the expected level of outcome range. Educators rated Goal Setting & IEPs ($M = 60$) and Awareness and Self-Advocacy ($M = 60$) exactly at the more than expected level of outcome whereas Postsecondary Options ($M = 53.33$) fell within the expected level of outcome range. The overall average score from the educators was 59.99, which corresponded to the more than expected level of outcome. The overall average score from the parents was 50.22, which corresponded to the expected level of outcome. Goal Setting and IE’s ($M = 56.95$) and
Table 5

*Goal Areas and Number of Goals*

<table>
<thead>
<tr>
<th>Goal Areas &amp; Unit</th>
<th># of Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postsecondary Exploration (PO)</td>
<td>10</td>
</tr>
<tr>
<td>Application Process (PO)</td>
<td>1</td>
</tr>
<tr>
<td>Money Sources (PO)</td>
<td>3</td>
</tr>
<tr>
<td>Accommodations (PO)</td>
<td>1</td>
</tr>
<tr>
<td>College Entrance Exams (PO)</td>
<td>1</td>
</tr>
<tr>
<td>College Testing (PO)</td>
<td>1</td>
</tr>
<tr>
<td>College Major Exploration (PO)</td>
<td>1</td>
</tr>
<tr>
<td><em>Total Postsecondary Options</em></td>
<td>18</td>
</tr>
<tr>
<td>Career Planning (GS)</td>
<td>8</td>
</tr>
<tr>
<td>Students’ Needs Interests and Preferences (GS)</td>
<td>2</td>
</tr>
<tr>
<td>Knowledge of Careers (GS)</td>
<td>2</td>
</tr>
<tr>
<td><em>Total Goal Setting &amp; IEPs</em></td>
<td>12</td>
</tr>
<tr>
<td>Disability Awareness (SA)</td>
<td>8</td>
</tr>
<tr>
<td><em>Total Awareness &amp; Self-Advocacy</em></td>
<td>8</td>
</tr>
</tbody>
</table>
Table 6

*T-Scores of Curricular Units*

<table>
<thead>
<tr>
<th>Source</th>
<th>Postsecondary Options</th>
<th>Goal Setting</th>
<th>Awareness &amp; Self-Advocacy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>45.88 (15.02)</td>
<td>53.64 (14.33)</td>
<td>54.29 (17.18)</td>
<td>50.22 (16.25)</td>
</tr>
<tr>
<td>Teachers</td>
<td>53.33 (11.99)</td>
<td>60.00 (7.39)</td>
<td>60.00 (9.26)</td>
<td>59.99 (9.39)</td>
</tr>
<tr>
<td>Total</td>
<td>50.29 (14.03)</td>
<td>56.95 (11.46)</td>
<td>57.33 (13.35)</td>
<td></td>
</tr>
</tbody>
</table>

Awareness and Advocacy ($M = 57.33$) were consistently scored higher than Postsecondary Options ($M = 50.29$) by both educators and parents.

A one way analysis of variance (ANOVA) was conducted to see if there was any difference between the raters for the average T-scores. Table 7 summarizes the results of the ANOVA. Analysis found no significant main effect for rater $F(1, 18) = 2.914, MS = 470.450, \alpha = .105$

Table 7

*Analysis of Variance of GAS T-Scores and Raters*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>\alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects Rater</td>
<td>1</td>
<td>470.450</td>
<td>470.450</td>
<td>2.914</td>
<td>.105</td>
</tr>
<tr>
<td>Error (Between)</td>
<td>18</td>
<td>2906.500</td>
<td>161.472</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A two-way ANOVA with repeated measures was conducted to evaluate the difference between the three themes (i.e., Postsecondary Options, Goal Setting and IEPs, and Awareness and Self-Advocacy) and rater (i.e., educator, parent). Table 8 summarizes the results of the ANOVA. Analysis found no significant main effect for rater $F(1, 14) = 1.399$, $MS = 309.271$, $\alpha = .257$. There was also no significant main effect for themes $F(2, 28) = .160$, $MS = 16.823$, $\alpha = .853$. The interaction of themes and raters was also not significant $F(2, 28) = .424$, $MS = 44.452$, $\alpha = .659$.

Table 8

*Analysis of Variance of CASAP Themes and Raters*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>$\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater</td>
<td>1</td>
<td>309.271</td>
<td>309.271</td>
<td>1.399</td>
<td>.257</td>
</tr>
<tr>
<td>Error (Between)</td>
<td>14</td>
<td>3094.217</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Themes</td>
<td>2</td>
<td>33.645</td>
<td>16.823</td>
<td>.160</td>
<td>.853</td>
</tr>
<tr>
<td>Themes X Rater</td>
<td>2</td>
<td>89.084</td>
<td>44.542</td>
<td>.424</td>
<td>.659</td>
</tr>
<tr>
<td>Error (Within)</td>
<td>28</td>
<td>2944.915</td>
<td>105.176</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall, (84%) of the Goal Attainment Scale ratings were at or above the expected level of outcome. The average score for parents was 50.22 and the average score for educators was 59.99. No statistical significance was found between the raters. However, the difference between the raters represents one standard deviation. All of the average
scores for the three themes were rated at or above the expected level of outcome. Significance was not found between the three themes or between the raters of the three themes.

Impact of CASAP on Self-Determination

The second question in this investigation was: What are the differences of perceived levels of self-determination (as assessed by the AIR Self-Determination Scale) among parents, teachers, and students after program participation? The AIR Self-Determination Scale was administered to students’ parents and educators before and after the CASAP was conducted. The format of the AIR varies slightly for each rater group (i.e., Educators [AIR-E], Students [AIR-S], and Parents [AIR-P]). The AIR-E is comprised of three scales to rate student capacity to self-determine (i.e., Ability, Perception, Knowledge) along with both opportunity sections (i.e., Opportunities at Home and Opportunities at School). The AIR-S is comprised of two scales to rate capacity (i.e., Ability and Perception) along with both opportunity sections (i.e., Opportunities at Home and Opportunities at School). The AIR-P has one capacity section (Ability) and both opportunity sections (i.e., Opportunities at Home and Opportunities at School). Scores were combined for each section with the highest score for each section being 30. The range of average scores was 17.2 (AIR-P pre-test) to 25.5 (AIR-E post-test).

