INSTITUTE FOR RESEARCH IN LEARNING DISABILITIES
The University of Kansas
Lawrence, Kansas, 66045
Emphasis on Adolescents and Young Adults

IMPLEMENTING GOAL SETTING ACTIVITIES WITH LD ADOLESCENTS

Nona Tollefson, D. B. Tracy, E. P. Johnsen,
Meredith Buenning, and Art Farmer

Research Report No. 48

June, 1981

The University of Kansas Institute for Research in Learning Disabilities is supported by a contract (#300-77-0494) with the Bureau of Education for the Handicapped, Department of Health, Education, and Welfare, U. S. Office of Education, through Title VI-G of Public Law 91-230. The University of Kansas Institute, a joint research effort involving the Department of Special Education and the Bureau of Child Research, has specified the learning disabled adolescent and young adult as the target population. The major responsibility of the Institute is to develop effective means of identifying learning disabled populations at the secondary level and to construct interventions that will have an effect upon school performance and life adjustment. Many areas of research have been designed to study the problems of LD adolescents and young adults in both school and non-school settings (e.g., employment, juvenile justice, military, etc.)

Director: Donald D. Deshler

Research Coordinator: Jean B. Schumaker

Institute for Research in Learning Disabilities
The University of Kansas
313 Carruth-O'Leary Hall
Lawrence, Kansas 66045

The preparation of this document was supported by a government contract. The views expressed here are those of the Institute, and do not necessarily reflect official positions of the Bureau of Education for the Handicapped, DHEW, USOE.

COOPERATING AGENCIES

Were it not for the cooperation of many agencies in the public and private sector, the research efforts of The University of Kansas Institute for Research in Learning Disabilities could not be conducted. The Institute has maintained an on-going dialogue with participating school districts and agencies to give focus to the research questions and issues that we address as an Institute. We see this dialogue as a means of reducing the gap between research and practice. This communication also allows us to design procedures that: (a) protect the LD adolescent or young adult, (b) disrupt the on-going program as little as possible, and (c) provide appropriate research data.

The majority of our research to this time has been conducted in public school settings in both Kansas and Missouri. School districts in Kansas which have or currently are participating in various studies include: Unified School District USD 384, Blue Valley; USD 500, Kansas City, Kansas; USD 469, Lansing; USD 497, Lawrence; USD 453, Leavenworth; USD 233, Olathe; USD 305, Salina; USD 450, Shawnee Heights; USD 512, Shawnee Mission; USD 464, Tonganoxie; USD 202, Turner; and USD 501, Topeka. Studies are also being conducted in several school districts in Missouri, including Center School District, Kansas City, Missouri; the New School for Human Education, Kansas City, Missouri; the Kansas City, Missouri School District; the Raytown, Missouri School District; and the School District of St. Joseph, St. Joseph, Missouri. Other participating districts include: Delta County, Colorado School District; Montrose County, Colorado School District; Elkhart Community Schools, Elkhart, Indiana; and Beaverton School District, Beaverton, Oregon. Many Child Service Demonstration Centers throughout the country have also contributed to our efforts.

Agencies currently participating in research in the juvenile justice system are the Overland Park, Kansas Youth Diversion Project, and the Douglas, Johnson, Leavenworth, and Sedgwick County, Kansas Juvenile Courts. Other agencies which have participated in out-of-school studies are: Penn House and Achievement Place of Lawrence, Kansas; Kansas State Industrial Reformatory, Hutchinson, Kansas; the U. S. Military; and Job Corps. Numerous employers in the public and private sector have also aided us with studies in employment.

While the agencies mentioned above allowed us to contact individuals and support our efforts, the cooperation of those individuals--LD adolescents and young adults; parents; professionals in education, the criminal justice system, the business community, and the military--have provided the valuable data for our research. This information will assist us in our research endeavors that have the potential of yielding greatest payoff for interventions with the LD adolescent and young adult.

Abstract

The purpose of this research was to teach LD adolescents to set realistic goals, to expend effort to achieve the goals, and to accept responsibility for achieving or failing to achieve their goals. Subjects were sixty-one junior high school students (13 females and 48 males) attending four junior high schools. The students were average in ability and were achieving at least two grade levels below their grade placement in language arts and mathematics. All students completed the Michigan State Self-Concept of Ability Scale, the Intellectual Achievement Responsibility Scale, the Task Attribution Questionnaire, and the How I Study Scale. Students were randomly assigned to treatment and control conditions. Through a combination of achievement motivation and level of aspiration activities, LD students in the treatment group were taught to set realistic achievement goals. Developing plans to reach goals and accepting responsibility for achievement outcomes were also stressed in the intervention. The intervention produced a significant increase in the number of students exhibiting realistic goal setting strategies. During effort attribution training the LD students produced a significantly greater number of effort attributions than ability, task difficulty, or luck attributions. The treatment group also showed an increase in internal attributions and a decrease in external attributions. Finally, student satisfaction ratings for the project were positive.

Introduction

Learning disabled (LD) adolescents have a history of school failure, and this history of failure is probably related in part to the low achievement motivation characteristic of the LD student (Deshler, 1978; Rosenthal, 1973). Ross (1976) and Torgesen (1977) characterized the LD student as possessing poorly developed planning and organizational skills. Hallahan, Gajar, Cohen, and Tarver (1978) described the LD student as ineffective in problem solving. Harway (1962) and Tollefson, Tracy, Johnsen, Buenning, Farmer, and Barke (1980) depicted the LD adolescent as lacking goal setting skills and the ability to use past performance as a predictor of future performance. Robbins and Harway (1977) found that LD students had greater variability in goal setting than regular education students and were less realistic in their reactions to prior performance. Tollefson et al. also found that LD adolescents showed marked discrepancy between their prior performance and predictions of future performance. Likewise, Harrison, Singer, Budoff, and Folman (1972), testing EMR students, found that students who had experienced a long history of failure set goals much higher or lower than their immediately preceding performance. These researchers all have suggested that LD adolescents are severely hindered in academic tasks by their low achievement motivation and lack of planning and goal setting skills.

The purpose of the present research was to teach LD students to use realistic goal setting strategies so they might experience feelings of success and satisfaction in school. The study also emphasized the related areas of making use of past feedback, expending effort, and taking personal responsibility for achievement outcomes. Through a combination of achievement motivation and level of aspiration activities, learning disabled adolescents were taught to set realistic academic goals, to develop plans to reach these goals and to accept responsibility for success/failure in reaching the goals.

Four research questions were addressed:

1. Can LD students be taught a strategy for setting realistic achievement goals?
2. Will effort attribution training combined with instruction in realistic goal setting produce more frequent effort attribution than ability, luck, or task difficulty attributions?
3. Will teaching realistic goal setting produce changes in LD students' study behaviors?
4. Will instruction in realistic goal setting combined with effort attribution training increase LD students' academic self-esteem?

Goal setting, in achievement-related activities, involves setting a specified level of performance and making a conscious effort to achieve the specified level of performance. The positive effects of goal setting, both in a qualitative and quantitative manner, have been explored extensively by Locke (1966a, 1967a, 1967b) and his associates. These researchers have found that: (a) specific goals lead to better performance than more general goals or no goals at all (Blumenfeld & Leidy, 1969; Kim & Hamner, 1976; Latham & Baldes, 1975; Latham & Kinne, 1974; Latham & Yukl, 1975a, 1976; Locke, 1966a, 1967b, 1968; Locke & Bryan, 1966b, 1967; Ronan, Latham, & Kinne 1973; Stedry & Kay, 1966; Wames & deJung, 1971), (b) the more difficult the goal, the higher the level of performance (Blumenfeld & Leidy, 1969; Bryan & Locke, 1967b; Ivancevich & McMahon, 1977; Locke, 1966a; 1966b, 1967b, 1968; Locke & Bryan, 1966a, 1967, 1969; Stedry & Kay, 1966), and (c) individuals who set goals or individuals who have goals set for them, show an increase in motivation, task interest, and personal satisfaction (Bryan & Locke, 1967a; Hammer & Hamett, 1974; Ilgen & Hamstra, 1972; Latham & Kinne, 1974, Locke, 1967a, 1968; Locke, Cartledge & Knerr, 1970; Locke, Cartledge, & Koeppel, 1968).

Thus, research on the effects of goal setting on performance suggests that teaching LD students to set realistic academic goals could increase their motivation and interest in school. Along with these positive effects, the LD student may experience the satisfaction associated with improved academic performance.

Feedback about performance is an important aspect of goal setting because feedback affects both rate of learning and motivation (Ammons, 1956; Payne & Hauty, 1955). Kolb and Boyatzis (1974) described a "cybernetic model of behavior change." A description by Kolb and Boyatzis of the way self directed behavior change occurs illustrates the basic theoretical focus of the present study. They wrote:

> The major emphasis of the method is on self-research. Each subject is encouraged to reflect on his own behavior, and to select a limited and well-defined goal which he would like to achieve. The next step is to undertake a continuing and accurate assessment of his behavior in the area related to his goal change. He keeps an objective record of his behavior in this area, generally in the form of a graph which measures progress toward the goal from day to day. (p. 351)

In summary, the use of a goal-setting strategy which incorporates specific goals and self-monitoring of behavior may enhance LD students' motivation. If LD students can learn to use feedback about goal attainment to set future goals, they can increase their chances of successfully reaching their goals and with success may come increased feelings of self-estem.

