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An Investigation of the Relationship Among Self-Efficacy Beliefs, Goal Setting, and Academic Performance of Students in a Transition to High School Program

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AN INVESTIGATION OF THE RELATIONSHIP AMONG SELF-EFFICACY
BELIEFS, GOAL SETTING, AND ACADEMIC PERFORMANCE
OF STUDENTS IN A *TRANSITION TO HIGH SCHOOL* PROGRAM

by

Cheryl Kinsman

A Dissertation submitted to the Faculty of the Graduate
School of Loyola University of Chicago in Partial
Fulfillment of the Requirements for the Degree of
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CHAPTER I

Introduction

Underachieving students are a challenge for educators and often become the recipients of psychological intervention. The term "underachiever" refers to students whose performance in the classroom is discrepant with their intellectual ability (Rimm, 1988). Characteristics of underachievers include a lack of persistence in goal accomplishment, a lack of self confidence, and a tendency to think that their troubles are the fault of someone else or are due to fate (Hoffman, Wasson & Christianson, 1985). Intervention with this type of student has been found effective in producing improved attitudes, behavior, and achievement (Hall, 1983).

Academic success can be influenced by a number of different factors both directly and indirectly. Research suggests that one important determinant of academic success is a student's self-efficacy beliefs about performing various academic-related tasks (Multon, Brown & Lent, 1991; Wood & Locke, 1987; Lent, Brown & Larkin, 1986; Norwich, 1986). Bandura (1982, p. 122) defines self-efficacy as "judgements of how well one can execute courses of actions required to deal with prospective situations." Underachievers have been found to display low academic self-

concepts (Gonzalez & Hayes, 1988) which suggests they might also have low self-efficacy beliefs with respect to academic achievement.

Also not only do self-efficacy beliefs have an impact on academic performance, they have been shown in the literature to affect the goals one sets for oneself which, in turn, also relate to achievement levels (Locke & Latham, 1990; Wood & Bandura, 1989). Likewise, self-assessment of goal achievement as satisfactory increases self-efficacy and encourages students to set new challenging goals (Schunk, 1990).

Self-efficacy Theory and Goal Setting

Bandura (1977, 1982, 1986) states that self-efficacy expectations stem from an individual's belief regarding one's skills and competencies to execute certain behaviors to solve problems or perform tasks. Individuals would, therefore, seek tasks they feel they can perform well and avoid tasks believed to be beyond their capabilities.

Self-efficacy has been hypothesized to be a crucial determinant of action, and therefore has a direct impact on an individual's performance (Bandura, 1982, 1986). Also, according to Bandura, self-efficacy beliefs affect action independently of an individual's demonstrated ability. Self-efficacy has been found to influence levels of performance, task choice, effort, persistence, thought patterns, and stress reactions (Bandura, 1986).

More recently, Bandura (1989) has asserted that personal goal setting is influenced by self-appraisal of capabilities. According to Bandura, an individual with strong self-efficacy beliefs will set higher goals and be more firmly committed to the goals than individuals with weaker self-efficacy beliefs. Further, self-efficacy beliefs are an important determinant in establishing the level of motivation to achieve a goal and those with a strong sense of efficacy will generally set high standards for themselves.

Similarly, Locke and Latham (1990), in an article on work motivation and satisfaction, argue that "task performance is regulated directly by the conscious goals that individuals are trying for on the task" (p. 240). Goal setting has been shown to be more effective when one receives feedback on performance in relation to one's goals (Locke & Bryan, 1969). Locke and Latham address the concept of self-efficacy by pointing out that self-efficacy fosters goal commitment and affects how people respond to feedback. In a study by Wood and Bandura (1989), goals, self-efficacy, and analytic strategies, all had independent effects on performance.

Rationale and Purpose

The present study is designed to evaluate the relationship among self-efficacy beliefs, academic goals, and academic achievement of students who have been

identified as underachievers and are participating in a Transition to High School intervention program. This Transition to High School Program, which attempts to assist graduating junior high school students make a successful advancement to the high school setting, was designed to improve academic performance. Although the intervention was not developed explicitly from self-efficacy theory, several methods employed in the program (e. g., teaching students to evaluate their performance realistically and take responsibility for their behavior) may affect students' academic self-efficacy beliefs. Further, although the intervention was not developed from an explicit theory of goal setting, a central ingredient of the intervention is helping students to set realistic goals. Thus, it is likely that the intervention may influence both self-efficacy beliefs and the setting of realistic, obtainable goals and these may be central ingredients in the promotion of later high school academic achievement. The main purpose of this study, therefore, was to assess whether self-efficacy beliefs and goal setting characteristics correlate with each other and academic achievement. A secondary purpose was to investigate changes in self-efficacy beliefs and goal setting associated with program participation.

CHAPTER II

Review of the Literature

Underachievement Research: Characteristics

The underachievement literature primarily addresses two areas: 1) describing characteristics of underachievers and 2) developing intervention programs to improve the academic performance of underachievers. Studies revealed that attempts to identify underachievers have been varied and sometimes vague. There were, however, some basic characteristics of underachievers suggested in the literature. Underachievers were identified and described in terms of their academic ability, motivation, behavior, personality traits, and family dynamics.

Characteristics describing underachievers include high IQ's with a lag between expected and actual performance levels, a weakness in basic skills, a lack of persistence in goal accomplishments, low self-confidence, a need to blame troubles on others or fate, a persistent seeking of negative attention, and a tendency to be withdrawn (Hoffman, Wasson, & Christianson, 1985). Also, according to Hoffman et al., underachieving boys outnumber underachieving girls by a ratio of 2 to 1.

Much of the literature on underachieving students

focuses on "gifted" underachievers who have been defined as students who score in the upper quarter on an academic ability measure but have a grade point average which places them in the lower half of their class (Roth, 1970). A major problem in this area is that underachievers, gifted or otherwise, are difficult to identify. Hall (1983) suggested that it is usually an intelligence test such as the Binet or WISC which identifies the underachiever rather than measures which rely on academic achievement and teacher recognition. She makes the point that teachers are often inaccurate at identifying gifted students particularly when they do not fit the stereotype of the high achiever.

The authors of a recent review of the gifted underachiever literature (Dowdwall & Colangelo, 1982) reported having difficulty finding consistent patterns among studies. This was due to several factors including too many definitions of the term "underachiever", discrepant methods of identifying underachievers, and few replications of studies. Nevertheless, the authors deduced that gifted underachievers have more in common with underachievers than they do with gifted achievers. Both gifted underachievers and underachievers exhibited more emotional problems and antisocial behavior, lower self-concepts, and were likely to have a family headed by a single parent, with less stability and a lower income than were normal achieving students. Generally, the one factor that most clearly differentiated

gifted underachievers from other underachievers was that the former tended to have higher scores on standardized IQ and achievement tests.

Teachers are often the first to identify students who are underachieving but extant research suggests that they may not be accurate in their assessments. For example, Hall (1983) gave a student characteristics checklist to teachers of gifted students to assess characteristics associated with their perceptions of underachievers. As might be expected, teachers saw the high achieving students as gifted and labeled students below average if they exhibited problem behaviors or low self-concept. Characteristics ascribed to below average students such as "makes excuses for not doing assignments", "doesn't get along with others", "talks too much", and "immature", also have been listed by Whitmore (1980) as typical of gifted underachievers. The dilemma occurs, as Hall points out, that underachieving students are often overlooked by teachers and, therefore, not recommended for special programming. Hall suggests that teachers be trained to become better identifiers of the underachievers to resolve this situation.

Parents can also provide information useful in classifying underachievers. Rimm (1988), who also stressed the early identification of an underachievement pattern in order to discover the cause of the problem and then reverse the process, used a parent report called AIM (Achievement

Identification Measure). AIM measures five dimensions of underachievement including competition, responsibility, self-control, achievement communication, and respect. In general, Rimm found that underachieving students do not cope well with losing and do not see future success as within their control. Thus, Rimm suggested that they need to learn that effort impacts outcome. Rimm also found that underachievers are often described as too dependent on adults for help and attention, suggesting that they might misbehave to gain attention and may be manipulative.

Rimm (1988) also suggested that underachievers often have parents who give inconsistent or negative messages about achievement. A result of this pattern of parental behavior may be lack of respect for adults and rebelliousness or disobedience. Generally, children underachieve by withdrawing from achievement and increasing avoidance behaviors or by actively rebelling against school and family. These practices can result in lack of confidence, skills, and accomplishment.