Separate two-way mixed analyses (ANOVAs) with repeated measures were conducted to test for rater differences among four of the subscales (i.e., Ability, Perception, Opportunities at School, and Opportunities at Home) and between pre- and
post-tests and rater (i.e., Educator, Student, Parent). A one way analysis of variance was conducted for the Knowledge subscale since there was only one rater (Educator).

**Capacity for Self-Determination—Ability**

Mean scores and standard deviations for *Ability* are displayed in Table 9. The overall mean scores for ability increased from 19.23 (pre-test) to 21.87 (post-test). The students scored themselves the highest with a mean score across pre- and post-tests of 23.10. Educators scored a 19.35 across pre- and post-tests whereas the parents scored a 19.20 across pre- and post-tests. The parents had the biggest change in score with an increase of four points between pre- and post-test.

<table>
<thead>
<tr>
<th></th>
<th>Educators</th>
<th>Students</th>
<th>Parents</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AIR</td>
<td>18.40 (5.08)</td>
<td>22.10 (3.28)</td>
<td>17.20 (5.37)</td>
<td>19.23 (4.98)</td>
</tr>
<tr>
<td>Post-AIR</td>
<td>20.30 (6.17)</td>
<td>24.10 (2.51)</td>
<td>21.20 (3.94)</td>
<td>21.87 (4.61)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19.35 (5.58)</td>
<td>23.10 (3.02)</td>
<td>19.20 (5.02)</td>
<td></td>
</tr>
</tbody>
</table>

Summary scores of the two by three ANOVA for *Ability* with repeated measures on one factor (Rater) are shown in Table 10. Analysis of the ability scale indicated no significant main effect for the between subjects factor (rater) $F (2, 27) = 3.279, MS = 97.65, \alpha = .053$. There was a significant main effect for *Ability* (pre-test, post-test) $F (1,
Table 10

**Analysis of Variance for Self Determination—Ability**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater (R)</td>
<td>2</td>
<td>195.300</td>
<td>97.65</td>
<td>3.279</td>
<td>.053</td>
</tr>
<tr>
<td>Error (Between)</td>
<td>27</td>
<td>980.200</td>
<td>36.304</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability (A)</td>
<td>1</td>
<td>104.017</td>
<td>104.017</td>
<td>8.683</td>
<td>.007</td>
</tr>
<tr>
<td>A x R</td>
<td>2</td>
<td>14.033</td>
<td>7.017</td>
<td>.586</td>
<td>.564</td>
</tr>
<tr>
<td>Error (Within)</td>
<td>27</td>
<td>323.450</td>
<td>11.980</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F(2, 27) = 8.683, MS = 104.017, α = .007. The interaction of the rater and ability was not significant F(2, 27) = .586, MS = 7.017, α = .564.

**Capacity for Self-Determination—Perception**

Mean scores and standard deviations for *Perception* are displayed in Table 11. The overall mean scores for perception increased from 19.95 (pre-test) to 22.35 (post-test). The students scored themselves the highest with a mean score across pre- and post-tests of 23.15, followed by the educators who had a mean score across pre- and post-tests of 19.15. Both the educators’ and students’ scores increased over two points from pre- to post-test.

Summary scores of the two by two ANOVA for *Perception* with repeated measures on one factor (Rater) are shown in Table 12. Analysis of the perception scale indicated a significant main effect for the between subjects factor (rater). F(1, 18) =
Table 11

*Means and Standard Deviation for Self-Determination—Perception*

<table>
<thead>
<tr>
<th></th>
<th>Educators</th>
<th>Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AIRs</td>
<td>18.00 (4.27)</td>
<td>21.90 (4.01)</td>
<td>19.95 (4.50)</td>
</tr>
<tr>
<td>Post-AIRs</td>
<td>20.30 (4.59)</td>
<td>24.40 (2.84)</td>
<td>22.35 (4.27)</td>
</tr>
<tr>
<td>Total</td>
<td>19.15 (4.48)</td>
<td>23.15 (3.62)</td>
<td></td>
</tr>
</tbody>
</table>

Table 12

*Analysis of Variance for Self-Determination—Perception*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater (R)</td>
<td>1</td>
<td>160</td>
<td>160</td>
<td>5.888</td>
<td>.026</td>
</tr>
<tr>
<td>Error (Between)</td>
<td>18</td>
<td>489.100</td>
<td>27.172</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception (P)</td>
<td>1</td>
<td>57.6</td>
<td>57.6</td>
<td>12.598</td>
<td>.002</td>
</tr>
<tr>
<td>P X R</td>
<td>1</td>
<td>.100</td>
<td>.100</td>
<td>.022</td>
<td>.884</td>
</tr>
<tr>
<td>Error (Within)</td>
<td>18</td>
<td>82.3</td>
<td>4.572</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.888, $MS = 160, \alpha = .026$. There was a significant main effect for Perception (pre-test, post-test) $F (1, 18) = 6.304, MS = 57.6, \alpha = .002$. The interaction of the rater and perception was not significant $F (1, 18) = .022, MS = .100, \alpha = .884$. 
Capacity for Self-Determination—Knowledge

The overall mean scores for knowledge (educator) increased from 19.50 to 21.90. Summary scores of the one by two ANOVA for Knowledge are shown in Table 13.

Analysis of the knowledge scale indicated differences from pre-test to post-test $F(1, 9) = 6.304, MS = 28.8, \alpha = .030$.

