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THE EFFECTS OF LEARNING GOALS ON SELF-CONCEPT AND INTRINSIC
MOTIVATION IN THE LEARNING DISABLED STUDENT: A CASE STUDY

by
Lindsay S. Reed

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
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at
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Approved by

Advisor

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ABSTRACT

Lindsay S. Reed

The Effects of Learning Goals on Self-Concept and Intrinsic Motivation in the Learning Disabled Student: A Case Study

2005/06

Dr. John Klanderma

Dr. Roberta Dihoff

Master of Arts in School Psychology

The purpose of this study was to increase levels of self-concept and intrinsic motivation in a 9th grade student with a specific learning disability in mathematics through the use of weekly learning goals and the introduction of problem-solving strategies. Over the course of the six week study, the student experienced a significant rise in overall self-concept and intrinsic motivation as indicated by the results of two, One-Way ANOVA's from two self-report scales completed by the student. Implications for generalization of this study's results should include sample size, degree of learning disability, and administration of intervention techniques.

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Chapter I

Introduction

Statement of Need

The transition to high school from junior high can be a challenging experience for any adolescent. The transition to high school from junior high for a student with a learning disability is an even greater challenge. A successful transition requires a certain amount of motivation, organizational skills, and personal confidence in one's own ability. For students with a learning disability, these qualities are not always easily attained.

It is imperative to assist students with learning disabilities in gaining the skills and confidence needed for success in the academic and professional fields. The student that believes in himself, will be the student that challenges himself to become more than what is expected.

Purpose

The purpose of this study was to increase the confidence level and academic intrinsic motivation in a student with a specific learning disability in preparation for the transition to high school. Motivational techniques were expected to increase the student's desire to learn and succeed in a challenging academic environment. Through goal setting and increased academic assistance, the student would develop the confidence needed to accomplish the implemented goals.

Hypothesis

It is hypothesized that upon completion of the study, levels of self-concept and intrinsic motivation will significantly increase through the use of learning goals and assistance in problem solving in the area of mathematics.

Background

Tom is currently a fifteen year old ninth grade student in the public school system in Southern New Jersey. Tom's childhood was not average, in that he was placed in foster care at three months of age. Born in Puerto Rico, the youngest of six children, Tom came to the United States in 1990 with his family after their home was devastated by a natural disaster. Tom's mother, who is mentally retarded, and father relocated their family to the United States with no more than the clothes on their backs. A taxi driver took the family to a shelter in a nearby town where they stayed for several months until the Division of Youth and Family Services (DYFS) removed the children on grounds of gross neglect. Tom was placed in a home for medically fragile children because of his nutrition level and stayed there from June of 1990 until November of 1990. Upon his release from the Ship home, Tom and one of his sisters were placed in foster care with their eventual adopted parents, Lynn and Jim.

Tom and his older sister, Alli, stayed with their foster parents until March of 1991 when they were sent to live with a Spanish speaking family in hopes of one day being reunited with their birth family. The children stayed with this foster family until

September of 1991 and then moved back in with Lynn and Jim after the birth parents were deemed unfit.

When Tom and Alli returned to their previous home with Lynn and Jim, Tom was 18 months old and had no language skills. His lack of communication forced his foster parents to take him for testing at the Newcomb Developmental Center. Testing concluded that Tom carried the genetic features of mental retardation and experienced a delay in his fine motor skills. Therapy began immediately several times a week to increase his fine motor skills and encourage speech. When Tom entered a preschool program in September of 1992 his speech appeared instantly and his therapy sessions ended.

When Tom entered kindergarten in September of 1995, he and his sister were ordered to return to their birth parents by DYFS. Tom experienced his first behavior problems at this point. Tom would often say that when they came to take him, he was going to get on his bike and ride away. Although Tom was never violent, he did act out and became a disruption in the academic setting. The children were eventually granted permission to stay with their foster parents until the case had been reheard in court. During the time between hearings, bonding evaluations were conducted between the children and their birth parents, as well as, the children with their foster parents. In addition, both children were to spend a weekend with their birth parents. The bonding evaluation resulted in a lack of bond between the children and birth parents, and strong bond between the children and foster family.

When the case was reheard in 1996, all parental rights of the birth parents were severed and the children were to be adopted by Lynn and Jim. Tom, now seven years old and his sister, eight years old, were adopted by Lynn and Jim. Both children have always known that they were adopted, but do not know specific details about their birth family and the genetic traits they share. According to Tom's mother, he recently conveyed feelings of resentment toward being adopted, which were not apparent in earlier years.

Upon entering 4th grade, Tom, now 10 years old, was tested by the child study team in his district due to voiced concerns by his mother, Lynn. Testing indicated that Tom has an average IQ of 95 according to results of the Wechsler Intelligence Scale. The Bender-Gestalt Test of Visual-Motor Integration showed his developmental age to be 7 years, 6 months. Results on Auditory-Perceptual Skills were all below average. The Weschler Individual Achievement Test found that Tom ranked below chronological age and current academic level. Personality and social functioning tests indicated that Tom was a student with a desire to do well, but held anxieties and feelings of inadequacy about his abilities. Completion of testing resulted in Tom being classified with a Specific Learning Disability in mathematics computation.

As a result of his classification, Tom received two periods per day of resource teaching in the subject areas of Language Arts and Mathematics. Tom also received extended time periods of assignments, modified assignments, monitored agenda book logs, peer tutoring, and individualized attention. After the implementation of resource center learning and education modifications, Tom received acceptable grades of B's and

C's. His behavior problems continued with disruptions in the classroom and mild incidences socially within the general academic setting.

