A FIELD TEST OF GARLAND'S COGNITIVE MEDIATION THEORY
OF GOAL SETTING

THESIS

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Jamie Bagnall, B.S.
Denton, Texas
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The present study examined Garland's cognitive mediation theory of goal setting in a three-minute basketball shooting task. The effects of different goal conditions were also investigated along with achievement motivation and self-motivation as mediating constructs of performance. Subjects (N=150) were males and females, assigned to one of five goal conditions: "do your best", easy, moderate, hard, and improbable. Results indicated no performance differences between the different goal conditions, with subjects in the "do your best" condition performing as well as subjects in the other goal conditions. Results also yielded partial support for Garland's cognitive mediation theory with task goals influencing performance through its influence on performance expectancy. Furthermore, a negative correlation between achievement motivation and performance was found for females in the improbable goal condition and a positive correlation was found between self-motivation and performance for females in the easy goal condition.
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CHAPTER I

INTRODUCTION

Goal setting as a motivational technique has been employed to increase individual performance in organizational, industrial, and sports settings. The use of goal setting in these areas is the result of the numerous studies which have provided evidence that goal setting can improve performance in industrial and organizational settings (Locke, Shaw, Saari, & Latham, 1981). A review of the literature by Locke et al. (1981) indicated that over 100 studies have tested goal setting with 90% supporting Locke’s (1968) theory that difficult, specific goals will produce a higher level of performance than easy goals, no goals, or “do your best” goals. These positive effects of goal setting on performance have been illustrated in both laboratory and field settings and have more recently been supported in studies by Locke, Fredrick, Lee, and Bobko (1984) and Garland (1982, 1983). Although there has been such extensive support for goal setting in organizational and industrial settings the findings in the sports literature have been equivocal. The positive relationship between goal setting and performance has been supported by various studies involving hand grip endurance (Botterill, 1977), archery (Barnett & Stanicek, 1979), and swimming (Burton, 1983) which have indicated that individuals assigned specific goals performed better than individuals without goals. Conversely, studies by Hollingsworth (1975) and Barnett (1977) using juggling and Weinberg, Bruya, and Jackson (1985) using a three minute sit-up task have
I found that individuals assigned specific goals performed no better than individuals with no goals. Even though the findings in the sports literature concerning the effectiveness of goal setting have been equivocal, further research is merited because of the sparse numbers of studies conducted.

Along these lines, in an attempt to explain how goals influence performance, Garland (1985) proposed a cognitive mediation theory of goal setting. Previous research in goal setting has indicated that goals do influence performance but no logical explanations have been offered to explain exactly how. Garland's theory provides a model in which an individual's task goal affects performance through its influence on performance expectancy and performance valence. An individual's task goal is defined as "an image of a future level of performance that the individual wishes to achieve" (p. 347). This task goal is linked to performance through the mediating constructs of performance expectancy and performance valence. The construct performance expectancy is defined as "a composite of an individual's subjective probabilities for reaching each of a number of performance levels over a range of performances" (p. 349) and the construct performance valence is defined as "a composite of those satisfactions an individual anticipates will be gained by producing a number of different performance levels over a range of performances that might be considered" (p. 349). Garland then tested his cognitive mediation theory in a laboratory setting with subjects being assigned to different goal conditions ranging from an easy goal to an extremely hard goal. A path analysis was employed to test the linkages between the mediating cognitive constructs and support was found for the proposed model with task goals influencing performance.
through their influence on performance expectancies and performance valences.

Garland, Weinberg, Bruya, and Jackson (in review) conducted a study trying to replicate Garland's (1985) findings in a physical endurance task. Based on the cognitive mediation theory (Garland, 1985), Garland et al. presented a similar causal model with task goals influencing performance through their influence on performance expectancies. A path analysis was used to analyze the data and support was found for Garland's (1985) theory indicating again a mediating process with task goals influencing performance through their influence on performance expectancies. Therefore, one of the aims of the present study will be to test Garland's theory and the linkages between task goals, performance expectancies, performance valences, and performance in a physical skill task, basketball shooting.

Another aspect of the present study will be to investigate the effect of goal difficulty on the linkages of Garland's theory. Locke (1968) has suggested that individuals should be assigned goals which are difficult but attainable and these goals should not be too difficult or the individual's performance may decrease because of repeated failures in reaching the goals. Contrary to this suggestion, Garland (1982, 1985) and Weinberg, Bruya, Garland, and Jackson (in press) have found that subjects assigned very difficult goals performed as well as or better than subjects in all other conditions.

In addition to examining goal difficulty and the moderating cognitive constructs of Garland's (1985) theory, two constructs of interest in relation to goal setting are achievement motivation and self-motivation. Achievement motivation attempts to determine an individual's direction, intensity, and
persistence of performance in an achievement situation (McClelland, Atkinson, Clark, & Lowell, 1953). According to achievement motivation, one of the main predictions is that high achievers and low achievers prefer different levels of task difficulty. Because this prediction deals with which task difficulty level individuals prefer, it seems possible that these individuals would prefer different levels of goal difficulty depending on their achievement motivation.

Self-motivation is a generalized tendency for an individual to persist at something in the absence of external reinforcement (Dishman & Gettman, 1980). The individual is reinforced more by his or her own goals than by those assigned by others. Dishman and Ickes (1981) developed a test to measure an individual's self-motivation in order to assist in identifying those individuals who would persist in exercise settings. Self-motivation has been used primarily in studies examining exercise adherence and it has been found that individuals with high self-motivation will persist at exercise longer than individuals with low self-motivation (Dishman & Gettman, 1980; Dishman, Ickes, & Morgan, 1980). In conclusion, Dishman (1983) and Dishman and Ickes (1981) state that one of the characteristics of highly self-motivated individuals is their ability to commit themselves to attaining a goal. Because of this characteristic it seems likely that high and low self-motivated individuals would prefer different levels of goal difficulty as well as perform differently at these different levels.

A final consideration which has not been researched in the goal setting literature is the possibility of sex differences as a moderator of goal setting. There have been a number of studies which have found that females have lower expectations and set lower goals than males but these studies have
dealt with how males and females differ in achievement situations and not actually with regards to goal setting.

Purposes of the Study

1. To test Garland’s (1985) cognitive mediation theory and the linkages between task goals, performance expectancies, performance valences, and performance in a physical skill task, a three minute timed basketball shooting task.

2. To examine the effect of goal difficulty on the variables task goal, performance expectancy, performance valence, self-efficacy, and performance.

3. To explore how an individual’s gender, achievement motivation and self-motivation relate to performance under different goal difficulty conditions as well as the linkages in Garland’s (1985) theory.

Limitations of the Study

One limiting factor of the present study is that it is a "one shot" study in which the subjects will come in and perform the task in one day as compared to a longitudinal study in which the subjects would perform the task over an extended period of time.

Delimitations

Fifty male and fifty female undergraduate students will perform the 3 minute timed basketball shooting task across five trials.
Definitions of Terms

1. **Goal**: The object or aim of action by an individual (Locke, 1968).

2. **Task Goal**: An image of a future level of performance that the individual wishes to achieve (Garland, 1985).

3. **Performance Expectancy**: A composite of an individual’s subjective probabilities for reaching each of a number of different performance levels over a range of performances that might be considered (Garland, 1985).

4. **Performance Valence**: A composite of those satisfactions an individual anticipates will be gained by producing a number of different performance levels over a range of performances that might be considered (Garland, 1985).

5. **Achievement Motivation**: An individual’s direction, intensity, and persistence of behavior or performance in a strictly achievement setting (McClelland, Atkinson, Clark, & Lowell, 1953).

6. **Self-Motivation**: A generalized tendency for an individual to persist at something in the absence of external reinforcement (Dishman & Gettman, 1980).
CHAPTER REFERENCES


CHAPTER II

REVIEW OF LITERATURE

Much has been written about the use of goal setting in organizations, industry, and sports, as a technique to motivate individuals to increase their performance. Numerous studies have provided experimental evidence that goal setting can enhance performance in industrial and organizational settings (Locke, Shaw, Saari, & Latham, 1981). Locke (1969) defined a goal as the object or aim of action by an individual. In essence, the goal is what the individual is trying to accomplish. Based on this definition, goal setting is the manipulation of an individual's aims or incentives to obtain higher achievement.

Goal Setting Theory

The theory of goal setting was developed across a series of studies by Locke (1966) and Locke and Bryan (1966) and finally proposed formally in a study by Locke (1968). In his initial goal setting study, Locke (1966) found that subjects given hard, specific goals exhibited higher levels of performance than subjects with easy, specific goals or "do your best" goals on a word usage task. Locke concluded that difficult goals enhanced performance across trials, even though the subjects reached their goals less than 10% of the time. The higher the subject's level of intended achievement, the higher their level of performance.

Locke and Bryan (1966) continued to find the positive results of goal setting using a psychomotor task. Subjects were assigned to either a goal
condition or a control condition. In the goal condition, subjects had fixed increments added to their previous best score after each trial with this number representing the subject's goal for the next trial. In the control condition, subjects were not given goals but instead instructed before the first trial to "do your best" on every trial. It was found that subjects in the goal condition performed significantly better than subjects in the control condition. Locke and Bryan found that subjects in the goal condition dropped below their previous best performance score 21% of the time compared to 41% of the time for the subjects in the control condition. This indicates that goals appear to intensify effort across time and prevents individuals from lapsing in their performance.

Locke and Bryan (1967) further extended their previous findings on goal setting. Assigning subjects to either a goal condition or a control condition and having them perform a number crossing task and a simple addition task they found that subjects assigned hard, specific goals performed at a higher level than subjects told to "do your best." In addition, subjects with hard, specific goals had more of an increased interest in the task than did subjects with no specific goals. Furthermore, goals appeared to increase interest and decrease boredom as trials got longer. These findings were a culmination of six different experiments which once again demonstrated support for the idea that goals seem to intensify an individual's efforts.