Table 13

Analysis of Variance for Self-Determination—Knowledge

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>(\alpha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>1</td>
<td>28.8</td>
<td>28.8</td>
<td>6.612</td>
<td>.030</td>
</tr>
<tr>
<td>Error (Within)</td>
<td>9</td>
<td>39.2</td>
<td>4.356</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Opportunities for Self-Determination—School

Mean scores and standard deviations for Opportunities for Self-Determination in School are displayed in Table 14. The overall mean scores for school opportunity increased from 21.2 (pre-test) to 22.7 (post-test). The educators scored their students the highest with a mean score across pre- and post-tests of 24.35, followed by the parents who had a mean score across pre- and post-tests of 20.25. The students had a mean score across pre- and post-tests of 20.55.
Table 14

*Means and Standard Deviations for Opportunities at School*

<table>
<thead>
<tr>
<th></th>
<th>Educators</th>
<th>Students</th>
<th>Parents</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AIRs</td>
<td>23.20 (4.47)</td>
<td>20.60 (3.77)</td>
<td>18.40 (5.72)</td>
<td>21.24 (4.19)</td>
</tr>
<tr>
<td>Post-AIRs</td>
<td>25.50 (4.67)</td>
<td>20.50 (5.02)</td>
<td>22.10 (3.76)</td>
<td>22.7 (4.84)</td>
</tr>
<tr>
<td>Total</td>
<td>24.35 (4.60)</td>
<td>20.55 (4.32)</td>
<td>20.25 (5.07)</td>
<td></td>
</tr>
</tbody>
</table>

Summary scores of the two by three ANOVA for *Opportunities at School* with repeated measures on one factor are shown in Table 15. Analysis of the *Opportunities at School* scale indicated no significant main effect for the between subjects factor (rater) $F(2, 26) = 1.160, MS = 11.568, \alpha = .329$. There was not a significant main effect for *School* (pre-test, post-test) $F(1, 26) = 3.993, MS = 39.822, \alpha = .056$. The interaction of the rater and opportunities at school was also not significant $F(2, 26) = 1.160, MS = 11.568, \alpha = .329$.

*Opportunities for Self-Determination—Home*

Mean scores and standard deviations for *Opportunities at Home* are displayed in Table 16. The overall mean scores for school increased from 21.07 (pre-test) to 22.22 (post-test). The parents scored their children the highest with a mean score across pre- and post-tests of 23.40, followed by the students who had a mean score across pre- and post-tests of 21.30. The educators had a mean score across pre- and post-tests of 19.64.
Table 15

*Analysis of Variance for Opportunities at School*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater</td>
<td>2</td>
<td>164.845</td>
<td>82.422</td>
<td>3.046</td>
<td>.065</td>
</tr>
<tr>
<td>Error (Between)</td>
<td>26</td>
<td>703.500</td>
<td>27.058</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>1</td>
<td>39.822</td>
<td>39.822</td>
<td>3.993</td>
<td>.056</td>
</tr>
<tr>
<td>School X Rater</td>
<td>2</td>
<td>23.136</td>
<td>11.568</td>
<td>1.160</td>
<td>.329</td>
</tr>
<tr>
<td>Error (Within)</td>
<td>26</td>
<td>259.278</td>
<td>9.972</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 16

*Means and Standard Deviations for Opportunities at Home*

<table>
<thead>
<tr>
<th>Educators</th>
<th>Students</th>
<th>Parents</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-AIRs</td>
<td>18.86 (5.52)</td>
<td>20.60 (4.90)</td>
<td>23.10 (4.01)</td>
</tr>
<tr>
<td>Post-AIRs</td>
<td>20.43 (4.65)</td>
<td>22.00 (4.19)</td>
<td>23.70 (3.49)</td>
</tr>
<tr>
<td>Total</td>
<td>19.64 (4.97)</td>
<td>21.30 (4.49)</td>
<td>23.40 (3.68)</td>
</tr>
</tbody>
</table>

Summary scores of the two by three ANOVA for *Opportunities at Home* with repeated measures on one factor are shown in Table 17. Analysis of the *Opportunities at Home* scale indicated no significant main effect for the between subjects factor (rater) $F(2, 24) = 1.907, MS = 60.050, \alpha = .170$. There was not a significant main effect for *Home*
Table 17

Analysis of Variance for Opportunities at Home

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater</td>
<td>2</td>
<td>120.101</td>
<td>60.050</td>
<td>1.907</td>
<td>.170</td>
</tr>
<tr>
<td>Error (Between)</td>
<td>24</td>
<td>755.714</td>
<td>31.488</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>1</td>
<td>18.6</td>
<td>18.6</td>
<td>2.397</td>
<td>.135</td>
</tr>
<tr>
<td>Home X Rater</td>
<td>2</td>
<td>2.447</td>
<td>1.223</td>
<td>.158</td>
<td>.855</td>
</tr>
<tr>
<td>Error (Within)</td>
<td>24</td>
<td>186.257</td>
<td>7.761</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(pre-test, post-test) $F(1, 24) = 2.397, MS = 18.6, \alpha = .135$. The interaction of the rater and opportunities at home was not significant $F(2, 24) = .158, MS = 1.223, \alpha = .855$.

*Overall Self-Determination*

Table 18 shows the overall pre- and post-AIR percents and standard deviations of all the subsections by the three raters. Percents were used instead of raw scores because some teachers and parents purposely did not fill out specific sections of the scale. The highest pre-AIR percents were rated by the students (71%), followed by the educators (67%), and the parents (66%). The highest post-AIR percents were rated by the students (76%), followed by the parents (74%), and the teachers (73%). Overall, all of the raters increased their overall ratings of the participants. The parents’ rating increased 8%, whereas the educators’ rating increased 6%, and finally the students’ ratings increased 5%. 
Table 18

*Means and Standard Deviations for Overall Self-Determination*

<table>
<thead>
<tr>
<th></th>
<th>Pre-AIR</th>
<th>Post-AIR</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educators</td>
<td>.67 (.14)</td>
<td>.73 (.15)</td>
<td>.70 (.14)</td>
</tr>
<tr>
<td>Students</td>
<td>.71 (.12)</td>
<td>.76 (.10)</td>
<td>.73 (.10)</td>
</tr>
<tr>
<td>Parents</td>
<td>.66 (.12)</td>
<td>.74 (.09)</td>
<td>.70 (.07)</td>
</tr>
<tr>
<td>Total</td>
<td>.67 (.14)</td>
<td>.73 (.15)</td>
<td></td>
</tr>
</tbody>
</table>

The average score of both pre-and post-tests as rated by the students was 73% and the average score of both the educators and the parents was 70%.

