The Effects of Manipulating Performance Expectancies on Achievement Motivation and Task Performance

Literature Review

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Running head: Achievement Motivation

THE EFFECT OF MANIPULATING PERFORMANCE EXPECTANCIES ON ACHIEVEMENT MOTIVATION AND TASK PERFORMANCE

Achievement motivation evaluates the relative strength of an individual's need for achievement (Neuman, Finaly & Reichel). Individuals are characterized as being either high or low need achievers. High need achievers enjoy tasks which require concentration and permit learning, and enjoy tasks which provide them with a challenge. Low need achievers have a fear of failure so they will set either very low goals so that success is guaranteed or very high goals which no one could achieve. Achievement motivation is a fairly stable aspect of personality. People who expect to achieve often do; those who expect to fail find that these predictions are confirmed. The focus of this literature review is to determine if achievement motivation can be altered by manipulating expectancies.

MANIPULATING EXPECTANCIES

One type of personal expectancy is self-efficacy, defined as "People's judgements of their capabilities to organize and execute courses of action required to attain designated types of performances" (Schunk, 1991). For example, there is evidence that self-efficacy predicts such diverse outcomes as academic achievements, social skills, smoking cessation, pain tolerance, athletic performances, career choices, assertiveness, coping with feared events, recovery from heart attack, and sales performance. It is hypothesized that self-efficacy affects an individual's choice of activities, effort, and persistence. People who have a low sense of efficacy for accomplishing a task may avoid it; those who believe they are capable should participate readily. Individuals who feel efficacious are hypothesized to work harder and persist longer when they encounter difficulties that those who doubt their

capabilities. An individual's own performances offer the most reliable guides for assessing efficacy. Successes raise efficacy and failure lowers it.

A study by McCaughan (1983) found that by manipulating success and failure altered expectancies for future success, giving rise to changes in perceived competence. Success increased expectancy of future competence, while failure lowered it.

Although expectancy theory is not a theory of performance but rather one of motivation, the utility of any motivation theory lies in explaining performance. Most expectancy theorists suggest that to enhance performance one should enhance motivation and to enhance motivation one should (1) increase task confidence and (2) increase perceived incentive by making valued outcomes contingent upon successful performance (Yancey, Humphrey & Neal, 1992).

The relationship between children's perceptions

of cognitive competence and their achievement orientations was studied by Phillips in 1984. A group of 117 academically competent fifth graders and their teachers were administered a battery of questionnaires tapping a variety of motivational constructs. The children were then divided into low, average and high groups based on their scores of perceived cognitive competence. Approximately 20% had self-perceptions that seriously underestimated their actual high abilities. The primary goal of the study was to ascertain whether young children's perceptions of their academic competencies bear a significant correlation to other motivational determinants of achievement behavior when the contribution of actual ability is controlled.

Expectancy of success was assessed with three measures (1) score estimate, (2) expectancy questionnaire and, (3) perceptions of teachers expectancies. The achievement orientations of the

children with low perceived competence diverged markedly from those displayed by the children with more positive perceptions of their abilities in each of the three areas investigated: (1) they set less demanding achieving standards for themselves and adopted lower expectancies for success. They also perceived that their teachers expected less of them, as was confirmed by the expectancy rating obtained from the teachers. (2) They were more likely to attribute positive achievement outcomes to effort rather than to ability. (3) They were portrayed by their teachers as exhibiting poor persistence. The implication of this study lies in the demonstration that children's subjective perceptions of their abilities bear a critical association to their achievement motives and orientations. Children who do not have accurate perceptions of their abilities may be less optimistic about future success and academic pursuits.

According to the cognitive approach to achievement motivation, the reasons people give to explain their success or failure on achievement tasks influence both their expectations for the future and emotional experience. A correlational study by DeBoer (1985) administered questionnaires to freshmen immediately after they received their first semester grades. The survey asked them to explain their performance in the courses they had completed. If their grade was equal to or better than they had expected, they explained their success by rating the importance of the following items on a 5-point scale ranging from not a reason (1) to a very important reason (5):

1. The course was easy.
2. I was lucky - studied just the right material, etc.
3. I worked very hard.
4. My ability in this area is high

If their grade was lower than anticipated, they

explained their failure by rating the importance ot these items:

1. The course was difficult.
2. I was unlucky - studied the wrong material, was sick before the test, etc.
3. I didn't work hard enough.
4. My ability in this area is not as high as it should be.