Because of the findings in 12 previous studies, including the three above studies. Locke (1968) proposed a theory of goal setting. The theory states that difficult, specific goals will produce a higher level of performance than easy goals, no goals, or "do your best" goals. The theory also contends
that goals help to regulate human action which help guide an individual to perform better. The relationship between goals and performance, however, is not a one-to-one relationship because people may make errors, lack the ability to reach their goals, or may have subconscious conflicts that subvert their goals (Locke et al., 1981). Although the relationship is not one-to-one, a rank order correlation of the 12 studies produced a correlation of .78 (p < .01). The theory also views goals as mediators of incentives used for performance. Specifically, Locke (1968) found that incentives including money, knowledge of results, time limits, participation, competition, and praise and reproof did not affect performance independently of the individual's goals.

There has been a great deal of support for this theory both in laboratory and field studies in industrial and organizational settings. A recent review of the literature (Locke et al., 1981) reported that over 100 studies have empirically tested the effects of goal setting on performance between 1968 and 1980. The studies reviewed for this period supported Locke's theory 90% of the time. The laboratory studies in which positive effects were found used a variety of tasks such as letter cancellation (Day & Kaur, 1965), simple addition (Locke & Bryan, 1969), reaction time (Locke, Cartledge, & Knerr, 1970), card sorting (London & Oldham, 1976), chess problem solving (Campbell & Ilgen, 1976), brainstorming (Bavelas & Lee, 1978), and perceptual speed (Mento, Cartledge, & Locke, 1980). The laboratory findings have been successfully replicated in industrial and organizational field settings involving logging crews (Latham & Locke, 1975), maintenance technicians (Ivancevich, 1977), and typists (Yukl & Latham, 1978). These studies have illustrated the positive effects of goal setting on
performance. In addition, more recent studies by Locke, Fredrick, Lee, and Bobko (1984) and Garland (1982, 1983), have supported the relationship between goals and performance.

Goal Setting and Sport

Even though there have been such consistent findings supporting the effects of goal setting on performance in industrial and organizational settings, there have been few studies actually showing consistent results for this topic in sports settings. The use of goal setting by coaches and athletes is very common despite the lack of research on the effects of goal setting on performance in sports. However, there have been some studies which have attempted to test Locke's theory of goal setting in sport settings and found support for it. For example, Botterill (1977) found support for Locke's goal setting theory in a field study examining the effects of goal setting on an endurance task. Results indicated that subjects with specific, difficult goals performed significantly better than subjects with instructions to "do your best" on an endurance task which involved repeated contractions on a grip dynamometer. Botterill concluded that the use of goal setting can affect an individual's performance, commitment, and motivation. Barnett and Stanicek (1979) also found support for goal setting theory in a field study examining the effects of goal setting on archery performance. They found that subjects in a group which set specific goals improved their archery performance significantly over a 10 week period when compared to a group which set no goals. A more recent study by Burton (1983) found that varsity swimmers who were taught goal setting techniques and who were judged as good at goal setting improved their performance times
significantly more than swimmers in a control group over the course of a swimming season.

Although there has been some support for Locke's theory of goal setting in sport settings, there have also been a number of studies showing no support for the theory. Hollingsworth (1975) and Barnett (1977), for example, found no performance differences between groups assigned specific, difficult goals and groups with no goals on a juggling task. Hollingsworth (1975) concluded that because the subjects received knowledge of results feedback, this may have influenced subjects in the control group to set their own goals. Hollingsworth also felt that the goals assigned in the experimental group may not have been difficult enough with subjects reaching their goals 44% of the time. Barnett (1977) also concluded that the nature of the task, juggling, provides feedback readily available to the subjects to evaluate their performance and this feedback can provide the motivation necessary to increase an individual's performance. Barnett also found that subjects in the control group were making implicit goal statements during the study. Because of the availability of feedback and the statements made by the control group, it was felt that the task itself may actually promote goal setting.

Weinberg, Bruya, and Jackson (1985) also examined the relationship between goal difficulty and performance and found that subjects with specific, difficult goals performed no better than subjects in a "do your best" group on a three minute sit-up task. The fact that 83% of the subjects in the control group set their own goals may be the reason for there being no differences. This confounds the study because the control group is actually just another goal group since they have assigned themselves their own goals.
This factor seems to be found in many of the studies which have found no differences between groups. Two other salient factors were suggested as explanations for the lack of differences including the nature of the task and the subject population. Specifically, the three minute sit-up task provided immediate feedback of pain and fatigue to the subjects which in turn informs the subjects that they are trying hard. This factor alone could be sufficient to motivate the individual but the nature of the subject population may also be a factor. That is, these subjects were in a conditioning class and they may have been highly motivated to improve their fitness in the first place. The combination of these two factors results in a subject who is already highly motivated and has salient physiological cues serving as feedback. Thus, assigning them a goal may not lead to any increased motivation to perform better since they are already trying very hard. More recently, Hall (in review) and Weinberg, Bruya, Garland, and Jackson (in press) have used the same three minute sit-up task and found similar results. Subjects assigned goals did not perform significantly better than subjects in a control group instructed to "do your best."

Cognitive Mediation Theory

Garland (1985) proposed a cognitive mediation theory of goal setting in an attempt to explain how goals influence performance. The previous research, as cited by Locke et al. (1981), has shown that goals influence performance in various settings but a logical explanation for how goals actually influence performance was lacking. Garland's theory illustrates a process in which an individual's task goal influences performance through its influence on performance expectancy and performance valence.
Garland defines a task goal as "an image of a future level of performance that the individual wishes to achieve" (p. 347). These task goals can be stored in memory and recalled later to evaluate a performance and also appear to have "motivational significance" (p. 347). The theory states that task goals are linked with future performance through two mediating constructs.

The first mediating cognitive construct is performance expectancy. Expectancy was conceptualized as an individual's subjective probability that an act will be followed by an outcome (Vroom, 1964). Because Vroom's theory did not predict performance, Galbraith and Cummings (1967) later defined expectancy as an individual's subjective probability that a level of effort would result in some level of performance. Garland (1984) states that conceptualizing expectancy as a subjective probability of success can cause problems in goal setting research. Expectancy has been conceptualized as individuals developing an expectancy for reaching a level of performance as defined by their task goal. Garland argues that individuals develop expectancies for reaching a number of different performance levels, not just one level of performance. For example, an individual shooting baskets may have a task goal of making 4 baskets and another individual may have a task goal of making 10 baskets in one minute. It is not possible to compare subjective probabilities of success between these two individuals because of their differing task goals.

In his theory, Garland defines performance expectancy as "a composite of an individual's subjective probabilities for reaching each of a number of different performance levels over a range of performances that might be considered" (p. 349). This definition takes into account that individuals
develop expectancies for a number of different performance levels. Considering the previous example, now the individual with a task goal of 4 and the individual with a task goal of 10 can be asked for their subjective probabilities of making at least 3, 8, or 12 baskets. An index could then be computed for performance expectancy by averaging the individual’s subjective probabilities. This index could then be used to compare performance expectancies for individuals performing the same task.

A brief note must be made here to address the similarities between Garland’s construct of performance expectancy and Bandura’s (1977) self-efficacy construct. Bandura (1977) defined self-efficacy as the strength of an individual’s conviction to execute a behavior to produce a certain outcome. These two terms have virtually the same meaning with both measuring an individual’s feelings of competence or personal expectations.

The other mediating cognitive construct in Garland’s cognitive mediation theory is performance valence which represents an individual’s anticipated satisfaction. This anticipated satisfaction comes from the individual’s performance. Garland defines performance valence as “a composite of those satisfactions an individual anticipates will be gained by producing a number of different performance levels over a range of performances that might be considered” (p. 349). In the earlier example, you can now ask each individual how satisfied they would be to make 3, 8, or 12 baskets. An index for performance valence can now be obtained by averaging the individual’s three anticipated satisfactions. Thus, this construct tells you how satisfied an individual is with their performance.

Following the above discussion, the first proposition of Garland’s cognitive mediation theory states that "task performance is a positive
function of task ability and performance expectancy and a negative function of performance valence" (p. 350). It is proposed that performance expectancy will influence performance by stimulating action and maintaining an individual’s effort. Individuals with high performance expectancies feel strongly about their ability to perform well. This in turn may result in initial high motivation, coupled with increased persistence. The relationship between performance valence and performance is proposed to be negative. Lower levels of anticipated satisfaction with performance will result in higher levels of performance. As performance valence decreases, an individual becomes less satisfied and anticipates increasing dissatisfaction in future performances. As a result, the individual will probably increase their effort to improve their performance. This negative relationship is the same for individuals who have higher levels of satisfaction. As the individual’s performance valence increases, the individual anticipates increasing satisfaction from their performance. This results in a decrease in motivation to improve their performance as performance valence gets higher.

Furthermore, the second proposition of Garland’s cognitive mediation theory states that “performance valence is a negative function of task goal and performance expectancy” (p. 351). The individual sets their task goal at a performance level which will be satisfying to them. According to the proposition, after an individual experiences either satisfaction or dissatisfaction following some performance, the individual then anticipates some level of satisfaction on a future performance. It follows that this anticipated satisfaction will be a direct, negative function of the individual’s task goals. Referring to the previous example, if we asked the individual with a task goal of making 4 baskets and the individual with a task goal of
making 10 baskets how satisfied each would be making 7 baskets, it would follow, that the individual with the task goal of 4 baskets would report more satisfaction than the individual with the task goal of 10. This relationship proposes that individuals with higher task goals will have lower performance valences.

