THE EFFECTS OF MASTERY, COMPETITIVE AND COOPERATIVE GOALS ON PERFORMANCE IN SIMPLE AND COMPLEX SPORT SKILLS

THESIS

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The present study investigated the effects of different goal and feedback conditions on performance of a basketball field goal shooting task and a more complex one-on-one offensive basketball task. Subjects (N = 100) were matched, based on pre-test performance, into one of five conditions: competitive goal, cooperative goal, mastery goal, "do your best" with feedback, and "do your best" without feedback. Results indicated the competitive group was significantly better than the "do your best" without feedback group in one-on-one performance. No other between group differences were significant, although some consistent group trends were present. Subjects' goal orientations were not related to performance in specific goal conditions, with the exception of mastery oriented subjects in the mastery goal condition.

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CHAPTER I

INTRODUCTION

Goal setting is often viewed as a practical technique to increase and direct motivation in achievement oriented fields such as business, education, and sport. The acceptance and use of goal setting in these fields came in response to overwhelming evidence for the motivational and performance enhancing effects of goals in the organizational and industrial literature. A recent review of this literature (Locke, Shaw, Saari, & Latham, 1981) found 99 of 110 studies supported the hypothesis that specific, difficult goals, if accepted, will result in higher performance than easy goals, vague goals, or no goals (Locke, 1968). This basic finding has been obtained using a variety of laboratory tasks and field settings and continues to receive support in the current literature (Garland, 1982; Locke, 1982; Locke, Fredrick, Lee, & Bobko, 1984;

The empirical support for the effectiveness of goal setting in organizations and industry has not been demonstrated in the sport literature though, as the results of goal setting studies in sport have been equivocal. Specifically, subjects in goal setting conditions have performed better than subjects without goals in intercollegiate swimming (Burton, 1983), archery (Barnett

& Stanicek, 1979) and hand grip endurance (Botterill, 1977), but no between group differences have been observed in studies using juggling performance (Barnett, 1977; Hollingsworth, 1975) and a muscular endurance timed sit-up task (Hall & Byrne, 1986; Weinberg, Bruya, & Jackson, 1985); The information available on goal setting in sport is obviously limited by the sparse number of studies conducted, but there are other limiting factors in the sport literature.

One limiting factor often suggested in studies demonstrating no goal setting effects is the use of inappropriate tasks. For example, Barnett (1977) suggested that novel or complex tasks, such as juggling, may limit the effectiveness of goals, because subjects lack the ability to improve under any condition. In studies using a 3 minute sit-up task (Hall & Byrne, 1986; Weinberg et al. 1985), lack of goal setting effects could have been due to salient fatigue and pain cues elicited by the task that could help subjects to reach physiological ceilings or maximal performance. In view of the questions raised by goal setting researchers regarding task appropriateness, a definite need emerges to establish the effects of goals in various types of tasks. Wood, Mento, and Locke (1986) have developed a framework to investigate the role of task characteristics as potential limiting conditions of goal effects that may prove useful in sport to determine

appropriate goal setting tasks. The general finding of Wood et al. (1986) was that goal setting effects were strongest for simple tasks (reaction time, brainstorming) and weakest for more complex tasks (engineering work, research productivity). Using the complex-simple framework of Wood et al. (1986), the present study explored differences in the strength of goal setting effects in simple and complex sport tasks.

Another limiting factor in previous goal setting studies is that only specific, difficult goals to encourage mastery and improvement have been employed. Although such goals have been proven to be effective in various settings, other goal conditions may be more useful in the sport environment. For instance, Locke and Latham (1985) encourage the study of competitive goals in sport. Competitive goals are ones in which the goal becomes the performance of another person or person(s) (competitors) and changes as the performance of the competitor(s) changes. In addition to competing against opponents, sport participants also often cooperate with and encourage each other. The influence of cooperative, group goals, as well as competitive goals, have yet to be investigated in sport studies. This was one of the aims of the present study.

Recent work in achievement motivation suggests competitive goals and cooperative goals are important in the achievement strivings of many individuals. In a

contemporary theory of achievement motivation, Maehr and Nicholls (1980) propose that achievement has different meanings for different individuals. The theory states that individuals have different personal achievement goals based on perceptions of what is considered desirable in personal character and behavior and evaluations of personal abilities and task demands. Maehr and Nicholls (1980) argue for the existence of multiple achievement goals and propose three universal achievement goal orientations. They discuss an ability goal orientation, in which the goal of behavior is "to maximize the subjective probability of attributing high ability to oneself" (p. 236); a task mastery goal orientation, in which the goal of behavior is "to produce an adequate product or solve a problem for its own sake rather than to demonstrate ability" (p. 239); and a social approval goal orientation, in which the goal of behavior is "to demonstrate virtuous intent or personal commitment" (p. 242). It seems reasonable to believe that the existing achievement goals of an individual, based on reinforcement histories, cognitive evaluations, and personal convictions of desirable behavior, could over-ride the influence of experimenter set goals. Also, the existence of multiple achievement goals indicates that the specific, difficult, mastery oriented goals typically used in research are not pertinent to all individuals. To maximize motivation, it seems that assigned goals should coincide with and emphasize

personal achievement goals. The present study explored the relationships between the strength of existing goal orientations and performance under various goal setting conditions. It was hypothesized that there would be a strong, positive relationship between goal orientation strength and performance, when there is similarity between the goal orientation and goal setting condition.

Purposes of the Study

1. To determine whether goal setting effects are stronger in a timed basketball shooting task or a more complex, one-on-one offensive basketball task.

2. To observe any performance differences between subjects in competitive, cooperative, mastery, and "do your best" goal conditions.

3. To explore the relationships between the strength of individual goal orientations and performance under particular goal conditions.

Hypotheses

1. There will be differences in goal setting effects using a simple sport task and a complex sport task.

2. There will be a positive relationship between the strength of achievement goal orientations and performance under goal conditions, when there is similarity between the goal condition and goal orientation.

3. There will be differences in performance and goal setting between subjects in the different goal conditions.

Limitations of the Study

One limiting factor was the possibility that subjects in the competitive goal possessed different ability levels, creating mismatches that negated any competitive atmosphere achieved. Also, although the tasks and measurement instruments used in the study have demonstrated adequate reliability and validity, there were limited data available on the scoring scales employed, thus leading to conservative conclusions based on the findings.

Delimitations

Male, college age recreational basketball players performed on a timed basketball shooting task and on a one-on-one offensive basketball task. Data on pre-test trial and post-test trials under goal conditions were obtained.

Definitions of Terms

1. Goal: The aim or object of action (Locke, Shaw, Saari, & Latham, 1981).

2. Competitive goal: The goal is the performance of another person or persons and changes as the performance of the person(s) changes (Locke & Latham, 1985).

3. Cooperative goal: The goal is shared by a set of individuals and the actions of the individuals are

interdependent in that their efforts converge toward the common goal (Ames & Ames, 1984).

4. Ability achievement goal: The goal of behavior is to maximize the subjective probability of attributing high ability to oneself (Maehr & Nicholls, 1980).

5. Mastery achievement goal: The goal of behavior is to produce an adequate product or solve a problem for its own sake rather than to demonstrate ability (Maehr & Nicholls, 1980).

6. Social approval achievement goal: The goal of behavior is to demonstrate virtuous intent or personal commitment (Maehr & Nicholls, 1980).

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CHAPTER II

REVIEW OF LITERATURE

Goal setting is a familiar technique in industry, organizations, education, and sport. It is a commonly accepted method of increasing performance and motivation in these achievement oriented fields. Defined as the aim or object of action (Locke, Shaw, Saari, & Latham, 1981), goals have been the focus of management by objective programs to enhance organizational performance (Carroll & Tosi, 1973) and a variety of instructional articles to enhance sport performance (Botterill, 1978, 1979, 1980) and academic performance (Fuchs, 1985; Leister, 1984).