Other dynamics of underachievers abstracted from the literature include possession of low self-esteem, deficient skills resulting from not applying oneself, a seeking of concern and attention from parents, motor deficiency, family conflicts, and poor interpersonal skills (Fine & Pitts, 1980). Also poor study skills and an extraverted orientation were found among lower achieving college

students (Robyak & Downey, 1978).

McGuire (1990) looked specifically at students who demonstrate underachievement in their writing skills. These students were identified to have the following characteristics: a resistance to writing; problems with reading, speaking and listening; short attention span; and simplistic thinking with a negative attitude towards new experiences and new ideas. According to McGuire, these students had "no faith that they could master writing" and "needed the experience of success to know they could achieve" (p. 17).

According to Lang (1988) who focused on college students, underachievement is often related to goal orientation (e.g., graduation). Students who are unclear about their purpose or direction in college are more likely to underachieve. They are also likely to rate themselves low on intelligence. Lang suggests that the challenge is to increase these students' sense of adequacy and change their view of themselves from dumb to smart. He recommends the use of inviting techniques to get students to reflect on why they are in college and help them to clarify their goals and take more responsibility for them.

Underachievement and perfectionism have been linked together even though perfectionism is often associated with high achievement. Adderholt-Elliott (1989) found five characteristics of perfectionistic students cited in the

literature which may account for underachievement: procrastination, fear of failure, the all-or-nothing mindset, paralyzed perfectionism, and workaholism. Goal setting is recommended as a way to encourage students to set reachable goals for themselves and thus overcome perfectionistic tendencies.

A review of 224 studies investigating the characteristics associated with underachievement and possible modes of treatment (Mitchell & Piatkowska, 1974) compared the results of studies on overachievers and normal achievers to results on underachievers focusing on intellectual and non-intellectual variables. Intellectual variables included study skills, study habits, academic application, academic productivity, goal-setting, and past performance. Non-intellectual variables consisted of general anxiety, neuroticism, test anxiety, self-evaluation, independence, conformity, interpersonal relationships, academic interests, introversion-extraversion, and environmental stressors. Intellectual characteristics found to discriminate between over- and underachievers were study habits, academic application, productivity, and goal-setting behavior. Discriminating non-intellectual characteristics were self-evaluation, conformity, and interests. Generally underachievers displayed poor study habits, deficient study skills, low academic application, lack of academic interest, and excessive test anxiety.

In a review of studies investigating the non-cognitive characteristics of over- and underachievers, Ghosh (1972), was unable to conclude with reasonable certainty that any of the variables studied could account for the differences between the two groups. The studies reviewed were categorized under the following three headings: personality-temperamental (e.g., anxiety, introversion-extroversion), interest-motivation, and environmental-biographical. Ghosh suggested that the conflicting results of the studies may be explained by a lack of rationale behind the measures chosen, methodological differences in identifying underachievers, and no control over factors like age, sex, and grade. In a more recent review Gonzalez & Hayes, 1988, deduced that gifted underachievers are not a homogeneous group. Studies investigating characteristics such as self-concept, locus of control, personality and temperament, often yield conflicting results.

A more intrapsychic approach to describing underachievers was taken by Delisle (1982). He suggested that a student who underachieves has a continuing sense that "I should be doing more" (p. 16) conveying the feeling of seldom meeting expectations of others (e.g., school, parents). This often results in guilt feelings and a lowered self-concept. Delisle also mentions that students who are perfectionists may give up if they can't be the best and thus strive to excel at being the worst. This meets

their need to gain some sort of status among peers. In a study comparing underachieving and achieving seventh graders, underachievers seemed to have a stronger need for social and peer acceptance and spent more time pursuing social relationships yet were viewed as less socially accepted with fewer friends (Mufson, Cooper, & Hall, 1989).

Summary. It appears that underachievers are difficult to identify accurately and this interferes with assigning the proper programs for them and identifying successful ingredients of programs for underachievers. Many of the characteristics used to describe underachievers are general and could also describe low achievers or simply students with behavior disorders. Some basic underachiever characteristics were repeated in the literature, however, and include the following: demonstrates a lag between expected and actual performance levels, low self-esteem, demonstrates a lack of academic interest, and lacks specific academic goals.

Underachievement Research: Interventions

Several suggestions for interventions with underachieving students have been made in the literature. Hoffman, Wasson, and Christianson (1985), recommended a variety of techniques such as group therapy, individual counseling, values clarification, and goal setting. They cited a program for grades four through six which places underachievers in social skills/personal development groups.

In these groups the students are asked to list what they want to change about their behavior and are helped to clarify their values. Also it is suggested that a primary objective of any program for underachievers should be to develop more persistence towards goal achievement. Students are asked to list and prioritize their goals as a first step. Weekly sessions of instructional guidance activities seemed to improve the students behavior and academic achievement.

An early review of successful treatment programs for underachievers (Bednar & Weinberg, 1970) utilized grade-point average as the dependent variable and specific programs designed to improve academic performance as the independent variable. Results suggested that programs which demonstrated significant improvement in academic performance were a) structured rather than unstructured, b) lengthier (lasting 10 hours or more), c) a combination of group counseling and study skills training, d) contained high levels of therapeutic conditions (e.g., empathy), and e) designed according to the level of independence of the students (e.g., less structure was provided for more independent students). The most powerful variables appeared to be the length and structure of the treatment program. Generally, highly structured and longer programs contributed to most improvement in academic performance and the effects tended to be lasting.

McGuire (1990) devised a program to help her underachieving writers by developing a sense of community among the students. Important components appeared to be the presence of a trustworthy environment, increased control over one's own behavior, and interaction among students and teacher. Students participated in their own evaluations and dialogue was established with the teacher through journals. Skill development, self awareness, and goal setting were all a part of the program.

Many intervention programs for underachievers emphasized the need for a supportive environment which can include the classroom, the family, or a treatment group. Decker and Hall (1987) recommended a multicomponent group intervention. This included relaxation exercises to reduce test anxiety, cognitive restructuring to change self-defeating thoughts into task-oriented thoughts, and training in study skills techniques. An evaluation of this multicomponent group found it effective in reducing test anxiety, improving study skills, and improving grade point averages.

The family of an underachieving student can also be a target for intervention. Fine and Pitts (1990) emphasized the importance of having a good working relationship between the parents and the school. To achieve this, meetings between the parents, teachers and possibly other school personnel are held to devise concrete plans of action

surrounding the student's school performance. This type of collaboration between parents and school was labelled the "transcontextual intervention" by McGuire and Lyons (1985). The goal is to monitor homework completion utilizing an assignment pad which is signed by both parents and teachers. By implementing this concrete task, families, with the assistance of a therapist, may learn to more effectively negotiate with their child and the school.

Gonzalez and Hayes (1988) reviewed intervention studies and found that programs which combine skill improvement, a supportive environment, a challenging curriculum, and family involvement have been most effective. More relevant to this study are the recommendations made by Renick (1987), [cited in Gonzalez and Hayes (1988)], to teach the students to take responsibility for their behavior by using attribution retraining, reality therapy (e.g., accepting no excuses, focusing on present behavior, planning alternate approaches), and having a positive role model. According to Gonzalez and Hayes, it is the role of the educator to increase the underachievers' perceived self-efficacy by allowing them to observe desired behaviors and coping strategies.

A review of research on the effects of counselor interventions on the academic performance of underachievers (Wilson, 1986) revealed that voluntary, structured group interventions focused on remediating study skill deficits

with parental involvement tended to be more effective than less structured person (as opposed to skill) centered individual interventions that lacked parental involvement. In addition, Dowdall and Colangelo (1982) stressed the need for early identification of underachieving patterns and long-term interventions beginning in the primary grades for "maximum impact" (p. 183). Wilson also noted a significant decrease in the amount of published experimental studies conducted with underachieving elementary, middle, and high school students since 1980 but also noted a trend towards increasingly sophisticated research.

Some creative ways of intervening with underachievers were suggested by Willings and Greenwood (1990) who hypothesize that much of special education may perpetuate current problems by focusing on the underachievers' weaknesses. They recommended focusing on strengths by designing tailor-made programs that utilize the interests or strengths of each individual student.

Another creative intervention involved the use of underachieving high school students as mental health aides with primary-grade students school adjustment problems (Tefft & Kloba, 1981). A study revealed that participating underachieving students improved significantly more than matched underachieving and average-achieving control groups on acting out, learning, and total problems as rated by teachers. In addition, the underachieving helpers were

effective with acting-out primary grade students but appeared to hinder shy students, possibly because the helpers understood and related better to the acting out students.