In addition, a negative relationship between performance expectancy and performance valence is predicted under the following assumption. Individuals go through their lives learning that performing tasks which are very easy to achieve result in less satisfaction than those tasks which are more difficult to achieve. Garland (1983) found that individuals set their task goals well above their assigned goals when those goals were very easy and it appears that individuals receive little satisfaction from reaching an assigned goal that is too easy and in turn set their own task goals higher. These task goals are usually set high enough that the individuals get some satisfaction from reaching their goal or at least coming close to it. This negative relationship proposes that individuals with high performance expectancies will have lower performance valences. The higher the individual’s expectancies, the lower their satisfaction will be due to the task being too easy.

Finally, the third proposition from Garland’s (1985) cognitive mediation theory states that “performance expectancy is a positive function of task goal and ability” (p. 352). The proposed relationship between task goals and performance expectancy is that higher task goals result in higher performance expectancies. Garland proposes at least three different possible cognitive mechanisms to explain this relationship. First, individuals with higher task goals may develop new strategies to reach these goals (Locke et
al., 1981). Some of these new strategies might be evaluating the performance in relation to the goal (Kolb & Boyatzis, 1970) and redefining the task to make it easier (Bavelas & Lee, 1978). Second, higher goals may use a process called "wishful thinking" (Jones, 1977). This process operates by the person overestimating the probability of achieving a very difficult goal. The individual believes that they can succeed and expends extra effort in order to reach this difficult goal. Finally, the individual's task goal can act as an anchor which results in higher performance expectations among individuals with high task goals. Thus, this proposition states that individuals with high task goals will have higher performance expectancies than individuals with low task goals.

Garland has tested his cognitive mediation theory in a laboratory setting with subjects randomly assigned to goal conditions ranging from an easy goal group to an extremely hard goal group. Subjects performed a creative brainstorming task across ten trials and before each trial their task goal, performance expectation, and performance valence were measured. Performance feedback after each trial was also provided. The results revealed that individuals who were assigned very difficult goals set higher task goals, exhibited higher performance expectancies, exhibited lower performance valences, and performed better than individuals in the control, easy, or medium goal conditions. A path analysis was then employed to test the linkages between the mediating cognitive constructs of the theory and support was found for a mediating process in which individual task goals influence performance through their influence on performance expectations with the path analysis indicating performance expectancy, performance valence, and task ability predicting 63% of the variance in performance.
More recently, Garland, Weinberg, Bruya, and Jackson (in review) conducted a study to replicate the above findings in a field setting using a physical endurance task. The subjects performed a three minute sit-up task in which they had three minutes to do as many sit-ups as possible. The three minute sit-up was practiced over a five week period and at the end of the five weeks a baseline performance score was obtained for each subject. The subjects were then randomly assigned to one of three groups in which they were either instructed to do their best to improve their performance, to improve their performance by a very difficult amount based on normative data, or to improve their performance by a highly improbable amount which nobody would likely reach. The three minute sit-up task was then performed for the next four weeks with the subjects practicing on Monday and Wednesday and then having their performance assessed on Friday. In addition, the subject's task goal and self-efficacy (performance expectancy) was measured prior to each performance assessment. Based on cognitive mediation theory (Garland, 1985), Garland et al. presented a causal model in which individual task goals were proposed to influence performance through their influence on self-efficacy. To test this causal model, a path analysis was employed to test the linkages between task goals, self-efficacy, and performance. Once again, a mediating process was found in which task goals influenced performance through their influence on self-efficacy.

Therefore, the major purpose of the present study is to test Garland's theory and the linkages between task goals, performance expectancies, performance valences, and performance in a physical skill task. Garland et al. (in review) found support for Garland's (1985) cognitive mediation theory in a physical endurance task which does not require physical skill, whereas
the present study will examine how Garland's theory operates in a physical
task, basketball shooting, which requires skill.

A second purpose of the present investigation is concerned with the
effect of goal difficulty on the variables task goal, performance expectancy,
performance valence, self-efficacy, and performance. Garland (1985) found
that individuals assigned very difficult goals set higher task goals, exhibited
higher expectancies, exhibited lower valences, and performed better than
individuals in the control, easy, or medium goal conditions. Similar results
examining the relationship between goal difficulty and performance have
been found by Garland (1982) and Weinberg, Bruya, Garland, and Jackson (in
press). Garland (1982), in a laboratory study, found that subjects assigned a
very difficult goal faced repeated failure, yet there was no decrease in their
motivation or performance. Weinberg et al. (in press) conducted a study in a
physical education setting to determine if unrealistically difficult goals
caused an individual's performance to decrease. Results indicated that
subjects assigned unrealistically difficult goals actually performed better
than all other conditions, although this finding was not statistically
significant. These findings seem to contradict what had been suggested by
Locke (1968) in his theory of goals setting, that individuals should be
assigned difficult but attainable goals. This suggestion of goal attainability
has been carried over into the sport literature, where the idea of goals being
too difficult will result in repeated failures, a drop in motivation, and a
decrease in performance (Gould, 1985; McClements & Botterill, 1979). These
equivocal findings in the goal attainability literature will be addressed in the
present study while also testing Garland's model.
Goals and Achievement Motivation

In addition to the mediating constructs in Garland's (1985) cognitive mediation theory, another construct of interest in relation to goal setting is achievement motivation. Achievement motivation was conceptualized from work by McClelland and Atkinson (Atkinson, 1957, 1964; McClelland, Atkinson, Clark, & Lowell, 1953) and attempts to determine an individual's direction, intensity, and persistence of behavior or performance in a strictly achievement setting (McClelland et al., 1953). This mediating construct is directly related to performance situations in which the individual knows their performance will be evaluated according to some standard and that the outcome of the performance will either result in success or failure. It is proposed that achievement situations present the individual with the possibility of succeeding or failing which in turn elicits two conflicting achievement motives within the individual which are the motives to approach success or to avoid failure. These motives tell us whether an individual is more likely to approach success or avoid failure in an achievement situation with both motives being present in each individual but one being more dominant than the other. Two other variables which operate in an achievement situation are the situational variables of probability of success or failure and incentive value of success or failure. These two variables along with the individual's achievement motive result in the individual's overall tendency to approach success or avoid failure in an achievement setting.

One of the main predictions of the theory deals with which task difficulty levels individuals with differing achievement motivations prefer. The theory predicts that individuals who approach success (high achievers)
will seek out tasks of intermediate difficulty. These tasks, with a .5 probability of success, are perceived as demanding and success will rely on the effort of the individual. These situations of intermediate difficulty also include a very evaluative process since the probability of success is just as likely as the probability of failure. If the probability of success is very high or very low the motivation for the individual decreases because the task is either too easy or too difficult. Conversely, the theory predicts that individuals who avoid failure (low achievers) will seek out tasks which are either very easy or very difficult. These tasks have very high or very low probabilities of success which minimizes the individual's anxiety of failure. The individual chooses these tasks because they want to avoid the intense evaluation that takes place in situations of intermediate difficulty. The very easy task has a very high probability of success which allows the individual to avoid failure. Likewise, the very difficult task has a low probability of success and the individual can avoid failure by explaining that almost everyone fails at the task.

Because one of the main predictions of achievement motivation deals with which task difficulty levels individuals with differing achievement motivations prefer, it seems plausible that these individuals may also prefer different levels of goal difficulty depending on their achievement motivation. In Locke et al.'s (1981) review of the goal setting literature, the studies cited that examined achievement motivation as a personality construct in goal setting did not examine the relationship between achievement motivation and goal difficulty. In the previous studies goal difficulty was held constant across goal setting conditions. It seems possible that there may be a relationship between an individual's achievement motivation and the level
of goal difficulty they prefer. According to achievement motivation predictions, individuals who approach success (high achievers) prefer tasks of intermediate difficulty because these tasks have a .5 probability of success and success depends on the individual's effort. Therefore, individuals who approach success (high achievers) would probably prefer goals of moderate difficulty because obtaining these moderate goals would be demanding and would depend on the individual's effort. Likewise, achievement motivation predicts that individuals who avoid failure (low achievers) prefer tasks that are either very easy or very difficult because these tasks present the individual with a great probability of either success or failure. Thus, individuals who avoid failure (low achievers) would probably prefer either very easy goals or very difficult goals. The very easy goal would present the individual with a very good chance of obtaining it while the individual can rationalize that hardly anybody reaches the very difficult goal, thus, avoiding failure in both circumstances. Because there appears to be a possible relationship between achievement motivation and goal difficulty based on the theoretical predictions of achievement motivation and the lack of previous research, another purpose of the present study is to examine this possible relationship.

Goals and Self-Motivation

Another mediating cognitive construct that might operate within a goal setting process is self-motivation. Self-motivation is a generalized tendency for an individual to persist at something in the absence of external reinforcement (Dishman & Gettman, 1980). Self-motivation is also independent of situational influence, and although the situation may change
or the behavior may change the individual's self-motivation should remain relatively stable. This means an individual is reinforced more through their own ideas or goals than by those offered by others. The theory of self-motivation has been used extensively in studies of exercise adherence to determine if individuals with different levels of self-motivation will stay in exercise programs. Dishman and Ickes (1981) developed a paper-and-pencil test to measure self-motivation because they wanted to develop a reliable measure of self-motivation to assist in identifying those individuals who would persist at exercising independently of situational influence. It was hoped that this would allow clinicians to focus attention on individuals who are prone to dropping out of exercise programs. The Self-Motivation Inventory was developed and administered to subjects in two studies to test for reliability and validity. The studies predicted that, relative to measures of ego strength and social desirability, the Self-Motivation Inventory would predict adherence to a voluntary physical activity program better. Dishman and Ickes found that the inventory was a very good predictor of exercise behavior. In addition, a number of other studies have found that individuals who scored high on the Self-Motivation Test, developed by Dishman and Ickes (1981), stayed with an exercise program longer than those who scored low on self-motivation (Dishman & Gettman, 1980; Dishman, Ickes, & Morgan, 1980; Wankel & Graham, 1982). Highly self-motivated people seem to stick with exercising better than low self-motivated people.