At the beginning of his seventh grade year in 2003, Tom received an Individualized Education Program. All academic areas were on target except for Spelling and Writing, where he ranked at grade level 5.8. There were no behavioral concerns mentioned and his social evaluation was deemed age appropriate. Teacher observations list Tom taking a great deal of pride in his schoolwork with progressive improvements. Recommendations for 8th grade education include general education with resource center for English. Tom also received preferential seating, immediate reinforcement or consequences, additional time for assignments and tests, repeating directions, and asking student to repeat questions back to instructor.

In October 2004, Tom's 8th grade year, reevaluation of his IEP displayed depressed academic performance to grade level ratings of 7.3 in Spelling/Writing, 5.2 in Math, 4.2 in Reading Comprehension, and 6.2 in Reading Recognition. He was described as well behaved with good peer relations; but lacked organizational skills, motivation, confidence and planning skills. The updated IEP recommended that Tom be placed in a supplemental/support classroom for one period each day. Observations noted that placement in the general education classroom will benefit Tom more than special education classes throughout the day. Tom continued to receive preferential seating, positive reinforcement, monitored agenda book use, individual attention, implementation of organizational aids, and defined limits, in addition to, preparation for assignments/tests in alternative setting and completing assignments/tests in alternative settings. Although

these adjustments have been made, Tom still lacks motivation to complete school assignments and displays no real enthusiasm for learning.

Currently, Tom is a very social adolescent that enjoys sports and spending time with friends and family. His social skills continue to develop with age, while academic performance shows little to no improvement. Tom shows a lack of motivation and confidence in his schoolwork and continuously demonstrates disruptive behavior in the classroom. At home, Lynn says that Tom is very affectionate and open to communication with immediate family members. Tom's attitude towards his parents can be harsh at times, but is described as average for his age group by his mother. Lynn sees a need for improvement in his academic performance and is open to modifications that may assist in this process. She is frustrated with the lack of progress from the school-imposed recommendations and would like to see Tom work to his full potential.

Definitions

Division of Youth and Family Services – New Jersey's child protection/child welfare agency. DYFS is responsible for investigating allegations of child abuse and neglect and if necessary arranging for the child's protection and the family's treatment.

Wechsler Intelligence Scale – The most widely used individual intelligence test, which is divided into verbal and performance scores.

The Bender-Gestalt Test of Visual-Motor Integration - The Bender-Gestalt II is a brief assessment of visual-motor integration that may provide interpretive information about an individual's development and neuropsychological functioning. This test may be

administered to children and adults, ages 4 to 85+ years and serves as a reliable tool to assess Visual-Motor development. It may also be used as a screener for neuropsychological impairment.

Weschler Individual Achievement Test – comprehensive individually administered battery for assessing the achievement of individuals in grades kindergarten through twelve, aged five to nineteen years, eleven months. Subjects tested include listening comprehension, written expression, basic reading skill, reading comprehension, mathematics calculation, and mathematical reasoning. Test results are to be used in a context encompassing the total history of the individual being assessed as opposed to using the test results in isolation.

Specific Learning Disability – Disorder in one or more of the basic processes involved in understanding or in using written or spoken language.

Individualized Education Program- Program describing goals set forth by the child study team for the student's performance throughout the school year, as well as any special supports that are needed by the student to complete said goals.

Chronological Age – The number of years a person has lived.

Developmental Age Equivalent – The age at which the individual functions in terms of average developmental milestones as compared to that of the general public.

Assumptions

Through the course of this study, it was assumed that although there is only one subject, all results were to be generalized to include a larger population of adolescents

with a learning disability making a transition from high school to junior high.

Environmental confounds, such as, teaching strategies in the school setting did not have an effect on the outcome of this study. Because the participant has already received unsuccessful accommodations within the school, continuation of these accommodations did not detract from the value of the current research design.

The participant complied with all attempts to increase academic performance and work toward completion of goals set forth by the researcher. Parents of the participant were in full support of this study and eager to attempt any effort necessary in helping their child make a successful transition to high school.

In this design, long-term effects were assumed to be consistent with the initial findings of the given results. Given the time frame and design strategy, the components implemented in the current study are to be continued with time and benefit the student in the coming years.

Limitations

The current study involved a single subject participating in strategies to increase intrinsic motivation and confidence, which will, in turn, positively increase overall academic performance. Further research featuring a greater population would increase the validity of the given results, increasing generalizability.

This design would benefit from a long-term follow-up to assess the student's success level in his transition and academic performance in the high school setting.

Because the data collection took place over a period of six weeks, it is not known what the long range effects will be.

The success of this study relies heavily on the cooperation of the participant. Increasing the number of participants would ensure a greater quality of genuine effort and cooperation. Because the design did not include the school staff, and was conducted primarily in private settings, the full resources available were not employed. Completing this design within the academic and private environments would allow for use of greater resources, which may, increase results in motivation and academic performance.

Summary

Chapter II of this study will include background research and information regarding the influences, theories, and previous research in adoption factors on personality, learning disabilities, types of motivation, and teaching strategies to increase motivation. Chapter III will discuss the research design and method of the current study. The exact procedures implemented, including strategy for motivation, time frame of data collection, method of data collection, and environment of data collection will be discussed. Chapter IV discusses the results of the current study. In this chapter, conclusions drawn from data collection will be displayed. Chapter V will conclude this study with discussion of collected results, contributing factors to the given results, and implications for future research.