As mentioned previously, learned disabled adolescents lack achievement motivation. They set very high or very low goals which provide little risk or challenge and which preclude them from taking personal responsibility for achievement outcomes (Covington & Omelich, 1979; Tollefson et al., 1980).

Achievement motivation is seen as a highly desirable characteristic in educational and vocational settings, and training programs have been developed

to teach achievement motivation strategies. McClelland & Winter (1969) have developed achievement motivation training for businessmen. Altschuler, Tabor, and McIntyre (1971) and deCharms (1976) have developed programs for school-age children and their teachers. The present study was built upon achievement motivation strategies developed by these researchers.

Finally, the present research used attribution theory to develop interventions to assist LD adolescents in accepting responsibility for achievement outcomes. Attribution theory is concerned with causal perceptions. The perceptions can relate to the causes of one's own behavior or to those of another person. Bar-Tal (1978) and Weiner (1972) explained that one does not observe the causes of behavior, but that they are cognitively constructed by the perceiver.

One way to view the outcomes of events is through Rotter's (1966) concept of locus of control. Locus of control refers to the way individuals view control over the reinforcements in their life. Rotter classified these controls as either internal or external to the individual.

> When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, or fate. When the event is interpreted in this way by an individual we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control. (p. 1)

Heider (1958) viewed performance as determined by personal and environmental factors. Heider also distinguished relatively unchanging dispositional conditions from more changeable situational factors. Heider described outcomes as a function of "effective personal force" and "effective environmental force." The "effective personal force" (within-person factors) includes a power factor (ability) and a motivational factor (trying). Heider concept-

ualized ability as a stable factor and effort as an unstable factor. The "effective environmental force" (within environmental factors) includes task difficulty as the stable environmental factor and luck as the unstable environmental factor.

Weiner (1972) combined Rotter's concept of locus of control and Heider's concept of stable and unstable factors into a two dimensional grid. Heider's concepts of "can" (know how) and "try" were translated by Weiner into the concepts of ability and effort. Figure 6 displays the relationship between dimensions.

	Locus of Control	
Stability	Internal	External
Stable	Ability	Task Difficulty
Unstable	Effort	Luck

Figure 6 (taken from Weiner, Heckhausen, Meyer & Cook, 1972)

The ability factor includes intelligence and knowledge as well as the personality and attitude variables that affect what the individual can do. Ability is viewed as a stable, internal factor; task difficulty as a stable, external factor. The unstable factors are effort (an internal factor) and luck (an external factor). Effort is defined as the exertion expended by the individual to accomplish a task. Luck is defined as a transient environmental condition involving change and/or opportunity.

The dimensions of locus of control and stability influence particular aspects of behavior. According to Weiner (1972), the stability of the reinforcement is crucial because it influences expectancy of success. Weiner (1974) explained that attributions related to stable variables tend to solidify

expectancies whereas attributions to unstable variables increase expectancy shifts. If one believes success or failure is due to an unstable factor such as luck or effort, expectations of future success will remain high and the individual will persist.

The dimension of locus of control relates to the affective domain. Weiner (1974) explained that external attributions tend to remove responsibility and therefore remove affective reactions. On the other hand, internal attributions increase personal responsibility in a given task therefore increasing affect.

In summary, locus of control research indicates that the greater the role the individual plays in determining outcomes or setting goals, the greater the feelings of freedom, control, personal responsibility, and satisfaction. Therefore, one can hypothesize that individuals who play a role in establishing their own goals and attribute outcomes to the internal and unstable variable of effort, will be most likely to have greater expectations of success, persist longer, perform better, and feel better about task outcomes. This point of view was explained by Dweck (1975) who wrote:

> Specifically, if a child believes failure to be a result of his lack of ability or a result of external factors beyond his control, he is unlikely to persist in his efforts. On the other hand, if a child believes failure to be a result of his lack of motivation, he is likely to escalate his effort in an attempt to obtain the goal. (p. 683)

Weiner and Kukla (1970) also hypothesized that effort attributions facilitate achievement. These authors wrote: "It is possible that attributing failure to motivation, rather than to lack of ability facilitates subsequent achievement strivings" (p. 19).

The present study combined training in realistic goal setting with effort attribution training. Through the combination of these training programs, LD

students were taught to set realistic academic goals, to take responsibility for achievement outcomes, and to experience the positive feelings associated with achieving realistic academic goals.

Methodology

Subjects

Subjects were 61 junior high school students (13 female, 48 male) who had been identified as learning disabled by school district guidelines and assigned to a resource room setting for part of the school day. All students had consented to participate in the study. The students attended four junior high schools in a moderate sized midwestern city. The schools served a heterogeneous student body. The schools were selected by district administrative personnel from the district's nine junior high schools to be representative of the district's racial, cultural, and socio-economic characteristics.

The students in the sample had WISC IQs in the normal range. Students scored in the range from one-half to two standard deviations below the mean. All students in the sample scored at least two grade levels below their grade placement in language and mathematics. Furthermore, all students in the sample had been identified as learned disabled during their elementary years and had been served in a resource room setting at both the elementary and junior high school levels.

LD students were randomly assigned within each junior high school to either an experimental or a control group. Thirty-nine students (11 female, 28 male) were assigned to the experimental group and 22 students (2 female, 20 male) to the control group. There were 11 seventh graders, 14 eighth graders, and 15 ninth graders in the experimental group. The control group included 10 seventh graders, 8 eight graders, and 4 ninth graders.

Instruments

Four instruments were administered pre- and post-treatment to all participants. These instruments included the Michigan State Self-Concept of Ability

Scale (Brookover, Le Pere, Hanachek, Thomas & Erickson, 1965); the Intellectual Achievement Responsibility Scale (IAR) (Crandall, Katkovsky & Crandall, 1965); the Task Attribution Questionnaire (TAQ) (Tollefson et al., 1980); and the How I Study Scale. One instrument (The Evaluation of Treatment Inventory) was administered to the experimental group as a post-test only.

The Michigan State Self-Concept of Ability Scale (Brookover et al., 1965) consists of eight Guttman scale items. The items ask questions about academic abilities in general as well as abilities in particular subject matter fields. This scale was judged by Shavelson, Hubner, and Stanton (1976) to have high test-retest reliability and adequate validity.

The Intellectual Achievement Responsibility Questionnaire (Crandall, Katkowsky & Crandall, 1965) consists of 34 forced-choice items. The respondent is presented with a positive or negative achievement situation and given two attributions between which to choose. One is an internal attribution wherein the subject assumes responsibility for the achievement outcome. The other is an external attribution where the outcome is seen as the responsibility of the situation or some other person. The "I" score gives the number of achievement situations for which the person takes responsibility.

The Task Attribution Questionnaire (Tollefson et al., 1980) is a four-item questionnaire that measures attributions, performance, and expectancy of success. Risk-taking and level of aspiration scores can be determined from the data provided. Moderately difficult spelling words matched to the students' actual spelling ability are used as stimulus material for the TAQ.

The How I Study Scale was developed specifically for this study. The How I Study Scale is an eleven-item Likert Scale. The scale measures goal setting and goal implementation skills.

The Evaluation of Treatment Inventory was also developed for the study. This inventory included three multiple choice items. LD student participants reported their feelings about and evaluations of the project.

The Teacher Rating Scale consisted of 10 Likert items. Items measured teacher perceptions of the LD student's study skills, goal setting, and goal implementation skills.

Procedures

LD Teacher Workshop. A one-day workshop was held for all LD teacher participants. The workshop introduced teachers to the concepts of realistic goal setting, use of feedback and personal responsibility. Teachers participated in all activities that would later be used with their students and offered suggestions for modifying the activities. An "eraser toss game" was changed to a "basketball toss game" after receiving feedback from one of the teachers that throwing erasers would seem too "juvenile" for her ninth grade students. Two of the research staff led the workshop and two participated in the activities with the teachers.

The workshop emphasized that the project would encourage students to choose their own "standard for excellence" (Altschuler et al., 1971) so they might be more in control of their feelings and behavior in school. Researchers explained that through activities and personal conferences with project staff members, students would be asked to explore their goal setting strategies, their use of feedback and their feelings associated with success and failure. It was further explained that the incentives offered for the three activities in the form of play or real money would stress the advantages of realistic goal setting and use of feedback.

Pre-testing. After student consent forms were returned, two research assistants administered three group measures (The Intellectual Achievement

Responsibility Questionnaire, The Michigan State Self-Concept of Ability Scale, and the How I Study Scale) and one individual measure (The Task Attribution Questionnaire) to the experimental and control students. All group measures were read aloud to insure that the students understood the test items.