Goal setting research has been conducted in a number of settings, but most of our knowledge has come from the industrial and organizational literature. A recent review of this literature (Locke et al., 1981), reported 99 of 110 studies supported the hypothesis that specific, difficult goals will lead to higher performance than easy goals, vague goals, or no goals (Locke, 1968). Much of this research was stimulated by a series of studies by Locke (1966) and Locke and Bryan (1966, 1967a, 1967b) and Locke's ensuing theory of goal setting (1968).

In a classic goal setting study, Locke (1966) found that difficult, specific goals led to higher levels of

performance than easy, specific goals or vague "do your best" goals on a creative word usage task. Locke also made the interesting point that difficult goals enhanced performance and maintained it over 20 trials, even though the goal was achieved less than 10% of the time. It appeared that goals activated effort expenditure and the harder the goal was, the greater the effort.

Locke and Bryan (1966) extended the above findings to performance on a complex psychomotor task. Subjects with goals derived from adding a fixed increment to their previous best score performed significantly better than subjects in a control "do your best" group. In addition to finding a significant performance difference, subjects in the goal setting group dropped below previous best scores on only 21% of the trials compared to 41% in the control group. Thus, goals maintained performance and prevented lapses.

Locke and Bryan (1967a, 1967b) found more difficult goals led to higher performance and more task interest on a simple addition task and a perceptual number crossing task. Goals decreased boredom and maintained interest and performance in longer trials. This suggested that goals operate through increasing the persistence of effort, as well as the intensity.

The consistent findings of goal setting research resulted in the proposal of a theory of goal setting (Locke,

1968). The theory is based on the assumption that goals are immediate regulators of human action. It states that difficult goals that are specific, if accepted, will result in higher performances than easy goals, non-specific goals, or no goals at all. The results of 12 studies by Locke and his colleagues were combined and a rank-order correlation between goal difficulty and performance of .78 ($p < .01$) was obtained to lend further support to the theory. Although the correlation is highly significant, there is not a one to one relationship between goals and performance, because people may make errors, have subconscious conflicts subverting their goals, or simply lack ability to attain their goals (Locke et al., 1981).

In addition to the hypothesis regarding goal difficulty and specificity and performance, the theory also hypothesized that goal setting mediates the effects of performance feedback and incentives. Locke (1967) found performance feedback only enhanced performance through its effects on goal setting and Locke et al. (1968) found an incentive, money, did not affect performance independently of its effect on goal setting.

As mentioned earlier, a great deal of research has been stimulated by the work of Locke and his colleagues. This research attention was directed to testing Locke's hypothesis (1968) concerning the relationship between goal difficulty and specificity and performance. Specific,

difficult goals have led to higher performances in a variety of laboratory tasks, such as brainstorming (Bavelas & Lee, 1978), prose learning (LaPorte & Nath, 1976), perceptual speed (Locke, Mento, & Katcher, 1978), card sorting (London & Oldham, 1976), anagrams (Rothkopf & Kaplan, 1972), and chess (Campbell & Ilgen, 1976), to name a few. Outside the the laboratory, industrial and organizational settings have lended themselves to the use of goal setting. Field have supported Locke's hypothesis using logging crews (Latham & Locke, 1975), maintenance technicians (Ivancevich, 1977), typists (Yukl & Latham, 1978), sales personnel (Ivancevich, 1976), and engineers (Latham, Mitchell, & Dossett, 1978). More recently, Locke, Frederick, Lee, and Bobko (1984) and Locke (1982) demonstrated significant relationships between goal difficulty and performance and Garland (1982) replicated Locke's (1966) classic study.

In view of the empirical support for the effectiveness of goal setting in increasing performance in the industrial and organizational literature, many coaches, athletes, and physical educators, interested in maximizing sport performance, have begun using goal setting. The use of goal setting in sport has become common, despite a very limited amount of research on the effects of goals on sport performance. In the studies done, some support for Locke's theory has been obtained. Botterill (1977) for example, found that subjects with specific, difficult goals performed

better than subjects with instructions to "do as well as you can" on an endurance task of repeated dynamic contractions on a hand grip dynamometer. Barnett and Stanicek (1979) also obtained support for Locke's theory, demonstrating the effectiveness of goals in the field. Specifically, subjects in a goal setting group experienced significantly greater improvement in archery performance over the course of a 10 week class compared to subjects in a control group. More recently, Burton (1983) found varsity swimmers who developed and used goal setting techniques early in their season improved their times significantly more than a control group over the course of the season.

Although there is support for Locke's theory in sport settings in the above studies, the sport literature is equivocal. A number of studies have shown no differences between subjects with specific, difficult goals and subjects without goals or vague "do your best" instructions. Barnett (1977) and Hollingsworth (1975) for instance, obtained such findings, investigating the effects of goals on juggling performance. Hollingsworth (1975) suggested that knowledge of results may have led control group subjects to set their own goals and that goals in the experimental group may not have been difficult enough (44% achievement rate) to create between group differences. Barnett (1977) suggested that a novel complex motor task, such as juggling, may limit the

effectiveness of goals, since sufficient ability to improve may not yet be present.

Weinberg, Bruya, and Jackson (1985) also found no differences between subjects with specific, difficult goals and subjects in a "do your best" condition on performance of a three minute sit-up test. A post-experimental questionnaire revealed 83% of the subjects in the "do your best" condition set their own goals though, confounding the results of the study. Other factors suggested by the authors that may have contributed to the lack of between group differences, were the nature of the subject population, and the task itself. The subjects had chosen to take a conditioning class, which was the setting for the study, and may have already been motivated to improve physical performance, with or without the use of goals. The task itself illicited salient fatigue and pain cues that subjects could use as information to help them reach physiological ceilings or maximal performance. The findings of Weinberg et al. (1985) were replicated by Hall and Byrne (1986), using similar subjects and the same task, and supported the reliability of these findings in such a setting.

In summary, research on the effectiveness of goal setting in sport has been limited and equivocal. Obviously, the effects of goals in sport are far from being established and the issue requires additional research attention.

One area of goal setting research that requires clarification is the role of task characteristics as possible mediators of goal effects. Studies showing no goal setting effects have suggested that tasks, which are novel and motorically complex (Barnett, 1977) or illicit salient physiological fatigue cues (Hall & Byrne, 1986; Weinberg et al., 1985) may limit the influence of goals. Recently, Wood, Mento, and Locke (1986) addressed the role of task complexity as a potential moderating condition of goal effects. Task complexity scores for 125 industrial goal setting studies were obtained by rating tasks for component complexity (type and number of acts and information cues involved), coordinative complexity (type and number of relationships among acts and cues), and dynamic complexity (changes in acts and cues). A meta-analysis of task complexity and goal effects was conducted and found that goal setting effects were strongest for simple tasks and weakest for more complex tasks. The task complexity framework used by Wood et al. (1986) may be useful in sport studies to determine appropriate tasks for goal setting. One may hypothesize that goal setting effects will be stronger for simple sport tasks than more complex ones, if the task does not involve a physiological ceiling (Hall & Byrne, 1986; Weinberg et al., 1985).

In addition to examining various task types in goal setting research, examining various goal types and goal

conditions also appears to be a worthy research topic. Typically, goal setting studies have used specific, difficult goals that encourage task mastery, as prescribed by Locke (1968). Mastery goals, in which specific, challenging improvements over past performances are the aim of action, certainly need further testing in sport, but research can and should investigate other potentially promising goal conditions. For example, Locke and Latham (1985) suggest that competitive goals be a topic of investigation. Competitive goals are ones in which the goal is the performance of another person or persons (competitors) and changes as the performance of the competitor(s) change. This is an integral part of sport's competitive atmosphere and increasing the salience of competition through competitive goals may be a useful method of increasing motivation in sport. This thought remains to be tested.