Chapter II

Review of Literature

This chapter will focus on research surrounding the areas of self-concept, motivation, and achievement goals in the educational setting. The role of these factors strongly influences the academic performance of students, especially those with classified learning disabilities. In addition, the incorporation of the items listed above into the subject area of mathematics will be discussed and their roles in the enhancement of academic achievement within the learning disabled student. Because the current study pertains to a student with a specific learning disability in mathematics, the information provided will shed light into the background research displaying elevation in areas of academic achievement including self-concept, intrinsic motivation, and completion of self-regulated goals in this subject area.

Role of Self-Concept in the Learning Disabled Student

The learning disabled student is susceptible to low self-esteem and a learned helplessness orientation due to the exceptional circumstances surrounding his academic environment (Grolnick & Ryan, 1990). It is important for the student to remain positive and motivated to learn despite urges to succumb to the pressures of academia. This positive outlook on personal performance is known as self-concept, or self-efficacy. Defined, this term represents a person's judgment about his capability to perform a task at a specified level of performance, or belief regarding ability in a cognitive,

achievement, or motivational setting (Adleman & Taylor, 1983; Ames, 1992; Seifert, 2004).

Those students with low self-efficacy ratings tend to perform at lower levels than their high-self conceptualized counterparts. Grolnick and Ryan (1990) found that students with a learning disability view themselves as less competent than those students without a learning disability and feel that their personal control is in the hands of powerful others. Students adopting attitudes of low self-concept tend to become failure-avoidant and adopt a low-achievement orientation. The failure-avoidant student often shifts reason for failure from internal factors to external variables with which the individual has no control (Covington, 1984). Students displaying failure-avoidance will also attempt to commit to tasks that are very easy and assure success (Covington, 1984; Seifert, 2004). The eventual outcomes of this orientation result in students failing to gain a sense of pride and accomplishment. In addition, repeatedly controlling measures to ensure perceived success will ultimately destroy the student's will to learn and create an even lower sense of self-worth in the classroom (Covington, 1984, Pintrich & De Groot, 1990).

Opposite of student's with low self-concept, are those with higher levels of self efficacy. Students with higher self-concept tend to implement better learning strategies, take on challenging tasks despite the probability of failure, have a general interest in learning, and perform at an overall higher cognitive level of functioning (Ames, 1992; Pintrich & De Groot, 1990; Seifert, 2004). In a study conducted by Evanthia Patrikakou in 1996, students with learning disabilities that hold higher levels of self-efficacy and

personal expectations led to increased resilience in stressful educational situations. Further research suggests that students willing to engage in higher levels of metacognition, use cognitive strategies, and remain focused on difficult tasks display higher levels of self-efficacy than their low self-conceptualized peers (Schunk, 1985). Ryan and Pintrich (1997) performed a study that found self-concept to be significantly related to achievement in mathematics. This study involved seventh and eighth-grade students and measured their performance in mathematics as related to perception of ability (Ryan & Pintrich, 1997). The results of this study found that students that felt more competent in their ability outperformed their counterparts with lower self-concept ratings (Ryan & Pintrich, 1997). Further conclusions in this study found that low achieving students were less likely to ask for help as a result of the fear of seeming less competent (Ryan & Pintrich, 1997). This study plainly describes the need for low-achieving students to have the highest self-concept possible.

Jere Brophy (1988) outlines several strategies for improved self-concept ratings among students with learning disabilities in his book, *Motivating Students to Learn*. Brophy (1998) suggests encouraging students to set specific but attainable goals, modeling effective task response, providing feedback, and acknowledging the importance of challenges and their place in learning. Through the implementation of these concepts, motivational levels will increase, which will result in greater satisfaction of learned materials and not merely assessment of achievement. The next section will lead into the role of motivation in learning and then proceed through to the advantages of intrinsic motivation.

Motivation

Motivation is what drives an individual, the need for personal accomplishment and mastery of concepts. In the educational community, learning motivation is a “student’s tendency to find academic activities meaningful and worthwhile and to try to derive intended academic benefits from them” (Glynn, Aultman, & Owens, 2005, p154). Student traits regarding activity level, interest, and curiosity, as well as, student beliefs of self-determination, goal orientation, and self-efficacy affect learning motivation (Glynn, et al., 2005). In the previous section the importance of self-concept was stressed and can be supported through the given research presented. Research also suggests that students who lack interest in a subject will perform poorly, but those who have high interest in a subject area perform well (Alexander & Murphy, 1998). The role of self-determination has been seen by researchers to increase student interest, sense of competence, learning, and preference for challenges (Ryan & Grolnick, 1986). In addition, Covington (2000) and Glynn (2005) found that goal setting can assist in student focus of attention, organize efforts, persist longer, and develop new approaches to challenges.

Motivating the student with learning disability is essential in assuring a higher level of academic performance. Motivational approaches include facilitating the student’s strategic processing, understanding affect, presenting engaging activities, providing ample opportunities to learn, providing support, and implementing accurate and fair assessment (Ames, 1992; Brophy, 1998; Winstead, 2004).

The two types of motivation that have received the most attention by researchers are extrinsic and intrinsic (Ames, 1992; Paas, Touvinen, van Merriënboer, & Darabi, 2005; Pintrich & De Groot, 1990; Seifert, 2004). The extrinsically motivated student performs tasks for the sole purpose of receiving a reward or punishment avoidance (Dev, 1997). Extrinsic motivation is based around the distribution of a reward for completion of tasks, verbal praise, or exemption from punishment (Brophy, 1998).

Dev (1997) defines academic intrinsic motivation as participation in an activity purely out of curiosity, the desire to engage in an activity for the sake of involvement, and the desire to contribute. This motivational orientation is based around behaviors taking place for their own sake and becoming their reward (Schultz & Switsky, 1990). In the next section, the benefits of intrinsic motivation over extrinsic motivation in learning environments will be discussed.