The TAQ used spelling words or math problems as the stimulus material. Before pre-testing, the LD teacher selected the subject area (spelling or math) for each student. Each student was given three trials at the task. A trial consisted of five steps: (1) predicting the number of words out of a set of five that the student would spell correctly, (2) recording the prediction, (3) taking the test orally, (4) receiving feedback about performance, and (5) stating a new prediction if the student were to take the test again with new problems of the same difficulty. After three trials, students were asked to attribute the reason for their performance to ability, luck, task difficulty, or effort.

The Teacher Rating Scale was also used as a pre-training measure. Two regular classroom teachers serving each LD student were selected by the LD teachers and asked to complete the Teacher Rating Scale. LD teachers had completed the Teacher Rating Scale prior to the workshop.

The basketball game was designed to introduce realistic goal setting techniques to the students and to acquaint them with the data collection procedures to be used during the intervention. The basketball game served as a pre-training measure for the treatment group only. It was used to gather baseline data on goal setting behaviors in a game activity. Charts for the basketball game were distributed to each treatment class and examples of charting predictions, charting actual scores, and calculating payoffs were provided. (See the Appendix for complete directions).

In the basketball game, students selected a pre-set distance (long-moderate-short) from which to throw three balls into a wastebasket. Students predicted how many baskets they would make. Each trial consisted of three tosses. Students charted their predictions, threw the ball three times, charted their actual scores and calculated their payoffs in terms of money earned. A student could earn up to nine cents per trial. Payoffs were contingent upon how closely the student's performance matched his/her prediction.

Intervention: Baseball Game. The week following the basketball game, the baseball game was introduced to each LD treatment classroom. The baseball game was structured like a regular baseball game. The student was the batter, a research assistant (RA) was the pitcher, the pitch was a spelling word, a hit was a correctly spelled word, and an out was a mispelled word.

LD teachers prepared four lists of words for each student. The four lists contained easy (a single), moderately difficult (a double), difficult (a triple), and very difficult (a homerun) words respectively. Each list was matched to the ability level of the student.

LD teachers helped the RAs divide the students into two teams of equal ability. The RAs explained that each student could select a single, double, triple, or homerun word. The students charted their predictions on graphs. As each inning began, students requested the type of hit they wanted and charted the prediction. The RA pronounced the word and the student spelled the word orally. The RA told the student if the word was spelled correctly (a hit) or incorrectly (an out). The students charted their actual outcome and were ready to select their new hit when it was their turn to bat again. Each team was given two minutes at bat or three outs per inning, whichever came first.

Students were allowed to discuss strategies and predictions among team members. Students were not allowed, however, to help teammates spell words. During each inning, one RA read the words and the other RA recorded outs, time, base runners, and runs. A detailed description of the baseball game is included in the Appendix.

The role of the RAs in this activity was to explore and to discuss the strategies used by the students. Below are examples of the questions that the RAs asked for this purpose.

1. Does there seem to be a winning strategy?
2. What seems to be the best way to move runners around the bases?
3. How would you tell a friend to play?
4. Is a moderate or realistic goal the same for everyone? Why?
5. How might this game apply to school or areas outside of school?

Intervention: Achievement Contract. During the five weeks following the baseball game, the Achievement Contract phase of the project was implemented. This activity was modeled after a math contract described by Altschuler et al. (1971). The contracts consisted of a graph on which predictions and actual scores were charted followed by a prediction and evaluation form (See Appendix for the actual contract).

Each student was given a booklet of contracts and $100 in play money. Directions for charting predicted and actual scores, and for investing play money and calculating returns were explained.

Before the achievement contracts were initiated, the LD teachers assigned each student to work either in the area of math or spelling. Each week, students selected ten words or math problems from a list of twenty moderately difficult ones. The words or math problems were prepared by the LD teachers and were matched to the achievement level of the student. Students predicted

how many items they would answer correctly on a test the following week and charted this prediction. The goal (prediction) was also stated in a written contract in the student's booklet along with a description of the study plan to be followed to accomplish this goal. After setting their goal, students deposited their investment and recorded the deposit in a bank book. Students were allowed to invest up to $100.00 per week. Arrangements could be made for loans if students needed them. A 10% interest rate was charged for all loans.

The following week the student was given the spelling words or math problems in the form of a test. After the test had been corrected, the students charted their actual scores and filled out the evaluation section of the contract. In the evaluation section, the student compared outcome to goal, evaluated satisfaction with performance, attributed a reason for performance, and changed their action plans if desired. Payoffs in the form of play money were made, new words or math problems were given and new goals were stated and graphed. The achievement contract phase continued for five weeks. However, due to the Easter holiday, some schools were involved for only four weeks.

During the achievement contract phase of the study, students and RAs met individually to discuss strategies, study plans, predictions, attributions for outcomes, and feelings associated with outcomes. These conferences were held while the students were completing the evaluation page of the contract. The individual conferences were 10 to 15 minutes in length depending upon the size of the class and the time available.

The Achievement Contracts provided an opportunity for each student to develop a specific study plan. RAs assisted students in writing study plans. Specific study strategies were emphasized and students were encouraged to avoid general statements such as "I will study hard." Specific plans developed

by the student and the estimated time to be spent studying were outlined in the contract. By signing and dating the agreement between the student and the RA, the students became responsible for implementing their personal study plans.

The evaluation page of the contract requested attributions for success and failure. Students provided reasons for their own success and failure each week. By examining these reasons, students could reevaluate their strategies and change them if they wished. The evaluation section of the Achievement Contract reinforced the idea that the student was responsible for goals and performance and, therefore, responsible for personal successes and failures.

The Achievement Contracts also stressed the affective domain. Students rated their level of satisfaction after each spelling or math test. The objective of the rating was to show the students that they can control feelings of success or failure by experiencing success through realistic goal setting. The RAs stressed that students had the right to feel good upon meeting goals and experiencing success. After failure, the RAs stressed that students might feel better about outcomes if they were more realistic in their goal setting and if they expended effort to meet their goals.

Post-testing. Following the final week of the Achievement Contracts, post-testing began. Treatment and control groups were administered the group and individual measures used during the pretesting. The Teacher Rating Scale was distributed to LD teachers and regular classroom teachers. After measures from students and teachers had been collected, the Basketball Game post-test was scheduled. This activity was conducted with the treatment group only.

Results

The results of the study will be presented in the context of the research questions which guided the study.

Research Question 1: Can LD adolescents be taught a strategy for setting realistic academic goals?

Analysis of the data from the treatment activities (the basketball and baseball games and the achievement contracts) indicated four patterns of goal-setting: realistic, over-predicting, under-predicting, and random. Agreement between two independent judges was required for a student to be placed in a category. Specific criteria for placement in the four categories were those identified by Rotter (1945). Table 1 gives the number and percentage of students in the experimental group exhibiting each pattern at the end-of-treatment.

Nineteen percent ($n = 7$) of the experimental students were judged to be realistic goal-setters at the onset of treatment as evidenced by their scores on the initial basketball game. Data from the treatment activities indicate a significant increase ($p < .05$) in the percentage of experimental students classified as realistic goal setters at the end of treatment (70%). The difference in percentages is statistically significant ($p < .05$) when over-prediction, i.e., striving to surpass prior performance, is viewed as realistic (Rotter, 1945).

Table 1

Number and Percentage of Students in the Treatment Group Judged to Display Realistic and Unrealistic Goal Setting Strategies at the End of Treatment

Goal Setting Strategy	n	%
Realistic	16	43
Over-prediction	10	27
Under-prediction	6	16
No-pattern	5	13

Research Question 2: Will effort attribution training combined with instruction in realistic goal setting produce more frequent effort attributions than ability, luck, or task difficulty attributions?

Attributions were collected from the experimental students weekly from their contracts (See Appendix) during the Achievement Contract Phase of the treatment and at the end of the project by the IAR. Table 2 presents the frequency of effort attributions for success and failure experiences during the Achievement Contract Phase.

Table 2

Frequency of Effort Attributions for Success and Failure Experiences during the Achievement Contract Phase of the Project

Attributions	Success		Failure	
	n	%	n	%
Effort	53	79	49	80
Ability	0	0	9	15
Task Difficulty	8	12	9	15
Luck	6	9	1	2

Chi Square analysis of the attributions given during the achievement contracts indicated significantly more effort attributions for success (X^2 = 106.7, df = 1, $p < .01$) and for failure (X^2 = 115.4, df = 1, $p < .01$) than ability, task difficulty, or luck attributions. Chi Square analysis of the end-of-project attributions also showed significantly (X^2 = 36.99, df = 1, $p < .001$) more effort attributions than ability, task difficulty, or luck attributions were given. Table 3 gives the frequency of effort attributions at the project's completion.