Furthermore, the previous research on self-motivation and exercise adherence indicates that high self-motivated individuals are more likely to overcome situational barriers, such as inappropriate goals, in the exercise setting. In addition, Dishman (1983) and Dishman and Ickes (1981)
concluded that one of the characteristics of a highly self-motivated individual is the ability to commit themselves to a goal. Based on these conclusions, it appears that one aspect of self-motivation is related to the pursuit and attainment of a goal. Because highly self-motivated individuals seem to pursue goals and have a greater tendency to persist in their exercise it seems likely that these individuals would not be discouraged by very difficult goals. Likewise, individuals who are low in self-motivation would probably not pursue goals or exercise for very long and would most likely do best with goals that are very easy because if the goals are too difficult they will just quit. Therefore, another purpose of the present study is to examine if individuals with high or low self-motivation perform differently according to goal difficulty.

Goals and Gender Differences

Another aspect of goal setting not fully studied is the possibility of sex differences as a moderator in goal setting. None of the previous studies examining goal difficulty and performance have treated sex as an independent variable. However, there are a number of studies which indicate that females have lower beliefs in their abilities, lower expectations, and set lower goals than males but these studies have not dealt with goal setting per se but instead with how males and females differ in achievement settings (Crandall, 1969; Feather, 1969; Feather & Simon, 1973; Maccoby & Jacklin, 1974). Ryan (1978) conducted a study, including three experiments, examining sex differences in goal setting behavior and how competition affected the expectancies of males and females. The most important factor influencing females expectations seemed to be the sex orientation of the
task. Lenney (1977) suggested that females would set lower goals and have lower expectations when a task was perceived as male oriented than when the task was seen as female oriented. Ryan found this to be true regardless of whether the sex orientation was manipulated as in the first two experiments or recorded after the completion of the task as in the third experiment. When females perceived the task as being male oriented their performance and expectations were lower than when the task was perceived as being female oriented.

These findings seem to indicate that there is some sort of sex differences in goal setting behavior but caution must be exercised when translating these conclusions because of the lack of research in this area. Because goal setting can present individuals with different levels of goals to achieve, it is quite likely that the expectations of males and females may differ according to the goal difficulty level. Furthermore, previous research has indicated that females, under certain conditions, set lower goals than males which indicates that females may perform better when assigned easier goals in an achievement situation. Therefore, a final purpose of the present investigation is to examine the possibility of sex differences in goal setting with particular reference to Garland's (1985) cognitive mediation theory.
CHAPTER REFERENCES


CHAPTER III

METHODS

Subjects and Design

Fifty male and fifty female undergraduate students enrolled at a four year university were used as subjects. These subjects were volunteers from physical education classes and were randomly assigned to one of five goal conditions before the study began. The five conditions included an easy goal, moderately difficult goal, very difficult goal, highly improbable goal and a control condition in which subjects were told to do their best. The subjects performed the 3 minute timed basketball shooting task for five trials. Therefore, the design was 2 (sex) x 5 (goal setting conditions) x 5 (trials) with repeated measures on the last factor.

Task

A 3-minute timed basketball shooting task was used as the dependent measure. Each subject had 3 minutes to make as many baskets as possible from outside a marked perimeter. The males shot from outside a 15 foot marked perimeter and the females shot from outside a 12 foot perimeter. The timed basketball shooting task was used because previous research examining Garland's (1985) cognitive mediation theory in a physical activity setting used a 3 minute sit-up task which does not really require much skill to perform (Garland et al., in review). Therefore, it is of interest to the present study to examine how Garland's (1985) theory operates within a physical activity which requires skill to perform.
Questionnaires

Achievement Motivation Questionnaire

The achievement motivation questionnaire developed by Mehrabian (1968, 1969) and later revised by Mehrabian and Bank (1978) was used to measure the achievement motivation of the subjects. Mehrabian (1968, 1969) developed the questionnaire to discriminate between high achievers and low achievers because the most frequently used test of need for achievement was the Thematic Apperception Test (TAT) which has yielded low reliability due to its projective nature and difficulty in administering and scoring. Mehrabian and Bank (1978) expanded and improved Mehrabian's (1969) need for achievement questionnaire from 26 items to 38 items in an attempt to develop a broad measure of achievement motivation which would be more reliable than earlier versions and could be applied to both males and females.

The 38 item achievement motivation scale was administered to 76 college males and 66 college females along with the Jackson (1967) achievement scale, Mehrabian's (1969) achievement motivation scale, and the Crowne and Marlowe (1960) social desirability scale to test for reliability and validity. A high level of internal consistency was found for the questionnaire as revealed by a Kuder-Richardson formula reliability coefficient of .91. In addition, the 38 item achievement motivation questionnaire exhibited discriminant validity with a correlation of .02 between the scale and the Crowne and Marlowe (1960) social desirability scale indicating that the achievement motivation scale was free of social desirability bias. Convergent validity was also found for the 38 item scale by correlating .74 with the Jackson (1967) achievement scale, .59 with
Mehrabian’s (1969) achievement motivation scale for males, and .68 with Mehrabian’s (1969) achievement motivation scale for females. Although these correlations are not extremely high they were all significant at the .01 level. The 38 item achievement motivation questionnaire is balanced for response bias with 19 items being positively worded (“I take pride in my work”) and 19 items being negatively worded (“I don’t work well under pressure”). The subjects answered each item on a 9-point scale which ranges from +4 (very strong agreement) to zero (neither agreement nor disagreement) to -4 (very strong disagreement) and a total score was computed for each subject by summing all the positively worded items and then subtracting the sum of the negatively worded items. The norms which were used for comparisons were a mean = 51 and a standard deviation = 35 as suggested by Mehrabian and Bank (1978).

**Self-Motivation Questionnaire**

The Self-Motivation Inventory (SMI) developed by Dishman and Ickes (1981) was used to measure the strength of each subject’s self-motivation. Dishman and Ickes (1981) developed the SMI to assist in identifying individuals who are more likely to persist at exercising independently of situational influence. The findings from four different samples provide support for the reliability and construct validity of the SMI. The first sample was used for scale refinement, in which 401 college males and females responded to 60 items on a five point Likert scale ranging from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me). The subjects in the present study answered the SMI on this five point Likert scale. The items the subjects responded to were concerned with the individual’s tendency to be self-motivated like "I can persist in spite of pain
or discomfort" or "I have a strong desire to achieve". After a series of factor analyses, 40 items were retained from the original 60 items to make up the SMI. The overall 40 item scale yielded high internal reliability with a Cronbach's alpha coefficient of .91. The final 40 item scale consists of 19 positively worded items and 21 negatively worded items with a possible range of 40-200. The first sample demonstrated a range of 84-184 with a mean of 140.5 and a standard deviation of 19.4 on the 40 item scale.

The remaining three samples were used to test the reliability and validity of the SMI. High test-retest reliabilities of .86 and .91 supported the suggestion that self-motivation is insensitive to situational influence. In addition, this insensitivity to situational influence was supported by self-motivation's consistent ability to predict perseverance in three different behavioral settings, ranging from athletic training to a program of preventive medicine to a program of acute exercise. The SMI exhibited convergent validity by correlating .63 with the Thomas-Zander Ego Strength Scale and by correlating with more behaviorally specific attitudes, such as, attraction to physical activity ($r = .53$) and perceptions of exercise having health and fitness ($r = .58$) and ascetic ($r = .47$) values. Despite the strong correlation between ego strength and self-motivation these two constructs appear to be different in some undefined aspect because of the inability of ego strength to predict exercise adherence on its own. Previous research on ego strength indicates that individuals rely on their own abilities and confidence in those abilities to perform a task but this construct does not reflect a general orientation to setting goals and committing oneself to those goals. Dishman and Ickes suggest that it is the "goal striving" component of self-motivation which makes it different and such a good predictor of
adherence. Because the predictive validity of the SMI has been attributed to its goal striving component, this instrument might be useful in determining which goal levels individuals with high and low self-motivation prefer as well as their performance at different goal levels.

Goal Setting Conditions

The goal setting conditions were established by goal difficulty levels. These were determined by increasing the number of baskets the subjects must make on the next trial. The short term goals were assigned before each trial and were based on the subject's performance on the previous trial. A set number was added to the subject's previous score and this new number was the subject's new goal for the next trial. The numbers added to the scores of the individuals were different for each goal level and a pilot study by Bagnall (1986) was conducted to determine if these numbers were indeed appropriate for the different goal levels. Before each trial the subjects were reminded what their goal was for that trial.

Do Your Best. This group served as the control group for the study. The subjects in this group were not assigned goals but instead were told to do their best before each trial.

Easy Goal. The subjects in this group did not have their previous performance increased or decreased but instead were instructed to try to match their previous performance. Thus, if the subject scored 10 baskets their goal for the next trial would be 10. This goal presents the subject with an easy goal with 73% of the subjects in the pilot study (Bagnall, 1986) actually reaching this goal.

Moderately Difficult Goal. The subjects in this group had their previous performance increased by 2 baskets. Therefore, if the subject
scored 8 baskets their goal for the next trial will be 10. In the pilot study by Bagnall (1986) this increase presented a moderately difficult goal with 43.75% of the subjects in this group actually reaching their goals.

