
GOAL SETTING IN SPORT AND EXERCISE: RESEARCH AND PRACTICAL APPLICATIONS

ESTABELECENDO METAS NO ESPORTE E EXERCÍCIO FÍSICO: PESQUISA E APLICAÇÕES PRÁTICAS

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ABSTRACT

The purpose of this paper was to briefly review the major theoretical and empirical research in goal setting related to sport and develop applications for best practice. Different types of goals were discussed and Locke's theory of goal setting provided the foundation for future research. After briefly reviewing the goal setting literature in sport and organizational settings, principles for how to apply goal setting to enhance performance were developed. The development and implementations of a goal setting system was presented including planning, meeting, and evaluation stages. Finally, effective goal setting practices based on empirical literature were discussed.

Keywords: Goal setting, Performance, Planning, Individual and team goals.

INTRODUÇÃO

The Concept of Goal Setting

By definition, a goal is that which an individual is trying to accomplish; it is the object or aim of an action. For example, in most goal setting studies, the term *goal* refers to attaining a specific level of proficiency on a task, usually within a specified time limit (Locke, Shaw, Saari, & Latham, 1981). From a practical point of view, goals focus on standards of excellence such as improving free throw percentage by 5 points, losing 10 pounds, lowering one's time in the mile run by 4 seconds, or improving one's batting average by 20 points. In addition, these goals would have to be reached within a given time frame, such as by the end of the season or within a certain number of days, weeks, or months

Types of Goals

In sport and exercise settings, the type of goals set by participants and coaches vary in their degree of specificity, what they are trying to accomplish, and the difficulty in measuring if they were accomplished. Specifically, *outcome*

goals usually refer to winning and losing, such as a goal to come in first place in the swim meet or to win the state championship. *Performance goals* refer to one's actual performance in relation to their own standard of excellence. For example, athletes may wish to improve their first serve percentage from 50% to 60%, or improve their high jump from 6 feet 4 inches to 6 feet 10 inches. These are all under the control of the athlete and are not dependent on winning and losing as with outcome goals. Finally, *process goals* are usually concerned with how an athlete performs a particular skill, displays a certain technique or carries out a specific strategy. For example, a process goal in tennis might be to bend your knees when hitting a low shot or in baseball it might be try to keep your bat straight up when waiting for the pitch. Although cases can be made to focus on one type of goal or another, research suggests all three types of goals can be effective in enhancing performance. However, from a research perspective, athletes who use process and performance goals rather than outcome goals exhibit less anxiety, greater levels of confidence, enhanced concentration, greater satisfaction and

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improved performance (Kingston & Hardy, 1997; Pierce & Burton, 1998)

Goal Setting Theory

Locke and his colleagues (Locke, 1966, 1968; Locke & Latham, 1990; 2006) developed a theory of goal setting that has served as the stimulus for literally hundreds of studies in industrial and organizational settings, and more recently in sport and exercise settings. According to the theory, hard goals result in a higher level of performance and effort than easy goals, and specific hard goals result in a higher level of performance than no goals or generalized goals of "do your best." Locke has argued that although goals can influence behavior, no simple correlation between goals and behavior can be assumed because people make errors, or lack the ability to attain their objectives.

Goal Setting and Task Performance in Industrial Settings

The most tested aspect of Locke's theory revolves around the relationship of goal difficulty/ specificity and performance. Locke and Latham (1990) reviewed 201 studies (over 40,000 and found, 91% supported Locke's initial hypothesis. These results were found using approximately 90 different tasks in both laboratory and field settings, which demonstrates the robustness and generalizability of these findings. Locke and Latham (2002; 2006) have more recently confirmed these findings. A second core aspect of Locke's goal setting theory is that there is a linear relationship between degree of goal difficulty and performance.. Results from these meta-analyses have revealed effect sizes ranging from 0.52-0.82. In addition, of the 192 studies reviewed, 175 (91%) provided support for harder goals producing higher levels of task performance than easy goals. Thus, the goal difficulty/specificity relationships found in industrial settings provide one of the most consistent and robust patterns of findings in the social science literature.