Table 3

Frequency of End-of-Project Attributions
For Experimental Students

Attributions	n	%	Combined %
High Effort	19	49	69
Low Effort	7	20	
High Ability	1	3	13
Low Ability	4	10	
Easy Task	2	5	5
Difficult Task	0	0	
Lucky	4	10	15
Unlucky	2	5	

The IAR was completed by the experimental and control groups of LD students and scored for effort, ability, task difficulty, and luck attributions. Analyses of covariance were performed for each type of attribution. Pre-test scores were used as the covariate. Table 4 gives the pre and post-test means and the adjusted post-test means for the experimental and control groups. These analyses show a weak effect for treatment (F significant at the .25 level). The experimental students showed higher adjusted post-test means for effort and ability attributions, the internal factors, and lower adjusted post-test means for task difficulty and luck, the external factors, than did the control subjects. Therefore, the effect, while weak, was in the direction hypothesized

to occur as a result of the intervention. Analysis of the pre- and post-TAQ attributions showed no significant treatment effect.

To summarize, during effort attribution training, a significantly greater number of effort attributions than ability, task difficulty, or luck attributions were produced by the treatment group of LD students. The treatment group also showed an increase in internal attributions (effort and ability attributions) and a decrease in external attributions (task difficulty and luck attributions) on the IAR from pre- to post-testing. The effect was weak, but the pattern of attributions was in the predicted direction.

Research Question 3: Will teaching realistic goal setting produce changes in LD students' study behaviors?

Analysis of students' self-reported study behavior yielded nonsignificant results. Pre- and post-mean study behavior scores did not change for either the experimental or control groups. Individual item means on the study behavior questionnaire showed pre- to post-training change for the experimental group, but no over-all significant effect was found.

Analysis of LD teachers' mean item ratings for items measuring goal-setting abilities and feelings of self-worth indicated that the LD teachers consistently rated experimental students higher than control students both before and after training. However, the mean item differences were not statistically significant. Regular classroom teachers did not change their ratings of experimental students from pre- to post-training.

Table 4

Adjusted Post-test Means for Effort, Ability, Task Difficulty, and Luck Attributions for the Experimental and Control Groups

Effort						
Group	Pre		Post		Adjusted Post	F
	$\bar{X}$	s	$\bar{X}$	s	$\bar{X}$	
E	16.2	3.8	17.2	3.7	17.1	1.36*
C	16.6	3.3	16.3	3.1	16.1	

Ability						
Group	Pre		Post		Adjusted Post	F
	$\bar{X}$	s	$\bar{X}$	s	$\bar{X}$	
E	7.5	1.8	7.5	1.9	7.5	
C	7.2	1.6	6.9	1.7	6.9	1.25*

Task Difficulty						
Group	Pre		Post		Adjusted Post	F
	$\bar{X}$	s	$\bar{X}$	s	$\bar{X}$	
E	1.8	1.5	1.8	1.5	1.9	1.10*
C	2.2	1.3	2.4	1.5	2.3	

Luck						
Group	Pre		Post		Adjusted Post	F
	$\bar{X}$	s	$\bar{X}$	s	$\bar{X}$	
E	8.3	3.9	7.6	3.8	7.5	1.62*
C	7.9	3.4	8.3	3.5	8.5	

* $p < .25$

Research Question 4. Will instruction in realistic goal setting combined with effort attribution training increase academic self-esteem?

LD students completed the Michigan State Self-Concept of Ability Scale as pre- and post-treatment measures. Analysis of covariance indicated no significant difference in adjusted post-test means for the experimental and control LD students.

Student Evaluations of the Project

Students were also asked to evaluate the intervention activities. Students ranked their preference for treatment activities, rated their enjoyment of the project, and indicated whether the project helped them to improve their school work. Responses to the evaluation questions are given in Table 5. Data in Table 5 show that the game activity was the prefered activity and that as the activity approached classroom work, the preference for the activity decreased. Nevertheless, LD students all reported that they enjoyed participating in the project. However, about half (54%) of the students did not associate the project activities with improvements in their school work.

Discussion

The present research evaluated the effectiveness of an intervention designed to teach LD adolescents to set realistic achievement goals, to expend effort to reach the goals, and to accept personal responsibility for achievement outcomes. The intervention progressed from a physical game to an academic game to an achievement contract. The intervention proved successful in teaching LD adolescents a strategy for setting realistic achievement goals. A significant increase in the percentage of the treatment group judged by two independent raters to exhibit realistic goal-setting strategies was found at the end of treatment.

Table 5

Experimental Students Responses to the Evaluation Items

Rank of Activities	1 (high)		2		3	
	n	%	n	%	n	%
Basketball Toss	23	64	11	31	2	5
Baseball Games	12	33	19	53	3	8
Contracts	0	0	5	14	30	86

Did you enjoy participating in the project?	n	%
a. all of the time	14	39
b. most of the time	15	42
c. some of the time	7	19
d. none of the time	0	00

Did completing the contracts help you to improve your school work?	n	%
yes	16	46
no	19	54

A realistic goal was defined in terms of the difference between actual performance and predicted performance. Realistic goal setting was defined as a low negative to moderate positive discrepancy score (Rotter, 1945). The end-of-treatment test scores and the significant increase in the proportion of students exhibiting realistic goal setting strategies at the end-of-treatment demonstrated that LD adolescents can be taught to set achievement goals congruent with their past performance.

The intervention program also emphasized effort attribution and assuming personal responsibility for achievement outcomes. Attribution data collected during treatment indicated that the experimental students used effort attributions to explain their performance significantly more often than they used ability, luck, or task difficulty attributions. Analysis of the pre- and post-IAR mean scores showed experimental students gave internal attributions (effort and ability attributions) more frequently than control students. Thus the attribution data suggest that the treatment program was effective in attribution retraining and in teaching students to assume personal responsibility for achievement outcomes.

In addition to the treatment data, pre and post measures of study behavior were collected from the LD students, the LD resource room teacher, and regular class-room teachers. Analysis of these data yielded non-significant results. An end-of-treatment evaluation indicated that experimental students as a group did not generalize the strategies learned during treatment to their regular school work. It seems reasonable to assume that the choices provided during treatment prevented generalization. The intervention stressed personal choice of goals, expending personal effort, and accepting personal responsibility for achievement outcomes. Choices in the regular school environment are limited. LD students probably did not view setting personal goals as possible in the

regular school setting and, thus did not change their study behavior. However, further studies must be conducted to explore the importance of choice in generalizing goal-setting strategies learned in a treatment setting to the regular classroom setting.

In addition to the information about the effectivness of the intervention program, this study also provided data about the goal-setting patterns of LD adolescents. Three case studies will illustrate the strategies used by the LD students in this study.

Case Study #1: A Realistic Goal Setter

The intervention activities of a ninth-grade male student illustrate realistic goal setting. The first week of the Achievement Contracts, the student predicted 100% and succeeded. The next week he predicted 100% but actually got 80% correct. He adjusted his prediction to 80% following feedback about his actual performance and was successful in meeting future goals. His attribution for failure was lack of effort. He was satisfied with success and partly satisfied/partly disatisfied with failure.

The same pattern of realistic goal setting was evident in the final intervention activity, the Basketball Game. The student started at long distance moving closer until meeting success. After meeting success, he proceeded to higher predictions and when faced with failure again moved closer.

This student used knowledge of past performance to set achievement goals, attributed success and failure to personal effort, and reported affect appropriate to achievement outcomes. Forty-three percent of the experimental students exhibited this pattern of behavior at the end of treatment.

Case Study #2 Unrealistic Goal Setting: An Underpredictor

The responses of a ninth-grade male show the pattern of underprediction displayed by 16% of the treatment group. During the Achievement Contracts,

the student predicted initially that he would spell nine out of ten words correctly. He spelled six out of ten words right, therefore failing to meet his goal. After this failure experience he lowered his predictions to the 10% level, remaining there throughout the last weeks of the contract. He experienced failure the first week and success the next two weeks. He took responsibility for failure by attributing it to lack of effort but attributed successes to the ease of the task.

This student's behavior reflects what Covington and Omelich (1979) and Rotter (1954) have labeled as an unrealistic need to protect the self from failure and what Dweck (1975) has labeled "learned helplessness." The student did not set goals congruent with prior performance. He took personal responsibility for failure, but did not attribute success to personal factors.

Case Study #3 Unrealistic Goal Setting: An Overpredictor

The behaviors and responses of an eighth-grade male typify the goal-setting strategy of an overpredictor. During the Achievement Contracts, this student predicted 100% each week and never experienced success. Each time he was asked how satisfied he was with his performance he said that he was completely satisfied. When asked about these feelings after failure he stated that things could always be worse. He attributed failure to forgetfulness or studying the wrong answers to math problems.

This student's behavior illustrates what Covington and Omelich (1979) have described as setting unrealistically high goals to protect against failure. The student was able to state that he was satisfied with failure because failing to reach an impossibly highly goal was not really failure.