Another goal condition that may be suitable for sport and physical activity settings is based on cooperative goals. Ames and Ames (1984) describe cooperative goals as "those in which a goal is shared by a set of individuals. The actions of the individuals are interdependent in that their efforts converge toward a common goal" (p. 539). Sport and physical activity usually take place in social situations that involve varying degrees of cooperation and encouragement, which suggests that cooperative, group goals

may be motivating in these settings. The effects of group goals, in which individuals are responsible towards others and support from others is available, need to be studied in sport.

Recent work on goal orientations in achievement motivation (Maehr, 1974; Maehr & Nicholls, 1980; Nicholls, 1980) and educational psychology (Ames, 1984b; Ames & Ames 1984) suggests that competitive goals and cooperative goals are important to many individuals in their achievement strivings. This work indicates that individuals tend to have their own achievement goals. Achievement goals are determined by what is perceived as being desirable in personal behavior and character (Maehr & Nicholls, 1980), cognitive evaluations of personal abilities (Maehr, 1974) and the reward structure of the environment (Ames & Ames, 1984). Thus, one can expect to find diversity in the achievement goals of individuals. These goals can be oriented towards competitive and cooperative behavior, as well as task involved, mastery behavior (Maehr & Nicholls, 1980). Recognizing the existence of multiple achievement goals, it is possible that the personal achievement goals of individuals could over-ride the influence of experimenter set mastery goals. It would seem in order to maximize motivation and performance, assigned goals should match and enhance personal achievement goals. This may not have always been the case in previous sport studies and

motivation and performance in goal conditions were not maximized.

In order to understand the argument for the presence of multiple achievement goals and their implications for goal setting research, a more thorough review of Maehr and Nicholls' (1980) contemporary theory of achievement motivation is necessary.

In the area of achievement motivation, the argument for multiple achievement goals and behavior arose from criticism of the trait approach employed by McClelland (1961) and Atkinson and Feather (1966). Maehr (1974) cited evidence that the instrument used to measure the motive to achieve or need for achievement, the Thematic Appreciation Test, does not elicit similar achievement language and imagery in different cultures (Mingione, 1965) or between sexes (Horner, 1972). This reflects a culturally and sexually biased concept of achievement motivation, which best describes the achievement behavior of western, white, middle-class males (Maehr, 1974). Maehr goes on to suggest that there is a universal will to achieve, but achievement behavior has a variety of forms and goals. Maehr and Nicholls (1980) hold that achievement goals will vary as perceptions of desirable behavior and personal characteristics vary according to culture and social group membership. The achievement goals of an individual may also differ in various situations, as perceptions of ability and

situational demands will affect goal choice (Maehr, 1974; Nicholls, 1980).

The presence of multiple achievement goals will lead to different definitions of success and failure according to Maehr and Nicholls (1980). They maintain that success and failure are psychological states consequent on attaining or not attaining goals that imply something desirable about oneself. Thus, different achievement goals will be paralleled by different perceptions of success and failure. Maehr and Nicholls (1980) suggest that researchers examine the concepts of success and failure to find diversity in the meaning of achievement behavior. Research has supported the notion that different concepts of success and failure exist among cultures and social groups. Salili and Maehr (1975), for example, found that success was associated with devotion, courage, and cooperation in the United States, Japan, and Iran, but with respect of others and tradition in Thailand. Triandis, McGuire, Saral, Yans, Loh, and Vassilion (1972) revealed perceived causes of success in the United States are ability and effort, but in India perceived causes of success are tact and leadership. Examining different perceptions of success and failure within a culture, Ewing (1981) found that high school males viewed success as being caused by money and ability and bringing one pride and "the good life." On the other hand, females saw that "doing your best" and "fun" brought success, which

brought a "good attitude." In sport, Spink and Roberts (1980) demonstrated that objective wins and losses are not always perceived as success and failure, respectively. Rather, the results of Spink and Roberts (1980) and the research mentioned above support Maehr and Nicholls' (1980) contention that there is diversity among people in perceptions of success and failure and this implies diversity in achievement goals as well.

While investigating the meaning of achievement for a group or individuals within a group constitutes one approach to the study of achievement motivation, a second approach is advocated by Maehr and Nicholls (1980) that focuses on "defining achievement behavior in terms of the goals of that behavior" (p. 236). Maehr and Nicholls (1980) proposed at least three forms of achievement goals exist and defined the expected behavior in each. Following is a discussion of each achievement goal orientation proposed and possible implications for goal setting research.

The first achievement goal discussed by Maehr and Nicholls (1980) is ability oriented. The goal of behavior is "to maximize the subjective probability of attributing high ability to oneself" (p. 236). In essence, the goal is to demonstrate high ability, a desirable outcome. As Roberts (1984) suggests, an ability goal orientation necessitates social comparison by which an individual can evaluate his or her ability against others to judge whether

ability has been demonstrated. Such social comparison processes give rise to competition, since one must demonstrate more ability than others to attribute high ability to oneself. Appropriately, Roberts (1984) labels the goal of the ability oriented individual, described by Maehr and Nicholls, "competitive ability." Roberts' emphasis on competition to accomplish ability oriented goals is supported by work in educational psychology. Ames (1984a) found that children in a competitive condition make more ability attributions than children in other conditions. In the classroom, competition has made the demonstration of ability salient in evaluating performance. Thus, competitive outcomes such as winning and losing are very salient reference criteria for competitive ability oriented individuals, as they provide a clear, unambiguous evaluation of ability displayed.

Recognizing that competitive ability goals may be present in sport and physical activity settings, it is possible that research subjects in control or "do your best" conditions actually have goals that are competitive in nature. Also, subjects provided with specific, difficult goals may outwardly indicate commitment to assigned goals, but maintain competitive goals in actual achievement strivings. Hall and Byrne (1986) correctly point out that the results of sport studies showing no differences between goal setting groups and control groups might be explained by

a lack of control over competition. Indeed, most physical activity and sport take place in social situations with ample opportunities for social comparison and competition. The goal of outperforming or demonstrating more ability than another could understandably over-ride the influence of experimenter set goals. For example, an individual may be satisfied with outperforming others and lower effort, even though an assigned goal has not been met. It seems reasonable to believe that existing achievement goals based on reinforcement histories and personal convictions regarding desirable behavior possess greater significance to individuals than most experimenter set goals.

The possibility that the competitive achievement goals of individuals have interferred with assigned goals in past studies is supported by studies indicating competitive ability goals are prevelant in sport and classroom environments. Specifically, Ewing (1981) and Duda (1981) found a strong competitive ability orientation emerged for high school sport participants, particularly with males. In educational psychology, Levine (1983) described the classroom as a situation of forced social comparison where students are continually overwhelmed with information about their peers' performances. The same can be said for any physical education or team setting. Ames (1984b) argues that the tendency to engage in social comparison and competition is "exacerbated by the extant ambiguity of many

classroom reward systems " (p. 179). Again, the reward systems of physical education and sport settings are often ambiguous, as instructors and coaches will unsystematically reward a variety of behaviors, such as outstanding performance, effort, and improvement. It appears then that the social nature of sport and the ambiguous reinforcement history of sport participants foster the development of competitive ability oriented goals.

A goal setting condition that may be more meaningful and effective in competitive ability orientations than the specific, difficult goals typically used in research is suggested by Locke and Latham (1985), who hypothesize that competitive goals will improve performance to the degree that they lead to the setting of higher goals and/or increased goal commitment. As previously discussed, competitive goals, in which goals become the performance of others, are easily incorporated into sport contexts and may already be the aim of behavior for many sport participants. Individuals with a strong competitive ability goal orientation should be highly motivated and perform well when competition is emphasized by competitive goal setting. It may be hypothesized that there will be a strong, positive relationship between performance under competitive goal conditions and the strength of competitive ability orientations.

In addition to the existence of ability oriented goals, Maehr and Nicholls (1980) also suggest that task oriented goals may be found in diverse cultures and social groups. The primary goal of task oriented behavior is to "produce an adequate product or to solve a problem for its own sake rather than to demonstrate ability" (p. 239). In terms of sport behavior, Roberts (1984) suggests that the task oriented individual "tries to achieve mastery, improving or perfecting a skill rather than demonstrating higher capacity than others" (p. 220). Consequently, success or failure is determined by comparing present performance to past performance, in order to judge changes in mastery or improvement.