For each course students were also asked to (a) rate their emotional reaction to their performance on a scale ranging from very disappointed to very pleased, (b) whether they planned to take another course in that area, and (c) the grade they expected to receive if they took another course in that area.

The results indicated that expectations for the future after experiencing success were most dependent on the grade received in the course. The course grade is probably the most reliable predictor of future

performance. After experiencing failure, expectations for the future were a function of the attribution of ability and task difficulty. Predictions concerning achievement behavior closely parallel predictions concerning expectations. Beliefs concerning competence or incompetence seem very powerful determinants of future achievement behavior. It is unfortunate that these beliefs are so effective after only one semester of college.

A study by Vollmer, 1986, investigated to what extent expectancy, as an expression of perceived ability, is related to the amount of independent thinking manifested in the examination situation, and to what extent the latter variable is a determinant of grade. The main idea in the paper is that on complex tasks, like examinations, the motivational effect of expectancy might not primarily be one of driving people generally to expend more or less effort, but rather one

of providing them with more or less courage to do some thinking on their own. Such a connection seemed plausible in view of the assumption that expectancy is an expression of a person's perceived ability of self-confidence. The data supported these assumptions in that significant relationships were found between perceived ability and expectancy, and between expectancy and independent thinking. The results support the hypothesis that expectancies may have motivational consequences in the examination situation and thereby determine performance outcome.

Expectancy theory is also a cognitive work theory which sees work motivation as the result of how attainable the workers believe their goals are. In this theory, work motivation is determined by the interaction of three factors. Valence refers to the perceived attractiveness of particular outcomes. Instrumentality refers to the perception that one's performance will be

rewarded. According to expectancy theory, workers rationally and logically assess the probabilities of these three components and combine them in a multiplicative manner, rather than merely summing them additively. Highest levels of motivation, therefore, result when all three components have high probabilities, whereas lowest levels result when any single component is zero (Vollmer, 1986). Expectancy refers to the perceived likelihood that a worker's efforts will result in successful performance.

ACHIEVEMENT MOTIVATION

Achievement motivation has been the focus of several highly successful research programs, beginning with the efforts of McClelland, Atkinson, and their associates at Wesleyan University in the late 1940s and early 1950s. The initial investigations derived from Henry Murray's (1938) concept of human motivation. Murray recognized the need to achieve as one of the

universal human needs. He defined it as striving to overcome obstacles, to exercise power, to strive to do something difficult as well and as quickly as possible. McClelland and his colleagues defined the need to achieve as seeking success in competition with some standard of excellence. Simply stated, achievement motivation evaluates the relative strength of individual's need for achievement (Neuman, Finaly & Reichel, 1986).

Studies which have investigated the relationship between achievement motivation and academic performance are mostly correlational. A study by Ali (1988) investigated the relationship between achievement motivation and academic performance of 67 college students in Zambia. Achievement motivation was measured with a modified version of Lynn's achievement motivation scale. Academic performance scores were obtained by averaging the grade of college-term examinations. The

results support the hypothesis that students who score high on achievement motivation tests would do better on academic tests.

The effect of achievement motivation training on academic performance was studied by Evans, Hearn, and Zwirner in 1975. Eighty-one students were given a fifteen week need achievement training course as part of their first semester of grade nine. They were compared with 108 grade nine students in another school who did not receive the course. The difference in mean change in language arts and science was not significant, while the mean change in need achievement, mathematics, social studies, and academic average was significant and in the direction predicted. The major flaw with this study is that the control group should have had a course as well to eliminate the effect of participating in an experiment and receiving extra attention as the cause for the results in the study. A fifteen week course is

giving a great amount of attention to the experimental group while the control group has no extra attention spent on them. Also this study does not state whether the effects could be obtained in any shorter period of time or if fifteen weeks is the necessary time it takes to cause a change in students' achievement motivation.