Some experimental students (13%) could not be labeled as realistic or unrealistic goal setters. They exhibited no systematic patterns of predictions and made few appropriate shifts in goals. Harrison et al. (1972)

found that EMR students with a history of school failure exhibited random goal setting patterns. This study suggest that a number of LD students also exhibit random goal setting patterns.

The patterns of goal setting behaviors exhibited by the LD students in the treatment group show the heterogeneity of this group of LD students. While a significant proportion of the treatment group learned to set realistic achievement goals and to accept responsibility for achievement outcome, a number of the students (30%) showed patterns of behavior that defended against failure in ways which preclude academic success. Individual or group counseling may be needed if these students are to learn to set realistic achievement goals and expend effort to reach these goals.

Limitations of the Study

The generalizability of the present study is limited by small sample size and the heterogeneous nature of the LD sample. Because of the small sample size, parametric tests of significance lacked power. The students in the LD sample were not highly similar in ability and achievement. Nevertheless, the sample was representative of the district in which the study was conducted. Therefore, the sample heterogenity found in this study may reflect the heterogeneous nature of the LD population as presently defined.

Suggestions for Future Research

The present research suggested that LD adolescents can learn to set realistic achievement goals, the first step in achieving a goal. However, the achievement contract data suggested that LD students were not always able to develop workable plans to achieve their achievement goals or to implement successfully the plans they did develop. Therefore, additional research needs to be undertaken which will assess LD students' ability to plan and to monitor their progress toward an achievement goal.

The present research also suggested that some LD students try to protect their self concepts in ways that preclude academic achievement commensurate with their ability. Additional research in the area of learned helplessness as a defense against failure needs to be undertaken. While researchers have suggested that LD adolescents display an attitude of learned helplessness, little research evidence is available about the incidence of the attitude among LD adolescents or about teaching or counseling approaches which modify the attitude.

Implications for the Field of Learning Disabilities.

LD adolescents can learn a goal setting strategy which will increase their chances for succcess and their feelings of self-worth within the school environment. The strategy is a cognitive strategy which requires LD students to assess their strengths relative to an academic task and then set a goal toward which they will work. The strategy emphasized in this research project places the responsibility with the LD student. It is the LD student who sets the goal and who schedules and completes all activities necessary to reach the goal.

The strategy stresses that the LD student is an able and responsible person. Teachers who use the strategy must be willing to permit LD students free choice in setting goals and developing plans to reach the goals. The LD student cannot be treated as a person who needs to be "helped" at every step in the achievement process. Students who learn that they always need help to accomplish school tasks may find it impossible to set goals, make plans, expend effort, and accept responsibility for achievement outcomes.

References

Altschuler A., Tabor, D., & McIntyre, J. Teaching achievement motivation. Middleton, Conn: Education Ventures, Inc., 1971.

Ammons, R. B. Effects of knowledge of performance: A survey and tentative theoretical formulation. The Journal of General Psychology, 1956, 54, 279-299.

Bar-Tal, D. Attributional analysis of achievement related behavior. Review of Educational Research, 1978, 48, 259-271.

Blumenfeld, W. E., & Leidy, T. E. Effectiveness of goal setting as a management device: Research note. Psychological Reports, 1969, 24, 24.

Brookover, W. B., Le Pere, J. M., Hanachek, D. D., Thomas, S., & Erickson, E. L. Self-concept of ability and school achievement, II (U.S. Office of Education, Cooperative Research Report, Project No. 845). East Lansing: Michigan State University, 1965.

Bryan, J. F., & Locke, E. A. Goal setting as a means of motivation. Journal of Applied Psychology, 1967, 51, 274-277. (a)

Bryan, J. F., & Locke, E. A. Parkinson's law as a goal setting phenomenon. Organizational Behavior and Human Performance, 1967, 2, 258-275. (b)

Covington, M. V., & Omelich, C. Effort: The double-edged sword in school achievement. Journal of Educational Psychology 1979, 71, 169-182.

Crandall, V. C., Katkovsky, W., & Crandall, V. J. Children's beliefs in their own control of reinforcements in intellectual - academic achievement situations. Child Development, 1965, 36, 91-109.

deCharms, R. Enhancing motivation: Change in the classroom. New York: Invington Publishers, 1976.

Deshler, D. Psychoeducational aspects of learning-disabled adolescents. In L. Mann, L. Goodman, & J. L. Wiederholt (Eds.), Teaching the learning disabled adolescent. Boston, Mass.: Houghton Mifflin, 1978.

Dweck, C. S. The role of expectations and attributions in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 1975, 31, 674-685.

Hallahan, D. P., Gajar, A., Cohen, S., & Tarver, S. Selective attention and locus of control in learning disabled and normal children. Journal of Learning Disabilities, 1978, 11(4), 47-52.

Hammer, W. C., & Hamett, D. L. Goal setting, performance and satisfaction in an independent task. Organization Behavior and Human Performance, 1974, 12, 217-230.

Harrison, Singer, Budoff, & Folman. Level of aspiration as a function of learning potential status in the educable mentally retarded. Psychology Report, 1972, 30(1), 47-57.

Harway, V. T. Self-evaluation and goal-setting behavior in handicapped children. In E. P. Trapp & P. Himmelstein (Eds.), Readings on the exceptional child. New York: Appleton-Century-Crofts, 1962.

Heider, F. The psychology of interpersonal relations. New York: John Wiley & Sons, 1958.

Ilgen, D. R., & Hamstra, B. W. Performance satisfaction as a function of the difference between expected and reported performance at five levels of reported performance. Organizational Behavior and Human Performance, 1972, 7, 359-370.

Ivancevich, J. M., & McMahon, J. T. Education as a moderator of goal setting effectiveness. Journal of Vocational Behavior, 1977, 11(1), 83-94.

Kim, J. S., & Hamner, L. W. Effect of performance feedback and goal setting on productivity and satisfaction in an organizational setting. Journal of Applied Psychology, 1976, 61, 48-57.

Kolb, D. A., & Boyatzis, R. E. Goal setting and self-directed behavior change. In D. A. Kolb, I. M. Rubin, & J. M. McIntyre, (Eds.), Organization psychology: A book of readings. Englewood Cliffs, New Jersey: Prentice-Hall, 1974.

Latham, G. P., & Baldes, J. S. The "practical significance" of Locke's theory of goal setting. Journal of Applied Psychology, 1975, 60, 122-124.

Latham, G. P., & Kinne III, S. B. Improving job performance through training in goal setting. Journal of Applied Psychology, 1974, 59, 187-191.

Latham, G. P., & Yukl, G. A. Assigned versus participative goal setting with educated and uneducated woodworkers. Journal of Applied Psychology, 1975, 60, 299-302. (a)

Latham, G. P., & Yukl, G. A. A review of research on the application of goal setting in organizations. Academy of Management Journal, 1975, 18(4), 824-845. (b)

Latham, G. P., & Yukl, G. A. Effects of assigned and participative goal setting on performance and job satisfaction. Journal of Applied Psychology, 1976, 61, 166-171.

Locke, E. A. A closer look at level of aspiration as a training procedure: A reanalysis of Fryer's data. Journal of Applied Psychology, 1966, 50, 417-420. (a)

Locke, E. A. The relationship of intentions to level of performance. Journal of Applied Psychology, 1966, 50, 60-66. (b)

Locke, E. A. Motivational effects of knowledge of results: Knowledge of goal setting. Journal of Applied Psychology, 1967, 51, 324-329. (a)

Locke, E. A. Relationship of goal level to performance level. Psychological Reports, 1967, 20, 1968. (b)

Locke, E. A. Toward a theory of task motivation and incentives, Organizational Behavior and Human Performance, 1968, 3, 157-189.

Locke, E. A., & Bryan, J. F. Cognitive aspects of psychomotor performance. Journal of Applied Psychology, 1966, 50, 286-291.

Locke, E. A., & Bryan, J. F. Performance goals as determinants of level of performance and bordom. Journal of Applied Psychology, 1967, 51, 120-130.

Locke, E. A., & Bryan, J. F. Knowledge of score and goal level as determinants of work rate. Journal of Applied Psychology, 1969, 53, 59-65.

Locke, E. A., Cartledge, N., & Knerr, L. S. Studies of the relationship between satisfaction goal-setting and performance. Organizatonal Behavior and Human Performance, 1970, 4, 135-158.

Locke, E. A., Cartledge, N, & Koeppel, J. Motivational effects of knowledge of results. Psychological Bulletin, 1968, 70(6), 474-485.

McClelland, D. C., & Winter, D. G. Motivating economic achievement. New York: Free Press, 1969.

Payne, R. B., & Hauty, G. T. Effect of psychological feedback upon work decrement. Journal of Experimental Psychology, 1955, 50, 343-351.

Robbins, R. L., & Harway, N. I. Goal setting and reactions to success and failure in children with learning disabilities. Journal of Learning Disabilities, 1977, 10, 356-362.

Ronan, W. W. Latham, G. P., & Kinne III, S. B. Effects of goal setting and supervision on worker behavior in an industrial situation. Journal of Applied Psychology, 1973, 58(3), 302-307.