Intrinsic vs. Extrinsic Motivation

Research surrounding motivation has often been directed toward the comparison of intrinsic vs. extrinsic motivational approaches. Most of these studies have resulted in the conclusion that benefits of intrinsic motivation outweigh the rewards of extrinsic motivation in regard to mastery and interest in a given subject area (Ames, 1992; Dev, 1997; Elliot & Harackiewicz, 1994; Elliott & Dweck, 1988; Harackiewicz & Elliot, 1993; Paas, et al., 2005; Pintrich, et al., 1990). Intrinsic motivation has been said to increase the overall mastery of a given subject, while extrinsic motivation is better suited for remedial tasks contingent on completion only. Students said to be intrinsically motivated

also display a greater sense of excitement toward learning, concept retention, confidence in the face of academic challenges, and task completion (Dev, 1997; Seifert, 2004).

Extrinsic rewards have been said to increase output for tasks that focus on merely completion and not quality of work (Elliot & Harackiewicz, 1994; Schultz & Switzky, 1990). Although this orientation can produce the necessary short-term results, it has not been proven successful in sustaining general academic growth (Schultz & Switzky, 1990). According to Schultz and Switzky, intrinsic orientation to motivational learning must be adopted for students to fully internalize a teaching strategy or concept (1990).

Although the research comparison displays a strong favor toward intrinsic motivation over extrinsic motivation, it can also be said that extrinsic rewards have detrimental effects on intrinsic motivation (Deci, 1975; Dev, 1997). Contingent rewards or punishments can be seen as stressors to the student and results in increased anxiety and poor performance with lack of attention toward mastery of the given task (Brophy, 1998; Dev, 1975)

In 1990, a study conducted by Pintrich and De Groot found that intrinsic value and cognitive strategies, as well as, self-regulation and performance levels were strongly related. Students employing a more intrinsic approach to learning were motivated to remain cognitively engaged and comprehend the given materials (Pintrich & De Groot, 1990). Similarly, several studies found that enhancing the intrinsic motivation of students with learning disabilities can result in “improved learning”(Adelman, 1978; Adelman & Taylor, 1983; Schunk, 1991).

Intrinsic motivation orientation can be combined with goals to create a more satisfying experience through the installation of challenge, task involvement, a sense of autonomy, immediate reinforcement upon completion, and structure (Ames, 1992; Elliot & Harackiewicz, 1994; Elliott & Dweck, 1988). In the coming sections of this chapter, the impact of goal orientations on motivation and academic performance will be evaluated.

Goals

Executives, coaches, and educators have implemented the use of goal setting throughout time. It has been said that external provision of goals for performance improve performance, and enhances interest in previously uninteresting or unappealing tasks (Eliot & Harackiewicz, 1994). The provision of such goals may be seen as extrinsic intrusion, anxiety provoking, or interfering with task involvement; however, if presented in an appropriate fashion the results will prove favorable (Eliot & Harackiewicz, 1994).

When defined short-term goals are presented, individuals are aware of concrete standards of performance evaluation, which can lead to the successful realization of standards and an increase in competence perceptions (Ames, 1992; Eliot & Harackiewicz, 1994). An increased positive view of self through goal setting leads to better performance in a given task, and, in turn, positively affects other areas in life (Eliot & Harackiewicz, 1994; Grant & Dweck, 2003).

The presence of goals in the academic setting has been known to have an effect on students' perceptions of themselves and task assignments (Ames, 1992; Elliot &

Dweck, 1988; Elliot & Harackiewicz, 1994; Shim & Ryan, 2005). Challenge, interest, and perceived control are all factors that play a central role in the education process (Ames, 1992). When students employ the use of goals in the classroom a sense of focus, skill improvement, and value in learning are increased, which tends to positively affect performance and intrinsic motivation (Ames, 1992).

Ames (1992) suggests that students focus on the quantity of work and high visibility of their production draws their attention away from learning. To ensure students' sense of autonomy, empowerment, and academic satisfaction, the focus needs to be directed toward skill acquisition and the quality of learning (Ames, 1992; Ames & Archer, 1988; Shim & Ryan, 2005). One type of goal utilized in the academic setting to promote positive outcomes in students is the achievement goal. Achievement goals can be defined as "schema or a cognitive framework that encompasses beliefs about purpose, competence, and success that influence students' approach to, engagement in, and evaluation of performance in school"(Shim & Ryan, 2005). This particular goal structure results in a system of cognitive processes that affect overall cognition and behavior, and influence motivational associations (Ames, 1992, Shim & Ryan, 2005).

Although research supports the role of achievement goals in education, the impact of such goals depends on the type of achievement goal and achievement orientation of the individual (Ames & Archer, 1988; Elliot & Harackiewicz, 1994; Meece & Holt, 1993; Shim & Ryan, 2005). The next two sections discuss two main types of achievement goals: performance or ability goals and learning or mastery goals.