Achievement motivation training programs have also been applied to underachievers. Markle, Rinn, & Goodwin, (1980) studied the effects of achievement motivation training programs on the academic performance of underachievers. Fifty-four students ranging from grades 3 to 11 served as subjects; half completed the achievement motivation training program, and the other half served as a no treatment control group. The experimental group took part in six 1-hr. sessions in which they were introduced to the concept of achievement motivation. The students were taught to set goals for each subject in school, test-taking skills, classroom

behavior, study habits, they were assigned homework and their study time was recorded. To assess the effects of the treatment, grades from the semester prior to treatment were compared to those obtained during the semester following the treatment. Results showed that the treatment group improved significantly compared to the control group, suggesting that achievement motivation training was an effective intervention strategy for underachieving students. Although the study demonstrated an effective outcome the design contains many flaws. First of all, the control group receives no extra attention as compared to the 6 hours in total which was spent with the experimental group. Also, learning test-taking skills and study habits may be the cause for the effect, not the entire training program. Future research should test the effects of the components of the achievement motivation training programs.

People with high achievement motivation differ in a number of ways from people with low achievement motivation. Research has shown that individuals with high achievement motivation perform better on a variety of tasks, particularly those which permit learning, demand concentration, or contain levels of difficulty which enhance one's confidence when the task is mastered. McClelland and Atkinson (1958) found that high need achievers (n Ach) performed better on anagram puzzles and addition tasks and persisted longer than low need achievers (Slade & Rush, 1991). People low in n Ach are motivated more by their fear of failure than by their hopes of success. This is why they set either very low goals or impossibly high goals, which no one can attain.

Achievement motivation is most often measured using the Thematic Apperception Test (TAT). Subjects look at several pictures then spend several minutes

writing a story that tells what is happening in each picture, what led up to it, what the characters are thinking, and what would happen next. TAT scores are supposed to reflect the individual's needs, fears, and wants. The pictures are then scored for achievement imagery. In stories that score high on achievement, the main character is concerned with standards of excellence, and a consistently high level of performance, with unique accomplishments, and in pursuit of a long term goal or career. Stories that show fear of failure indicate low achievement motive, and the greater the fear, the lower the achievement.

Although this has been the test of choice, the TAT is cumbersome and time consuming compared to the more modern and faster methods of testing. A study by Lindgren, Mortisch, Thulin & Mich (1986) investigated the concurrent validity of two questionnaires (the NachNaff scale and Ray's Achievement-Orientation scale)

and the TAT test, each purporting to measure achievement.

The NachNaff scale requires subjects to choose between self-descriptions characterized by achievement, e.g., "efficient" and "resourceful", and those characterized by affiliation, e.g., "sympathetic" and "trusting". Most of the items were taken from the Need for Achievement (n Ach) and the Need for Affiliation (n Aff) scales of Gough's (1952) Adjective Check List, scales that suggested the title: the NachNaff scale. Only the adjectives which have positive affect were chosen from the checklist scales to minimize subjects' defensiveness. Split-half reliability of the NachNaff is .80, and the test retest reliability is .88. Validation of the NachNaff has produced results that are, in general, consistent with n Ach theory. Students' scores tend to correlate with their academic performance.

Ray's (1975) Achievement-Orientation (AO)

scale employs an abbreviated Likert scale (Yes ? No) in asking subjects to respond to direct questions about their attitudes and behavior, such as "Are you satisfied to be no better than most people at your job?." A 14-item version of Ray's AO scale has a reliability of .73.