**Very Difficult Goal.** The subjects in this group had their previous performance increased by 5 baskets. This increase of 5 baskets presented subjects a very difficult goal with 10.42% actually reaching their goals in this group in the pilot study by Bagnall (1986).

**Highly Improbable Goal.** The subjects in this group had their previous performance increased by 10 baskets for the next trial. In the pilot study by Bagnall (1986), subjects had their previous performance increased by 8 baskets and this was thought to be a highly improbable goal with only 6.25% reaching their goals yet the subjects in this group still felt this goal was realistic. Therefore, the increase of the subject's previous performance by 10 baskets should present the subjects with a highly improbable goal.

**Procedure**

Each subject in the study was randomly assigned to one of five goal conditions before the study began. Upon arrival the subjects completed Mehrabian and Bank's (1978) achievement motivation questionnaire (Appendix B) and the Self-Motivation Inventory (Appendix C). Each subject in the study performed five trials, the first being a baseline trial to assess their performance. The subjects were given five minutes to warm up before the baseline trial began. After this warm up period subjects performed one trial of the experimental task which was their baseline assessment. Prior to the next assessment, subjects in the goal conditions completed a basketball performance questionnaire (Appendix D). The four measures of interest on the questionnaire were the subject's task goal in response to "How many
baskets will you try to make on the next trial?"; performance expectancy in response to "How many baskets do you expect to make on the next trial"; self-efficacy in response to "How many baskets can you make on the next trial?"; and performance valence in response to "How satisfied would you be to make this number of baskets?." The performance valence question was asked after each of the goal, expectancy, and efficacy questions. The subject's personal goal, performance expectancy, performance valence, and self-efficacy was measured after the baseline trial and after each trial except for the last trial.

The subjects in the goal conditions also completed a goal acceptance questionnaire (Appendix E) before each trial. This questionnaire measured how realistic the goal was to the subject, how confident the subject was of reaching the goal, how difficult the goal was to the subject, how hard the subject would try to reach the goal, and whether or not the subject accepted the goal. This questionnaire was administered after the subject's personal goal, performance expectancy, and performance valence was assessed and after they had been assigned their new goal for the next trial.

Subjects in the control group were told to do their best on the baseline trial and for each subsequent trial. The control group received the same type of performance feedback during their shooting sessions as did the subjects in the goal conditions. These subjects did not complete the basketball performance questionnaire due to the fact that this questionnaire might sensitize the subjects to goal setting. However, the subjects did complete a goal questionnaire (Appendix F) after the last trial to determine if they set goals for each trial and if so, what their goals were for each trial.
Subjects performed the 3-minute timed basketball shooting task individually with only the experimenter present in order to avoid any possible influence an audience might have on the subject's performance. The subject could start shooting from anywhere outside the perimeter and once the subject shot the first shot they had 3 minutes to make as many baskets as possible. The only performance feedback the subjects received during each trial was the experimenter announcing how many baskets had been made each time the subject makes one.

The 3-minute timed basketball shooting task was started by an experimenter timed countdown. The experimenter began each trial with "go" and then announced the time remaining with "2 minutes left", "1 minute left", and "30 seconds left" announcements. The experimenter then started a verbal countdown at 10 seconds and ended the assessment with "stop".

Following each trial the subjects were allowed 3 minutes to rest. During this time the subjects completed the basketball performance questionnaire and the goal acceptance questionnaire. Subjects then had some time to rest and evaluate their performance in regards to reaching their goal and use this evaluative process to adopt strategies to help them reach future goals.

Statistical Analyses

A series of 2 (sex) by 5 (goal setting conditions) by 5 (trials) analyses of variance with repeated measures on the last factor were performed on subject's task goals, performance expectancies, performance valences, self-efficacies, and performances. These repeated measure ANOVAs were employed to determine if there are any main effects or interactions between
the independent and dependent variables, thus, the independent and dependent variables were as follows:

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Task Goal</td>
</tr>
<tr>
<td>Goal Setting Condition</td>
<td>Performance Expectancy</td>
</tr>
<tr>
<td>Trial</td>
<td>Performance Valence</td>
</tr>
<tr>
<td></td>
<td>Self-Efficacy</td>
</tr>
<tr>
<td></td>
<td>Performance</td>
</tr>
</tbody>
</table>

In addition, if any differences were found between the goal setting conditions or trials, Newman-Keuls post hoc tests were be employed to determine which groups were significantly different. Furthermore, in order to test the linkages of Garland's (1985) cognitive mediation theory correlational analyses and a multiple regression equation were employed. Finally, correlational analyses were employed to determine the relationship of achievement motivation and self-motivation to the other dependent and independent variables.
CHAPTER REFERENCES


CHAPTER IV

RESULTS

Goal Questionnaire

The goal questionnaire was completed by the subjects to measure how they perceived their assigned goals. In terms of goal acceptance, results indicated that 89% of the subjects accepted their assigned goals regardless of their goal condition. A series of 2 x 4 x 4 (gender x goal condition x trials) analyses of variance were conducted for each question on the questionnaire. All questions were answered on a 11 point Likert scale with 1 being low and 11 being high. The means for the goal questionnaire measures are presented in Table 1 and Table 2. How realistic the subjects perceived their assigned goals to be differed significantly between goal conditions, F(1, 106) = 15.37, p < .001. Newman Keuls post hoc test showed that the improbable goal group perceived their goals as significantly less realistic than the hard goal group, easy goal group, and the moderate goal group. No other main effects or interactions were found for this question. To further substantiate that the difficulty of the goals were appropriate, goal attainment was computed to determine the percentage of individuals that actually reached their goals in each group. The findings indicated that 68% of the easy group, 49% of the moderate group, 19% of the hard group, and 1% of the improbable group reached their goals.

The results for the question measuring how confident the subjects were of reaching their goal produced a trials main effect F(3, 318) = 3.14, p < .05 with subjects' confidence decreasing significantly across trials. Post hoc
Table 1
Means for the Goal Questionnaire by Trials

<table>
<thead>
<tr>
<th></th>
<th>Realistic</th>
<th>Confidence</th>
<th>Difficulty</th>
<th>Striving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Trial 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8.93</td>
<td>8.85</td>
<td>6.68</td>
<td>10.37</td>
</tr>
<tr>
<td>Female</td>
<td>8.40</td>
<td>8.21</td>
<td>6.64</td>
<td>10.35</td>
</tr>
<tr>
<td>Overall</td>
<td>8.66</td>
<td>8.53</td>
<td>6.66</td>
<td>10.36</td>
</tr>
<tr>
<td>Trial 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8.38</td>
<td>8.20</td>
<td>7.77</td>
<td>10.34</td>
</tr>
<tr>
<td>Female</td>
<td>8.26</td>
<td>8.06</td>
<td>7.24</td>
<td>10.36</td>
</tr>
<tr>
<td>Overall</td>
<td>8.32</td>
<td>8.13</td>
<td>7.24</td>
<td>10.35</td>
</tr>
<tr>
<td>Trial 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8.71</td>
<td>8.60</td>
<td>8.60</td>
<td>10.59</td>
</tr>
<tr>
<td>Female</td>
<td>8.33</td>
<td>8.37</td>
<td>7.51</td>
<td>10.46</td>
</tr>
<tr>
<td>Overall</td>
<td>8.52</td>
<td>8.48</td>
<td>8.06</td>
<td>10.52</td>
</tr>
<tr>
<td>Trial 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8.62</td>
<td>8.21</td>
<td>8.85</td>
<td>10.63</td>
</tr>
<tr>
<td>Female</td>
<td>8.37</td>
<td>7.94</td>
<td>7.76</td>
<td>10.54</td>
</tr>
<tr>
<td>Overall</td>
<td>8.49</td>
<td>8.07</td>
<td>8.31</td>
<td>10.58</td>
</tr>
</tbody>
</table>
Table 2
Means for the Goal Questionnaire by Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Realistic</th>
<th>Confidence</th>
<th>Difficulty</th>
<th>Striving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Easy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9.63</td>
<td>9.73</td>
<td>6.64</td>
<td>10.45</td>
</tr>
<tr>
<td>Female</td>
<td>9.17</td>
<td>9.04</td>
<td>7.45</td>
<td>10.48</td>
</tr>
<tr>
<td>Overall</td>
<td>9.40</td>
<td>9.38</td>
<td>7.05</td>
<td>10.47</td>
</tr>
<tr>
<td>Moderate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9.28</td>
<td>9.07</td>
<td>8.02</td>
<td>10.33</td>
</tr>
<tr>
<td>Female</td>
<td>9.79</td>
<td>9.25</td>
<td>5.52</td>
<td>10.47</td>
</tr>
<tr>
<td>Overall</td>
<td>9.53</td>
<td>9.16</td>
<td>6.77</td>
<td>10.40</td>
</tr>
<tr>
<td>Hard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8.21</td>
<td>7.84</td>
<td>8.12</td>
<td>10.50</td>
</tr>
<tr>
<td>Female</td>
<td>8.82</td>
<td>8.34</td>
<td>7.25</td>
<td>10.52</td>
</tr>
<tr>
<td>Overall</td>
<td>8.52</td>
<td>8.09</td>
<td>7.69</td>
<td>10.51</td>
</tr>
<tr>
<td>Improbable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>7.30</td>
<td>7.23</td>
<td>9.12</td>
<td>10.65</td>
</tr>
<tr>
<td>Female</td>
<td>5.59</td>
<td>5.55</td>
<td>8.93</td>
<td>10.25</td>
</tr>
<tr>
<td>Overall</td>
<td>6.44</td>
<td>6.39</td>
<td>9.03</td>
<td>10.45</td>
</tr>
</tbody>
</table>
tests indicated that subjects' confidence on trial 3 and trial 5 was significantly lower than trial 2 and trial 4. A goal group main effect $F(1, 106) = 16.01, p < .001$ was also found for the confidence measure and Newman Keuls post hoc tests showed that the confidence of the improbable goal group was significantly lower than the hard goal group, moderate goal group, and the easy goal group. Furthermore, subjects in the hard goal group were also significantly less confident of reaching their assigned goal than the moderate or easy goal group.