The large number of studies that support Locke's theory of goal setting (Locke et al. 1981) typically used mastery goals based on Locke's hypothesis that specific, difficult goals will result in higher performance (Locke, 1968). Mastery goals have been very effective in laboratory, industrial, and organizational settings, but individuals may be oriented toward different achievement goals in sport. Ewing (1981) and Duda (1981) indicate this is very possible. Their research points out that certain sport environments in our society discourage task oriented goals and behavior. Specifically, Ewing (1981) found that the task orientation described by Maehr and Nicholls (1981) did not emerge as a strong orientation in high school sport participants. Duda

(1981) found that male high school students preferred to have individual athletic success in which ability is demonstrated through competition rather than improvement and mastery. This could possibly explain the ineffectiveness of mastery goals in a number of sport psychology studies. However, it would seem that mastery goals would be meaningful and effective when individuals with task orientations are involved.

The third achievement orientation identified by Maehr and Nicholls (1980) is characterzied by social approval goals. The goal of social approval oriented behavior is to maximize the probability of attributing high effort to oneself. Maehr and Nicholls proposed that this goal is "based on the assumption that effort is seen as voluntary and something that anyone can display" (p. 241). Considering this assumption, it is not suprising that Kukla (1978) and Nicholls (1976) found a lack of effort indicated a lack of virtuous intent or choosing not to try. Alternatively, when high effort is demonstrated, it reflects a conformity to norms and virtuous intent that is likely to be met with the approval of others. Maehr and Nicholls (1980) state, "the goal in this instance is to demonstrate virtuous intentions or personal commitment rather than ability" (p. 242). Extending this achievement goal into sport contexts, Roberts (1984) appears correct in writing, "the goal is to have signficant others--coaches, parents,

spectators, and teammates--attribute virtuous intent to him or her rather than focus on goals of competitve ability or sport mastery" (p. 221).

Ewing (1981) found that social approval emerged as a strong achievement orientation in high school sport participants. The existence of social approval goals in sport and physical activity has implications for goal setting research. For example, if an individual has the goal of obtaining approval from peers or teammates and receives that approval before an assigned goal is attained, much motivation will likely be lost.

Research in educational psychology (Ames, 1984a) suggests that cooperative, group goals could illicit high levels of motivation in social approval oriented individuals. The argument for the matching of cooperative group goals and social approval oriented individuals begins with Ames and Ames' (1984) proposal that three systems of motivation, not unlike Maehr and Nicholls' (1980) three achievement orientations, exist in educational settings. One of these motivational systems is labeled "moral responsibility" and it is similar to the social approval achievement orientation under discussion. Moral responsibility is experienced by individuals when they are part of a group with a shared, common goal (Ames & Ames, 1984). The efforts of group members are therefore interdependent and cooperative. Reviewing the literature on

cooperative goals, Ames (1984a) states that, "the most consistent finding of research on cooperative structures has been the increase in positive peer interactions, prosocial behaviors, and positive peer relations, all of which are presumed to be mediated by positive peer interdependence, helping, and peer norms for reinforcing effort" (p. 539). In other words, cooperative goals allow for social approval dependent on effort and contributions to the group goal. This goal setting technique could also allow for goal attainment by social approval oriented individuals in sport. It is reasonable to expect that cooperative group goals, which allow for positive social interactions and the display of virtuous intent, would be meaningful and motivating to social approval oriented individuals.

To summarize, in the preceding discussion of a contemporary theory of achievement motivation forwarded by Maehr and Nicholls (1980) and its implications for goal setting, it has been argued that meaningful and effective goals should take existing goal orientations into consideration. Examples were given in which attaining one's achievement goal creates satisfaction that lowers motivation to pursue assigned goals. This logic is consistent with a recent theory of goal setting offered by Garland (1985) which holds that satisfaction is a mediating variable in determining the effects of goals. Specifically, satisfaction and effort towards goal attainment are held to

be inversely related (Garland, 1985). Satisfaction may be delayed however, and motivation maximized by goal setting which parallels the achievement goal of an individual in a given situation. In this line of thought, assigned goals are provided in a competitive, individual, or group context, depending on the orientation of the individual, so that attaining one's existing achievement goal does not occur until the assigned goal is attained. The failure of previous goal setting studies in the sport psychology literature to recognize the presence of multiple achievement goals, which could over-ride the influence of assigned goals, may have led to the lack of goal setting effects often obtained.

As previously mentioned, Ewing (1981) and Duda (1981) provided early support for the existence of multiple goal orientations in sport. Since these initial studies, additional support has been obtained. For example, a recent study by Duda (1986) indicated that sport goals vary according to social group membership. Specifically, intercollegiate athletes were shown to place a greater emphasis on task mastery and social comparison based goals than recreational athletes and males stressed social comparison more than females, who were more socially oriented in their sport goals. Pemberton, Petlichkoff, and Ewing (1986) sought to establish the psychometric properties of a revised version of the Achievement Orientation

Questionnaire used by Ewing (1981) and identified two achievement orientations in addition to those proposed by Maehr and Nicholls (1980). Along with ability, social approval, and mastery orientations, "sport venture" and "cognitive ability" orientations also emerged. The sport venture goal orientation defines success in terms of intrinsic satisfaction. The goal of behavior seems to be the experiences of self-satisfaction and independence. The cognitive ability goal orientation defines success in terms of demonstrating intelligence and leadership. It is very difficult to conjecture what type of goal setting would parallel these achievement goal orientations, so that attaining one's existing achievement goal is contingent upon assigned goal attainment. However, individuals with these achievement goals should react differently to various types of assigned goals.

Upon reviewing the goal setting and achievement orientation literature, the present study sought to explore the effectiveness of mastery, competitive, and cooperative goals in a sport setting. It will tested the hypothesis that there will be a positive relationship between the strength of achievement goal orientations and performance under parallel goal conditions. The parallel goal orientation-goal condition relationships proposed are: competitive ability orientation--competitive goal

condition, social approval orientation--cooperative goal condition, and task orientation--mastery goal condition.

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CHAPTER III

METHODS

Subjects and Design

Subjects were 100 volunteer, male recreational basketball players recruited from open gym periods in North Texas State University's Physical Education Building and from physical education classes. Subjects were matched, based on pre-test performance, into one of five conditions. Three goal setting conditions were comprised of subjects receiving either competitive, cooperative, or mastery goal instructions and two control groups were instructed to "do your best" with one group receiving performance feedback and the other receiving no specific feedback. Thus, the design was a 5 (goal condition) x 2 (pre-test and post-test) design.

Experimental Tasks

All subjects performed two tasks under their assigned conditions. One was a 3 minute basketball shooting task. In this task, a 15 foot arc was marked around the basket and subjects were instructed to make as many shots from beyond the arc as possible in 3 minutes. Subjects rebounded their own shots and chose where they shot from beyond the

arc. Scoring was achieved by counting each made basket as one point.

The other experimental task was one-on-one offensive basketball against a defensive player. Subjects played offense for an entire 2 minutes and were instructed to score as many points as possible against a defender. The rules of the one-on-one task were: the ball must be checked back to the experimenter after a basket is scored or the defender gains possession of the ball and play will be immediately reinstated when the offensive player is in the free throw circle; only the defender may call a foul in which case two free throws will be shot; the clock will only stop on fouls and while the ball is out of bounds. Scoring was accomplished by counting each basket as two points and each free throw as one point. The defenders used in the task were three research assistants selected by the experimenter. They served as common opponents for all subjects and any ability differences between them were controlled for by balancing their use across all conditions. Of the 20 subjects in each condition, 12 faced one defender and 8 faced the other two defenders (four against each).