Goal Setting in Sport and Exercise

While considerable research has been conducted on goal setting in industrial and

organizational settings, only in the last 25-30 years has sport and exercise psychology researchers begun to examine the topic. The first quantitative review of goal-setting in sport and exercise settings was conducted by Kyllö and Landers (1995). This initial review found a consistent relationship between goals and sport/exercise performance although the findings were not as robust as in the industrial/organizational literature. However, more recent research has produced a stronger relationship between goals and sport/exercise performance (see Burton & Weiss 2008 for a review). Along these lines, the perceived effectiveness of goal setting was demonstrated in surveys conducted with leading sport psychology consultants working with U.S. Olympic athletes. Sullivan & Nashman, 1998) and NCAA athletes (Burton, Pickering, Weinberg, Yukelson, & Weigand, 2010). Overall, it is clear that goal setting is an extremely powerful technique for enhancing performance

Explanations for the Effectiveness of Goal Setting

Although different approaches have been put forth to explain the effectiveness of goal setting, the mechanistic view is the one that has been adopted by most researchers. Locke and his colleagues (Locke et al., 1981) put forth the mechanistic explanation regarding the effectiveness of goals on enhancing performance. They argue that goals influence performance in four distinct ways: (a) directing attention (b) mobilizing effort, (c) enhancing persistence, and (d) developing new learning strategies.

Principles of Goal-Setting

It is clear that goals can enhance performance in a variety of settings. However it is misleading to think, however, that all types of goals are equally effective in achieving these ends due to individual differences and environmental influences. It is important to emphasize the distinction between the 'science' and the 'art' of setting goals. Specifically, researchers can provide practitioners with the science of goal setting, which leads to the development of certain principles. But situational constraints and individual differences

always play a role; thus coaches need to know their teams and individual athletes to maximize goal-setting effectiveness. The goal setting principles stated below should be viewed within this context (WEINBERG, 2010).

Set Specific, Measurable Goals

Many time coaches and teachers tell participants simply to go out and “do your best.” This instruction can be interpreted different ways and thus with “do your best” goals, athletes/ exercisers never fail because they can always say that they did their best. Although this “do your best” type of instruction can be motivating, it is not as powerful in enhancing motivation and performance as encouraging participants to go out and achieve a specific goal. In fact, it has been consistently shown that specific, measurable goals produce significantly better performance than “do your best” goals. One of the reasons that goals need to be specific is that they also need to be measurable so that performers know they are making progress towards achieving them. For example, telling a basketball player to improve her foul shooting percentage would not be as helpful as telling her that you want her to improve her percentage from 65% to 75%. By bending her knees and keeping her elbow closer to her body. This gives the player a specific goal to shoot for and a way to measure if she achieved the goal.

Set Realistic But Challenging/Moderately Difficult Goals

A standard principle to follow when setting goals is that they should be challenging and realistic. When goals that are too difficult, individuals will have a tendency to lose motivation and possibly give up when they fall short of their goal. Conversely, goals that are too easy do not present a challenge to individuals, which lead to becoming complacent and exerting less than maximum effort. But how does one determine if a goal is realistic and challenging? Here is where the art of coaching becomes important, as coaches need to know each individual athlete, in order to determine the appropriate challenge for that athlete.

But a good rule of thumb is to set more immediate goals no more than 5% above current performance over the past couple of weeks.

However, in many sports (e.g., swimming, skiing, track) even a 1% increase in performance can be a significant improvement and mean the difference between winning and losing. Thus, the secret is to find a balance between setting oneself up for failure (goals too difficult) and allowing for easy success (goals too easy). In this middle ground reside challenging, realistic, moderately difficult, attainable goals.

Set Short-Term and Long-Term Goals

Coaches and athletes are always told to set both short-term and long-term goals. But why are both of these types of goals necessary? Coaches typically set outcome-oriented and long-term goals such as winning their league championship and athletes might set individual long-term goals such as winning a medal at the Olympics. These long-term goals are very important for success as they provide coaches and athletes with a direction and destination, and can sometimes act as dream goals. In essence, they keep the focus on where you want to eventually go. As some athletes would say “keep your eye on the prize.”

However, research has revealed that both short- and long-term goals are needed to maintain motivation and performance over time (WEINBERG; BUTT; KNIGHT, 2001; WEINBERG; BUTT; KNIGHT; PERRITT, 2002). Short-term goals are important because they help individuals focus on small improvements and also provide continuous feedback concerning progress toward the long-term goal. This feedback can serve a motivational function and allow adjustment of goals either upward or downward, depending on the situation. A long-term goal may seem out of reach; but breaking it up into manageable short-term goals can make the seemingly impossible become possible. A good way to envision the interaction of short-term and long-term goals is to think of a staircase with the long-term goal at the top, the present level of performance at the bottom, and a sequence of progressively linked short-term goals connecting the top and bottom of the stairs.