The results of the analysis of variance for how difficult the subjects perceived their assigned goals produced a significant goal group by gender interaction $F(3, 106) = 2.86, p < .05$. Newman Keuls post hoc tests indicated that males in the easy goal group perceived their assigned goal as significantly easier than the improbable goal group and the females in the moderate goal group perceived their assigned goal as significantly easier than the improbable goal group. The analysis of variance also produced a gender by trials interaction $F(3, 318) = 3.45, p < .05$. Post hoc tests showed that males perceived their assigned goals on trial 4 and trial 5 as significantly more difficult than females on trial 4 and trial 5.

Finally, results from the analysis of variance for how hard the subjects would try to reach their assigned goal indicated a trials main effect $F(3, 318) = 5.50, p < .001$ with subjects trying harder across trials. Post hoc test indicate that subjects tried significantly harder on trial 5 and trial 4 than on trial 2 and trial 3. The overall mean indicated that subjects tried very hard to reach their goals.
Performance Variables

The performance variables which were analyzed were the subjects' performance scores, task goals, performance expectancies, and performance valences. The means and standard deviations for these performance variables by trial are presented in Table 3 and are presented in Table 4 by goal group and gender.

First, a series of $2 \times 5 \times 4$ (gender x goal condition x trials) analyses of covariance were employed to test for any significant performance differences between any of the goal conditions. The subjects' baseline performance score was used as the covariate in the analysis. Results did indicate a significant trials main effect $F(3, 396) = 6.00, p < .001$ with subjects' performance improving over trials. Post hoc tests showed that performance scores on trial 4 ($M = 14.34$) and trial 5 ($M = 14.77$) were significantly higher than performance scores on trial 2 ($M = 13.47$). No other main effects or interactions were revealed by the analysis.

A series of $2 \times 4 \times 4$ (gender x goal condition x trials) analyses of covariance were then performed on the remaining performance variables task goals, performance expectancies, and performance valences. The $2 \times 4 \times 4$ designs were employed because the do your best goal condition did not answer the performance questionnaires on which these variables were measured. The subjects' baseline performance score was treated again as the covariate in the analyses.

The first analysis of covariance was performed on subjects' task goals. The results indicated a significant trials main effect $F(3, 318) = 6.94, p < .001$ with subjects' task goals increasing significantly over trials. Post hoc tests showed that task goals on trial 2 ($M = 16.00$) were significantly lower than
Table 3
Means and Standard Deviations for Task Goals, Performance Expectancies, Performance Valences, and Performance Scores By Trials

<table>
<thead>
<tr>
<th></th>
<th>Task Goal M</th>
<th>Task Goal SD</th>
<th>Performance Expectancy M</th>
<th>Performance Expectancy SD</th>
<th>Performance Valence M</th>
<th>Performance Valence SD</th>
<th>Performance M</th>
<th>Performance SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial 1</td>
<td>16.00</td>
<td>7.51</td>
<td>13.94</td>
<td>6.90</td>
<td>7.90</td>
<td>1.91</td>
<td>11.11</td>
<td>5.96</td>
</tr>
<tr>
<td>Trial 2</td>
<td>16.83</td>
<td>6.70</td>
<td>15.27</td>
<td>6.39</td>
<td>8.66</td>
<td>1.78</td>
<td>13.47</td>
<td>6.37</td>
</tr>
<tr>
<td>Trial 3</td>
<td>17.41</td>
<td>7.02</td>
<td>15.63</td>
<td>6.79</td>
<td>8.79</td>
<td>1.89</td>
<td>13.75</td>
<td>6.89</td>
</tr>
<tr>
<td>Trial 4</td>
<td>17.66</td>
<td>7.03</td>
<td>16.08</td>
<td>7.03</td>
<td>9.03</td>
<td>1.93</td>
<td>14.33</td>
<td>6.71</td>
</tr>
<tr>
<td>Trial 5</td>
<td>17.66</td>
<td>7.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14.77</td>
<td>6.78</td>
</tr>
</tbody>
</table>
Table 4
Means and Standard Deviations for Task Goals, Performance Expectancies, Performance Valences, and Performance Scores By Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Task Goal M</th>
<th>Task Goal SD</th>
<th>Performance Expectancy M</th>
<th>Performance Expectancy SD</th>
<th>Performance Valence M</th>
<th>Performance Valence SD</th>
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<th>Performance SD</th>
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<td>1.75</td>
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<td>5.70</td>
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task goals on trial 4 (M = 17.41) and trial 5 (M = 17.66). Results also indicated a gender main effect F(1, 105) = 5.30, p < .05 with males setting task goals significantly higher (M = 17.79) than females (M = 16.11). No interactions were produced by the analysis.

The analysis of covariance employed on subjects' performance expectancies produced a significant trials main effect F(3, 318) = 12.61, p < .001 with subjects' performance expectancies increasing significantly across trials. Post hoc tests revealed that performance expectancies for trial 2 (M = 13.95) were significantly lower than for trial 3 (M = 15.27), trial 4 (M = 15.63), and trial 5 (M = 16.08). No other main effects or interactions were found.

The final analysis of covariance was performed on the subjects' performance valences. The results indicated a significant trials main effect F(3, 318) = 17.50, p < .001 with subjects' performance valences increasing significantly across trials. Post hoc tests indicated performance valences on trial 2 (M = 7.90) were significantly lower than on trial 3 (M = 8.67), trial 4 (M = 8.79), and trial 5 (M = 9.03) while trial 3 was also significantly lower than trial 4 and trial 5. No further main effects or interactions were produced by the analysis.

Achievement Motivation and Self-Motivation

Pearson product moment correlation coefficients were computed to test the relationship between performance, achievement motivation, and self-motivation. These possible relationships were tested for the overall sample, for each goal condition, and for each goal condition according to gender. The results indicated only three significant relationships.
Specifically, a positive correlation for the relationship between performance and self-motivation in the easy goal condition was found for both the overall sample \( (r = .34) \) and for females \( (r = .52) \). The only other significant result indicated a negative correlation \( (r = -.62) \) for females in the improbable group for the relationship between performance and achievement motivation. All other correlations in the analyses failed to reach significance.

**Cognitive Mediation Theory**

To test the cognitive mediation model a series of multiple regressions were employed to estimate the needed path coefficients in the proposed model. It should be noted that all path coefficients used in these analyses are standardized regression coefficients (beta weights) and not correlation coefficients. One more further comment on beta weights is that these values can exceed 1.00 unlike the values of a correlation coefficient. Beta weights were used instead of correlation coefficients because they can control for other variables (Garland, personal communication). The theoretical model was first analyzed for the entire sample with all variables being averaged and then for each individual trial. The theoretical model was also tested with all variables being averaged for males and females.

**Entire Sample**. Results for the overall model were partially consistent with the theoretical model. Figure 1 presents the path coefficients derived from the multiple regressions. The paths from task goal to performance expectancy to performance were very strong and highly consistent with the theoretical model. All of these path coefficients were significant at \( p < .001 \) and had the predicted positive signs. However, the paths from task goal to performance valence to performance and from performance expectancy to
Fig. 1—Path Coefficients For Overall Model

*Note: Garland's (1985) original path signs are presented in parentheses.*
performance valence were not consistent with the model. The results of the multiple regression analyses used to compute the path coefficients are presented in Table 5. Results also indicated that performance expectancy and ability (previous performance) best predicted performance with these two variables making up 82% of the variance in performance.

**By Trials.** The theoretical model was then tested for each separate trial to determine if the model operates across trials as it does for the overall sample. Separate multiple regressions were performed for each trial to compute the path coefficients for the model. Results of each multiple regression analysis and the estimated path coefficients are presented in Table 6. The results for the model across trials were not consistent with the theoretical model. Specifically, the only path which was consistent for each trial was the path from task goal to performance expectancy. The path from performance expectancy to performance only reached significance on trial 4 while the path from task goal to performance valence to performance again was not consistent with the theoretical model. According to the results, ability (previous performance) best predicted performance, making up between 64% and 69% of the variance in performance.

**Overall By Gender.** The analysis for the overall model for males and females produced partially consistent results for males and some significantly different results for females. The results of the multiple regression analyses used to estimate the path coefficients are presented in Table 7 and Table 8. The path coefficients derived from the multiple regressions for both males and females are presented in Figure 2. Results for males were partially consistent with the theoretical model. The paths from task goal to performance expectancy to performance were again highly
<table>
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<tr>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Beta</th>
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<th>Df</th>
<th>p</th>
<th>R²</th>
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Table 6

Regressions of Performance on Performance Expectancy, Performance Valence, and Task Ability Across Trials

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<th>R²</th>
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<td>4</td>
<td>.57***</td>
<td>.45**</td>
<td>-.08</td>
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<tr>
<td>5</td>
<td>.57***</td>
<td>.21</td>
<td>-.03</td>
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<td>.72</td>
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*p < .05  ** p < .01  *** p < .001
Table 7
Multiple Regression Analyses Used To Generate the Path Coefficients for Males

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<th>R²</th>
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Fig. 2--Path Coefficients For Males and Females

*Note: Garland's (1985) original path signs are presented in parentheses.
significant \((p < .001)\) and consistent with the model. Again the paths for the other variables did not support those found in the theoretical model. The results also indicated that ability and performance expectancy predicted performance significantly better with these two variables making up 85% of the variance in performance.