The experimental tasks were selected for three reasons. First, the tasks fit the simple-complex framework used by Wood, Mento, & Locke (1986) to test for task characteristics limiting goal effects. The timed shooting task is low in component, coordinative, and dynamic complexity compared to

one-on-one offensive basketball. Any differences in the goal setting effects observed between the tasks will provide information on task appropriateness for sport goal setting. Second, the tasks involve familiar acts and are without physiological ceilings, thereby avoiding possible limitations suggested by Barnett (1977) and Weinberg, Bruya, and Jackson (1985). Third, a pilot study using 45 male, recreational basketball players as subjects demonstrated that both tasks demonstrated adequate reliability. For two trials on the timed shooting task, Cronbach's Alpha coefficient was .91 and for two trials on the one-on-one task the reliability coefficient was .84. Reliability coefficients of .83 and .85 were obtained for subjects tested across the two defensive opponents used in the one-on-one task. Because of injury to one of the defenders, another was chosen and pre-test data on two trials indicated a .80 reliability coefficient for subjects performing against the third defender.

Basketball Achievement Questionnaire

The Sport Achievement Questionnaire (SAQ) developed by Ewing (1981) and recently revised by Pemberton, Petlichkoff, and Ewing (1986) was used to measure the strength of existing goal orientations in subjects. Because achievement goals are influenced by perceived ability and situational demands (Maehr, 1974), the SAQ was modified to measure the stength of subject's achievement goal orientations in

basketball in general and in performing each of the two experimental tasks. The SAQ is currently the only measurement instrument that has undergone any psychometric tests, available to identify multiple achievement goal orientations. Pemberton et al. (1986) demonstrated the discriminant validity of the SAQ, as no goal orientations were related to traditional concepts of achievement motivation. Some concurrent validity was established as existing measures of social competence and physical competence were low to moderately correlated with the social approval orientation and sport ability orientation, respectively, of the SAQ.

Cronbach's alpha revealed internal reliabilities of goal orientation sub-scales ranged from .55 to .77 and test-retest reliabilities on the sub-scales ranged from .33 to .54. Although these correlations were significant ($p < .001$), they are low and border on acceptable levels. In view of this, a pilot study was conducted using 57 male, recreational basketball players. All subjects completed the Basketball Achievement Questionnaire (see Appendices A, B, and C), a basketball specific modification of the SAQ used in the present study, and 30 subjects completed the retest portion of the pilot study. Test-retest reliabilities on the subscales ranged from .84 to .77, which demonstrates adequate reliability. The higher test-retest reliabilities obtained in the pilot study were likely due to the use of

adult subjects with more established reinforcement histories and administering the tests 3 to 4 days apart in the same environment. Pemberton et al. (1986) used subjects with relatively short sport reinforcement histories (13-18 years) and the testing session took place in very different environments over 4 weeks apart. Such situational changes, for personal experiences between testing sessions, and short reinforcement histories tend to negatively affect the stability of achievement goal orientations (Ewing, 1986).

Alpha coefficients of the internal consistency of each subscale in the pilot study were: .84 for social approval, .70 for sport mastery, .69 for sport venture, .55 for cognitive ability, and .63 for sport competence. The low internal reliability of the sport venture and cognitive ability scales did not affect the hypotheses proposed in the present study, which only made predictions regarding the social approval, sport mastery, and sport competence orientations. The low internal reliability of the sport competence scale was a concern, but Pemberton et al. (1986) found an internal reliability of .70 on the scale, which may be considered acceptable. However, given the limited psychometric data available on the SAQ, any findings regarding the sport competence goal orientation should be interpreted with caution.

Procedure

Subjects were scheduled in groups of two. Present at each testing session were two subjects, the experimenter and a research assistant. It was desirable to create a social situation in this study, so that subjects had the opportunity to pursue social approval goals, allowing that the effects of competitive and cooperative goals be studied. Upon arriving, subjects had a 5 minute warmup period. After this warm-up period, each subject performed on two trials of each experimental task. The order of the tasks were counter-balanced in each goal condition. Subjects performed both trials of the first task before beginning the second task. In the case of the timed shooting task, one subject rested while the other performed, so there was no need for delays between trials. In the case of the one-on-one task, there was a 2 minute rest between trials for the benefit of the defensive players. Performance on the first two trials of each task was used as pre-test data.

After the pre-test data was collected, subjects completed versions I, II, and III of the Basketball Achievement Questionnaire (see Appendices A, B, and C) and then received their goal condition instructions. Upon receiving goal condition instructions, subjects performed two more trials of one task. Similar goal instructions were then given for performance of two trials on the other

experimental task. The same task order and procedures used to collect pre-test data was used to collect post-test data.

Goal Setting Conditions

Subjects in each goal-setting condition received goal instructions and set performance goals for each post-test trial. Three reasons for the use of self-set goals may be advanced. First, self-set goals seem to occur naturally in sport and physical activity settings (Hall & Byrne, 1986; Hollingsworth, 1975; Weinberg et al., 1985), and it was hoped that employing them in the present study would create a natural environment, increasing the ecological validity of the study. Second, Garland (1985) in proposing a contemporary goal setting theory, points out that self-set task goals are strong predictors of task performance and that self-set goals have been superior to or just as effective as assigned goals in a number of organizational studies (Latham, Mitchell, & Dossett, 1978; Latham & Saari, 1979; Latham & Yukl, 1975). Third, Locke and Latham (1985) hypothesize that competitive goals will lead to increased performance to the degree that they lead to higher goals or increased goal commitment. Employing self-set goals, the present study tested this hypothesis and extended it to mastery and cooperative goal setting conditions.

Competitive Goal Condition

In this condition, subjects received feedback on their performance and the performance of the other subject present in each trial. They were instructed to compete against each other in following performances to obtain the highest single trial score. Before each subsequent trial, subjects expressed their performance goal.

Mastery Goals

In this condition, subjects received feedback on performance in each trial. However, unlike the other experimental goal conditions, subjects did not observe the other subject present performing and had no visual feedback, as well as no written, specific feedback on the other subject's performance. This procedure was adopted to discourage any competitive or social approval goals and achieve a truer mastery goal condition. Subjects were instructed to strive for improvement over their previous best score. Before each subsequent trial, subjects expressed their performance goal.

Cooperative Goals

In this condition, each pair of subjects received feedback on their combined performance on all trials. They were instructed to strive for improvement over their previous best team score and, in effect, performed under a cooperative-mastery goal condition. Before each subsequent

trial, the two subjects collaborated on a team goal and provided their individual goal to contribute to the team goal (see Appendix F).

Do Your Best Without Feedback

In this control condition, subjects received no visual or specific feedback on the other subject's performance and no specific feedback on their performance. Previous studies (Hall & Byrne, 1986; Hollingsworth, 1975; Weinberg et al. 1985) have reported that most subjects in control, "do your best" conditions use performance feedback to set goals, thereby confounding the purpose of the control group. The present study hoped to avoid this by limiting the feedback available to control group subjects. It should be pointed out though, that subjects still received the visual feedback that is commonly available to sport participants, which maintained the natural sport environment the study strived to create.

Do Your Best With Feedback

In this control condition, subjects were treated as those in the control condition without feedback, except verbal performance feedback was provided to subjects following each post-test trial. This control condition was adopted to determine if feedback would be responsible for any differences between subjects receiving specific goal

setting instructions and subjects receiving no goal instructions, but told to "do your best."

Post-Experimental Questionnaire

Locke, Shaw, Saari, and Latham (1981) suggest four mechanisms by which goals can affect performance: effort intensity, persistence, developing strategy, and focusing concentration. A post-experimental questionnaire was developed and administered to goal-setting groups to determine the extent to which subjects felt their goals positively affected the four mechanisms proposed by Locke et al. (1981) and the more global concept of motivation (see Appendix G).