A two-way mixed analysis (ANOVA) with repeated measures on one factor (rater) was conducted to test for differences among the overall self-determination rating from the pre-test and post-test and the rater (i.e., educator, student, and parent). Summary scores of the two by three ANOVA for *Overall Self-Determination* with repeated measures on one factor are shown in Table 19. Scores indicated no significant main effect for the between subjects factor (rater) $F(2, 27) = .232, MS = .006, \alpha = .795$. There was a significant main effect for the *Overall Self-Determination* (pre-test, post-test) $F(1, 27) = 9.54, MS = .060, \alpha = .005$. The interaction of the rater and overall self-determination was not significant $F(2, 27) = .232, MS = .006, \alpha = .795$. 
Table 19

*Analysis of Variance for Overall Self-Determination Rating*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater</td>
<td>2</td>
<td>.013</td>
<td>.006</td>
<td>.269</td>
<td>.766</td>
</tr>
<tr>
<td>Error (Between)</td>
<td>27</td>
<td>.634</td>
<td>.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall SD</td>
<td>1</td>
<td>.060</td>
<td>.060</td>
<td>9.544</td>
<td>.005</td>
</tr>
<tr>
<td>Overall SD X Rater</td>
<td>2</td>
<td>.003</td>
<td>.006</td>
<td>.232</td>
<td>.795</td>
</tr>
<tr>
<td>Error (Within)</td>
<td>27</td>
<td>257</td>
<td>9.52</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Relationship Between Goal Attainment and Self-Determination

The third question in this investigation was: What is the relationship between the attainment of transition related goals and self-determination skills as assessed by the AIR Self-Determination Scale? In order to address this question, separate bivariate correlations were run between the Goal Attainment Scale average T-scores of the educators and parents (GAS-E, GAS-P) and the 12 post-test subscales of the Air Self-determination Scale by the educators, students, and parents. Table 20 represents the correlation matrix for GAS T-scores and all of the AIR subscales by rater. In order to look for significant correlations and possible patterns, seven separate clusters were analyzed. The seven clusters were: (a) GAS-E and GAS-P and all the AIR subscales from every rater; (b) Educator by Educator...
Table 20

*Correlation Matrix GAS T-Scores and AIR Subscales*

<table>
<thead>
<tr>
<th></th>
<th>GAS-P</th>
<th>GAS-E</th>
<th>Ed Abil</th>
<th>Ed Perc</th>
<th>Ed Know</th>
<th>Ed Sch</th>
<th>Ed Home</th>
<th>St Abil</th>
<th>St Perc</th>
<th>St Sch</th>
<th>St Home</th>
<th>Par Abil</th>
<th>Par Sch</th>
<th>Par Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAS-P</td>
<td>1</td>
<td>.297</td>
<td>.324</td>
<td>.004</td>
<td>.321</td>
<td>-.134</td>
<td>-.414</td>
<td>.008</td>
<td>-.196</td>
<td>.097</td>
<td>-.031</td>
<td>.576</td>
<td>.461</td>
<td>-.262</td>
</tr>
<tr>
<td>GAS-E</td>
<td>1</td>
<td>.269</td>
<td>.099</td>
<td>.359</td>
<td>-.118</td>
<td>-.359</td>
<td>.283</td>
<td>.123</td>
<td>-.411</td>
<td>.011</td>
<td>.481</td>
<td>.507</td>
<td>.097</td>
<td></td>
</tr>
<tr>
<td>Ed</td>
<td>1</td>
<td>.891</td>
<td>.922</td>
<td>.530</td>
<td>.029</td>
<td>.148</td>
<td>-.160</td>
<td>.189</td>
<td>-.439</td>
<td>.176</td>
<td>-.189</td>
<td>.324</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability Ed</td>
<td>1</td>
<td>.907</td>
<td>.608</td>
<td>.432</td>
<td>.064</td>
<td>-.147</td>
<td>.282</td>
<td>-.514</td>
<td>-.016</td>
<td>-.420</td>
<td>.297</td>
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<td></td>
<td></td>
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<tr>
<td>Perc</td>
<td>1</td>
<td>.468</td>
<td>.187</td>
<td>-.032</td>
<td>-.282</td>
<td>.089</td>
<td>-.524</td>
<td>.180</td>
<td>-.154</td>
<td>.105</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ed</td>
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<td>.796</td>
<td>.024</td>
<td>-.151</td>
<td>.306</td>
<td>-.465</td>
<td>.030</td>
<td>-.440</td>
<td>.452</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Know</td>
<td>1</td>
<td>.033</td>
<td>.102</td>
<td>.586</td>
<td>.129</td>
<td>-.025</td>
<td>-.415</td>
<td>.206</td>
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<td>.357</td>
<td>.464</td>
<td>.626</td>
<td>.481</td>
<td>.699</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Home St</td>
<td>1</td>
<td>.422</td>
<td>.654</td>
<td>.549</td>
<td>.517</td>
<td>.439</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>St Abil</td>
<td>1</td>
<td>.344</td>
<td>.292</td>
<td>-.109</td>
<td>.060</td>
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<td></td>
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</tr>
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subscales; (c) Educator by Student subscales; (d) Educator by Parent subscales; (e) Student by Student subscales; (f) Student by Parent subscales; and (g) Parent by Parent subscales.

No significant relationships were found in cluster one between the GAS T-scores and any of the subscales of the AIR by rater; however, some patterns of correlations are worthy of examination. First, a pattern of moderate negative correlations were found between the Opportunities at Home scores (educators) and the GAS-P scores ($r = -.414$) and the GAS –E scores ($r = -.359$). Another pattern of moderate positive correlations were found between the Ability (parents) scores and the GAS-P scores ($r = .576$) and the GAS-E scores ($r = .481$). Finally, a pattern of moderate positive correlations were found between the Opportunities at School (parents) scores and The GAS-P scores ($r = .461$) and the GAS-E scores ($r = .507$).