In Study I, Lindgren's NachNaff test correlated more strongly than Ray's AO test with scales on the Strong-Campbell Interest Inventory (SCII) considered to reflect different degrees of achievement motivation. In Study II, women's NachNaff and AO scores correlated significantly with more California Psychological Inventory scales than men's did. Study III, was done to validate NachNaff and AO scales against ratings of stories written to TAT picture, but with little success. Numbers of both achievement and affiliation themes found in TAT stories were positively correlated with grade-point averages for both sexes and with men's AO scores,

but when verbal fluency was controlled, correlations were negative and nonsignificant. NachNaff and AO scales discriminated between students' choices of academic majors, but TAT rating did not. The NachNaff is the test of choice due to the fact that the scale is brief, highly reliable, rapidly administered, and easily scored (Lindgren, 1976).

PERFORMANCE

Research studying achievement motivation as an independent variable often uses a performance measure as a dependent variable, and\or a correlational measure. For example, many studies have looked at the effect of achievement motivation on academic performance. Ali (1988) investigated the relationship between achievement motivation and academic performance among college students. The results supported the hypothesis that students who score high on achievement motivation tests would do better on academic tests. Other studies have

employed achievement motivation training programs and examined the effects on academic performance. These studies have found that training programs have increased academic performance and subjects' level of need achievement.

Performance is often used as a dependent variable when manipulating expectancies. Yancey, Humphrey & Neal (1992), manipulated expectancies by providing subjects with feedback on practice exams. The subjects were told that they were going to participate in a psychology experiment that pertained to mathematics ability. The subjects were given a short 10-item practice test. Upon completion, the experimenter calculated the median test score and reported this score, six correct out of ten, to the class. The purpose of this feedback was to manipulate the confidence of the subjects, to enhance the confidence of the good performers, and impair the performance of the

poor performers. The results suggested that task confidence is a good predictor of performance. McCaughan (1983), suggested that success and failure also alter expectancies for future success, giving rise to changes in perceived competence. Results found that expectancy cognitions induced by success and failure alter performance.

SUMMARY

The need for achievement is a fairly stable aspect of personality, hence research in this area has focused mostly on individual differences. Performance is often studied along with achievement motivation. Research has found that individuals who score high on tests of achievement motivation, also tend to perform better on a variety of tasks, such as academic tests, then those who score low on achievement motivation tests. It has also been found that an individual's own performances offer the most reliable guides for

assessing expectancies. Achievement motivation training programs have also been studied in an attempt to improve need for achievement. These programs are often lengthy and teach proper test-taking skills and study habits. Alone, these improved skills could cause an increase in performance and achievement motivation. Therefore, if manipulating expectanices can improve achievement motivation, and individual's who score high on achievement motivation tests also tend to perform better at various tasks, and improved performances raise expectancies, then a circular model has been developed.

Thus, the experimental strategy is to determine if there is one link, manipulating expectancies, which can alter an individual's achievement motivation and cause a change in their performance.

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Expectancy theory is not a theory of performance but rather of motivation, and the utility of any motivation theory lies in explaining performance.

The Effect of Manipulating Performance Expectancies on Achievement Motivation and Task Performance

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A thesis submitted to the Department of Psychology of Algoma University College in partial fulfillment of the requirements for the degree of Honors Bachelor of Arts.

Abstract

This study investigated the effect of manipulating performance expectancies on achievement motivation and task performance. Sixty participants, drawn from two post secondary institutions, completed the NachNaff (Lindgren, 1976) test of achievement motivation, followed by an anagram task. They were then told that their performance was either above, below or almost exactly average for the anagrams that they had chosen. Participants again completed the NachNaff scale and a different set of anagrams. It was hypothesized that high expectancies would cause an increase in both achievement motivation and subsequent performance, and low expectancies would cause a decrease in both achievement motivation and subsequent performance, as compared to initial testing. Results revealed that achievement motivation was altered in the directions predicted, whereas no significance difference was found for performance.