“Ink It, Don’t Think It”

Several sport psychologists (e.g., BURTON; RADAKE, 2008; GOULD, 2010; WEINBERG

et al., 2000) have emphasized the importance of writing down and recording goals. Not only should goals be written down, they also should be recorded in a place where they can be easily seen. This can be done in a number of different ways such as putting goals (as well as goal progress) on a bulletin board outside a swimming pool with a graph recording the number of miles that each swimmer has completed each week. Or athletes can write their goals on a 3 x 5 card before each practice. The key is not simply that the goals are written down, but rather it is that the goals are available and remain salient to each individual.

Develop Goal Achievement Strategies

In Locke's (1968) seminal work, he proposed that one of the mechanisms underlying the effectiveness of goals in enhancing performance is the development of relevant learning strategies. Unfortunately, this aspect of goal setting is often neglected, as goals are set without a solid series of strategies identified to achieve these goals. Setting goals without also setting appropriate strategies for achieving these goals is like setting a goal to drive from New York to Los Angeles in four days, but forgetting to bring a map.

A sport example highlighting the importance of goal achievement strategies begins with a softball player who sets a goal to improve her batting average 25 points from last season. The question now becomes, how is she going to accomplish this goal? At this point, the setting of relevant learning strategies comes into play. The player might decide to change her stance and move further back in the batter's box to get a better look at the ball. She may change her routine while in the on-deck circle and employ some imagery before she gets up to bat. Or she may decide she needs to lift more weights to build up her upper body strength. The key is that some learning strategy (or strategies) needs to be identified and incorporated into the daily training regimen so that the player can actively pursue the goal of improving her batting average by 25 points. Similarly, using an exercise example, an individual want to lose 15 pounds and increase her muscle tone through exercise. Focusing on the exercise aspect (as opposed to the nutritional aspect), the individual might join a fitness class that meets three times

Set Goals For Practice and Competition

Many societies seem to be focused on winning in sport competition and thus setting goals generally focuses solely or predominantly on competition goals. However, for most sports, daily practices encompass much more time commitment than do competitions. This is especially the case in sports such as gymnastics, swimming, figure skating, and track and field where there usually are only a few important meets; the rest of the time is spent on practice, practice, and more practice. This is not to say that competition goals aren't important (although they should focus more on performance and process); rather setting a practice goal is a good way to keep an athlete motivated and focused during long, arduous and often repetitive practice sessions. Some typical practice goals could include getting to practice on time, giving teammates positive reinforcement and encouragement, displaying leadership behaviors, and achieving certain performance standards for specific drills. Research with high school and college coaches (WEINBERG et al., 2001, 2002) has confirmed that coaches feel it is important to set goals both in practice and in competition.

But let's not totally forget competition goals. The important point is not to focus on winning; rather focus more on doing the things that will help you win (which are usually more in the form of process goals). The process goals in practice should help athletes learn their skills so well that they become automatic in competition. This is the ticket for peak performance in competition.

Develop Plans to Reach Goals

In Locke's (1968) seminal work, he proposed that one of the mechanisms underlying the effectiveness of goals in enhancing performance is the development of relevant learning strategies. Unfortunately, this aspect of goal setting is often neglected as coaches often seem to believe that simply having goals will improve performance. However, strategies need to be specific (as noted above) and should involve definite numbers (e.g., how much, how many, how often). So, when setting goals, one should always ask the question, "What do I need to do to reach my goals? For example what

would a baseball player do to increase his batting average from .250 to .300, a golfer reducing her average score from 78 to 74, or a basketball player increasing his foul shooting percentage from 70% to 80%? Setting more specific process goals would help achieve the performance goals that were set. Using the baseball example, the player might decide to change his stance and move further back in the batter's box to get a better look at the ball. He may change his routine while in the on-deck circle and employ some imagery before he gets up to bat. Or she may decide he needs to lift more weights to build up his upper body strength.