Rosenthal, J., Self-esteem in dyslexic children. Academic Therapy, 1973, 9, 27-33.

Ross, M. The self-perception of intrinsic motivation. In J. H. Harvey, W. J. Hicks, & R. F. Kidd (Eds.), New directions in attribution research (Vol. 1). New Jersey: Lawrence Erlbaum Associates, 1976.

Rotter, J. B. Level of aspiration as a method of studying personality: A critical review of methodology. Psychological Review, 1942, 49, 463-474.

Rotter, J. B. Level of aspiration as a method of studying personality: IV The analysis of patterns of response. Journal of Social Psychology, 1945, 21, 159-177.

Rotter, J. B. Social learning and clinical psychology. Englewood Cliffs, New Jersey: Prentice-Hall, 1954.

Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80, No. 609.

Stedry, A. C., & Kay, E. The effects of goal difficulty in performance: A field experiment. Behavioral Science, 1966, 11, 459-470.

Tollefson, N., Tracy, D. B., Johnsen, E. P., Buenning, M. Farmer, A. & Barke,, C. R. An application of attribution theory to developing self-esteem in learning disabled adolescents (Research Report No. 23). Lawrence, Kansas: The University of Kansas Institute for Research in Learning Disabilities, 1980.

Torgesen, J. K. The role of non-specific factors in task performance of learning disabled children; A theoretical assessment. Journal of Learning Disabilities, 1977, 10, 27-34.

Wames, D. A., & deJung, J. E. Effects of goal setting upon learning in educable retardates. American Journal of Mental Deficiency, 1971, 75, 681-684.

Weiner, B. An attributional interpretation of expectancy-value theory. In B. Weiner (Ed.), Cognitive views of human motivation. New York: Academic Press, 1974.

Weiner, B. Theories of motivation from mechanism to cognition. Chicago: Markham, 1972.

Weiner, B., Heckhausen, H., Meyer, W., & Cook, R. E. Causal ascriptions and achievement behavior: The conceptual analysis of effort. Journal of Personality and Social Psychology, 1972, 21, 239-248.

Weiner, B., & Kukla, A. An attributional analysis of achievement motivation. Journal of Personality and Social Psychology, 1970, 15, 1-20.

APPENDIX

Reaching Goals Booklet

Purpose

"Reaching Goals" is a booklet designed to assist teachers in encouraging achievement in students. Through achievement-related games and activities, the booklet strives to teach three achievement motivation strategies: (1) realistic goal setting, (2) proper use of feedback, and (3) taking personal responsibility.

What Is Achievement Motivation?

Alschuler, Tabor, and McIntyre (1971) described people who are motivated to achieve in their book Teaching Achievement Motivation in the following way:

> When desire for achievement becomes a dominant concern for a person, it is expressed in restless driving energy aimed at attaining excellence, getting ahead, improving on past records, beating competitors, doing things better, faster, more efficiently, and finding unique solutions to difficult problems. People with strong achievement motivation generally are self-confident individuals who are at their best taking personal responsibility in situations where they can control what happens to them. They set challenging goals demanding maximum effort, but goals which are possible to attain; they are not satisfied with automatic success that comes from easy goals, nor do they try to do the impossible. Time rushes by them and causes mild anxiety that there won't be enough hours to get things done. As a result they make more accurate long-range plans than people with less achievement motivation. They like to get regular, concrete feedback on how well they are doing so that their plans can be modified accordingly. They take pride in their accomplishments and get pleasure from striving for the challenging goals of excellence they set.

Although achievement motivation is not meant to be a cure-all for student problems, those who are motivated to achieve are more likely to be involved in their learning, participants in purposeful planning, and less dependent on teacher direction than those who lack this motivation.

We hope this booklet will be helpful in the LD classroom. The ideas presented in this booklet are, by no means, inclusive of all the possible strategies that can be used to reach the above goals. References are provided in the back of the booklet to stimulate new ideas that may be useful in the classroom.

ERASER BASKETBALL GAME

How to Play

A trash can is placed at one end of the room. A line of tape is placed on the floor two feet from the can and is labeled "Short". Another line of tape is placed on the floor eight feet from the can and is labeled "Medium." The last line of tape, labeled "Long", is placed fifteen feet from the can. (The actual lengths labeled short, medium, and long are arbitrary and should be determined by the ability of the group.)

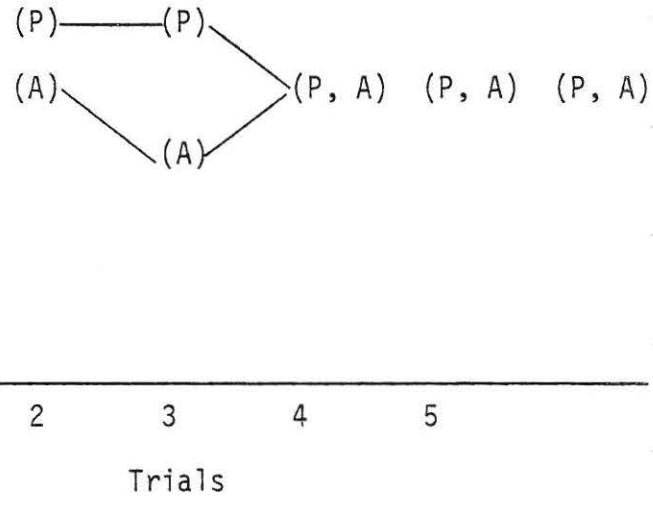
Each student is given five or six trials, depending on the size of the group and time allowed, in which to throw three erasers into the trash can. Each student is asked to select a distance and to predict how many of the three erasers he/she will toss into the can from that distance. Before selecting distances and predicting outcomes it should be explained to the group that different distances and different predictions will be awarded varying amounts of money (or whatever rewards are available) if predictions are achieved. (See graph below for example.)

Each student is given a chart, like the one below, to graph predictions and actual scores for each trial. Graphs allow the student and the teacher to keep track of past performances.

After the directions have been explained and all questions have been answered, the members of the group should take turns doing the following: selecting a distance, predicting the outcome, charting the prediction, throwing the three erasers, and charting actual outcomes.

Distance from basket	Predicted no. of baskets	Payoff Cents
	3	9
	2	8
Long	1	7
	3	6
	2	5
Medium	1	4
	3	3
	2	2
Short	1	1

P = Prediction
A = Accomplishment



Let's back up a bit and explain the graph and how to chart behaviors in more detail. To the left of the above diagram are the different distances from which shots will be taken: long, medium, short. The column labeled "Predicted" are the number of baskets predicted out of three shots that the student thinks s/he can make. The next column labeled "Cents" is the amount of money earned according to distance, prediction, and outcome.

In the example above, the student chose the medium distance and predicted that s/he would make three out of three on the first trial. This prediction is plotted on the graph as (P). The student actually made two out of three and this is plotted as (A). These predictions and accomplishments are charted across trials. This particular student adjusted his/her prediction to match the actual score and in this way became more realistic.

Payoffs are calculated by giving the students the payoffs appropriate if their actual score is the same as the previously predicted score. For example, trials three, four and five earned the student 5¢. If the student's actual score is one step away from her/his predicted score, one step is subtracted from the actual score and the payoff (cents) appropriate for that score is earned by the student. For example, the student above predicted three out of three at the medium distance on the first trial. The student actually made two out of three and was one step away from the predicted score. One step would be subtracted from the actual score and the student would earn 4¢. The same logic would be used if the student actually made more than s/he predicted. If the student predicted s/he would make one toss from the medium distance, but the actual score was two from the medium distance, the payoff would be 4¢.

Objective

The eraser game allows students to assess their ability at the task. By charting their behavior the students may for the first time, begin to look at past achievements and take them into consideration during future endeavors. The student will also begin to realize there are payoffs in setting realistic goals and disadvantages in setting unrealistic goals. Finally, the student may begin to take responsibility for outcomes. It should remain clear that the student actually controls the level of prediction. Whether the student experiences success or failure is determined by student's prediction. In this way the student can take responsibility for failure as well as success.

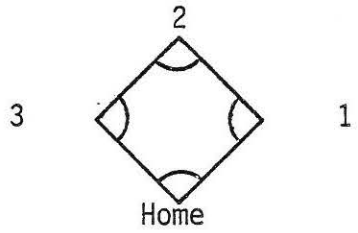
BASEBALL GAME

How to Play

This game is played like regular baseball, except that the batter is the student, the ball is the question, the hit or homerun is the correct answer, the out is the incorrect answer, and the pitcher is the teacher or assistant.

The class should be divided into two teams of similar ability. Each team member will ask for a single, double, triple, or a homerun question. The more difficult the hit requested, the more difficult the question. For example, a single question will be an easy question, a double will be a moderately difficult question, and so on.