Manipulating Performance Expectancies on Achievement Motivation and Task Performance

Achievement motivation evaluates the relative strength of an individual's need for achievement (Neuman, Finaly & Reichel, 1988). That is, the need to master difficult challenges, to outperform others, and to meet high standards of excellence (Yancey, Humphrey & Neal, 1992). Individuals are characterized as being either high or low need achievers. High need achievers enjoy tasks which require concentration and permit learning, and enjoy tasks which provide them with a challenge. Low need achievers have a fear of failure so they will set either very low goals so that success is guaranteed or very high goals in which success would be impossible. McClelland and Atkinson (1958) found that high need achievers (n ach) performed better on a variety of tasks, including anagram puzzles, then low need achievers (Slade & Rush, 1991). Achievement motivation is a fairly stable aspect of personality (Neuman, Finaly & Reichel, 1988). People who expect to achieve often do; those who expect to fail find that these predictions are confirmed (Schunk, 1991).

One type of personal expectancy is self-efficacy, defined as "People's judgements of their capabilities to organize and execute courses of action required to attain designated types of performances" (Schunk, 1991). It is

hypothesized that self-efficacy affects an individuals choice of activities, effort, and persistence. People who have a low sense of efficacy for accomplishing a task may avoid it; those who believe they are capable should participate readily. Individuals who feel efficacious are hypothesized to work harder and persist longer when they encounter difficulties then those who doubt their capabilities. An individuals own performances offer the most reliable guides for assessing expectancies. Successes raise efficacy while failure lowers it. In addition, a study by McCaughan (1983) found that by manipulating success and failure altered expectancies for future success, giving rise to changes in perceived competence. Results found that expectancy cognitions induced by success and failure alter performance.

Achievement motivation is often highly correlated with performance. A study by Ali (1988) investigate the relationship between achievement motivation and academic performance. The results support the hypothesis that students who score high on achievement motivation tests would do better on academic test.

The effect of achievement motivation training on the academic performance of underachievers was studied by Markle, Rinn & Goodwin in 1980. The subjects were taught to set goals for each subject i school, test-taking skills,

classroom behavior, study habits, they were assigned homework and their study time was recorded. Results showed that the treatment group improved significantly compared to the control group, who did receive any extra attention during the 6 hours which was spent with the treatment group. Since many skills were learned during the training program, it is hard to determine what caused the difference in achievement motivation and performance. Therefore, the purpose of this research was to determine if there is a link, manipulating expectancies, which will alter an individual's achievement motivation and task performance. If expectancies alter achievement motivation, and high achievement motivation tends to improve performance, and performance is a reliable guide for assessing expectancies, then the manipulation may cause a circular effect which may continually reinforce expectancies.

The NachNaff scale was used to measure achievement motivation. Although, the Thematic Apperception Test (TAT) is often used to measure achievement motivation, it is cumbersome and time consuming compared to the more modern and faster methods of testing. The NachNaff is a very convenient scale to use since it is brief, highly reliable, rapidly administered, and easily scored (Lindgren, 1976). Split-half reliability is .80, and the test-retest reliability is .88. Validation of the NachNaff has produced

results consistent with the need achievement theory (Lindgren, Mortisch, Thulin & Mich, 1986)

Expectancies were manipulated by providing participants with feedback after completing a set of anagrams (letters which have to be unscrambled to form a word). The feedback informed the participants that their actual score was either well above average, average or well below average. The feedback was determined by taking the participants actual score and adding or subtracting 53.5% or adding 3.5% depending on which expectancy manipulation group they were in.

Performance was operationally defined as how successful an individual was at completing the anagram tasks.

The experimental strategy was to determine if manipulating performance expectancies will effect an individual's achievement motivation and task performance?

Method

Participants

Sixty introductory psychology students from two post-secondary institutions.

Materials

The NachNaff scale, devised by Lindgren (1976) required participants to choose between 30 self-descriptions and was used to measure achievement motivation.

Anagrams were chosen from a list of 72 five letter anagrams rated on their mean solution time from 3 to 240 seconds (Tresselt & Mayzner, 1966). The anagrams were divided into three groups. The order of the anagrams were predetermined so that each group contained anagrams of approximately equal mean solution time. Participants chose the level of difficulty before attempting each anagram, easy, moderate, difficult, or very difficult. In actuality, the anagrams were predetermined so that each participant received the same anagrams and in the same order.

Procedure

The sixty participants were randomly divided into three groups. The subject's were told the experiment deals with how moods affect problem solving ability. This was done in order to mask the true intention of the study. The entire experiment is administered via computer.