Analysis of cluster number two (educators by educators) revealed a pattern of significant positive correlations between the Perception and Ability scores ($r = .891$). Knowledge and Ability scores ($r = .922$), and Knowledge and Perception scores ($r = .907$). A pattern of positive moderate correlations were found between the scores of Opportunities at School and Ability scores ($r = .530$), Perception scores ($r = .608$), and Knowledge scores ($r = .468$). Positive correlations were found between the Opportunities at Home scores and Perception scores ($r = .432$) and the Opportunities at School scores ($r = .796$). The latter correlation was significant.

No significant relationships were found in cluster number three (educators by students). One pattern of moderate negative correlations was found between the
Opportunities at Home scores (student) and the three educator subscales: Ability \((r = -.439)\); Perception \((r = -.514)\); and Knowledge \((r = -.524)\).

Analysis of cluster number four (educators by parents) revealed no significant relationships between the educators and parents subscale scores. One pattern of moderate negative correlations was found between the Opportunities at School scores (parents) and three educator subscales: Perception \((r = -.420)\); Opportunities at School \((r = -.440)\); and What Happens at Home \((r = -.415)\).

One significant positive correlation was found in cluster number five (students by students) between the Perception scores and Ability scores \((r = .897)\). Two patterns of positive moderate correlations are worthy of consideration. First, positive moderate correlations were also found between the Opportunities at School and two other subscales: Ability \((r = .357)\); and Perception \((r = .422)\). Another pattern of positive moderate correlations was also found between the Opportunities at Home scores and three other student subscales: Ability \((r = .464)\); Perception \((r = .654)\); and Opportunities at School \((r = .344)\).

No significant relationships were found in cluster six (student by parent). However a few patterns of positive moderate correlations were found. First, the Ability (parents) scores were positively moderately correlated with the student scores for Ability \((r = .626)\) and Perception \((r = .549)\). The Opportunities at School (parents) scores were moderately correlated with student scores for Ability \((r = .481)\), Perception \((r = .517)\), and Opportunities at Home \((r = .480)\). Finally, the Opportunities at Home (parents) scores were moderately correlated with student scores for Ability \((r = .699)\) and Perception \((r = .439)\).
Cluster seven (parents by parents) revealed one significant positive correlation between *Ability* and *Opportunities at School* ($r = .825$).
CHAPTER V
DISCUSSION

Increasing the self-determination skills of youths with disabilities continues to be an important focus in the field of special education. Although the overall literature on self-determination is extensive, a good portion of it is descriptive or theoretical as opposed to empirical studies. This study examined the impact that the Career and Self-Advocacy Program (CASAP) had on the goal attainment and self-determination skills of students with mild to moderate disabilities. The results of this study are encouraging. The CASAP had some impact on students’ goal attainment and perceived level of self-determination. The relationships found between transition related goals and self-determination skills were non-significant for the most part; however, significant correlations and patterns of non-significant moderate correlations were found between the different self-determination components. This chapter discusses findings and interpretations related to the three research questions followed by limitations and implications.

Impact of CASAP on Goal Attainment

To answer Research Question #1, raw goal attainment scores were converted to standardized T-scores, which had a mean of 50 and a standard deviation of 10. Conversion to T-scores allowed for comparison between the raters (i.e., educator, parent) as well as between the three themes of the CASAP (i.e., Postsecondary Options, Goal
Setting & IEPs, and Awareness and Self-Advocacy). A one-way ANOVA was conducted to evaluate differences between the T-scores of the raters. A two-way ANOVA with repeated measures was conducted to evaluate the difference between the three themes and rater.

The findings on GAS scores, as rated by parents, indicated that, on the average, students attained the expected level of achievement of their goals. Ratings by educators indicated that, on the average, students exceeded the expected level for achievement of their goals. In comparison to studies that used the GAS to evaluate a self-determination curriculum, this study was comparable to the findings of the Wehmeyer, Palmer, et al. (2000) study in which educators rated goals at the expected level and to the findings of the Agran et al. (2000) study in which educators rated goal achievement at the more than expected level.

In this study, the educators were also more consistent in their rating of the students than parents with a smaller range of scores. All of the teachers rated the students as having met or exceeded expected levels in their goal attainment. Parents were less consistent with a higher range of scores and a large standard deviation. Three of the parent ratings were below the expected level as well. These findings also resemble the findings of Agran et al. (2000), who had 89% of the students (N = 19) meeting or exceeding their teachers’ expectation. Wehmeyer, Palmer, et al. (2000) had lower rates of goal attainment with 55% of the participants (N = 40) having achieved or exceeded their goals. Since Wehmeyer, Palmer, et al. had a larger sample it is possible that those ratings may be more reflective of the population.
Studies using GAS with larger samples found means closer to the expected level of 50 with standard deviations close to 10. Sherman (1977) conducted a study with 698 GAS T-scores recorded. The distribution was reasonably normal with a mean of 51.8 ($SD = 11.4$). Jacobs and Cytrynbaum (1977) had 113 GAS T-scores and reported a mean of 47.1 ($SD = 9.9$). It would seem that for some unknown reason, teachers in special education, like in this study and Agran et al. (2000), tend to inflate expected levels of goal achievement.

The findings in this study did not find any statistically significant differences between the teachers and parents. However, the educators, on average, rated students one standard deviation higher than the parents did. Although not significant, the one standard deviation may be important from a practical standpoint and be worthy of further discussion. First, educators may be more familiar with writing goals and evaluating the progress of those goals from the IEP process, making the application of Goal Attainment Scaling an easier adjustment in their thinking about students. Parents may be familiar with the IEP process and understand the meaning of the goals and objectives, but lack the knowledge of establishing and evaluating goals.

Conversely, educators also have a vested interest in seeing improvement with their students especially within the framework of the general education environment. The IDEIA (2004) stressed that students with disabilities need to be provided access to and progress within the general education curriculum. The IDEIA also mandates that students with disabilities are not excluded from the accountability systems linked with standards based reform. No Child Left Behind is explicit in its intent that all children, regardless of
disability, meet the same high quality standards. The instruction of self-determination activities and student involvement actually provides a means to promote the participation of students with disabilities in the general curriculum, making teachers more attuned to students’ role in progress (Palmer, Wehmeyer, Gipson, & Agran, 2004). Further research is needed to understand both parents’ and educators’ knowledge and application of specific self-determination strategies and components.