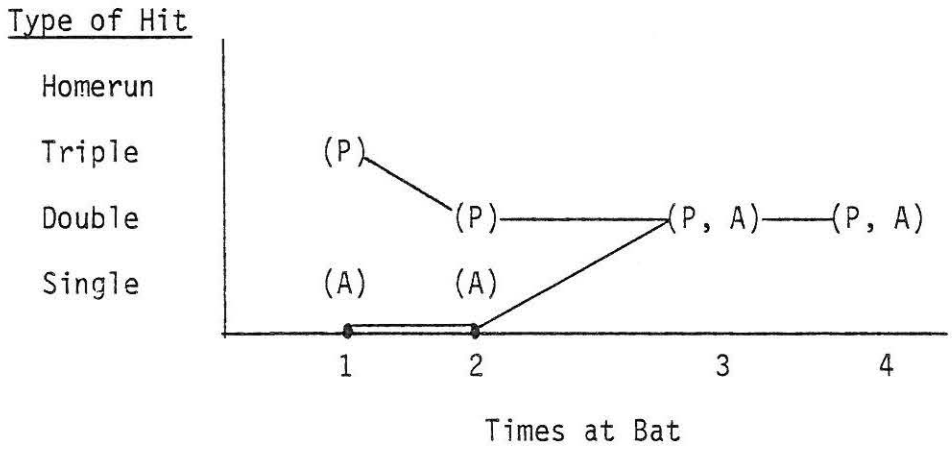
If the student answers his/her question correctly the hit will be charted on the appropriate base using the following diagram.



Team scores should be charted on the board.

A time limit should be set for each half inning to guard against the possibility of the entire team asking for easy questions. (If the entire team asked for easy questions they may never make an out.) Time limits will vary according to the amount of time available for the game.

Charting of individual behavior will be the main thrust of this exercise. That is, each type of hit requested and whether or not the student got the hit will be graphed on the following chart.



In the example above, the student asked for a triple question. The student is predicting (P) that s/he will make a triple. The student in this case missed the question so the actual score (A) is plotted at zero. The next time at bat the student makes a low prediction (P), but again falls short of the prediction. In the third and fourth time at bat it would seem the student found his/her ability level, therefore, becoming realistic in the predictions (P) being made. Lines are drawn between plots to better represent the direction of predictions and actual scores.

Objective

The baseball game not only gives the student practice in his/her problem area but provides insight into other areas. By allowing students to choose between levels of ability they can begin to test their own ability range. By charting their behavior the students may, for the first time, begin to look at past achievements and take them into consideration during future endeavors. The students will also begin to realize that there are payoffs in setting realistic goals. These payoffs will be success and the positive feelings that accompany success. Finally, the game may help the students to take responsibility for outcomes. It will remain clear that the students actually control the level of prediction. Whether the students experience success or failure will be due to the level of prediction. In this way the students can take responsibility for failure as well as success.

ACHIEVEMENT CONTRACTS

How to Play

Each student is given $100.00 in play money and asked to make a contract with the teacher or assistant. Students predict their percent correct on a test or activity at the end of the week. Each percentage level the student predicts involves a cost which will bring about a certain return if the prediction is achieved. The following scale could be used.

Prediction	Cost	Return	Rate
100%	$100	$300	3-1
90%	$90	$180	2-1
80%	$80	$140	7-4
70%	$70	$115	23-14
60%	$60	$95	19-12
50%	$50	$75	3-2
40%	$40	$55	11-8
30%	$30	$40	4-3
20%	$20	$25	5-4
10%	$10	$12	6-5

Before making the contract, the scale involving costs and returns should be explained to each student. Payoffs should also be explained in detail.

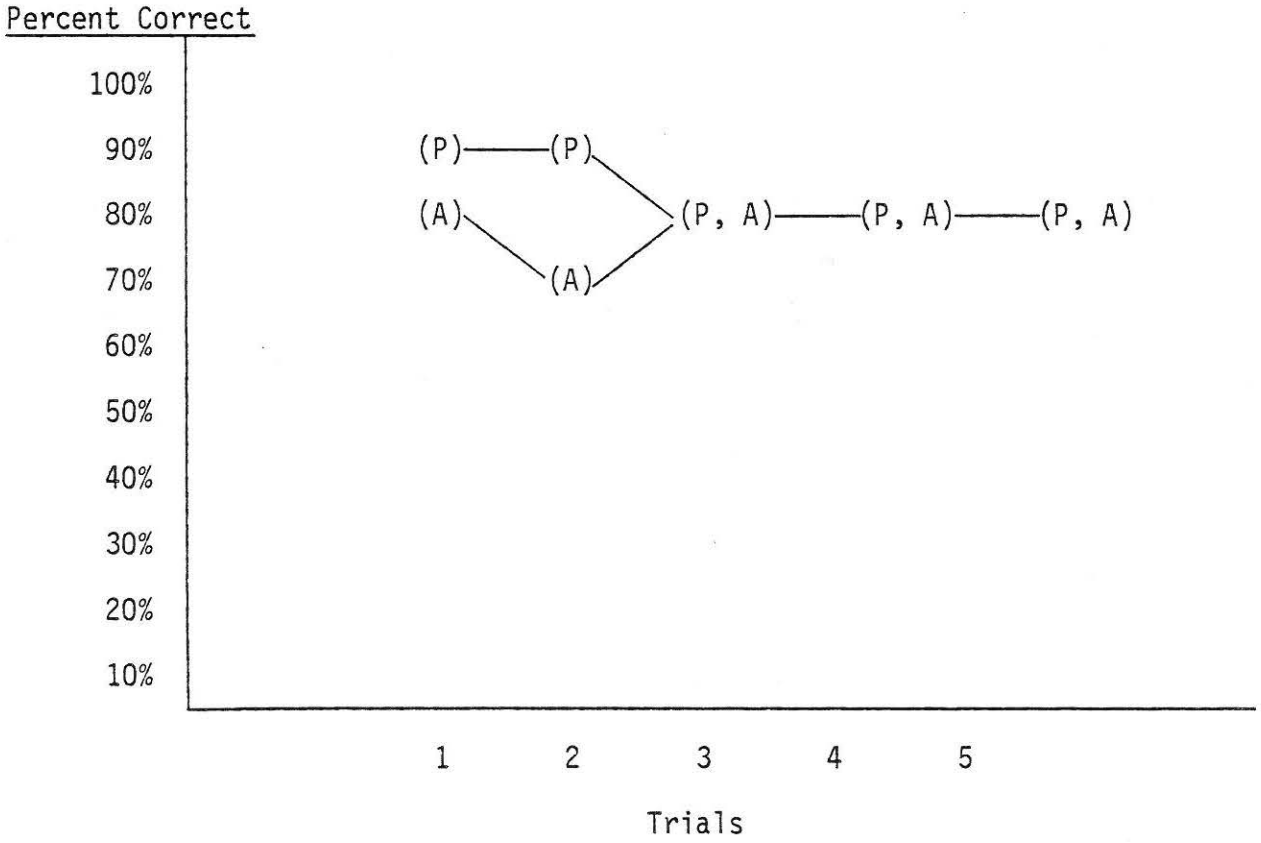
If the student actually achieves the percent predicted, the student would receive the appropriate return for the investment. For example, the student predicting 80% correct and achieving 80% correct would pay $80 at the beginning of the week and receive $140 at the end of the week.

The student who overachieves receives the return appropriate for the original prediction. For example, the student predicting 70%, that actually achieves 90%, would only receive $115, the return appropriate for 70%. The student still makes money and is therefore not penalized for overachieving. However, it should be pointed out to the students that had they predicted accurately, the profit could have been more. Hopefully, this will motivate the student to become more realistic.

For those who underachieve or overpredict, the payoff is calculated a bit differently. If the student achieves 10% below (or above) the prediction, 10% would be subtracted from the return. If the student is 20% below the prediction, 50% is subtracted from the return; 40% below the prediction, 70% is subtracted from the return; and 50% below the prediction, 90% is subtracted from the return. If the student is below his/her prediction by more than 50%, then the student receives no money in return for the investment. The student receiving a zero on the test or activity also receives no return for his/her investment. The penalties for not meeting the prediction are to encourage realistic goal setting.

Investments should be deposited with the teacher and recorded in a mock bank book. Payoffs can be made after each week's test or activity and recorded in the book. Loans can be provided to those students who lose all of their money. Payments toward loans should be agreed upon between the student and the teacher.

A graph of predicted and actual scores is helpful to the student as a representation of past performances. The graph might look something like the following.



In the above example (P) represents the predicted value and (A) represents the accomplishment. In this example, the student over predicts on the first two trials, but finds a realistic range the next three trials. It should be noted that costs paid and returns earned could also be graphed. It is also suggested that multiple trials be used. Time available will influence the number of trials allowed.

Objective

The achievement contract not only allows the student to work in his/her problem area, but may even spark new enthusiasm for old material. The contracts also provide insight into other areas. By allowing the students to choose what will be attempted, the students can begin to test their own ability range. By charting behavior the students may, for the first time, begin to look at past achievements and use this knowledge in planning how much time is required for an assignment. The students will also begin to realize that there are payoffs in setting realistic, reachable goals and disadvantages in setting unrealistic goals.