Summary. A variety of techniques have been recommended as effective interventions with underachievers including group therapy, individual therapy, values clarification, and goal setting. Highly structured programs offering a combination of group counseling and study skills training were found most effective in improving academic performance. A good working relationship between the parents and the school is important for a program to be successful. Finally, it was suggested in the literature that it is the role of the educator to increase the underachievers' perceived self-efficacy.

Self-efficacy Research

Bandura (1977), in his theory of self-efficacy, hypothesized that "expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences" (p. 191). Perceived self-efficacy is hypothesized to influence one's choice of activities, the amount of effort put forth, and the length of time one will persevere when confronted with obstacles or negative circumstances. Sources of self-efficacy include performance

accomplishments, observation of the success of others, verbal persuasion that one has the ability to succeed, and one's judgement of one's susceptibility to stress based on physiological reactions (Bandura & Adams, 1977).

Since Bandura's development of the concept of self-efficacy, perceived self-efficacy has been shown, in a large number of studies, to predict behavior change regardless of treatment approaches used. For example, level of self-efficacy predicted effectiveness of systematic desensitization in reducing phobic behavior (Bandura & Adams, 1977; Bandura, Adams & Beyer, 1977; Bandura, Adams, Hardy & Howells, 1980), amount of effort expended to lose weight or quit smoking (DiClemente, 1981; Tipton & Worthington, 1984; Haaga & Stewart, 1992), the acquisition of social skills (Moe & Zeiss, 1982), and recovery from heart attacks (Bandura, 1982).

Self-efficacy has also been found to influence general achievement behaviors. Brown and Inouye (1978) reported a correlation between self-efficacy and persistence for college students solving anagrams. Zimmerman and Ringle (1981) found increased self-efficacy and persistence for children who were solving puzzles. Their subjects were exposed to a model who failed to successfully solve a puzzle but expressed feelings of confidence.

A meta-analytic study of the self-efficacy of children and adolescents (Holden, Moncher, Schinke, & Barker, 1990),

evidenced the effectiveness of self-efficacy in predicting behavior of children under the age of 16. Finally, more specific to this study, self-efficacy has been found to predict academic performance.

Norwich (1986), for example, investigated perceived self-efficacy in relation to mathematic tasks with nine- and ten-year-old children. Children were asked whether or not they could answer particular kinds of mathematics question.. Their total number of "yes" responses indicated self-efficacy level. Self-efficacy strength was determined by rating their certainty on an 11-point scale if they answered "yes". Self-judgment of mathematics ability was assessed with statements such as "I'm very good at mathematics." Norwich found a correlation between self-efficacy, task performance, and mathematics self concept.

A series of studies involving children by Schunk and his colleagues have also demonstrated a link between self-efficacy beliefs and achievement behaviors. For example, Schunk and Gunn (1985) found that exposing nine- and ten-year-olds to an adult model who demonstrated the importance of task strategies in learning division and modeled the use of positive achievement beliefs led to higher self-efficacy beliefs than being exposed to a model showing task strategies or achievement beliefs alone. Schunk and Hanson (1985) found that a same-sex peer model demonstrating how to solve subtraction problems increased

children's self-efficacy for subtraction better than an adult model. Schunk, Hanson, and Cox (1987) compared peer models demonstrating a rapid (mastery model) or gradual (coping model) learning of fraction skills. Children who observed the coping model, who initially hesitated and made mistakes, demonstrated higher self-efficacy, skill, and training performance than did students who observed the mastery models.

Two studies assessing the determinants of children's academic self-efficacy beliefs (Keyser & Barling, 1981) looked at performance accomplishments, modeling, locus of control, and their interactions. They found that modeling was the most significant predictor of self-efficacy beliefs. Also "rule specification", which reflected a structured classroom environment, added significantly to the prediction.

It has also been found that, with children, attributional feedback can affect self-efficacy beliefs and, consequently, have an impact on achievement outcome. In several studies, Schunk (1982, 1983a, 1984) and Schunk and Cox (1986) concluded that the timing and type of feedback is critical. Effort feedback (e.g., "You've been working hard") for early task successes seems appropriate when an initial lack of skill is likely to necessitate expending more effort. Then, once skills are developed, giving ability feedback is preferable for increasing self-efficacy.

Relich, Debus, & Walker's (1986) study of low-achieving children found that the treatment which combined modeling and attributional feedback resulted in higher self-efficacy than treatments using modeling or feedback alone.

Several studies involving college students have found that self-efficacy beliefs are predictive of achievement and persistence in various academic majors (Brown, Lent, & Larkin, 1989; Lent, Brown, & Larkin, 1984, 1986, 1987). Others (Meier, McCarthy, & Schmeck, 1984) found self-efficacy to be the best predictor of writing performance on a pretest among college students enrolled in remedial, required, or honors courses. Shell, Murphy, and Bruning (1989) also found that self-efficacy accounted for significant variance in predicting writing achievement among college students.

College students completing an RET (Rational Emotive Therapy) Seminar demonstrated higher perceived self-efficacy than students in two non-therapy oriented seminars (McCormick, Tooke, Winston, & Kjellander, 1991). The self-efficacy measure used in this study was a modified version of the Self-Efficacy Scale designed by Sherer et al. (1982) and contained 24 items such as "When I make plans, I am certain I can make them work" and "A bad grade or failure in a course just makes me try harder the next time". The scale, on which each item was rated on a 5-point Likert scale (1 = extremely uncharacteristic to 5 = extremely

characteristic), displayed satisfactory internal consistency ($\alpha = 0.69$). In addition, perceived self-efficacy was found to significantly correlate with high academic achievement (as measured by grade point average).

Finally, a recently performed meta-analysis of thirty-nine studies found the relationship of self-efficacy beliefs to academic performance and persistence to be significant (Multon, Brown, & Lent, 1991). The studies primarily used elementary school or college students. Multon et al. also found that self-efficacy and performance were more highly related among low-achieving students than among normally-achieving students. Also a stronger effect size was found in studies employing a basic skills performance measure, with the second strongest measure being classroom-based performance, and the weakest measure being achievement tests. Multon et al. ended their article by recommending the construction and evaluation of strategies designed to promote the self-efficacy beliefs of diverse student types.

Summary. Perceived self-efficacy appears to influence one's choice of activities, the amount of effort expended, and the length of time one perseveres when faced with difficulties. Self-efficacy has been found to predict behavior change regardless of treatment approaches used in children and adults. Self-efficacy influences general achievement behaviors and predicts academic performance.

Observation of a model, particularly a coping peer model, and receiving attributional feedback have an impact on self-efficacy and achievement behavior. The development of programs designed to improve self-efficacy beliefs of students was recommended.

Goal-setting Research

Goal setting is one approach that has come out of motivation research which has largely been conducted in the organizational sector, focusing on how to improve employee performance (Punnett, 1986b). Goal setting is described as mainly a motivational process which influences the direction, degree, and persistence of effort over time (Locke, Shaw, Saari, & Latham, 1981). Goal setting impacts performance and, according to Locke's theory, difficult, specific goals produce higher levels of performance than easy or ambiguous goals (Locke, 1968). In their review of studies investigating the effect of goal setting on task performance, Locke et al. (1981) cited the following findings which supported and built on Locke's original premise : specific and challenging goals lead to higher performance than easy goals, instructions to "do your best", or no goals. [This premise was also found to generalize to other cultures (Punnett, 1986a)]. Also, goal setting is more likely to improve performance when feedback and rewards are provided, the manager or teacher is supportive and, if the goals are assigned, the individual has accepted them.

A meta-analysis of studies investigating the effects of goal setting on task performance (Mento, Steel, & Karren, 1987) also supported Locke's theory that difficult goals lead to higher levels of task performance than do easy goals and that specific difficult goals lead to higher performance than general goals. Additional incentives of "knowledge of results" (KR) and participation in the goal setting process have been hypothesized by Locke to influence goal aspirations but reviews of goal setting studies do not support this relationship (Chacko & McElroy, 1983). Furthermore, Chacko and McElroy found that knowledge of successful performance given to subjects only increased their goal aspiration level when they cognitively attributed their success to ability rather than effort or luck.