Differences between the three units of the CASAP (Postsecondary Options, Goal Setting and IEPs, and Awareness and Self-Advocacy) between rater groups mirrored the overall differences. Educators had higher goal attainment ratings than the parents in all three themes. The mean scores for Postsecondary Options for parents, and for educators, Goal Setting for parents, and Awareness and Advocacy for parents were all at the expected level of outcome. The mean scores for Goal Setting for educators, and Awareness and Advocacy for educators, were at the more than expected level of outcome. Even not reaching statistical significance, all of the themes were rated at the expected level or higher. It appears that instruction on all three themes had an impact on the students’ attainment of transition related goals with attainment on no single theme emerging as superior or inferior.

Impact of CASAP on Self-Determination

To answer Research Question #2, separate two-way mixed analyses of variance (ANOVAs) with repeated measures were conducted to test for differences on four subscales of the AIR (i.e., Ability, Perception, School, and Home and between pre- and post-tests and rater (i.e., educator, student, parent). A one-way analysis of variance was
conducted for the knowledge subscale since there was only one rater (educator). The results indicated significant differences between the pre- and post-tests in the entire Capacity section (i.e., Ability, Perception, and Knowledge) but not in the Opportunity section (i.e., Opportunities at Home, Opportunities at School). This study documented important differences in the self-determination skill assessment of the various stakeholders. Students rated themselves higher than the parents and educators in all of the Capacity subscales, whereas the educators had the highest ratings for Opportunities at School and parents had the highest ratings for Opportunities at Home. However the only statistical significance between raters came in the Perception subscale where the students’ mean scores were significantly higher than the educators’ mean scores.

Capacity for Self-Determination

Analysis of the Ability scale found a significant difference between the pre- and post-test means but no difference was found among the educators, students, and parents. The students scored themselves the highest in this area while the overall parents’ and educators’ scores were fairly consistent. Parents initially rated this area relatively low but had a substantial increase in ratings on the posttest.

The Ability subscale measures the students’ ability to make choices, decisions, and plans, and follow up with actions to meet those goals. Students feel confidence in those abilities. The parents and educators do believe the students have the ability to become more self-determined but are not as optimistic as the students. The parents and educators may have a more realistic view of the students’ abilities. Even though both parents and educators ratings increased from pre- to post-test, the parents’ average
change of four points either may reflect an observed change or just a greater awareness and sensitivity to their child’s ability.

Analysis of the Perception scale found a significant difference between the pre- and post-test scores and among the educators and students. Like the Ability scale, students rated themselves relatively high on Perception. The educators actually had the same overall mean score as they did on the Ability scale reflecting a view that self-determination remains somewhat stable over short periods of time.

The Perception subscale measures the students’ confidence in their own general knowledge and ability. It also assesses the students’ motivation to set goals, the degree of optimism of being able to achieve goals and the willingness to take risks. Students significantly had a higher perception of their self-determination skills than the educators. Educators are not nearly as confident with the students’ motivation to set and achieve goals. These findings corroborate the results of Carter, Lane, Pierson, and Glaeser (2006). Using the AIR Self-Determination scale, they assessed students with behavioral disorders (BD) and students with learning disabilities (LD). Educator ratings of students with BD were significantly lower on the Perception subscale than the ratings of the students with BD.

Analysis of the Knowledge scale found a significant difference between the pre- and post-test scores of the educators. This scale measures the level of understanding (from the educators’ perspective) that a student has about self-determination and the skills it requires. Overall, educators feel fairly confident about their students’ understanding of self-determination and feel they have the necessary skills to become
more self-determined, perhaps reflecting that teachers may believe that they teach these skills.

Overall, findings from the AIR support the conclusion that the CASAP had an impact on the capacity for students to become more self-determined. Statistically significant differences were found between the pre- and post-test mean scores on all of the *Capacity* subscales. By the end of the program students were better able to connect what they need, want, and can do to become more self-determined as reflected in the AIR. These findings corroborate the field tests of other self-determination curricula that focus more on elements related to the capacity for self-determination rather than opportunities to engage in self-determined behavior (Cross et al., 1999; Durlak et al., 1994; Field & Hoffman, 1995). The research on opportunities for self-determination is less extensive but must become a focus in the special education literature so that the field can gain further understanding of how to develop self-determined learners and self-advocates.

**Opportunities for Self-Determination**

Analysis of the *Opportunities at School* scale found no significant differences between the pre- and post-test scores or among the educators, students, and parents. The educators’ and parents’ average ratings increased but the students’ average ratings stayed the same. The educators had very high pre- and post-test ratings, indicating they feel strongly that opportunities for self-determination exist at school. These findings were consistent with the findings of Grigal et al. (2003) who found that 84% of the teachers
surveyed reported some level of agreement that students with disabilities had the opportunity to learn and practice self-determination skills at their school.

Students were very consistent in their rating of opportunity, having virtually the same mean score at both pre- and post-test with their average score being lower than the parents. Parents initially rated school opportunity fairly low, but the mean post score increased by almost three points. Like Ability, parents may have observed more self-determination activities existing at school. These findings, even though not significant, also corroborate the findings of Grigal et al. (2003) who found that a majority of parents (78%) had some level of agreement that their child had the opportunity to apply self-determination skills at school.

Taken overall, the CASAP did not have a statistically significant impact on self-determination opportunities at school. However the overall post-test scores of all the raters were above the median threshold. Students and parents felt that some opportunities exist at school, whereas the educators felt that there are a lot more opportunities to practice self-determination skills within school settings. It is widely believed that parents can play a crucial role in the development of self-determination for students with disabilities (Field & Hoffman, 1994; Mithaug, Wehmeyer, Martin, & Palmer, 1998; Wehmeyer, 1996). If parents believe that self-determination is an important part of the curriculum, then schools and educators are more likely to promote its development.