Finally, the game may help students to take responsibility for outcomes. It should remain clear throughout the exercise that the students control their predictions. Whether the students experience success or failure is under their control. In this way the students can take responsibility for success and failure.

CONTRACT

I will attempt to do _____% of this week's task correctly, which is _____ items. The sum of $ _____ will be deposited as my investment. I understand that if I reach my goal I will receive $ _____. If my actual outcome is different than my predicted score, I understand that my return will be lowered according to the agreed upon rules of the contract.

Date _____ Student _____ Teacher _____

What action will I take to accomplish this goal?

_____

_____

Evaluation

My actual outcome was _____ above, _____ below, or _____ equal to my predicted score.

I received $ _____. My profit was $ _____.

The main reason for my actual score was _____

_____

How satisfied am I with my performance?

Completely Satisfied	Mostly Satisfied	Partly Sat. Partly Dis.	Mostly Dissatisfied	Completely Dissatisfied
_____	_____	_____	_____	_____

Do I want to make any changes in my goal? _____

If so, what are they? _____.

Do I want to make any changes in my plan? _____

If so, what are they? _____

_____.

Looking Back

Have I done this task before? _____

How did I do? I predicted _____% correct. I actually got _____% correct.

Contract

I will attempt to do _____% of this week's task correctly, which is _____ items. The sum of $_____ will be deposited as my investment. I understand that if I reach my goal I will receive $_____. If my actual outcome is different than my predicted score, I understnad that my return will be lowered according to the agreed upon rules of the contract.

Date _____ Student _____ Teacher _____

What action will I take to accomplish this goal?

_____

_____

Evaluation

My actual outcome was _____ above, _____ below, or _____ equal to my predicted score.

I received $_____. My profit was $ _____.

The main reason for my actual score was _____

_____.

How satisifed am I with my performance?

Completely Satisfied	Mostly Satisfied	Partly Sat. Partly Dis.	Mostly Dissatisfied	Completely Dissatisfied
_____	_____	_____	_____	_____

Do I want to make any changes in my goal? _____

If so, what are they? _____.

Do I want to make any changes in my plan? _____

If so, what are they? _____

_____.

VOCABULARY

Goal - a prespecified level of accomplishment

Personal Responsibility - attributing outcomes to personal factors, such as effort and ability rather than luck or task difficulty

Need - deep desire to reach a goal

Hope for Success - imaging what it would be like to reach the goal successfully

Fear of Failure - worrying that the goal might not be reached

Action or Strategy - plans that help one to reach the goal

Personal Obstacles - blocks within the person which stand in the way of success

Failure Feelings - strong, negative feelings a person has when s/he fails or thinks about not reaching the goal

Success Feelings - strong positive feelings a person has when s/he succeeds or thinks about successfully reaching a goal

Need for Achievement - desire to strive for excellence, involving a set of strong feelings about doing well and using specific action strategies

POSSIBLE ACTIVITIES

1. Write a story about an achievement goal that is important to you. Include need for achievement thoughts in the story.

2. Keep track of all the achievement thoughts that you have for two days and write them down.

3. Interview someone who has an achievement goal or who has achieved a goal to find out what plans and methods s/he has for reaching the goal.

4. From your knowledge of goal setting, what advice would you give someone who wanted to stop smoking? Lose weight? Get in shape for a sport?

5. Find a short story in which a character is striving toward an achievement goal. Describe the goal and write down some of the need for achievement thoughts.

6. From television, newpapers, magazines, advertisements, school, sports, conversations, personal experiences, find and present examples of need for achievement thoughts and goal setting.

7. Listen to some popular music, and try to decide what goals are expressed in the lyrics.

8. Make up a game that uses goal setting strategies.

9. Create a comic strip character who used action strategies to reach a goal.

10. Invite a guest speaker to talk about their process of working toward a goal. Discuss achievement motivation concepts with them and explore which ones they have used.

11. Analyze T.V. programs according to achievement motivation concepts.

12. Fill out an "admiration ladder," writing the name of someone you admire on the top of the rung and the name of a person you do not want to be like on the bottom rung. Write your name on one of the rungs also. Discuss possible goals and strategies to be more like your "admired" person.

13. Use theatrical techniques to illustrate goal setting and other achievement motivation concepts (skits, improvisations, pantomimes, and role plays).

14. Make a collage of photographs or newspaper fragments to depict goal setting concepts.

15. Create drawings or posters or take pictures that demonstrate action strategies.

16. Read a copy to the class that illustrates achievement motivation concepts.

17. Create in a skit or role play a situation, for example, one showing a conflict between achievement values and some other value, or one in which it would be almost impossible to display need for achievement.

CHART FOR CONTRACTS

Percent Correct	Cost	Return
100%	$100	$300
90%	$90	$180
80%	$80	$140
70%	$70	$115
60%	$60	$95
50%	$50	$75
40%	$40	$55
30%	$30	$40
20%	$20	$25
10%	$10	$12

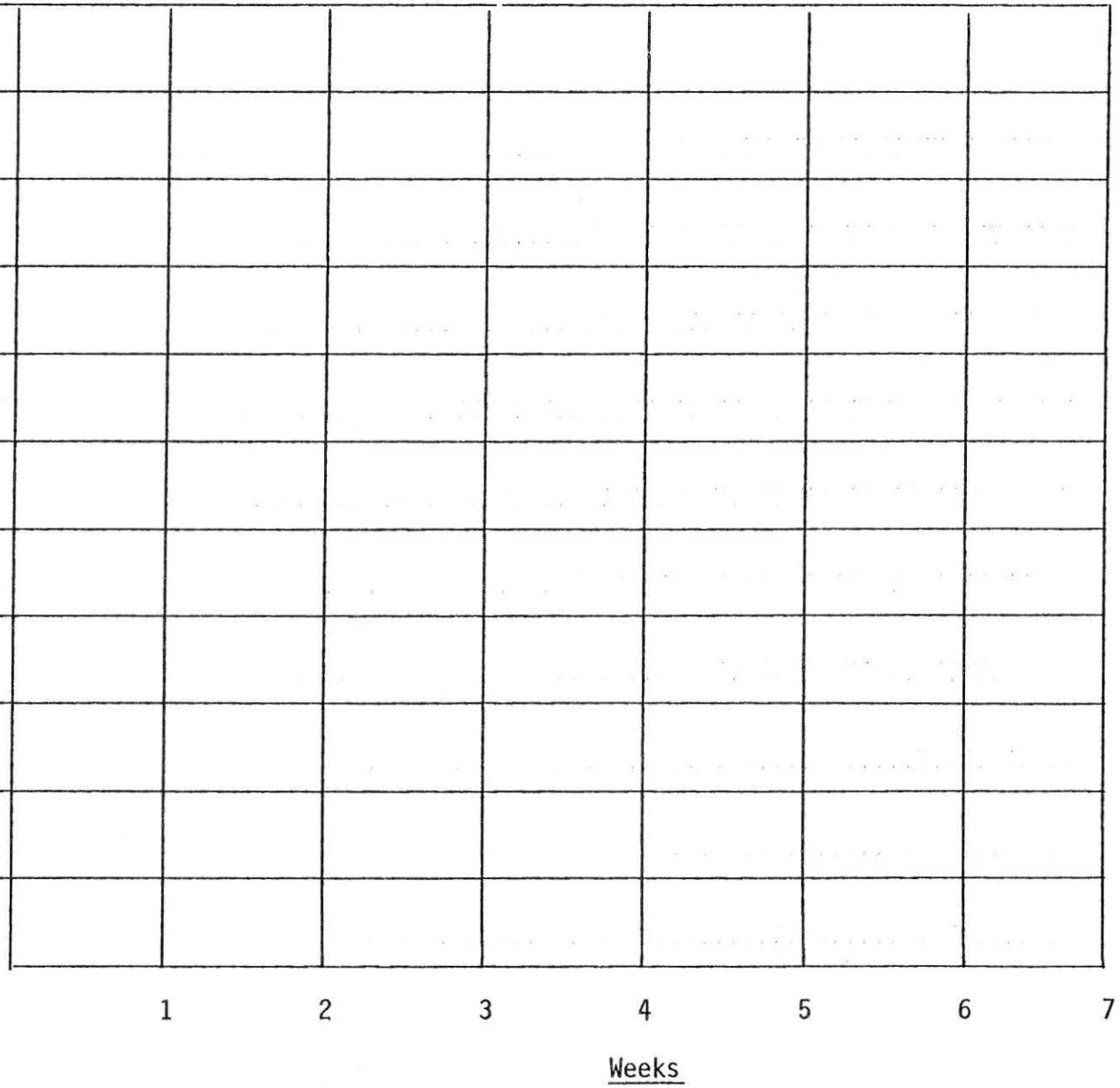


CHART FOR BASEBALL GAME