Goal commitment is another concept originated by Locke and refers to the determination to achieve a goal (Locke, Shaw, Saari, & Latham, 1981) and resistance to changing the goal later (Locke, Latham, & Erez, 1988). Several studies by Locke and others (as cited in an article by Hollenbeck and Klein, 1987) have found that the expected probability of obtaining a goal was positively related to goal commitment. Other factors affecting goal commitment (also cited in Hollenbeck & Klein) include the extent to which significant others have knowledge of one's goals, certain personality factors such as endurance, high self-esteem, and a high need for achievement, and, as Bandura (1977) has shown, seeing

others who have adopted difficult goals. Hollenbeck and Klein emphasize the important role of goal commitment in goal setting theory and suggest that the neglect of many studies to measure and compensate for degree of goal commitment may explain inconsistent findings with variables such as monetary incentives, participation, and individual differences. Locke et al. (1988) added that it has been shown that there is a logical relationship between goal commitment and performance but measures used must allow for considerable variance in goal commitment.

Most of the goal setting research has been done on individual rather than group goals even though much work is done in groups and aggregate data are often used as a performance indicator (Austin & Bobko, 1985). Reportedly, studies by Zander and associates have done the majority of group goal setting studies (Zander & Meadow, 1963; Zander & Newcomb, 1967; Zander, Forward, & Albert, 1969) and have found that groups raised their performance by setting goals higher than the previous year's total.

Austin and Bobko (1985) suggested that an area in which group functioning may exceed individual functioning is in the implementation of goal setting programs. Latham and Yukl (1975) compared different goal setting conditions (assigned goals, participative goal setting, and "do your best") for educated and uneducated logging crews. They found that for the uneducated workers, participation in goal

setting for their group increased their productivity more than assigned or "do best" goals.

In addition to industrial/organizational settings, goal setting theory has been investigated in education. A substantial amount of literature has investigated the same principles of goal setting and its impact on academic achievement. For example, goal setting has been shown to improve arithmetic performance (Arlin, 1975), prose learning (LaPorte & Nath, 1976), spelling performance (Rosswork, 1977), and overall GPA (Wentzel, 1989). According to Wentzel, student GPA,s were related to the number and unique types of goals that students attempt to achieve. For example, high achieving students were found to 1) pursue goals that were more socially responsible and dependable and, 2) learn new things, significantly more often than low achieving students.

In an attempt to explain why goal setting works, Champion and Lord (1982), integrated goal setting with a control systems model of motivation which demonstrates how goals interact with feedback to determine performance. They investigated this theory with college students using self-set grade goals, ACT scores to measure ability, previous quarter grade point average to measure past performance, test scores to measure performance, and various measures to assess effort (e.g., self-reported number of hours studying). The following hypotheses were supported: initial

goal levels were related to past performance and ability, future test goals were set higher than past test performance, the magnitude and frequency of failure were associated with subsequent increases in effort, and raising goals was positively correlated with subsequent success. Champion and Lord concluded that goal setting is a "dynamic process where specific performance feedback is necessary to assure adequate behavioral adjustments" (p. 285).

Students participating in individual goal setting conferences have even been shown to improve their academic performance (Gaa, 1979). During these conferences, students set their own goals and discussed approaches for achieving these goals. According to Gaa, this goal setting procedure seemed to help students perceive the connection between their efforts and successful academic achievement.

Teacher-assigned and student self-set goals were compared in a study investigating the effects of goal setting on mathematic achievement and student attitudes (Hannafin, 1981). Goal sheets included current goals, a rating scale (1-5) for evaluating students' work in relation to goals, and space for setting new goals. Self-set goals resulted in less total goals set than teacher-assigned goals but self-set goals resulted in a higher number of goals attained. Hannafin suggested that students are better predictors of what they can learn. Also students who set their own goals seemed to rate their work more positively.

Overall, self-set goals were significantly related to attitude but not to achievement.

Ambitiousness of goals was also found to be positively related with student achievement (Fuchs, Fuchs, & Deno, 1985). In a study of special education students, when teachers set moderately and highly ambitious reading goals for them, students achieved more than those with fairly unambitious goals. Goal ambitiousness was established by comparing baseline performance to the stated level of anticipated performance. Goal mastery was not related to achievement in this particular study.

One factor which apparently influences the effects of goal setting on achievement is students' perceptions of affective consequences of goal setting. Wicker, Brown, Hagen, Boring, and Wiehe (1991), found, contrary to expectations, that more difficult goals are invariably related to more positive and less negative moods. Difficult goals were found to reduce feelings of playfulness and social affection at first, but this reversed at a later phase (after outcome feedback). This mood pattern seemed to be optimal for success in studying and test-taking.

Summary. Goal setting is a motivational process which influences the direction, degree, and persistence of effort over time. It impacts performance with difficult, specific goals producing higher levels of performance than easy or ambiguous goals. Feedback, rewards, and a supportive

teacher or manager, combine with goal setting to improve performance. Goal commitment refers to the determination to achieve a goal. It has been considered an important concept and should be included in more studies. Much of the goal setting research has been conducted in the organizational sector but the same principles have been successfully applied to education. Goal setting has been found to positively impact academic achievement. Students participating in individual goal setting conferences have improved their academic performance. Self-set goals have positively impacted attitude and goal ambitiousness has been related to achievement. The setting of more difficult goals has been positively correlated with more positive moods.

Studies Relating Self-efficacy and Goal Setting to Academic Performance

Self-efficacy has been identified as an "important mechanism underlying the goal-setting-performance process" (Mento, Steel, & Karren, 1987, p. 76). Subjects with high-perceived task-related ability (or self-efficacy) have been found to have higher expectations for achieving difficult goals than subjects with low-perceived task-related ability (Locke, Frederick, Bobko, & Lee, 1984). According to Bandura and Schunk (1981), self-motivation through proximal goal setting is effective in enhancing competencies, self-perceptions of efficacy, and intrinsic interest.

Earley and Lituchy (1991) tested three leading models

(Locke & Latham, 1990; Garland, 1985; Eden, 1988) which relate goals, self-efficacy expectations, performance valence, and performance. According to Locke and Latham's (1990) model, an assigned goal concurrently affects a person's self-efficacy expectations and personal goals, which correspondingly influence performance. Garland's (1985; Garland et al., 1988) model explains that personal goals influence self-efficacy expectations and performance valence, which in turn influence performance. Performance valence is defined as "a composite of those satisfactions an individual anticipates will be gained by producing each of a number of different performance levels over a range of performance that might be considered" (Earley & Lituchy (1991), p. 84, from Garland, 1985). In Eden's (1988) model, goals and expectancies (self-efficacy expectation which is setting-specific and trait efficacy which is a view of generalized self-competence) are mutually reinforcing. These three models differ in four ways. The major difference is in the causal order of self-efficacy and goal setting. Locke and Latham hypothesize that self-efficacy is a precursor to personal goals, Garland proposes that personal goals precede self-efficacy, and Eden proposes that self-efficacy and personal goals are "reciprocally determined" (Earley & Lituchy, 1991, p. 86). The other three differences among the models are that Garland included the construct of performance valence while the others did

not, Locke and Latham and Garland included ability while Eden did not, and Eden included trait efficacy while the others did not. Results of Earley and Lituchy's comparisons of these three models suggested support for each but found Locke and Latham's model to have the best fit with the data particularly with regards to the causal relations among self-efficacy, personal goals, and performance. Personal goals were unfailingly found to act as a mediator between self-efficacy and performance (i.e., self-efficacy influenced performance primarily through its impact on goal setting).

Self-efficacy for achieving goals appears also to be affected by abilities, previous experience, attitudes toward learning, education, and the social environment (Schunk, 1990). While working on academic tasks, students continually observe their performance, evaluate their progress towards goal accomplishment, and continue or change their approaches accordingly. When evaluation of progress towards goal accomplishment is acceptable then self efficacy is improved.

Schunk reviewed the research investigating goal setting and self-efficacy (1990) looking at studies that investigated such goal properties as goal specificity, proximity, and difficulty level; self-set goals; and progress feedback in academic settings. In the majority of studies, goals improved academic performance when they were

specific (Schunk, 1983b), proximal (Bandura & Schunk, 1981), difficult (Schunk, 1983c), and self-set (Schunk, 1985), and when children received feedback plus information on strategies to improve performance (Schunk & Rice, 1987, 1989).

An investigation of how self-evaluation and self-efficacy regulate the effects of goal systems has been conducted. Subjects with goals plus performance feedback improved their performance on a strenuous activity more than subjects receiving the goal or feedback alone or neither (Bandura and Cervone, 1983). Perceived self-efficacy was also found to predict performance change of those subjects receiving goals and feedback. Self-dissatisfaction and self-efficacy worked conjointly to effect performance changes. Subjects who were self-dissatisfied but had high self-efficacy exhibited large performance gains. Subjects who were self-satisfied with low self-efficacy demonstrated little change in performance.