Prior survey research suggested that opportunities for students to engage in self-determination activities may be limited in typical secondary schools (Agran et al., 1999; Wehmeyer, Agran, et al., 2000). On the other hand, Zhang et al. (2002) determined that
some self-determination activities appear more appropriate for teachers and school, whereas parents traditionally are less prepared and willing to reinforce skills taught at school. However, home settings provide their own realistic opportunities to generalize self-determination skills.

Analysis of the *Opportunities at Home* scale found no significant differences between the pre- and post-test scores or among the educators, students, and parents. The parents were fairly consistent in their pre- and post-test scores with the post-test score increasing only one half point. Student scores were also fairly consistent with an increase of one and one half points. Educators had the lowest pre- and post-test scores in this section; however, three educators failed to fill out this section. Even though the findings are not significant and given important missing educator data, certain points are worthy of discussion.

It can be determined that the parents felt strongly about the opportunities that exist at home whereas the educators did not. Parents felt that the opportunities at home can enhance and possibly foster self-determination skills. Carter et al. (2006) found the parent ratings in the *Opportunities at Home* were significantly higher than the educators’ and students’. This is in slight contrast to Zhang et al. (2002) who found that only 34% of the parents frequently engaged in self-determination activities.

Differences in evaluations of opportunities for self-determination were evident across special educators, students, and parents. Students feel that opportunities for self-determination exist both at home and at school. Whereas, educators feel they exist at school and parents feel strongly about the opportunities at home. Parents did gain more
confidence in the schools by the end of the study. These differences may occur because educators and parents do not have direct daily involvement in home and school settings. The parents’ and educators’ knowledge of opportunities within other settings may rely primarily with the communication of the students. The student scores were the most consistent in the *Opportunities* section which is not surprising considering they have direct knowledge in both school and home settings.

There is little question that both parents and teachers believe that students with disabilities should be exposed to self-determination activities. Grigal et al. (2003) found that 98% of the parents of students with disabilities agreed that students with disabilities should be taught self-determination skills at school. Agran et al. (1999), and Wehmeyer, Palmer, et al. (2000) found that the majority of teachers think that self-determination is an important instructional area. Discussions between parents and educators could lead to a better understanding of the components of self-determined behavior and opportunities to exercise those skills. This could help to ensure consistency in opportunities for self-determination across the different settings.

*Overall Self-Determination*

Analysis of the overall self-determination percents found a significant difference between the pre- and post-test means but no difference among raters. What is interesting is that the average pre- and post-percent of both the educators and parents were exactly the same. The students had higher pre- and post-percents than both the parents and educators. Students may have gained a raised awareness level of the test measure and that sensitivity to the test increased the scores (Cook & Campbell, 1979).
Therefore, taken as a whole, the changes in scores for all the components of the AIR Self-Determination Scale were significant. Therefore, the CASAP did have an impact on the students’ overall self-determination skills. However, these findings should be interpreted cautiously. Recent research by Shogren et al. (2007) has suggested that combining the capacity and opportunity subscales of the AIR-E into a higher order construct is not justified. A correlation between the opportunity and capacity subscales was moderately positive ($\alpha = 0.34$). Looking at the subscales separately may provide the greatest insight. The findings support that students with mild to moderate disabilities have the capacity for self-determination but the opportunities to exercise these skills remains unclear.

**Relationship Between Goal Attainment and Self-Determination**

To answer Research Question #3, separate bivariate correlations were run between the Goal Attainment Scale T-scores of the educators and parents, and the post-test of the 12 subscales of the Air Self-Determination scale by the educators, students, and parents. Analysis of seven separate clusters revealed several significant correlations, as well as patterns of moderate positive and negative correlations. The moderate correlations were not significant but they are above chance.

Significant correlations were found between all the *Capacity* subscales for the educators (Ability, Perception, & Knowledge). Significant correlations were also found between *Ability* (parent) and *Opportunities at School* (parent). *Perception* (student) and *Ability* (student) were significantly correlated. Educators were consistent in the assessment of students’ capacity to engage in self-determined activities. They appear to be relatively
confident concerning the students’ capacities to engage in self-determined activities. The students in this study are extremely confident in their abilities and application of those skills. Parents too are very confident in their children’s ability to be self-determined and that the school environment provides that opportunity.

Some patterns of moderate positive correlations included: The GAS-P and GAS-E and both Ability (parent) and Opportunities at School (parent); Opportunities at School (educator) and all the educators’ Capacity subscales; all the students’ Capacity subscales and all the students’ Opportunity subscales; and all the parent subscales (Ability, Home, Opportunities at School) and all the students’ Capacity subscales (Ability, Perception).

The parents’ confidence in their children’s ability to be self-determined was related to attainment of transition related goals of both parents and educators. These findings confirm the results of analysis of the GAS, where parents felt that their child achieved their goals at the expected level. Parents also believe that the school provides adequate opportunities for students to enhance their self-determination skills. Educators are very confident in the opportunities at school and this was related to their perception of the students’ abilities. Students are confident in their abilities both at school and at home, whereas parents are confident in the students’ abilities and the opportunities that occur at school. These patterns help to confirm the analysis of the AIR where educators felt opportunities exist at school and parents felt strongly about the opportunities at home. Ratings from the AIR indicated that students felt opportunities for self-determination exist both at home and at school.
Some patterns of moderate negative correlations included: *Opportunities at Home* (educator) with both the GAS-P and GAS-E; and *Opportunities at School* (educator) and *Opportunities at School* (parent). The first pattern indicates that parents and educators believe students attained their goals, but educators do not believe that the opportunities at home are the reason. This confirms the analysis of the GAS where students achieved their goals at an expected level or higher but the opportunities at home remain in doubt. The second pattern indicates that educators believe opportunities exist at school more so than the parents do.

Overall, the results indicate no direct relationship between goal attainment and either the capacity or opportunity for self-determination. Some direct and moderate relationships confirmed the educators’ confidence in the opportunities that exist at school. However, they lack confidence in the home environment for these opportunities. Students are very confident in their capacity to be self-determined and believe opportunities exist at home and at school. Parents are also confident in their children’s ability to be self-determined and they believe that opportunities exist at home and school, but feel more confidence in the home environment.