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CHAPTER IV

RESULTS

Shooting Performance

The data from the timed basketball shooting task were analyzed in a 5 x 2 MANOVA (group x trials). Results indicated a highly significant main effect for time, $F(1, 95) = 68.44$, $p < .0001$, as subjects improved performance in post-test trials ($M = 34.97$) over performance in pre-test trials ($M = 30.41$). The group main effect and group x trials interaction were both not significant. However, the group means (see Table 1) for pre-test and post-test performance reveal that subjects in the goal setting groups and the "do your best" group with feedback improved more and performed objectively better in post-test trials than "do your best" subjects without feedback.

One-on-One Performance

The data from the timed one-on-one offensive basketball task were also analyzed in a 5 x 2 MANOVA. Another highly significant main effect for trials was obtained, $F(1, 95) = 28.88$, $p < .0001$, as subjects improved performance on post-test trials ($M = 35.73$) over performance on pre-test trials ($M = 31.68$). In addition, a significant group by time interaction was found, $F(4, 95) = 4.87$, $p < .001$. Follow-up

TABLE 1

MEANS AND STANDARD DEVIATIONS OF SUCCESSFUL SHOTS IN THE 3 MINUTE SHOOTING TASK

Group	Pre-Test Performance		Post-Test Performance	
	M	SD	M	SD
Competitive Goal	32.35	9.13	38.70	11.00
Cooperative Goal	31.05	13.26	36.35	11.75
Mastery Goal	27.50	11.57	32.85	14.01
Do Your Best with Feedback	32.10	10.50	35.75	10.93
Do Your Best without Feedback	29.05	8.80	31.20	10.07

ANOVAs indicated the groups were not significantly different in pre-test performance, but a significant between group difference was indicated on post-test performance, $F(4, 95) = 2.94$, $p < .02$. A post-hoc Newman-Keuls analysis ($p < .05$) found that the competitive goal group performed significantly better than the "do your best" group without feedback on post-test trials. Table 2 displays the group means for one on one performance and once again, subjects in the goal setting groups and the "do your best" group with feedback improved more and scored higher than subjects in the "do your best" group without feedback on post-test

trials, but only the competitive goal group was significantly different.

TABLE 2

MEANS AND STANDARD DEVIATIONS OF POINTS SCORED IN ALL POST-TEST TRIALS

Group	Pre-Test Performance		Post-Test Performance	
	M	SD	M	SD
Competitive Goal	34.50	12.70	42.60	13.35
Cooperative Goal	33.60	11.18	39.85	16.05
Mastery Goal	29.70	15.57	32.30	13.71
Do Your Best with Feedback	29.40	12.56	34.25	13.42
Do Your Best without Feedback	31.20	10.63	29.65	13.22

Goal Setting

Goal choice and goal commitment data for both tasks from subjects in the three goal setting groups were included as dependent variables. Results indicated there were no significant differences between the groups in goal choice or goal commitment for any post-test trials. Table 3 displays the means and standard deviations for goal choice by the goal setting groups on all post-test trials. Table 4 provides the same information for goal commitment, which was generally very high. Although there were no significant

TABLE 3

MEANS AND STANDARD DEVIATIONS OF GOAL CHOICE
IN ALL POST-TEST TRIALS

Group	Shooting Post-Test				One-on-One Post-Test			
	Trial 1	SD	Trial 2	SD	Trial 1	SD	Trial 2	SD
Competitive Goal	22.65	5.06	23.15	5.48	22.70	7.73	24.80	8.51
Cooperative Goal	20.10	6.03	20.80	5.76	20.70	7.34	21.45	7.69
Mastery Goal	19.15	6.69	19.40	6.57	20.00	8.12	19.45	8.10

TABLE 4

MEANS AND STANDARD DEVIATIONS OF GOAL COMMITMENT
IN ALL POST-TEST TRIALS (1-11 LIKERT SCALE)

Group	Shooting Post-Test				One-on-One Post-Test			
	Trial 1	SD	Trial 2	SD	Trial 1	SD	Trial 2	SD
Competitive Group	9.7	1.26	10.05	1.15	9.40	1.27	9.70	1.03
Cooperative Group	9.9	.97	10.20	.95	10.15	1.04	10.10	1.07
Mastery Group	9.7	1.56	9.85	1.31	9.75	1.37	9.95	1.23

differences between the groups, it can be observed in the raw scores that the competitive goal group consistently chose the highest goals and the cooperative goal group consistently experienced the greatest goal commitment.

Achievement Goal Orientations and Performance

Pearson product moment correlations were obtained between the strength of task specific achievement goal orientations and performance under goal conditions. Tables 5 and 6 show the correlational data for the shooting and one-on-one tasks respectively, and the underlined data represents situations in which there is similarity between goal condition and goal orientation, where a positive relationship was hypothesized. Only in the mastery goal group are significant, positive relationships observed. In direct opposition to the mastery goal group are the competitive and cooperative goal groups, in which all the correlations obtained, including those underlined, are very low or negative. Table 7 displays the raw means for all subjects in general and task specific goal orientation strength. The means occur on a 1 to 5 scale.

Post-Experimental Questionnaire

Subject ratings on the post-experimental questionnaire were included as dependent variables in follow-up ANOVAs. Two significant differences emerged between goal setting

TABLE 5

CORRELATIONS BETWEEN GOAL ORIENTATION STRENGTH AND GOAL CONDITION PERFORMANCE IN THE TIMED SHOOTING TASK

	Sport Competence Orientation	Social Approval Orientation	Mastery Orientation
Competitive Goal Group Performance	r = -.17	r = -.30	r = -.27
Cooperative Goal Group Performance	r = .01	r = .09	r = -.34
Mastery Goal Group Performance	r = .37*	r = .37*	r = .49*

*Denotes $p < .05$.

TABLE 6

CORRELATIONS BETWEEN GOAL ORIENTATION STRENGTH AND GOAL CONDITION PERFORMANCE IN THE TIMED ONE-ON-ONE TASK

	Sport Competence Orientation	Social Approval Orientation	Mastery Orientation
Competitive Goal Group Performance	r = .05	r = -.14	r = -.23
Cooperative Goal Group Performance	r = .03	r = .06	r = -.21
Mastery Goal Group Performance	r = .61*	r = .39*	r = .45*

*Denotes $p < .05$.

TABLE 7

MEANS OF GOAL ORIENTATION STRENGTH FOR ALL SUBJECTS*

	General Basketball Measure	Shooting Task Specific	One-on-One Task Specific
Sport Competence Goal Orientation	3.79	3.21	3.27
Social Approval Goal Orientation	3.75	2.94	3.08
Mastery Goal Orientation	4.28	3.71	3.72

*Higher scores mean stronger goal orientation on a 1-5 Likert scale.

groups on their responses. First, a significant difference, $F(2, 57) = 3.51$, $p < .04$, was found in the degree to which groups felt their goals helped them to develop effective strategies in the timed shooting task. A post-hoc Newman-Keuls analysis ($p = .05$) indicated that subjects in the cooperative goal group felt their goals helped them develop effective strategies ($M = 9.6$, rating in 11 points Likert scale) more than subjects in the mastery goal group ($M = 7.75$). Second, a significant difference, $F(2, 57) = 3.07$, $p < .05$, was found in the degree to which groups felt their goals motivated them in one-on-one performance. A post-hoc Newman-Keuls analysis ($p = .05$) indicated that competitive goal group subjects felt their goals were more motivating ($M = 9.95$) than mastery goal group subjects ($M = 8.65$).

CHAPTER V

DISCUSSION

Goal Conditions and Performance

The results of the present study provide only limited support for the proposed hypotheses. Specifically, the competitive goal group performed significantly better on the one-on-one task than the "do your best" group without feedback. All other between group differences in performance and goal setting were non-significant.

However, the raw data indicate certain trends consistently appeared though, in post-test trials on both tasks. That is, subjects performing under goal conditions and subjects without specific goal instructions, but receiving performance feedback tended to perform better than subjects without goal instructions or feedback. The goal setting data also had non-significant trends with the competitive goal group consistently setting higher goals and the cooperative goal group experiencing greater goal commitment than others. These findings provide only partial support for the hypothesis that there would be differences in performance and goal setting among subjects in different goal conditions.