Session 1, provided the baseline measures of the participants achievement motivation and anagram solving performance. These were obtained by administering the NachNaff scale of achievement motivation and the anagram test. The NachNaff presented one pair of self-descriptions at a time. The instructions were as follows:

> "Consider the adjectives in each of the pairs that follow and select one adjective in each pair that best describes your characteristically prevailing mood.

Work rapidly, select first impressions, do not worry about contradictory responses, and answer all questions. Remember to select one adjective in each pair."

Immediately following the NachNaff test the participants began the anagram test. The instructions were as follows:

"Within the 6.5 minute time limit you are to complete as many anagrams as you can. Points will be awarded based on the difficulty of the anagram, the speed at which you complete the anagram, and the accuracy. Before each anagram you will have your choice as to the level of difficulty, Easy, Moderate, Difficult, and Very Difficult. One anagram will appear on the screen at a time. Remember, the more difficult the anagram the more points you can accumulate. The points range from 3 to 240. The countdown clock in the top right-hand corner of your screen will remind you how much time is remaining."

After reading the instructions, the participants chose which level of difficulty they would like to attempt. Once the 6.5 minutes expired the computer generated the subject's actual score and presented it on the screen. Based on which group they were in, feedback was manipulated. For example, feedback for the low expectancy group was

manipulated by taking the participant's actual score and adding 53.5% to it. If their score was 610 the participant was told "Your score is 610 points. The average score for the anagrams you have selected is 936.35 points. Your score is well below average." The feedback for the high expectancy group was determined by subtracting 53.5% from the participant's actual score and they were told "Your score is well above average". The feedback for the moderate expectancy group was determined by adding 3.5% to the participants actual score and were told "Your score is almost exactly average".

An expectancy manipulation check was buried within a set of five related questions. The key question was "How well do you expect to do on the next set of anagrams?" The participants chose their responses from Pretty Good, Above Average, Average, Below Average, or Very Poor. The other questions were as follows:
"How would you rate your mood when you woke up this morning?", "How would you rate your mood right now?", "How well do you think you will do in your introductory psychology class?" and "How would you rate your problem solving ability?".

The participants were asked to complete a second NachNaff test and another anagram test. These tests were the key measures in determining if the participants scores

had changed form their baseline. Both tests will follow the same procedure as initially stated. After the second anagram test the participants received no feedback pertaining to their score or to the norms of the anagrams they had selected.

Session 2, occurred one week later and asked participants to complete a third NachNaff scale and anagram task. The participants were not given feedback. The 1 week delay was incorporated into the experimental design to assess the lasting effects of the manipulation on achievement motivation and performance. Upon completion of the experiment, participants were told that they may find out their actual scores and the purpose of the study by making an appointment with the experimenter. All participants were encouraged to attend the 1995 Thesis Conference April 7, 1995.

Results

An analysis of variance was performed on the two dependent measures, achievement motivation and performance. A significant interaction was found between achievement motivation and trials. Simple effects revealed there was a significant difference across the three trials $F(4,86)=6.71$, $p < 0.05$. Neuman-Keuls post hoc analysis revealed that the difference was found with the High Expectancy group between

Trial 1 and Trial 2. The average difference scores between groups are illustrated in Table 2. The low group's level of achievement motivation was lowered 2.75 from Trial 1 to Trial 2 and the high group's achievement motivation was raised 2.8 from Trial 1 to Trial 2. The standard deviation for the NachNaff ranges from 5.41 to 5.77. Therefore, the difference between Trial 1 and Trial 2 for both the high and low group was approximately half of a standard deviation and in the direction predicted. There was no significance between performance and trials. Also, only directly after manipulation, Trial 2, revealed significant results. The manipulation was not strong enough to cause a change over a 1 week delay. Therefore, results discussed will be between Trial 1 and Trial 2.