Locke, Frederick, Bobko, and Lee (1984) investigated the effect of self-efficacy, goals, and task strategies on goal choice and task performance with 209 undergraduates. The task involved finding uses for common objects with one practice trial and seven 1-minute experimental trials. Subjects were assigned to one of three conditions: "high strategy" (training of specific methods for finding high number of uses provided); "low strategy" (subjects only told

to give good ideas); and "control" (no training provided). Results were significant with the high strategy group having the highest performance, the low strategy group having the lowest, and the control group in the middle. Self-efficacy measures employed showed high correlations with goal choice. Strategy training seemed to affect goal level through its effect on self-efficacy. Self-efficacy was influenced by posttraining performance, strategies used, and ability, while performance was affected by self-efficacy, goals, ability, posttraining ability, and strategies used. In addition, self-efficacy was found to impact goal commitment and the choice to set a specific goal. Locke et al. pointed out that these results strongly support Bandura's (1982) assertion that self-efficacy directly and indirectly affects performance.

The above-mentioned study was replicated in a field setting by Wood and Locke (1987) who examined the relation of self-efficacy and grade goals to academic performance with college students. Four studies were performed drawing subjects from different semesters of a management course. Seven task areas (e.g., class concentration, memorization, and understanding) were broken down into items and students were asked to relate their answers to the management course. First, students were asked to indicate if they could achieve the task ("yes" or "no") then asked to rate their degree of confidence in their ability to perform the task (0 to 100).

The total number of yes's revealed a measure of self-efficacy magnitude (SEM) and the mean confidence rating for all items revealed a measure of self-efficacy strength (SES). Grade goals in Wood and Locke's study were assessed by asking students to indicate: 1) the grade the student hoped to get on the course exam, 2) the minimum grade the student would be satisfied with on the exam, 3) the grade the student expected to get, and 4) the grade the student would actually try for on the exam. (These items were highly intercorrelated and therefore created one goal construct.) Ability was measured by a standardized test called the Wonderlic Personnel Test. Academic performance was measured by the total number of points earned in the course.

Overall, the results of Wood and Locke's (1987) four studies demonstrated that self-efficacy has a significant relationship to academic performance with and without ability being controlled. Self-efficacy strength (SES) and grade goals were both significantly related to academic performance as measured by the course total. Self-efficacy magnitude (SEM) was not consistently related to academic performance but did contribute to goal choice. Also hierarchical regressions revealed that ability, self-efficacy strength (SES), and self-efficacy magnitude (SEM), significantly added to the prediction of goals.

Summary. People with high self-efficacy have been

found to have higher expectations for achieving difficult goals. Goal setting is effective in improving competencies and self-efficacy. Self-efficacy for achieving goals is affected by abilities, previous experience, attitudes toward learning, education, and the social environment. Goal setting most effectively improves self-efficacy and academic performance when goals are specific, proximal goals are set, and feedback is provided. Self-efficacy has been found to impact goal commitment and self-efficacy directly and indirectly influences academic performance.

Review of Purpose of Study and Hypotheses

As indicated in Chapter 1, the overall purpose of this study was to investigate the relationship among academic self-efficacy beliefs, academic goals, and academic performance among underachieving students enrolled in a program designed to improve their academic achievement. More specifically, the review of the literature on self-efficacy, goal setting, and performance provided in this chapter suggest the following hypotheses:

1. Academic self-efficacy beliefs will be significantly and positively related to concurrent levels of academic performance, as measured by GPA.
2. Academic self-efficacy beliefs will be significantly and positively related to concurrent academic goals.
3. Academic goals will be significantly and positively related to concurrent academic performance.

4. A combination of self-efficacy and academic goals will predict concurrent levels of academic performance better than either self-efficacy or academic goals alone after scholastic aptitude is controlled.

5. Academic goals will partially mediate the relationship of self-efficacy and academic performance.

CHAPTER III

Method

Subjects

Participants were 82 (50 males and 32 females) high school freshman students involved in the Transition to High School Program during the 1990-91 and 1991-92 academic years. Students were selected for the Transition to High School Program while in the eighth grade after being referred by their teachers and other school personnel. All referred students who have their parents' permission are accepted into the Transition to High School Program. Permission to conduct this study was given to the researcher by the Libertyville High School Social Worker who was directing the Transition to High School Program and the Libertyville High School Director of Pupil Personnel. It was the decision of the Transition to High School staff to include the scales used in this study as part of their program and, since students already had parents permission to participate in the program, the need for additional permission for involvement in this study was waived. Thus, the sample is comprised of all students enrolled in the program during the 1990-1991 and 1991-1992 years. Participants ranged in age from 13 to 15 years and consisted

of 81 Caucasians and one Hispanic.

Description of the Transition to High School Program

The Transition to High School Program was designed to assist graduating junior high school students to make a successful transition to the high school setting. The program was developed by community helping professionals and school personnel.

The program was designed to prevent, rather than treat, high school adjustment problems. Students categorized as underachievers are referred to the program by their junior high school principals and teachers. These students are considered to be "at risk" in a variety of areas including social, behavioral, and/or academic functioning. The basic assumption of the program, taken from James McHolland's (1980, 1989) "Success Group Model", is that these students accept their role as nonachiever and do not accept responsibility for their behavior.

The Transition program is divided into three components: "Camping Group", "In-school Group" and "In-school Individual". Once school begins, all components last for eight weeks. The Camping and In-school Groups are similar once school begins. However, the Camping Group includes a summer phase which provides a more challenging experience for the students and includes a day-long "Marathon" and a three-day camping trip. The Marathon consists of several small group discussions, trust

exercises, goal setting, and some physical exercises and games. The camping trip, which occurs in the same week as the Marathon, includes activities such as ropes courses, canoeing, and repelling. The goal of these experiences is to help students learn to take responsibility for their own behaviors. It is assumed that facilitating changes in perceived responsibility during the summer activities will transfer to situations in school or in other areas of their lives.

Once school begins, students meet in groups, led by two staff members, on a weekly basis. During the school meetings, each student establishes his or her own goals for academic improvement. Every other week the students are given progress reports from their teachers which consist of their current course grades and evaluations of classroom behavior. The students read their reports to the group and members confront them with "excuses" they are using to avoid accomplishing their goals.

Parents are also involved in this program. They meet in groups biweekly to review their children's progress in school and to share concerns.

Self-efficacy and academic goal rating scales were administered to students in the Camping component shortly after they arrived to participate in the "Marathon" during the latter part of summer. Students in the In-school component were given the scales in the first group meeting

during the first week of school. The scales were then readministered to all students during their last group meeting at the end of first quarter.

Instruments

Academic self-efficacy. A 10-item academic self-efficacy scale was constructed based on a scale used by Lent, Brown, and Larkin (1984, 1986) and Brown, Lent, and Larkin (1989) which asked college students to rate their confidence in their ability to complete certain educational requirements. This scale was adapted for use with high school students and asked them to indicate on a dichotomous, "yes" or "no", scale whether they feel they could achieve certain grade levels in typical freshman courses (e.g., Freshman English), achieve at least a C-average overall, and graduate from high school. For all yes responses, participants then rated how sure they are (1 = "completely unsure" to 10 = "completely sure") about their ability to accomplish those achievements (See Attachment A). As in Lent, Brown & Larkin (1986, 1987), a self-efficacy strength score was calculated for each student by summing confidence ratings and dividing by the number of items on the scale (10).

Academic goal-setting. The academic goal scale was constructed in the same manner as the self-efficacy scale but asks the students to assess the degree to which they want to achieve the academic tasks presented on the self-

efficacy measure (See Attachment B). Instructions asked them to indicate how hard they will try (1 = "I will not try at all" to 10 = "I will try my hardest") to accomplish each academic task. The idea for this scale also came from Locke et al.'s (1984) measure of goal commitment and Wood and Locke's (1987) measure of grade goals. Overall goal commitment scores were calculated by summing ratings by the total number of items (10).

Academic performance. Grade-point average was used to operationalize academic performance, with last quarter eighth grade GPA being the pre-program measure and the first quarter freshman GPA being the post-program measure. Academic ability was operationalized as the total raw score achieved on the Comprehensive Test of Basic Skills (CTBS), (CTB MacMillan McGraw-Hill, 1989), which was administered to all eighth grade students to assist the high schools in placement of students in class levels commensurate with their ability.

Data Analysis

Preliminary analyses involved assessing the psychometric characteristics of the self-efficacy and goal scales, as well as describing the sample demographics. The first three hypotheses were tested by calculating correlations between self-efficacy beliefs and academic goals, self-efficacy beliefs and academic performance, and academic goals and academic performance. The fourth

hypothesis was tested using a stepwise regression procedure to determine the extent to which academic ability, self-efficacy, and goal setting contributed to the prediction of academic performance. The fifth hypothesis was tested using a mediated regression procedure to determine the direct and indirect effects of self-efficacy beliefs on academic performance.