Performance Goals

Performance goals, also known as ability goals, focus on demonstration of ability and highlight normatively based standards (Harackiewicz & Elliot, 1993). This pattern of goal setting serves the purpose of validating one's own ability, maintaining positive judgments, and avoidance of negative perceptions (Elliot & Dweck, 1988; Grant & Dweck, 2003). Individuals that ascribe to this pattern of goal setting often become vulnerable to learned helplessness, low ability attributions, negative affect, and impaired performance in an attempt to prove ability (Elliot & Dweck, 1988; Grant & Dweck 2003; Harackiewicz & Elliot, 1993)

Although performance goal research does not display favorable results for low-achieving individuals, high-achieving students respond well to this goal orientation. When positive ability is expected and personal regard are high, research has found that performance will maintain or positively increase (Grant & Dweck, 2003; Steele-Johnson, Beauregard, Hoover, & Schmidt, 2000). Performance goal orientations that lead students to value their competence can strengthen their value and increase intrinsic motivation (Harackiewicz & Elliot, 1993). In addition, performance goal orientation has been shown to be beneficial in early skill acquisition, increasing rehearsal task strategies (Steele-Johnson, et al., 2000), and task enjoyment in high-achievement oriented students (Elliot & Harackiewicz, 1994; Harackiewicz & Elliot, 1993).

Performance goals provide a more positive outcome for individuals with high-achievement orientations in that these students thrive in challenging situations, constantly seek assessment and feedback, and attain high levels of ability (Elliott & Harackiewicz,

1994; Harackiewicz & Elliot, 1993). Performance goals allow for the opportunity for students to be evaluated and demonstrate their ability externally. Along the lines of achievement orientation, personality may also affect success with performance goals. Type A personalities possess a strong desire to meet challenges and gain a high level of ability, which allows for greater success with performance goals (Elliot & Harackiewicz, 1994). In contrast, Type B personalities dislike competition and would not benefit from a goal orientation that emphasizes ability and comparison (Elliot & Harackiewicz, 1994).

Research has shown that performance goals raise interest, promote concentration, increase competence, and enhance intrinsic motivation for achievement-oriented individuals (Elliot & Dweck, 1998; Elliot & Harackiewicz, 1994; Harackiewicz & Elliot, 1993). Elliot & Dweck (1988) found that when performance goals were highlighted with a given task, those who believed their skill levels were high challenged themselves despite the presence of possible failure. In light of the positive results of performance goals and high-achievement oriented individuals, research has also proven that individuals with low-achievement orientation gain increased anxiety, characteristics of learned helplessness, low regard to ability, and negative affect (Elliot & Dweck, 1998; Elliot & Harackiewicz, 1994; Harackiewicz & Elliot, 1993). Given the circumstances and achievement orientation of the participant in the current study, the performance goal approach will not be beneficial.

Learning Goals

Learning goals, or mastery goals, can be defined as one that places emphasis on developing competence and gaining understanding of concepts in regard to one's past (Harakiewicz & Elliot, 1993; Shim & Ryan, 2005). This orientation focuses on challenge, positive affect associated with effort, persistence in the face of failure, solution oriented self-instructions, and increased ability (Elliot & Dweck, 1988; Harakiewicz & Elliot, 1993; Meece & Holt, 1993). Learning goals stress the mastery of a subject and not merely completion of task. Students who adopt a learning goal orientation strive to develop new skills, understand work, improve levels of competence, and in return gain a greater sense of intrinsic motivation in their quest for achievement (Ames, 1992; Ames & Archer, 1988). Contrary to the performance goal orientation, those students operating with learning goals tend to take pride and satisfaction in their efforts despite setbacks, a greater sense of accomplishment is achieved in the process and not necessarily the overall outcome (Ames, 1992; Grant & Dweck, 2003).

Low-achievement oriented students benefit from learning goals in that this orientation provides room for failure and places importance on effort and the learning process. According to research done by Strube in 1987, Type B personalities are more likely to respond to learning goals because of the absence of competence feedback. Despite the resounding success of learning goals with low-achievement oriented students, those with high-achievement orientations do not tend to respond to these goals. Students with perceived high ability levels show little to no change in the presence of learning

goals in that they often desire assessment and feedback based on task achievement (Elliot & Dweck, 1988, Harakiewicz & Elliot, 1993).

A study conducted by Meece and Holt in 1993, found that students oriented with learning goals recorded a relatively high level of active involvement and low levels of superficial engagement on a give task. In addition to work habits, improvements were shown in semester grades, test scores, and teacher ratings on effort for the learning goal students (Meece & Holt, 1993). In 1994, Elliot and Harakiewicz demonstrated that intrinsic motivation levels increased through the implementation of learning goals in low-achievement oriented students. It is their finding that provision of goals facilitates concentration and attention to the task, in turn, enhancing intrinsic motivation and enjoyment of assignments (Elliot & Harakiewicz, 1994).

Although behavior disruptions are known to coexist with learning disabilities, it has been shown that these disruptions may decrease when students adopt a mastery goal approach to learning. In a study involving low-achieving ninth-grade students, Kaplan, Gheen, and Midgley (2002) found that the use of personal mastery goals was related to lower reports of disruptive behavior in the classroom. Additional findings indicate that the use of learning goals can be seen to override the fear of failure and achievement and increase motivation to learn new skills (Ames & Archer, 1988; Grant & Dweck, 2003; Steele-Johnson, et al., 2000).

Strategies for Enhancing Mathematic Achievement

As previously discussed, students with learning disabilities are often at a disadvantage in terms of academic achievement. Because of their personal failures in school, students with learning disabilities find it more difficult than students without learning disabilities to have high self-concept, maintain motivation, carry out goals, and perform up to their potential (Grolnick & Ryan, 1990; Kaplan, et al., 2002; Zeleke, 2004). In addition, students with information-processing problems may not understand what is being said by the teacher, which usually results in less than optimal academic achievement (Sullivan, 2005). Sullivan has summarized several strategies for improving performance in mathematics, which include: make the content relevant to the student, make use of a concrete-to-abstract sequence, provide opportunities for guided practice in problem solving, and provide opportunities for students to verbalize their strategies and processes in problem solving (Sullivan, 2005).