Analysis of the expectancy manipulation check using analysis of variance, revealed participants conformed with the manipulation $F(2,58)=34.81$, $p < 0.05$. After the manipulation, those in the low group answered they expected to perform below average on the next anagram task. The moderate group answered that they expected to perform at the average level. The high group answered that they expected to perform above average on the next set of anagrams (see Figure 3).

Analysis of variance on the choice of difficulty level revealed that the participants choice of difficulty level

conformed with the manipulation $F(2,58)=7.78$, $p < 0.05$. The low group chose easy to average anagrams. The moderate group chose average to difficult and the High group chose difficult anagrams (see Figure 4).

Discussion

By providing participants with feedback as to their performance on an anagram task did manipulate their expectancies for future performance on the same task. The manipulation also altered participants choice of difficulty level. A participant who was told their performance was above average, chose 'difficult' anagrams immediately following. A participant who was told their performance was average, chose 'average' to 'difficult' anagrams. Those who were told their performance was below average, chose 'average' anagrams.

The manipulation caused modest changes in achievement motivation , but only directly after manipulation. This suggests that achievement motivation is not an entirely stable personality trait and can be altered by manipulating performance expectancies. The manipulation caused no significant changes in performance. The number of anagrams completed was lowered from Trial 1 to Trial 2, in the predicted direction. All of the scores of Trial 3 improved from Trial 1 and again from Trial 2. This is probably due

to practice effects. The more often the participants were exposed to the task, the better their performance.

Therefore, by leading a person to believe that they performed well, they will then expect to perform well in the future, they will choose more challenging tasks, and their level of achievement motivation will improve. The results show that they may not necessarily perform better, at least not on specific, timed anagram tasks, but other tasks may reveal opposite findings.

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Table 1

Assignment to Groups:

GROUP	LOW	MODERATE	HIGH
SUBJECTS	20	20	20

Table 2

Difference Scores From Trial 1:

Achievement Motivation			Performance	
	Trial 2	Trial 3	Trial 2	Trial 3
Low	- 2.75	-0.78	-0.4	+1.57
Moderate	-1.85	+0.43	+0.45	+1.5
High	+2.8	-2.6	+0.3	+1.7

Figure 3

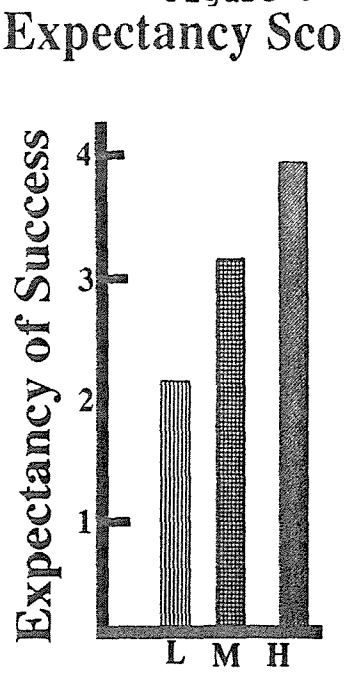
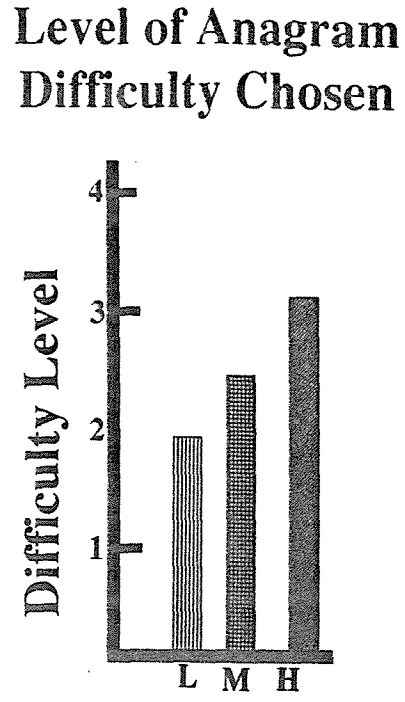


Figure 4



NachNaff 1

Anagrams 1

Feedback

Expectancy Check

NachNaff 2

Anagrams 2

Delay (1 week)

NachNaff 3

Anagrams 3