CHAPTER IV

Results

Sample Characteristics

Descriptive statistics for the sample may be found in Table 1. There was a total of 82 subjects, 50 males and 32 females, 81 Caucasian and one Hispanic. The mean age was 14.0.

Sample score characteristics may be found in Table 2. CTBS Scores ranged from 84 to 262 ($M = 163.05$, $S.D. = 39.72$). Eighth grade GPA's ranged from 1.00 to 3.67 ($M = 2.28$, $S.D. = 1.08$). Freshmen grades ranged from .60 to 3.80 ($M = 2.36$, $S.D. = 1.10$). Pre-program self-efficacy scores ranged from 2.00 to 10.00 ($M = 7.02$, $S.D. = 2.00$). Pre-program goal setting scores ranged from 2.20 to 10.00 ($M = 7.98$, $S.D. = 1.90$). Post-program self-efficacy scores ranged from 2.80 to 10.00 ($M = 7.67$, $S.D. = 1.98$). Post-program goal setting scores ranged from 2.80 to 10.00 ($M = 8.44$, $S.D. = 1.91$).

Description of Psychometric Information on Self-efficacy and Goal Setting Measures

Internal consistency reliability estimates were determined for each measure on both administrations (pre and post-program). The Cronbach alpha values were as follows:

pre-program self-efficacy = .87, pre-program goal setting = .86, post-program self-efficacy = .89 and, post-program goal setting = .90.

Preliminary Analyses

A repeated measures MANOVA was performed on pre and post-program self-efficacy, goal setting and GPA measures. Significant pre to post-program differences were found on both the self-efficacy, $F(1, 78) = 7.96$, $p < .01$, and goal setting measures, $F(1, 78) = 5.01$, $p < .05$. Post-program self-efficacy ($M = 7.65$, $S.D. = 2.11$) exceeded pre-program self-efficacy ($M = 6.96$, $S.D. = 2.02$). Post-program goal setting ($M = 8.42$, $S.D. = 1.91$) exceeded pre-program goal setting ($M = 7.93$, $S.D. = 1.90$). The trend for GPA, though not significant, was also in a positive direction, $F(1, 81) = .84$, $p < .36$. Freshman GPA ($M = 2.36$, $S.D. = 1.10$) exceeded Eighth grade GPA ($M = 2.29$, $S.D. = 1.08$).

Tests of Hypotheses

Correlations calculated among the self-efficacy, goal setting, GPA, and CTBS are shown in Table 3. It was hypothesized that both self-efficacy (Hypothesis 1) and goal setting (Hypothesis 3) would be related significantly to GPA. Additionally, it was hypothesized that self-efficacy and goal setting would be related (Hypothesis 2). Pre-program measures of academic self-efficacy were not significantly related to GPA in the last quarter of eighth grade. However, it was found that post-program measures of

academic self-efficacy were significantly related to GPA at the end of the first quarter of high school ($r = .24, p < .05$) (Hypothesis 1).

Pre- and post-program academic self-efficacy beliefs were significantly and positively related to concurrent academic goals (Hypothesis 2). Pre-program self-efficacy was significantly and highly correlated with pre-program goal setting ($r = .71, p < .01$). Post-program self-efficacy and goal setting were also significantly correlated ($r = .62, p < .01$).

Academic goals, however, were not found to be significantly and positively related to academic performance (Hypothesis 3) either pre-program ($r = .08$) or post-program ($r = .18$). Interestingly, CTBS was significantly correlated to goal setting and self-efficacy, with post-program correlations (self-efficacy $r = .36, p < .01$; goal setting $r = .35, p < .01$) exceeding pre-program correlations (self-efficacy $r = .26, p < .05$; goal setting $r = .28, p < .05$).

As a test of Hypothesis 4, stepwise multiple regressions (See Table 4) revealed that self-efficacy was a significant predictor of academic performance but goal setting was not. CTBS was entered into the equations first to control for ability but was not found to account for a significant amount of variance in academic performance. Pre-program self-efficacy was the only significant predictor, $F(1, 75) = 3.81, p < .05$, of eighth grade

academic performance, accounting for 5 percent of the variance. Post-program self-efficacy was the only significant predictor, $F(1, 75) = 4.80, p < .03$, of freshmen academic performance, accounting for 6 percent of the variance. Thus, Hypothesis 4 was not supported. Self-efficacy alone was the only significant predictor of academic performance.

The above multiple regression analyses revealed that while self-efficacy significantly predicted academic performance, goal setting did not. Since a mediation hypothesis (Hypothesis 5) requires that the hypothesized mediator (goal setting) is related to the criterion variable (academic performance), the mediating effect of goals on the relation of self-efficacy and performance was not supported. Thus, although self-efficacy and goal setting were significantly correlated, Hypothesis 5 was not supported.

Post-hoc Analyses

After performing the primary analyses, a supplemental analysis was performed to see if ability might influence the relations observed in the primary analysis. Specifically, Brown et al. (1989) found that self-efficacy beliefs were more strongly related to academic performance among lower than higher aptitude students in a sample of academically talented science and engineering college students (i.e., strong self-efficacy beliefs facilitated the performance of the lower aptitude students but had no noticeable impact on

the performance of the higher aptitude students.) We hypothesized a similar moderating influence of aptitude in this sample, but of a different direction (i.e., that self-efficacy will not likely compensate for marginal skills but will facilitate performance of those with higher levels of aptitude).

Thus, participants were divided into high and low aptitude groups on the basis of a median split on the CTBS (Low aptitude: $M = 130.37$, $S.D. = 22.35$; High aptitude: $M = 194.44$, $S.D. = 23.99$) and correlations were calculated between self-efficacy, goal setting, and performance separately for the two groups. The correlations obtained from these analyses are presented in Tables 5 (Low Ability Group) and 6 (High Ability Group). Table 7 presents the means and standard deviations of each group on all measures. The results are strikingly consistent with the proposed moderator hypothesis for both self-efficacy and goal setting. Pre- and post-program self-efficacy measures were both highly correlated with concurrent academic performance measures (Eighth grade GPA: $r = .36$, $p < .05$; Freshman GPA: $r = .52$, $p < .01$) in the high ability group but were virtually uncorrelated in the low ability group ($r = .11$ between pre-program self-efficacy and eighth grade GPA and between post-program self-efficacy and freshman GPA). Likewise, pre and post-program goal setting was significantly correlated with concurrent performance scores

for high ability ($r = .20$ and $.36$, $p < .05$, for eighth grade and freshman GPA, respectively) but not for the low ability group ($r = .02$ and $.10$ for eighth grade and freshman GPA, respectively).

Table 1

Sample Demographic Characteristics

	Number of Subjects
<hr/>	
<u>Sex</u>	
Male	50
Female	32
<u>Age</u>	
13	10
14	60
15	12
<u>Race</u>	
Caucasian	81
Hispanic	1

Table 2

Sample Score Characteristics

Measure	M	SD	Potential Range	Obtained Range
CTBS	163.05	39.72	0-338	84-262
Eighth Grade GPA	2.28	1.08	0.00-4.00	1.00-3.67
Freshman GPA	2.36	1.10	0.00-4.00	.60-3.80
Pre-program Self-efficacy	7.02	2.00	0-10.0	2.00-10.0
Pre-program Goal Setting	7.98	1.90	0-10.0	2.20-10.0
Post-program Self-efficacy	7.67	1.98	0-10.0	2.80-10.0
Post-program Goal Setting	8.44	1.91	0-10.0	2.80-10.0

Table 3

Full Sample Correlation Matrix among All Variables

	SEPre	GSPre	SEPost	GSPost	Eighth	Fresh	CTBS
SEPre							
GSPre	.7122**						
SEPost	.4136**	.3161**					
GSPost	.3031**	.4603*	.6152**				
Eighth	.1981	.0796	.0375	.0410			
Fresh	.1681	.0823	.2394*	.1776	.7761**		
CTBS	.2630*	.2786*	.3581**	.3472**	.0628	.1115	

Note. SEPre = Pre-program self-efficacy, GSPre = Pre-program goal setting, SEPost = Post-program self-efficacy, GSPost = Post-program goal setting, Eighth = Eighth grade GPA, Fresh = Freshman GPA, CTBS = CTBS scores.

* $p < .05$. ** $p < .01$.