**Limitations**

Several limitations warrant consideration and may suggest additional areas for future research. First the sample size was small ($N = 10$) which resulted in insufficient power for several analyses. A slightly larger sample, perhaps 15 or 20, may have provided more significant findings. The sample size of this study also decreased the ability to generalize the findings to a larger population. Future research is needed with additional
students, as well as with students who have had the opportunity to not only verbalize goals and plans, but also students who put those plans into action (Cross et al., 1999). The idea of setting, implementing, and evaluating individuals’ goals will necessitate the need for longitudinal research and follow-up data.

Another limitation of this study was the lack of a control group. Having a group with no program or an alternate program with which to compare the CASAP would allow for stronger statements to be made concerning the efficacy. A control group would help eliminate alternate explanations of the experimental results and allow greater confidence in the findings.

Participants were drawn from a single geographic region within one large school district and were not randomly selected. Therefore broad generalizations cannot be made concerning whether this would have the same effect in other districts or regions. One half of the sample were African-American adolescents, a population for whom transition related studies is particularly limited (Geenenn, Powers, Lopez-Vasquez, & Bersani, 2003). Evaluating this program within other districts and with students from varying backgrounds would increase the understanding of its effectiveness.

The length of time of the intervention (3 weeks) can help to improve students’ self-determination skills but it may not have been long enough. The development of self-determination skill requires sustained efforts over a long period of time (Field et al., 1998). It may take years of small daily activities to build some basic skills. Once these skills are built, teachers can adopt a self-determination curriculum to expand and improve students’ self-determination skills (Zhang et al., 2002).
Promoting self-determination requires a variety of activities across different settings. Parents and educators need a variety of supports to help youths with disabilities build, utilize, and maintain these skills. There are many self-determination curricula from which to choose. Many are expensive and not empirically validated. Curricula such as the CASAP are suitable for use by parents and teachers with practical activities and lesson plans designed to facilitate the transition of youth with disabilities.

Implications for Future Research and Practice

Despite the above limitations the present findings have implications for further research and practice. Although there is a great interest in self-determination, there are still limited empirical investigations in the transition literature on the effects of strategies to promote self-determination. The present study provides empirical data of the value of teaching students specific self-determination skills. Self-determination is often considered in isolation of other skills areas. Perhaps self-determination outcomes correlate more closely with social or behavioral deficits than with different disability labels. Future research should examine the connection between self-determination and the acquisition of other skills including social, academic, behavioral, and vocational domains (Carter et al., 2006).

In this study, students were assessed from their own perspective as well as from parents’ and their special education teachers’ perspective. It would be valuable to query general education teachers regarding the capacity and opportunity for self-determination for all students. Eisenmann and Chamberlin (2001) felt that approaching self-determination as a special education only construct encourages fragmented and isolated
efforts within the school. Special educators believed that their general education colleagues would agree with the importance of self-determination for all of the students regardless of disability.

The concept of self-determination is primarily a special education concept. However the term is not directly used in the Council for Exceptional Children’s (CEC) professional standards for Beginning Teachers, Individualized Independence Curriculum Referenced Standards (for teachers of students with low incidence disabilities), Individualized General Curriculum Reference Standards (for teachers of students with high incidence disabilities), or for Transition Specialists (Council for Exceptional Children, 2005). These standards do address various components of self-determination such as self-advocacy, self-reliance, and self-awareness. If self-determination is as important as the literature indicates then it should be officially recognized within some of these standards. This recognition could help bridge the gap between research and practice.

Several implications for practice can be derived from the findings of this study. First, it is apparent that educators, students, and parents feel that the participants have the capacity to be self-determined but may lack the opportunity. One limitation is that the parents have limited knowledge about what happens at school and the educators have limited knowledge about what happens at home. Currently, the research on the impact of individual and ecological factors on the self-determination skills of students with disabilities is less extensive. Greater understanding of the opportunities for self-
determination both at home and at school would ensure more consistency across settings and increase the likelihood of better outcomes.

The push for access to general education curriculum and content standards creates a challenge for implementation of the CASAP. With a current emphasis on portfolios and career plans, this program can be utilized to support some of those types of activities. A lot of the activities in the CASAP can be utilized for all students, not just students with disabilities. Many of the self-determination curricula are geared for students with and without disabilities as well as youth who are considered at risk. Test et al. (2000) found that 15 out of the 60 self-determination curricula reviewed could be geared toward students without disabilities or youth at risk.

It may be feasible in the future to consider the value of self-determination activities for all students and then differentiate self-determination instruction depending on the need and disability. If teachers and administrators found self-determination skills useful in raising the achievement of all students, perhaps a greater amount of instructional time would be devoted to teaching specific self-determination skills (Karvonen et al., 2004).

Conclusion

The Career and Self-Advocacy Program teaches students specific self-determination skills such as evaluating postsecondary options, understanding one’s strengths and limitations, and setting goals for the future. This program enables students to prepare for whatever postsecondary options may be in their future. Taken as a whole, the findings suggest that the CASAP had an effect on the participants’ specific self-
determination skills. Students increased their capacity to be self-determined and achieved specific transition related goals. In this study as in others, opportunities at school are more easily connected to teaching self-determination to students with disabilities.

Self-determination is a complex construct comprised of many variables (Wehmeyer, 1996). This study addressed both capacity and opportunity related to self-determined behavior, something which has provided challenges to researchers. As Field et al. (1998) noted, “self-determination is a function of the interaction between the individual skills and the opportunities provided by their environments” (p. 119). With further research, pre-service programs will be better able to equip both general and special education teachers with materials and strategies that support self-determination (Browder et al., 2001).

Transition to adult roles can be complicated, one that all youths, regardless of disability, negotiate. Many factors affect students’ lives as they continue through this process. Self-determination is just one facet of this process. Students are influenced by many factors including: student and family characteristics, economic conditions, community contexts, and the availability of services. The inability to control many of these variables presents a challenge for conducting transition related research. This study adds to the overall transition literature base but more importantly, the participants, equipped with specific self-determination skills, may be better prepared for the future.
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