Further consideration is made by Daly (1994), who says that instruction should include concepts and application strategies, utilization of visual, auditory, and kinesthetic methods of learning, age-appropriate materials, and an emphasis placed on mastery of concepts and not only completion. Students should also be able to verbalize thought processes with instructor to gain necessary feedback and assessment without threat of failure or punishment (Daly, 1994).

Miles and Forcht (1995) developed a strategy to assist students who are having difficulty in the area of mathematics. Students are instructed to read the presented math problem, copy the problem into a notebook, and then verbalize and write down the steps

needed to solve the problem (Miles & Forcht, 1995). Once the problem has been solved, students are then instructed to again verbalize the steps taken in finding the solution (Miles and Forcht, 1995). The role of the mentor in this intervention should be to guide the student through verbalization using appropriate questions and summarizing student's statements back to them (Miles & Forcht, 1995). The combination of verbalization and written work allows the student to obtain a mastery of the problem solving strategy and clarify simple errors that may occur during solitary processing (Miles & Forcht, 1995). Subjects partaking in this design included high school students enrolled in algebra and calculus classes (Miles & Forcht, 1995). These students met with a mentor one-on-one for two hours weekly during the school year, which resulted in successful reports of achievement and performance for all students involved.

The current study will take into consideration the guidelines offered by researchers regarding mathematic achievement. Diversity in material presentation, verbalization of problem solving processes, one-on-one attention, and goal setting will be added to strategies for improvement of self-concept and intrinsic motivation for the subject.

Summary

The given research provides a strong background to assume that students with learning disabilities benefit from a high level of self-concept, intrinsic motivational orientation, and implementation of learning goals. Higher self-concept gives the student a sense of worth and confidence to complete challenging tasks head-on regardless of the

threat of failure. Motivational processes that focus on intrinsic orientation provide a greater sense of mastery to general learning, which, in turn, benefits performance in the educational setting. Goals that focus on learning, or mastery, of a given subject allow the student to approach tasks without the presence of failure anxiety. This process lends itself to a greater sense of accomplishment and confidence to take on tasks that seem difficult, yet achievable. With regard to the current research presented, it is assumed that the current study's participant will benefit from an intervention program that includes specific short-term learning goals, one-on-one guidance in mathematics, verbalization in problem solving, and variety of presented material. The self-regulation and alternate approach to academics should increase currently low levels of motivation and self-concept with regard to the learning environment.

The next section of this paper will discuss the methods and specific design of the study, including subjects, data collection techniques, and processes of result analysis.

Chapter III

Design of Study

In Chapter Three the methods surrounding the current study will be discussed. Details regarding the subject, measurements, data collection and analysis, specific procedures of the study, and a restatement of the hypothesis will be outlined in the following sections.

Subject

This study involved one 15-year-old male in the 9th grade at a public school in Southern New Jersey. He is a member of a large biological family with a history of mental disabilities, but has permanently been placed with his adopted family since 1995. This subject responded to a public announcement and volunteered with support from his parents.

The current participant was diagnosed with a Specific Learning Disability in Mathematics upon entering the 4th grade. An intelligence test and other recent evaluations determined that the subject has an IQ of 95 and had an academic rating of grade level 5.2 during his 8th grade year in Math. Currently, the participant has an average of 65 out of a possible 100-point scale in mathematics and was reported to have low levels of motivation and self-concept with regard to academic performance.

Measures

The current study used Harter's Self-Perception Profile for Learning Disabled Students and the Scale of Intrinsic Versus Extrinsic Orientation in the Classroom to track levels of self-concept and motivation throughout the study. Susan Harter of the University of Denver in Denver, Colorado, developed both of these scales in an effort to better understand the role of self-concept among learning disabled students and how motivation affects student learning.

A Scale of Intrinsic Versus Extrinsic Orientation in the Classroom is a self-report scale comprised of thirty questions divided into six subscales that determine the student's levels of intrinsic and extrinsic motivation in the classroom. These subscales include challenge, independent mastery, curiosity, judgment, and criteria and have a reliability range of .78 to .84, .68 to .82, .70 to .78, .72 to .81, and .75 to .83 respectively (Harter, 1980). The question format for this scale presents two opposite situations and asks the student to choose which situation applies to him, and whether the situation is "Really true for me" or "Sort of true for me" (Harter, 1980). Responses for each item are scored on a one to four point scale, with one representing the maximum extrinsic orientation and four representing the maximum intrinsic orientation. The mean score for each subscale is then calculated to determine levels of motivation for the coordinating category.

The Self-Perception Profile for Learning Disabled Students is another self-report scale that measures the learning disabled student's domain-specific judgments of their competence or adequacy and their perceived worth or esteem as a person. This forty-six question scale is represented by nine domains which include general intellectual ability,

reading competence, spelling competence, writing competence, math competence, social acceptance, athletic competence, behavioral conduct, physical appearance, and global self-worth and have a reliability of .81, .86, .78, .89, .88, .81, .82, .83, .82, and .83 respectively (Harter & Renick, 1988). Question format for this scale describes two opposite situations and asks the student to identify himself with one situation and respond to the situation as being “Really true for me” or “Sort of true for me” (Harter & Renick, 1988). Scores for each response range from one, being the least competent, to four, being the most competent.