Table 4

Predictors of Academic Performance: A Stepwise Multiple
Regression

Dependent variable - Eighth grade GPA

	<u>R</u>	<u>R²</u>	<u>F</u> (1, 75)
1. SEPre	.22	.05	.05

Dependent variable - Freshman GPA

	<u>R</u>	<u>R²</u>	<u>F</u> (1, 75)
1. SEPost	.25	.06	.03

Note. SEPre = Pre-program Self-efficacy, SEPost = Post-program self-efficacy.

Table 5

Correlations among Variables for Low Ability Group (n = 38)

	SEPre	GSPre	SEPost	GSPost	Eighth	Fresh	CTBS
SEPre							
GSPre	.7489**						
SEPost	.2935	.2951					
GSPost	.3643*	.4256**	.8265**				
Eighth	.1139	.0185	-.0607	-.0342			
Fresh	.0576	-.0071	.1063	.0973	.8452**		
CTBS	.0996	.3245*	.1611	.3643*	-.1514	-.0783	

Note. SEPre = Pre-program self-efficacy, GSPre = Pre-program goal setting, SEPost = Post-program self-efficacy, GSPost = Post-program goal setting, Eighth = Eighth grade GPA, Fresh = Freshman GPA, CTBS = CTBS scores.

* $p < .05$. ** $p < .01$.

Table 6

Correlations among Variables for High Ability Group (n = 39)

	SEPre	GSPre	SEPost	GSPost	Eighth	Fresh	CTBS
SEPre							
GSPre	.7284**						
SEPost	.4806**	.3202*					
GSPost	.2588	.3853*	.3323*				
Eighth	.3645*	.1987	.2379	.2594			
Fresh	.3491*	.2017	.5223**	.3569*	.5370**		
CTBS	.2809	.2015	.4711**	.1618	.3626*	.3288*	

Note. SEPre = Pre-program self-efficacy, GSPre = Pre-program goal setting, SEPost = Post-program self-efficacy, GSPost = Post-program goal setting, Eighth = Eighth grade GPA, Fresh = Freshman GPA, CTBS = CTBS scores.

* $p < .05$. ** $p < .01$.

Table 7

Means and Standard Deviations on Measures for Low and High Ability Groups

Measure	Low Ability	High Ability
	M (S.D.)	M (S.D.)
CTBS	130.37 (22.35)	194.44 (23.99)
Eighth Grade GPA	2.26 (1.41)	2.36 (.73)
Freshman GPA	2.29 (1.41)	2.47 (.76)
Pre-program Self-efficacy	6.46 (1.94)	7.34 (1.97)
Pre-program Goal Setting	7.58 (1.85)	8.30 (1.86)
Post-program Self-efficacy	7.17 (2.18)	8.06 (1.73)
Post-program Goal Setting	8.04 (2.15)	8.89 (1.38)

CHAPTER V

Discussion

The primary goal of this study was to explore the relations among academic self-efficacy beliefs, goal setting, and academic performance for underachieving students. This particular investigation differed from the many prior studies by focusing on underachieving high school students. Measures of self-efficacy, goal setting, and academic performance were obtained prior to the students' participation in a transition to high school program and at its end. Due to the lack of a control or comparison group, no inferences about the effect of the transition program on the measures used in this study can be made.

The results of this study indicated that academic self-efficacy beliefs relate significantly and positively to academic performance. For the entire subject population, post-program measures of self-efficacy were correlated with academic performance as measured by freshmen GPA. This finding concurs with the considerable amount of literature on self-efficacy which has demonstrated that self-efficacy beliefs relate to level of performance (e.g., Bandura, 1982; Bandura and Schunk, 1981) and academic self-efficacy relates to academic performance (e.g., Lent, Brown, & Larkin, 1986;

Schunk, 1989).

Multon et al. (1991) found that effect sizes in their meta-analysis were heterogeneous and suggested that the relationship of self-efficacy to performance and persistence may change according to types of students, measures, and methods employed in studies. They identified four trends related to factors which appeared to moderate effect sizes. For example, posttreatment data yielded a larger effect size (.58) than pretreatment or correlational data (.32). Studies of low-achieving students had stronger effect sizes (.56) than studies of normal achieving students (.33). Studies of high school, college students, and elementary students produced effect sizes of .41, .35, and .21, respectively. Studies using basic skills as performance measures had the strongest effect size (.52) as compared to those using GPA (.36) and achievement tests (.13).

The correlation between self-efficacy and academic performance in this study ($r = .24$) is lower than the effect size found for the total sample (.38) in the meta-analytic study by Multon et al. (1991) but is comparable to the effect size they found for elementary school students (.21) and closer to the effect size they found for correlational data (.32). This study is also in line with Schunk's (1989) finding that studies relating self-efficacy to skill level have reported a range of positive and significant correlations between posttest efficacy and skill ($r = 0.27-$

0.84).

The predictive relationship of self-efficacy to academic performance was also supported in this study ($R^2 = .06$). It was low, however, when compared to other studies. For example, Schunk (1989) reported an R^2 range of 0.17-0.24 in a review of self-efficacy and achievement studies, and Brown, Lent, and Larkin (1989) reported an R^2 of .20.

Academic goals were not found to be significantly and positively related to academic performance. Correlations between the goal setting measures and academic performance were far lower in this study as compared to previous findings. A possible explanation for this is that the goal measure used in this study focused on distal rather than proximal goal concepts. The literature on goal setting and achievement (Schunk, 1990) has generally reported that setting proximal goals improves self-efficacy and performance more than setting distal goals. Also specific, rather than vague, goals have been linked with higher levels of performance (Locke, 1968). Thus, while the items on the goal measure used in this study were fairly specific (e.g., graduating from high school) they may have seemed vague or ambiguous to a student just entering high school.

Another explanation for the low correlations between goals and academic performance might be that these students were already beginning their participation in the transition to high school program and were feeling more optimistic

about their ability to perform well in high school. This might have impaired their ability to realistically assess their capabilities and thus caused the discrepancy between their goals and actual performance. The literature often investigated goal setting in terms of accomplishing a particular task. The goal setting measure in this study was more global and responses to it may have been influenced by the mood and optimism of the program. Interestingly, in a study of the affective correlates of academic goal setting (Wicker, Brown, Hagen, Boring, & Wiehe, 1991), positive moods were related to lower effort intentions.

For the students in the transition to high school program, it seems likely that the goals they set for themselves in their small groups, which related to specific courses, would more accurately reflect their academic performance and be more likely to improve performance. As Locke (1968) and others pointed out, difficult and specific goals produce higher levels of performance.

The supplemental analyses revealed, perhaps, the most important aspect of this study. Like Brown et al. (1989), this study found that ability moderated the relationship between self-efficacy and performance. However, the moderator effect in this study suggested self-efficacy and performance were related in high ability students [($r = .36$, $p < .05$ (pre-program); $r = .52$, $p < .01$ (post-program))] but unrelated in low ability students [($r = .11$ (pre-program); r

= .11 (post-program)], whereas Brown et al. found self-efficacy to have moderating, compensatory effects on the academic performance of lower aptitude students but not on the higher aptitude students. The results of this study suggest that self-efficacy beliefs are not likely to compensate when ability is lacking. Therefore, interventions with low aptitude students may need to strengthen skills and abilities before self-efficacy can have much of an impact.

Academic goals were also found to be significantly and positively related to academic performance for the high ability group only. There may be several explanations for this. Schunk (1990) stated that "self-judgment involves comparing present performance with one's goal" (p. 73). Perhaps the higher ability group possessed greater capacity for accurate self-judgment, especially in terms of the effort they planned to exert. The low ability group may have been more ambitious with their goals than their capabilities allowed them to actually achieve. Whereas the higher ability group was able to set more realistic goals and achieve them. The post-program measures of the higher ability group seem to indicate that self-efficacy, goal setting, and ability are more in line with this groups' potential. Though it cannot be concluded from this study that the transition to high school program produced this change, it would be a valuable goal of an academic program

to accomplish such an outcome. Again, goal setting alone is not likely to compensate when ability is significantly lacking, but, like self-efficacy, can facilitate performance in the presence of at least minimally adequate skills.

Self-efficacy was found to be directly and highly related to academic performance. An indirect relationship of self-efficacy on academic performance through its influence on academic goals was not readily established. Prior studies (Locke, Frederick, Bobko, & Lee, 1984; Wood & Locke, 1987) which also investigated the effects of goals and self-efficacy on task performance, found strong support for the direct and indirect (via goals) of self-efficacy on performance. As previously discussed, post-program goals were correlated with academic performance for the higher ability group but not for the entire subject group or the lower ability group.