The lack of differences between most groups adds to the growing number of sport studies showing no statistically

significant differences between subjects who overtly set specific goals and subjects without explicitly stated goals. These results indicate that performance feedback alone seems to produce similar performance and motivational levels as a formal goal setting program. The most likely explanation for this similarity is that upon receiving performance feedback, individuals who are intrinsically interested in performance such as the volunteer, recreational basketball players used here, will independently set their own goals. Weinberg, Bruya, and Jackson (1985) found 83% of subjects in a "do your best" group with feedback actually had set specific goals. Although no post-experimental data were obtained here on the extent to which control group subjects set goals, there is sufficient reason, based on past research and the performance data, to suspect this was indeed the case. This explanation is also consistent with the findings of Locke (1967) in which feedback only improved performance to the degree that it led to the setting of specific goals.

Further support for the motivational effects of performance feedback through goal setting may be found in the results of the "do your best" group without feedback. This group performed significantly poorer than the competitive goal group in one-on-one post-test trials and produced the lowest performance means on both tasks. Locke Shaw, Saari, and Latham (1981) suggest that feedback is

necessary for goals to increase performance, as setting specific goals and knowledge of goal attainment are not possible without performance feedback. Thus, the "do your best" group without feedback may have served as a true control group in this study, since subjects could only do their best, without the necessary feedback to set specific goals.

One may read a practical implication into the performance results of the various goal groups. That is, the importance of performance feedback is emphasized as necessary information to allow individuals to set specific, challenging goals that will lead to increased performance. The sensory feedback that is common to all sport participants, typically through observing performance outcomes, does not seem to be sufficient information to allow individuals to closely monitor performance over an extended period of time and set appropriate goals.

As previously stated, the only significant between group difference occured in one-on-one performance. The non-significant trend of the goal-setting and feedback groups to perform better also appeared stronger in the one-on-one task. This finding supports the general hypothesis that there would be differences in the goal-setting effects observed in simple and complex sport tasks. However, the greater goal setting effects observed in the more complex one-on-one task as compared to the shooting task contradicts

evidence in the organizational literature, which shows that goal setting effects are strongest in simple tasks (Wood, Mento, & Locke, 1986). Wood et al. (1986) persuasively argue, with supporting data from a meta-analysis of task complexity in 125 goal setting studies, that the motivating effects of goals can more easily direct increased effort to the responses necessary to improve performance when fewer informational cues and acts are involved in a task. However, further consideration of the tasks used in the present study and those common in sport may limit the generalization that goal setting effects are strongest in simple tasks.

Locke et al. (1981) suggest that in order for goals to be effective in increasing performance, increased effort at a task must lead to increased performance. Basketball shooting, like many sport skills, requires extensive practice to reach significantly higher levels of performance and an immediate increase in effort may not be met by a corresponding increase in performance. Goals may still be effective in such cases, but the time frame for goal attainment may have to be extended to allow for necessary practice.

Alternatively, performance in one-on-one basketball may be increased by immediate effort, as summoning greater endurance, speed, and strength is important and useful in scoring more points against a defender. This should not be

viewed as a total contradiction of Wood et al. (1986) though, as one-on-one basketball may still be on the simple end on the continuum of basketball task complexity, when one considers the increased demands of additional players and strategy in the situation. Rather, the findings suggest that goal setting programs in sport should consider the motoric difficulty of tasks, as well as conceptual complexity and base goals on the appropriate rate of improvement.

Goal Orientation, Goal Conditions and Performance

Performance under different goal conditions in sport tasks of varying complexity was of primary interest to the present study, but it was also recognized that subjects possessed personal achievement goals. Based on the rationale that meaningful, effective goal setting should match, emphasize, and increase personal achievement goals, it was hypothesized that there would be a positive relationship between the strength of achievement goal orientations and performance under goal conditions, when there was similarity between goal orientation and goal condition.

The results indicated support for the hypothesis only in the mastery goal condition, where mastery goal orientation strength was positively and significantly related to performance on both tasks. Sport competence and

social approval goal orientation strength were positively related to performance under the mastery goal condition as well while there were very low or negative relationships between all measures of goal orientation strength and performance under competitive and cooperative goal conditions.

The expected positive relationship between mastery goal orientation strength and performance under the mastery goal condition reflects the assumption that mastery goals will motivate individuals to the degree that mastery goals are perceived as being important in the achievement situation. The unexpected positive relationship between sports competence and social approval goal orientation strength and performance under the mastery goal condition might be explained in terms of the similarities between the various achievement goals and the lack of experimental control, which allowed these similarities to surface. Specifically, the lack of experimental control in the field setting likely allowed subjects to continue pursuing sport competence and social approval goals in the mastery condition. For example, subjects still had the opportunity to demonstrate high ability relative to others and to win the approval of the experimenter and his assistant with high effort, if these were perceived as being desirable outcomes for the subject. The mastery goal instructions provided, certainly could not control against the persistence of such personal

achievement goals. In view of this, it is not surprising that the strength of these forms of achievement motivation would be positively related to performance. Effort and performance should be a function of motivation, whether personal mastery, sport competence, or social approval goals fuel that motivation. The implication of this is that any of these forms of achievement motivation can lead to high performance provided that the opportunity to achieve relevant personal goals is available.

The very different correlational data obtained in the competitive and cooperative goal groups, as compared to the mastery goal group, might be explained in terms of differences in their experimental treatment and the changing nature of achievement goals in novel situations. It should be noted that data on the strength of goal orientations for all subjects reveal that subjects tended to be more oriented towards mastery goals in pre-test trials and possessed very moderate orientation strength toward competitive or social approval goals. Thus, mastery goal instructions may have coincided with the personal achievement goals of most subjects and affected little change in goal orientation as reported on the achievement questionnaires.

On the other hand, competitive or cooperative goal instructions likely did not coincide with the personal goals of many subjects in pre-test trials, but subjects appeared to follow those instructions and change in goal orientation

after providing data on the achievement questionnaires. The fact that competitive and cooperative group subjects also received their instructions in the presence of another subject, who was clearly told to expect competitive or cooperative behavior, also may have increased conformity to goal instructions in these conditions.

Mastery goal group subjects, on the other hand, received instructions and performed alone and were not influenced by the additional social expectations of a peer. The present study measured goal orientation strength before introducing goal instructions, because it was believed that the measures would be stable and there would be instances of lessened goal acceptance when there was conflict between goal orientations and goal instructions.

In retrospect, it would have been useful to take the measurements after performance under goal conditions though in order to determine the extent to which achievement goals conformed to goal instructions. If achievement goal orientations did change upon receiving specific goal instructions, this later measurement may have revealed the hypothesized positive relationships in the competitive and cooperative groups.

This possibility suggests that the task specificity of achievement goal orientations is highly sensitive to any changes in the social surroundings or task demands of a situation, even when the skills being performed are highly

familiar. Considering this, future studies investigating the role of personal achievement goal orientations in developing effective goal setting programs should focus on natural field settings, in which individuals have well established reinforcement histories and participate frequently, indicating the setting fulfills some stable personally relevant achievement goals. The goal orientation data from the present study supports this notion as goal orientation strength was higher for experiences in recreational basketball or past organized settings than experiences in the relatively novel experimental setting. These stronger goal orientations in pre-existing natural sport environments may be less resistent to change and would add a great deal to the ecological validity of any research findings. The thought that the personal achievement goals of individuals are important factors in determining effective goal setting conditions remain intuitively attractive and open to future research.

Conclusions and Recommendations

The present study indicates that providing specific performance feedback appears to be an important factor in enhancing sport performance and that goal setting programs emphasizing competition may be particularly helpful in increasing performance above levels achieved with only sensory feedback available to sport participants. The effects of the various goal and feedback conditions employed

here on performance are far from established and additional research in the area is clearly needed. This research should continue to study goal choice and goal commitment as variables possibly mediating the effects of different goal conditions on performance. Improvements that can be achieved in the goal conditions include conducting pre-tests and post-tests on separate days in order to arrange for a closer match of subjects with regard to ability to participate in competitive conditions against each other.