Procedures

During the course of this study the participant attended weekly sessions of individual academic instruction in the area of mathematics. These sessions took place for a period of six weeks, for two hours each session. The subject constructed weekly goals that focus on mastery of the subject, rather than simply performance. In addition, the weekly sessions included specific strategies for improvement in comprehension and problem solving that include verbalization of problem solving steps, repetition of steps upon completion of problem, and sustained individual attention. During this time period, the subject was also be instructed to complete the two self-report scales previously mentioned to track progress at week one, week three and week six.

These sessions had taken place in a neutral space outside of the school. Throughout the course of the study, the participant received positive verbal reinforcement and encouragement to work through challenges in math assignments.

Hypothesis

The null hypothesis for this study was that there would be no significant difference between beginning levels of self-concept and intrinsic motivation compared to levels after completion of the study. The alternative hypothesis states that upon completion of the study, levels of self-concept and intrinsic motivation will significantly increase through the use of the outlined procedures.

Data Analysis

A One-Way ANOVA and the Scheffe post hoc analysis for each set of scores on Harter's Self-Perception Profile for Learning Disabled Students and The Scale of Intrinsic Versus Extrinsic Orientation in the Classroom determined any significance found in each of the samples.

Summary

This chapter has outlined the specific procedures to be implemented throughout the course of this study. The participant was expected to experience significant levels of change with regard to self-concept, intrinsic motivation, and academic performance in the area of mathematics. Self-report scales served as progress measurements, and the data collected was interpreted using a One-Way ANOVA. Chapter Four will display the results of the current study and outline what changes, if any, have taken place as a result of the applied procedures.

Chapter IV

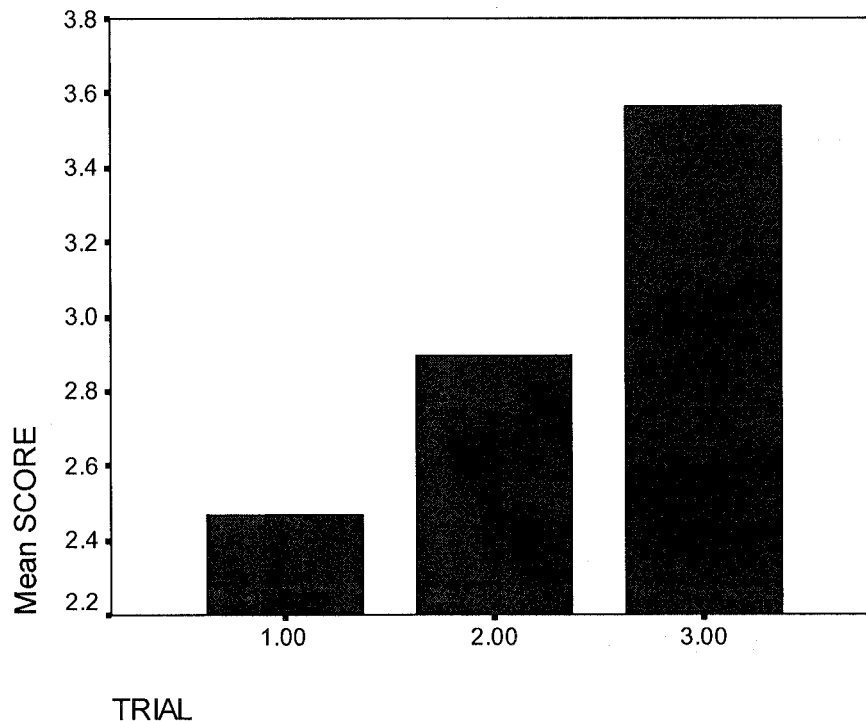
Presentation of Research Findings

The hypothesis was that the student's levels of self-concept and intrinsic motivation will increase through the implementation of learning goals and individual assistance in mathematics with an emphasis on problem solving. Levels of self-concept and intrinsic motivation were obtained three times throughout the study and documented using on Harter's Self-Perception Profile for Learning Disabled Students and The Scale of Intrinsic Versus Extrinsic Orientation in the Classroom. During the course of the six-week study, the student was encouraged to set weekly goals emphasizing mastery of mathematical concepts and practiced effective problem-solving strategies. A One-Way ANOVA and the Sheffe post hoc test found significance on both scales between the first and third completions of the scales.

Results

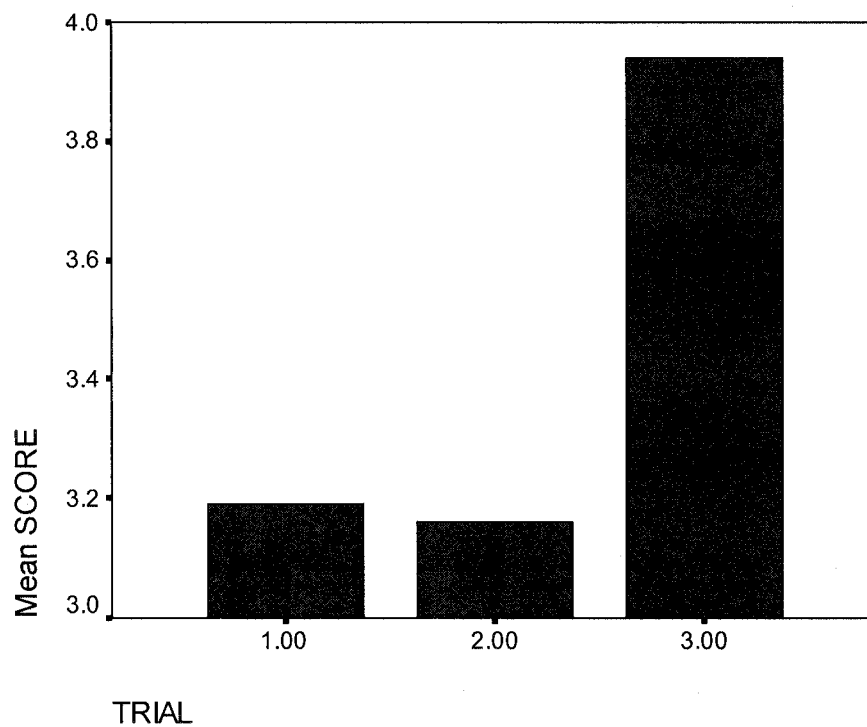
With regard to intrinsic motivation in the classroom, data analysis showed an F value of 17.673 with a significance level of .000 between trials one, two and three. Because significance was found with $p=.000$ a post hoc test was run to determine the significance between specific trials. Between trials one and three and two and three there was significance of $p=.000$ and $p=.013$ respectively. There was no significant difference between the mean scores of trials one and two. Figure 4.1 displays the mean scores of trials one through three, where the mean score significantly rises from both trial one and two to trial three.