The results for the females differed from males in that the path from task goal to performance was highly significant and the path between performance valence and performance was also significant. In the theoretical model and the present analyses the task goal has always dropped out of significance in the multiple regression analysis when performance expectancy was entered into the regression equation. Task goal did not drop out of the regression equation and as a result the most significant path was between task goal and performance instead of performance expectancy and performance. The path from performance valence and performance was also significant but this path was positive which is not consistent with the negative path exhibited in the theoretical model.
CHAPTER IV

DISCUSSION

Goal Questionnaire

The findings of the goal questionnaires completed by the subjects in the goal conditions yielded what would be expected for each goal condition. Specifically, subjects perceived their goals as more unrealistic and difficult, as well as having less confidence in reaching them as the goal difficulty levels increased. As expected, subjects in the improbable condition perceived their goals as significantly less realistic and more difficult along with their confidence being lower than other goal conditions. These findings do indicate that the goal conditions were set up correctly with the subjects' goal perceptions changing as the goal difficulty level increased. Furthermore, the findings for goal attainment lend more support for the goal conditions being set up correctly with the percentage of individuals actually reaching their goals decreasing as the goal difficulty level increased.

Performance

The results of the present study indicated that subjects in four different goal conditions did not perform significantly better than subjects in a "do your best" group. This is not consistent with the large body of literature showing the positive effects of goal setting in industrial/organizational settings which reveal that specific, difficult goals lead to better performance than no goals (Locke, Shaw, Saari, & Latham, 1981). However, these results are consistent with some of the findings in
the sport related literature in which no differences have been found between goal groups and no goal groups (Barnett, 1977; Hollingsworth, 1975; Weinberg, Bruya, Garland, & Jackson, in press; Weinberg, Bruya, & Jackson, 1985).

It might be premature to conclude that goal setting does not work just because no differences were found and some potential explanations are presented. One possible explanation is that subjects in the control group were setting goals for themselves for each trial. Findings from the control group questionnaire indicated that 88% of the subjects in the control group were setting their own goals after the first trial. These findings are consistent with the findings by Weinberg et al. (1985) which also indicated that 83% of the subjects in a "do your best" condition set their own goals. By setting their own goals the control group in both studies were similar to the assigned goal groups in that all the groups were trying to reach some specific goal. Consequently, subjects in the control group may have been motivated by the feedback they received and set goals which in turn led to increased effort and better performance.

Another possible explanation for no performance differences might be due to the nature of the study. Specifically, most of the studies which have found no support for goal setting in sports settings have been field studies. Furthermore, Tubbs (1986) conducted a meta-analysis to determine the strength of goal setting effects in organizational settings. Results revealed that the effect sizes were significantly larger in laboratory studies than in field studies. Consequently, it seems that when goal setting is taken out the laboratory extraneous variables within the field setting are interfering with the goal setting process.
Since the feedback the control group received was the same type as that received by the goal groups, this feedback alone might have been enough to motivate these subjects to set goals and produce performances similar to the goal groups. This is consistent with findings by Locke (1968) in which he found that feedback would only improve performance to the extent that it would lead to setting goals. Furthermore, Locke et al. (1981) also suggested that feedback is necessary in order for goals to increase performance. Consequently, the feedback (how many baskets made) was enough to stimulate subjects in the control group to set their own goals and motivate them to reach these goals and in turn perform as well as the other goal group.

In a more recent study, Giannini (1986) found similar results with the "do your best" condition performing as well as other goal conditions but he also included a "do your best" group which received no feedback. The findings indicated that this group performed significantly poorer than any other group. These findings seem to support the idea that feedback alone might have been enough to motivate the "do your best" group to perform as well as the assigned goal groups. The implications of these findings in a sport setting suggest that giving the athlete feedback they can use may be just as good as setting a specific goal and worrying if the goal is too difficult or too easy.

The results did indicate that subjects' performance increased across trials with performance on the last trial being the best. This finding is consistent with other studies involving sport related tasks (Hall, in review; Weinberg et al., in press; Weinberg, et al., 1985). Evidently, the subjects become more familiar with the task across trials and are more likely to
improve with practice. Results also revealed no significant performance differences between males and females according to goal difficulty conditions. This finding is consistent with a couple of other studies which have found no gender differences in goal setting (Hall, in review; Garland, Weinberg, Bruya, & Jackson, in review). Thus, this might be an indication that there really are no differences between males and females in regards to how they perform under different goal difficulty conditions.

Cognitive Mediation Theory

One of the main purposes of the present study was to test Garland's (1985) cognitive mediation theory in a basketball shooting task. The results indicated partial support for the overall theory but no consistent support across the trials. The present study showed the paths from task goal to performance expectancy to performance were positive and very strong which are consistent with the theoretical model. Thus, the first proposition of the theory that performance is a positive function of performance expectancy was supported by the present study. This expected positive path between performance and performance expectancy might indicate that performance expectancy influences performance by stimulating and maintaining high levels of effort. Individuals with high performance expectancies may also believe that they can perform well and this belief could result in a higher motivation to persist.

The second part of Garland's first proposition is a negative path between performance and performance valence. Garland proposed that as performance valence increases, individuals would anticipate increasing satisfaction from a given performance and would in turn be less motivated
to improve their performance. This negative relationship was not supported in the present study. One possible explanation for these results is the way the performance valence was measured. The subjects were asked how satisfied they would be if they made the number of baskets they expected to make. The nature of this question measures how satisfied each subject would be with their own expected performance and not how satisfied the subjects would be with a continuum of performance levels. Garland's original premise was, given two individuals with identical performances, when asked how satisfied they would be with the same performance in the future the individual with the lower performance valence would exert more effort to surpass their performance. Therefore, the performance valence question should have been asked as a series of questions with different performance levels in order to measure each subject's subjective probabilities of reaching the different performance levels.

The second proposition of Garland's (1985) theory predicts a negative function between task goal and performance expectancy. Both of these possible paths in the present study were not consistent with the theoretical model and once again the most logical explanation was the fact that the performance valence question was not measuring the same thing that Garland measured in his model. Even though the path between task goal and performance valence was negative, the validity of the performance valence measure must be questioned.

The final proposition of the theoretical model is that performance expectancy is a positive function of task goal. This relationship was supported by the present study with the path between task goal and performance expectancy being positive. This finding indicates that higher
goals lead to higher performance expectancies. This can be explained in a number of different ways. One explanation is that individuals with higher task goals may develop new strategies to reach these goals (Locke et al., 1981). One of these new strategies might be evaluating their performance in relation to the goal (Kolb & Boyatzis, 1970). The subjects in the present study had the opportunity to evaluate their performance because they were given five minutes to rest in between trials in order to complete questionnaires and to also allow them to evaluate their performance. Another example of the subjects developing strategies to reach their goals is the fact that some of the subjects communicated that they were setting short term goals to make a certain number of baskets by a given time.

Another explanation for this relationship might be through the process of "wishful thinking" (Jones, 1977). This process operates by the person overestimating the probability of achieving a very difficult goal because they believe they can succeed. Because they believe they can succeed, the individual expends extra effort in order to reach this difficult goal. Therefore, individuals with higher task goals are more likely to believe they can reach a goal even when it is extremely difficult, producing a positive relationship between performance expectancy and task goal.

The results of the findings for the theoretical model across trials were not as consistent as Garland's (1985) model across trials. The only path that was consistent was between task goal and performance expectancy. As an individual's expectancies increase so do their goals. This makes sense, since whenever an individual's expectancy of a certain performance increases they will readjust their goal in order to motivate themselves to perform up to their expected level of performance.
The results for Garland's (1985) model for males and females produced some significant differences. Specifically, the males' model indicated the same findings as the overall analysis with the paths from task goal to performance expectancy to performance being consistent with the theoretical model while the other relationships did not support the model. The results for the females differed from the males in that the path from task goal to performance was highly significant. These findings indicated performance for females was a function of task goals rather than performance expectancy as stated in the theoretical model. In Garland's original cognitive mediation work he found no gender differences in his original analyses and did not examine his model separately for males and females as done in the present study. Therefore, future studies should examine the theoretical model for both males and females to determine if there really is a gender difference for the cognitive mediation theory.

In conclusion, the present study revealed some very strong support for half of Garland's (1985) cognitive mediation theory. The paths from task goal to performance expectancy to performance were replicated here and in fact were perhaps slightly stronger than the theoretical model. However, no support was found for the performance valence aspect of the theory in the present study but this was probably due to the confounding of the manner in which the valence question was asked.

Achievement Motivation and Self-Motivation

A final purpose of the present study was to examine how achievement motivation and self-motivation related to goal setting. Since one aspect of achievement motivation deals with the task difficulty preferences of high
and low achievers, it was possible that these individuals might prefer
different levels of goal difficulty.

The results indicated a significant negative correlation between
achievement motivation and performance for females in the improbable goal
condition. This finding does seem to fit what was postulated about
individuals with differing achievement motivations performing differently
depending on their goal difficulty. Females with lower levels achievement
motivation performed significantly better than females with higher
achievement motivations in an improbable goal condition. This finding
follows the prediction of achievement motivation that individuals with low
achievement motivation would prefer either easy or very difficult tasks as
compared to high achievement motivation individuals preferring moderately
difficult tasks. The females in the improbable goal condition appeared to
prefer the very improbable goal because if they failed to reach it they could
rationalize that nobody else probably reached it. On the other hand, females
with high achievement motivation did not perform as well when assigned
the very improbable goal due perhaps to their preference for moderately
difficult goals.