Also, cooperative goal group subjects should be studied, both when individual contributions to the group goal are acknowledged by providing individual as well as group feedback and when only group feedback is provided as in the present study. This latter procedure was employed to emphasize group commitment and discourage individual mastery goals, but social loafing research indicates that maintaining individual identifiability is important in effective cooperative performance (Williams, Latane, & Harkins, 1981). Observation during the study suggests increased cooperation could also be achieved by matching subjects in the group based on previous friendship or interpersonal liking.

Finally, future research may want to study group-competitive or cooperative-competitive goals. In essence, the cooperative goal group in the present study possessed group-mastery goals as the group instructions were to strive

for improvement in group performance. Groups can also have the cooperative goal of beating another group in competition, which is the basis for team sport and may combine the possible competitive tendency to set high goals and the possible cooperative tendency to experience high goal commitment.

In adopting any of the above suggestions though, special attention should be given to organizing goal setting interventions based on the effort and practice necessary to improve performance in the task of interest, while being aware of task complexity as a possible limiting factor of goal effects as well.

Although the results of investigating the relationships between goal orientation strength and performance were ambiguous, several recommendations for further research in this potentially promising area may be forwarded.

First, if the experimental setting used to study this relationship is relatively novel, in terms of task demands or social environment, goal orientation strength should be measured, following post-test trials, as it is likely to change upon receiving specific task instructions and social expections.

Second, the use of existing natural field settings may be appropriate in studying the topic, as prolonged participation in a consistent environment is likely motivated by stable and highly meaningful personal

achievement goals. In such an environment, the assumption that goal setting will be effective in increasing performance to the degree that the goals encouraged are perceived as being personally relevant remains reasonable and open to experimental testing.

Third, in addition to the exploratory, correlational design of the present study, greater cause and effect inference could be achieved by placing subjects in goal conditions based on reporting dominant achievement goals in pre-test trials. A crossed design could be employed in this manner to address the more specific question of: what goal setting conditions are most effective for individuals with various achievement goals?

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APPENDIX A

#_____ (1-3)

BASKETBALL ACHIEVEMENT QUESTIONNAIRE I

NAME _____

DIRECTIONS

We are interested in learning more about what people think is important in playing basketball. In order to understand what you think is important, we will be asking you to think about those experiences in basketball that you felt good about. We would like to know what it was that made you feel good about the experience.

We are most interested in what you think. In order to identify these experiences and what it was that made you feel good, we ask that you take a little time to think about your responses.

Remember, there are no RIGHT or WRONG answers.

For the following situation, think about an experience you've had in which you felt successful, i.e., you felt good about what you did. Briefly describe the experience on the lines provided and then answer the questions that follow the experience. You may need to take a few minutes to think about those experiences you have had before describing one. If you have questions, we will be glad to help you.

Identify a basketball experience in which you felt successful.

_____

_____

_____

_____

_____

_____

A. What were the things that made you feel successful? For each statement below, circle the number representing the amount you agree or disagree with each statement.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

I FELT SUCCESSFUL BECAUSE:

1.	I pleased people important to me.	1	2	3	4	5	(4)
2.	I did something few other people did.	1	2	3	4	5	(5)
3.	I demonstrated my importance to others.	1	2	3	4	5	(6)
4.	I showed how smart I was.	1	2	3	4	5	(7)
5.	I did it on my own.	1	2	3	4	5	(8)
6.	I experienced adventure.	1	2	3	4	5	(9)
7.	I did something new and different.	1	2	3	4	5	(10)
8.	I was recognized as a good player.	1	2	3	4	5	(11)
9.	I showed I was a leader.	1	2	3	4	5	(12)
10.	I made other people happy.	1	2	3	4	5	(13)
11.	I understood something important to me.	1	2	3	4	5	(14)
12.	I completed something.	1	2	3	4	5	(15)
13.	Other people made me feel good.	1	2	3	4	5	(16)
14.	I reached a goal.	1	2	3	4	5	(17)
15.	My performance made me feel good.	1	2	3	4	5	(18)
16.	I met the challenge.	1	2	3	4	5	(19)
17.	Other people told me I did well.	1	2	3	4	5	(20)

18.	I demonstrated my athletic skills.	1	2	3	4	5	(21)
19.	My hard work (practice paid off.	1	2	3	4	5	(22)
20.	I was able to think through the needed strategy.	1	2	3	4	5	(23)
21.	Other (specify) _____	1	2	3	4	5	(24)

APPENDIX B

#_____ (1-3)

BASKETBALL ACHIEVEMENT QUESTIONNAIRE II

NAME _____

DIRECTIONS

In this situation, think about your performance in our 3 minute shooting task. Describe any instance in which you felt successful, i.e., after making a shot, a series of shots, or performing well overall, and then answer the que tions that follow.

_____

_____

_____

_____

_____

_____

APPENDIX C

#_____ (1-3)

BASKETBALL ACHIEVEMENT QUESTIONNAIRE III

NAME _____

DIRECTIONS

In this instance, think about your performance in our 2 minute one-on-one task. Describe any instance in which you felt successful, i.e., after making a good move or scoring, and then answer the questions that follow.

_____

_____

_____

_____

_____

_____

APPENDIX D

#_____

NAME _____

In your first two trials you scored _____ and _____ on our _____ task. _____ scored _____ and _____.

You and _____ will perform in two or more trials on this task. You will compete against each other to get the highest score in each trial. So far the highest score is _____ by _____.

What is your goal for the next trial? _____

How hard will you work to achieve your goal?

1 2 3 4 5 6 7 8 9 10 11
not at all extremely

On the last trial, the highest score was _____ by _____ and _____ scored _____.

What is your goal for the next trial? _____

How hard will you work to achieve your goal?

1 2 3 4 5 6 7 8 9 10 11
not at all extremely

APPENDIX E

#_____

NAME _____

In your first two trials you scored _____ and _____ on our _____ task. You will perform in two more trials of this task and you should try to improve and perfect your performance on this task as much as possible.

What is your goal for the next trial? _____

How hard will you work to achieve your goal?

1 2 3 4 5 6 7 8 9 10 11
not at all extremely

On your last performance you scored _____.

What is your goal for the next trial? _____

How hard will you work to achieve your goal?

1 2 3 4 5 6 7 8 9 10 11
not at all extremely

APPENDIX F

#_____

NAME _____

In the first two trials of our _____ task, you and _____ have combined scores of _____ and _____.

Both of you will perform in two more trials on this task and you should try to improve your team score as much as possible. Together, decide on your team goal for the next trial.

What is your team goal? _____

What is your individual goal to contribute to the team goal?

_____

How hard will you work to achieve your goal?

1 2 3 4 5 6 7 8 9 10 11
not at all extremely

On the last trial, your team scored _____.

What is your team goal for the ext trial? _____

What is your individual goal to contribute to the team goal?

_____

How hard will you work to achieve your goal?

1 2 3 4 5 6 7 8 9 10 11
not at all extremely

APPENDIX G

#_____

POST-EXPERIMENTAL QUESTIONNAIRE

NAME _____

Please answer these questions regarding the goals you have expressed.

On the _____ task: My goals made me work harder.

1 2 3 4 5 6 7 8 9 10 11
not at all very much so

My goals kept me going when things got difficult (i.e. missed shots, got tired).

1 2 3 4 5 6 7 8 9 10 11
not at all very much so

My goals helped me develop strategies.

1 2 3 4 5 6 7 8 9 10 11
not at all very much so

What strategies did you use?

My goals helped me to concentrate more on my performance.

1 2 3 4 5 6 7 8 9 10 11
not at all very much so

What did you concentrate on?

My goals motivated me to do better.

1 2 3 4 5 6 7 8 9 10 11
not at all very much so

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