Figure 4.1 Intrinsic Versus Extrinsic Orientation in the Classroom



When measuring levels of self-concept, analysis output showed a significance level of .000 with an F value of 16.729. Because significance was found, a post hoc test was performed to determine specific significance between the three trials. Between trials one and two $p=.981$, one and three $p=.000$, and two and three $p=.000$. As shown in figure 4.2, the students levels of overall self-concept increased significantly from trial one and trial two to trial three; however, there was no significance between trial one and two.

Figure 4.2 Self-Perception of the Learning Disabled Student



Summary of Analysis

According to the presented analysis the null hypothesis has been rejected given that each of the self-report scales showed a significant difference from the initial trial to the concluding trial. These statistics show that the student's levels of intrinsic motivation and overall self-concept increased throughout the course of this six week study.

Chapter V

Conclusions, Implications, and Future Study

Summary

The purpose of this study was to increase levels of intrinsic motivation and self-concept in a 9th grade student diagnosed with a specific learning disability in mathematics through the use of learning goals and effective problem solving strategies. Analysis results provided significant levels of increased intrinsic motivation and self-concept as interpreted from two self-report scales developed by Susan Harter of the University of Denver in Denver, Colorado. The following section will discuss the given analysis and provide support for the obtained results in this particular study.

Discussion

Motivation and self-concept are key to success in the academic setting, and this holds particularly true for those individuals with learning disabilities. In implementing a program of learning goals and problem solving techniques that emphasize intrinsic motivation and confidence within the student to master a given subject, the student in this study has seen a significant positive increase in intrinsic motivation and self-concept.

The purpose of the present study was to strengthen levels of intrinsic motivation and self-concept in a learning disabled student through the use of learning goals and problem solving strategies to ensure a smooth transition from junior high school to high school. Because of the participants levels of motivation and self-concept before the onset

of this study were not high, it was feared that the transition to high school would prove unsuccessful and he would fall further behind in his academic progress. As stated by Grolnick and Ryan (1990), the learning disabled student is susceptible to low self-esteem and a learned helplessness orientation due to the exceptional circumstances surrounding his academic environment. To decrease the chances of low-self esteem in the classroom, the student was given positive verbal reinforcement and encouraged to work through difficult tasks with an absence of fearing failure. As a result of this study, the participant's level of self-concept significantly increased, allowing for a greater chance of resilience in the face of difficult academic situations. In addition, the participant is now more likely to engage in higher levels of metacognition, use cognitive strategies, and remain focused despite challenging activities or tasks (Schunk, 1985).

In regard to intrinsic motivation, the current participant showed a significant increase in intrinsic motivation levels throughout the course of the six week study. Increases in this motivational orientation will allow the student to strive toward mastery of a given subject with a greater amount of enthusiasm and personal pride in performance (Dev, 1997; Seifert, 2004). Because the participant is challenged academically with a learning disorder, the increased intrinsic motivation will aid in the learning process by intensifying the use of cognitive strategies and comprehension of presented materials (Pintrich & De Groot, 1990).

Learning goals were devised by the participant and followed each week throughout the course of the study. Because students working with learning goals tend to see skill improvement, increases in focus in the classroom, greater value in learning, and

have an increase in motivation, the current study focused on creating, and following through on, goals each week (Ames, 1992). These goals allowed the student to focus on the mastery of tasks rather than simply completion. As the sessions progressed, completion of the participant's learning goals became easier, in part due to the increased motivation and attitude surrounding his personal ability. If the participant continues the use of learning goals during the course of his high school career, he will maintain a sense of pride in his academic studies while experiencing a great deal of personal satisfaction in production and completion of tasks.

Implications for Future Research

Future research on this subject should include several variables to extend this particular procedure to increase generalizability. Because this study involved a single subject, future research should increase the population of the study to include different genders and grade levels, which may change the effectiveness of learning goals. If students with a variety of learning disabilities were to be used, this could emphasize the effectiveness of learning goals across a greater population than simply a specific learning disability in mathematics. Perhaps, if students were given specific goals that they were to adopt, the results of the study would be more concrete in terms of response to learning goals. Another suggestion would be to have a solid measure of progress, rather than merely opinion expressed in the self-report scales of student performance.

Conclusions

In conclusion, the intervention put in place throughout the course of this six week study proved successful in increasing the levels of intrinsic motivation and self-concept in a 9th grade male student with a specific learning disability in mathematics. Although outcomes of this research need to be expanded to include a greater population, the analysis of data does display a significant rise in levels of self-concept and intrinsic motivation, suggesting that this particular study is a successful one for students with learning disabilities.

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