The results did not indicate any significant relationships for
achievement motivation and performance for males. One explanation for
this might be that males perceived the basketball shooting task as a male
oriented task and felt ego involved to perform well on it. Thus, being highly
ego involved, the goal manipulation may have been more salient than their
achievement motivation in terms of performing well. Future research in this
area might measure task orientation and ego involvement directly to
determine if this is why males differed from females.
One implication of this finding in sports might be to alert coaches to the fact that females might perform better when they are assigned more difficult goals if they are low in achievement motivation. Therefore, the coach could know beforehand that if the female has low achievement motivation she will probably perform better if given a very difficult goal rather than an easy or moderate goal.

The final consideration of the present study was to test if there was a relationship between self-motivation and goal difficulty. According to Dishman (1984), individuals who are highly self-motivated are better able to overcome situational factors such as inappropriate goals and are reinforced more by their own goals rather than by assigned goals. The results revealed a significant correlation ($r = .34$) between self-motivation and performance in the easy goal condition. It should be noted that this relationship between self-motivation and the easy goal condition seems to have been influenced primarily by the female sample ($r = .52$). This finding shows that individuals, when assigned an easy goal, performed best if they were high in self-motivation. This implies that the easy goal may have been too easy or inappropriate and the individuals who were highly self-motivated were able to motivate themselves to try harder to reach a more difficult goal. The individuals who were low in self-motivation might have exerted just enough effort to achieve the easy goal but nothing more.

Furthermore, the results did not indicate any significant relationships between self-motivation and performance for the males. Again, this could be explained by the males being more ego involved due to the nature of the task. Thus, males might have been more influenced by the goal manipulation with the goals actually overriding their self-motivation.
Conclusions and Recommendations

The present study indicated that individuals in a "do your best" goal condition performed as well as individuals in four different goal setting conditions. These findings are not consistent with the vast literature in industrial/organizational settings which state that specific, difficult goals will lead to better than do your best goals. Yet, the findings are consistent with a number of other studies conducted in sport settings. Therefore, it is still necessary to continue this research in order to further understand the goal setting process and to eventually draw a firm conclusion to whether setting goals actually make a difference. One possibility is that the use of assigned goals may not be as important as the feedback individuals receive.

One recommendation for future research might be to manipulate task complexity by using a simple task and a more complex task. Another might be to examine more closely the findings obtained in laboratory studies and determine how reflective they are of goal setting in a field study. According to Tubbs (1986), goal setting effects were stronger in laboratory studies than field studies. It appears that there may be some unknown variables that are overriding the effects of goal setting. Consequently, more well controlled and thorough research is needed in order to distinguish if laboratory findings are reflective of real life settings.

Furthermore, the main focus of the present study was to examine Garland's (1985) cognitive mediation theory in a task requiring skill, basketball shooting. The results indicated that the theory was partially supported with strong support being shown for the linkages from task goal to performance expectancy to performance. The other possible linkages of
the theoretical model were not supported but this was probably due to the manner in which performance valence was measured. The results also indicated support for the model for males but not for females. The model for females indicated that task goal was directly related to performance rather than being mediated by performance expectancy as in the theoretical model. A further continuation of the present study would be to examine Garland's (1985) cognitive mediation theory more completely in the same setting. Although strong support was found for part of the theory it is unfortunate that the performance valence variables were confounded by the manner in which they were measured. Therefore, it would be interesting to find out if the rest of the theoretical model would be supported in the present setting. It would also be of interest to explore the gender differences found in the present study even further, to determine if Garland's model does actually differ for males and females and if so why does it.

The final consideration of the present study was the relationship between performance and achievement motivation and self-motivation according to goal difficulty. The results showed significant relationships for these two constructs and performance for females but not for males. Specifically, females with low achievement motivation performed better in the improbable goal condition than females with high achievement motivation. Furthermore, highly self-motivated females in the easy goal condition performed better than low self-motivated females in the same condition. The reason for examining these relationships in goal setting was to offer some possible evidence to coaches and physical educators, that if individuals were high or low achievers or high or low self-motivated that
they may perform differently depending on the type of goal they are assigned.

Future research on achievement motivation and self-motivation in goal setting might consider controlling the two trait variables more. This could be set up as part of the design by having individuals matched to groups according to being high or low by using a median split. This would then give an equal number of high and low individuals in each group. The rationale for setting up the design in this manner is to protect from the possibility of getting either all high or all low individuals in a goal condition.
CHAPTER REFERENCES


APPENDIX A

Fig. 3--Garland's (1985) Cognitive Mediation Model
APPENDIX B

Achievement Motivation Questionnaire

1. I usually end up carrying out the things I plan at work.
2. I have difficulty working in a new and unfamiliar situation.
3. I am very optimistic about my work career.
4. I don't usually tackle problems that others have found to be difficult.
5. I am hesitant about making important decisions at work.
6. The idea of struggling my way to the top does not appeal to me.
7. I would prefer a job which is important, difficult, and involves 50% chance of failure to a job which is somewhat important but not difficult.
8. I am usually tempted to take on more responsibilities than a job originally entails.
9. The thought of having to take on a new job would bother me.
10. I find it especially satisfying to complete an important job that requires a lot of effort.
11. I don't work well under pressure.
12. I believe that if I try hard enough, I will be able to reach my goals in life.
13. I take pride in my work.
14. Learning new skills doesn't excite me very much.
15. I only work as hard as I have to.
16. I tend to set very difficult goals for myself.
17. I like tasks that require little effort once I've learned them.
18. I am ambitious.
19. I prefer small daily projects to long-term ones.
20. I really enjoy a job that involves overcoming obstacles.
21. I appreciate opportunities to discover my own strengths and weaknesses.
22. I find little satisfaction in working hard.
23. These days, I see little chance for promotion on the job unless a person gets a break.
24. Solving a simple problem is not as satisfying to me as trying a difficult one.
25. I prefer a job which requires original thinking.
26. I prefer a job which doesn't require my making risky decisions.
27. I only work because I have to.
28. I often succeed in reaching important goals I've set for myself.
29. I feel relief rather than satisfaction when I have finally completed a difficult task.
30. I perform best in competitive situations.
31. Constant work toward goals is not my idea of a rewarding life.
32. I more often attempt difficult tasks that I am not sure I can do than easier tasks I believe I can do.
33. I am not satisfied unless I excel in my work.
34. I don't like to have the responsibility of handling a difficult situation.
35. I prefer my work to be filled with challenging tasks.
36. When I do a job, I set high standards for myself regardless of what others do.
37. I try to anticipate and avoid situations where there is a moderate chance of failure.
38. I would rather do something at which I feel confident and relaxed than something which is challenging and difficult.
APPENDIX C

Self-Motivation Questionnaire

1. I’m not very good at committing myself to do things.
2. Whenever I get bored with projects I start, I drop them to do something else.
3. I can persevere at stressful tasks, even when they are physically tiring or painful.
4. If something gets to be too much of an effort to do, I’m likely to just forget it.
5. I’m really concerned about developing and maintaining self-discipline.
6. I’m good at keeping promises, especially the ones I make to myself.
7. I don’t work any harder than I have to.
8. I seldom work to my full capacity.
9. I’m just not the goal-setting type.
10. When I take on a difficult job, I make a point of sticking with it until it’s completed.
11. I’m willing to work for things I want as long as it’s not a big hassle for me.
12. I have a lot of self-motivation.
13. I’m good at making decisions and standing by them.
14. I generally take the path of least resistance.
15. I get discouraged easily.
16. If I tell somebody I’ll do something, you can depend on it being done.
17. I don’t like to overextend myself.
18. I’m basically lazy.
19. I have a very hard-driving, aggressive personality.
20. I work harder than most of my friends.
21. I can persist in spite of pain or discomfort.
22. I like to set goals and work toward them.
23. Sometimes I push myself harder than I should.
24. I tend to be overly apathetic.
25. I seldom, if ever, let myself down.
26. I'm not very reliable.
27. I like to take on jobs that challenge me.
28. I challenge my mind about things quite easily.
29. I have a lot of willpower.
30. I'm not likely to put myself out if I don't have to.
31. Things just don't matter much to me.
32. I avoid stressful situations.
33. I often work to the point of exhaustion.
34. I don't impose much structure on my activities.
35. I never force myself to do things I don't feel like doing.
36. It takes a lot to get me going.
37. Whenever I reach a goal, I set a higher one.
38. I can persist in spite of failure.
39. I have a strong desire to achieve.
40. I don't have much self-discipline.
APPENDIX D

Basketball Performance Questionnaire

1. How many baskets will you try to make on the next trial?_______

How satisfied would you be to make this number of baskets?

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2. How many baskets do you expect to make on the next trial?_______

How satisfied would you be to make this number of baskets?

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3. How many baskets can you make on the next trial?_______

How satisfied would you be to make this number of baskets?

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Extremely Dissatisfied

Extremely Satisfied
Goal Acceptance Questionnaire

1. Do you feel the goal which has been set for you is realistic?

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2. How confident are you that you can reach this goal?

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3. How difficult do you feel the goal to be?

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4. How hard will you try to reach your goal?

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5. Do you accept the goal which has been set for you?

YES

NO

If not what is your goal?_______
APPENDIX F

Goal Questionnaire

1. Did you set a goal for the first trial?
   YES
   NO
   If so what was your goal?_______

2. Did you set a goal for the second trial?
   YES
   NO
   If so what was your goal?_______

3. Did you set a goal for the third trial?
   YES
   NO
   If so what was your goal?_______

4. Did you set a goal for the fourth trial?
   YES
   NO
   If so what was your goal?_______

5. Did you set a goal for the fifth trial?
   YES
   NO
   If so what was your goal?_______
REFERENCES