It was also revealed that boys reported higher self-efficacy than girls on the post-program measure. This finding concurs with Eccles, Adler, and Meece's (1989) test of sex differences in achievement. Eccles et al. found some evidence of sex differences in ability attributions, with females' expectancies (of success) dropping lower than males in the face of failure on a task. Females also rated ability as a more critical cause of their failure than did males. Although males and females in the present study did not differ significantly on freshman (post-program) GPA, the

males indicated higher self-efficacy while females did not, possibly in response to their lack of improvement in academic performance.

Academic self-efficacy and concurrent academic goals were highly correlated. This relationship was often suggested in the self-efficacy literature. For example, Locke, Frederick, Bobko, and Lee (1984) found that self-efficacy strength was strongly related to difficulty level of goals set by subjects. Self-efficacy also affected goal commitment when the goals were self-set. Schunk (1985) found that when children set their own performance goals in mathematics, they judged themselves as more confident of attaining their goals than students who were assigned goals. Wood and Locke (1987) also found support for the positive relationship between self-efficacy and grade goals.

The implications of the findings of this study are threefold. First, as Wood and Locke (1987) pointed out, it is encouraging that results of self-efficacy and goal setting field studies are able to replicate the results of Locke's laboratory settings. Self-efficacy, in particular, again emerged as a salient construct that can be measured in many ways. The positive relationship between academic self-efficacy and academic performance was supported in this study, as was the relationship between self-efficacy and goal level.

Second, the discrepant results for low and high ability

students should be considered when implementing a program designed to improve academic performance. A stronger relationship among self-efficacy, goal setting, and academic performance was revealed for the higher ability subjects. This suggests that a program promoting goal setting and high self-efficacy would be effective in improving the academic performance of students who have higher ability but are underachieving. Indeed, reviews of intervention programs for academic underachievers emphasize the importance of helping students set reasonable goals (Adderholt-Elliott, 1989). Also, according to Gonzalez and Hayes (1988), it is the role of the educator to increase the underachiever's perceived self-efficacy. This can be accomplished by teaching the students to take responsibility for their behavior. The transition to high school program described in this study is such a program.

Students with lower academic aptitude, however, are likely to require more intervention than a program which provides assistance with goal setting, feedback on progress, and encourages students to take responsibility for their behavior. Also, enhancing academic self-efficacy beliefs may not be enough since behavior is influenced by other factors such as skills and outcome expectations. It is important to note that "high self-efficacy will not produce competent performances when requisite skills are lacking" (Schunk, 1989, p. 175). Therefore it seems especially

critical to evaluate the skill and learning deficits of the lower aptitude students in order to provide the most effective program for them. A generic program such as the transition to high school program which does not emphasize skill training, is unlikely to be extremely successful in improving the academic performance of the lower aptitude student. It may, however, increase the self-efficacy of these students which could, in turn, increase their persistence in learning new skills.

The final implication of the results of this study is understanding the vital relationship of academic self-efficacy to academic performance. Any educational program which has the purpose of improving a student's performance in school should include methods designed to enhance academic self-efficacy.

This study attempted to contribute to the understanding of the relationship between self-efficacy, goal setting, and academic performance. Limitations were present, however.

The lack of a control group in the design of this study necessitated the investigation to remain correlational. If a comparison or control group had been used, the results would have been richer and inferences about the effectiveness of the transition to high school program could have been made. It was decided to omit a control group due to the problems which arise when a group is identified as needing treatment but the treatment is not provided. This

would be particularly problematic in a school setting where, if students are identified as having problems, some intervention must be provided. In addition, it is ethically questionable to withhold a conceivably beneficial treatment from persons who might have a need for it (Cook & Campbell, 1979).

Self-report instruments can be affected by "evaluation apprehension" (a threat to construct validity in Cook & Campbell, 1979) and thus attempt to present themselves more favorably. In this particular case, the subjects were probably more concerned about the school's evaluation of them than the evaluation of the investigator conducting the study. To minimize this effect, subjects were assured of the confidentiality of their responses and assured that they would not be used to evaluate them by school personnel. In addition, in spite of efforts to explain the scales clearly, some students seemed unable to completely understand the concepts involved while others did not appear to take the task seriously. Thus all responses were not accurately representing the students' views.

The similar format of the academic self-efficacy and goal setting measures may have encouraged similar responses on both thus increasing correlation between the two. Therefore it may be that the responses on the goal setting measure, which was filled out second, were a reflection of their responses to the self-efficacy measure.

In this study, ability, as measured by the CTBS, did not account for significant variance in the prediction of academic performance. According to the underachievement literature, a basic skills test would not be the best measure of ability. Literature cites that an IQ test such as the WISC is better for identifying underachievers. This would not be an option in a study of this nature however. A study involving students in a special education program would be more likely to have data available from standard intelligence tests.

Other considerations of this study include the possibility that the involvement in the selection process of the transition to high school program may have affected the subjects view of themselves and their ability. A pre-program measure of self-efficacy and goal setting taken prior to contact with transition to high school staff may offer more accurate results.

In this study, personality factors were not considered. The underachievement literature suggests the presence of such characteristics as low self-confidence, less social and emotional maturity, less hard working, etc. (Mufson, Cooper, & Hall, 1989). These characteristics would surely impact self-efficacy, goal setting, and achievement. Identification of some of the personality characteristics of the subjects in this study would have provided additional useful information.

This study is not easily generalizable to other intervention programs because no conclusions about the effects of the transition to high school program can be made. The research design, which was basically correlational, precludes this type of inference. This study, instead, contributed support for self-efficacy theory and some support for the relationship between goal setting, self-efficacy, and academic performance.

Results of this study showed that self-efficacy had a significant relationship to academic performance for underachievers participating in an intervention program designed to improve academic performance. Also, self-efficacy was significantly related to goal setting. Goal setting, however, did not show the direct relationship to academic performance it has in previous research.

A need for further research on effective interventions with underachievers has been cited in the literature. This study was a step in that direction as it identified relationships among important factors deemed necessary for successful academic performance. However, the addition of a comparison group to the present study would allow an assessment of the effectiveness of the transition to high school program in terms of improving self-efficacy and academic performance. The transition program consisted of many of the components recommended for successful intervention with underachievers including a group format,

ongoing specific goal setting, ongoing feedback, some modeling of appropriate study attitude, and a therapeutic context.

The academic self-efficacy measure used in this study was satisfactory. The goal commitment measure, however, may need revision. Possibly the goal setting performed in the weekly small groups could be more systematically evaluated. The goals set in the small groups are more specific and proximal, two characteristics of goals that have been found to relate highly to improved academic performance.

Finally, research is still needed to investigate the durability of self-efficacy and its impact on achievement behaviors, as well as, the long-term effect of an intervention like the transition to high school program on academic performance. Longitudinal studies following students throughout their high school years is recommended.

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APPENDIX A

APPENDIX B

NAME _____

INSTRUCTIONS: Please indicate whether or not you want to accomplish each of the following at Libertyville High School:

		If yes, how hard will you try?										
		I will not try at all					I will try my hardest					
	Yes	No	1	2	3	4	5	6	7	8	9	10
1. Complete freshman English with a C or above	Yes	No	1	2	3	4	5	6	7	8	9	10
2. Complete freshman Pre-algebra with a C or above	Yes	No	1	2	3	4	5	6	7	8	9	10
3. Complete freshman Social Studies with a C or above	Yes	No	1	2	3	4	5	6	7	8	9	10
4. Complete freshman Biology with a C or above	Yes	No	1	2	3	4	5	6	7	8	9	10
5. Complete freshman PE with a C or above	Yes	No	1	2	3	4	5	6	7	8	9	10
6. Complete an elective such as Music, Shop, or Home Ec with a C or above	Yes	No	1	2	3	4	5	6	7	8	9	10
7. Finish first semester of high school with a C average grade point or above	Yes	No	1	2	3	4	5	6	7	8	9	10
8. Make the honor roll my first year in high school	Yes	No	1	2	3	4	5	6	7	8	9	10
9. Maintain a C average or above throughout high school	Yes	No	1	2	3	4	5	6	7	8	9	10
10. Graduate from high school	Yes	No	1	2	3	4	5	6	7	8	9	10

CURRICULUM VITA

The author, Cheryl Ann Kinsman, was born in Cincinnati, Ohio. Her main residence has been in Illinois.

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APPROVAL SHEET

The dissertation submitted by Cheryl Ann Kinsman has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

4/13/93
Date



Director's Signature