Set Individual and Team Goals

Coaches often think that setting individual goals would undermine the greater team goal. However, there is a place for individual goals within a team sport, as long as the individual goals do not conflict with team goals (WEINBERG et al., 2000). If athletes meet their individual goals, then this should theoretically help ensure success as a team. In fact, researchers have found that team goals enhance performance as effectively as individual goals if they foster individual goal-setting (Locke & Latham, 1990). For example, setting a goal to improve one's shooting percentage from 45% to 55% should enhance the team's goal of winning the championship. However, increasing one's individual goal from average 10 points per game to 15 points per game may undermine the team goal of winning a championship because the player may simply take more shots to get the 15 points. Thus, sport psychology consultants should be cautious when athletes set individual goals, making sure they contribute to overall team goals.

Re-evaluate Goals

Goal setting should be a starting place and not an ending place. Many coaches and athletes make the mistake of setting goals and never going back to them to see how they are progressing toward those goals. However, goals should be re-evaluated periodically based on current performance versus the original goal that was set and potentially made easier or more difficult. For example, if a baseball player set a

goal to bat .300 and was hitting only .220 at midseason, then he should probably readjust his goal to be more realistic such as hitting .275 by the end of the season. However, if he was hitting .340 at midseason, he might increase his goal to .325 as that now would seem very realistic. The point is that one's goal can be altered based on the current situation (maybe the player got injured or simply got off to a very slow or fast start). By periodically revisiting (and then potentially adjusting) the goal, it always remains realistic but challenging as noted above. This should help keep athletes optimally motivated as they strive to meet their goal.

Designing a Goal-Setting System

The principles of goal-setting and the supporting research should give you a good start into setting productive goals for your participants. But to provide even more detail, a brief overview of the "nuts and bolts" of a goal-setting system is presented with three different unique phases or stages (WEINBERG; GOULD, 2011).

Planning Stage

An effective coach, instructor, or trainer does not want to enter a physical activity setting unprepared. In this stage, preparation and planning are essential. The key elements to making this stage work include the following:

Assess the individuals' needs/abilities

For athletes, this could be done in the off-season or preseason and, for exercisers, this should be done as quickly as possible at the beginning of their program of physical activity. Meetings with individuals could be scheduled to discuss their needs (or that of the team if appropriate). Depending on the team or group, there may be many individuals returning or none at all. In any case, the abilities of the individuals and their needs should be carefully assessed as this will help inform the coach/instructor regarding what overall goals are necessary and important.

Based on the abilities/needs assessment, goals should be set

It is important that goals be set in different areas and not just focus on individual or team skills. For example, there may be a focus of

goals on enjoyment, playing time, psychological skills, or fitness. It is important to set goals in diverse areas because students, athletes, and exercisers participate in sport and physical activity for a variety of reasons (e.g., skill improvement, weight loss, fun, winning).

Plan goal strategies

Although given to participants in the meeting stage, you should be planning on some specific strategies to help achieve the goals you believe the individuals and/or team should accomplish over the next season or next program. These strategies will be refined in the next meeting stage.

Meeting Stage

Once you have planned out the goals based on the assessments of abilities and needs, then you are ready to move into the meeting phase. In this phase, you will impart basic goal-setting information and principles to participants as well as have them set their specific goals.

Provide basic goal-setting information

At the initial meeting provide participants with the basic information about goals including the principles that were discussed earlier. You might have individuals share with the rest of the group concerning how goal setting has helped them in the past. In addition, understanding athletes' strengths and weaknesses would also be a goal of this meeting. Having athletes reflect on goals they have set in the past and why or why not they reached their goals, which could include both internal and external barriers. This information and athletes' own reflections should help them in setting their own specific goals for the upcoming season.

Second Meeting

After the first meeting, give athletes a chance to go home and think about the goals they want to set based on the information they received in the first meeting. They should be asked by coaches to think about making some specific individual goals (maybe in certain areas such as in basketball where they could set goals on field goal percentage, assists, and rebounds). In addition, they could be asked to think about team goals such as winning percentage, number

of points as a team per game and holding opponents to a certain number of points per game. With this information in hand, team goals should be set in this meeting by soliciting goals from the players and then voting on them. Of course the coach should act as a "benevolent dictator" by gently directing the team toward goals they think are realistic and important.

Meet individually with all participants

It is a good idea to meet individually with all participants to set up their specific goals after they now have had some time to think about their goals in more detail. Just like in team goals the coach needs to make sure that goals are appropriate and realistic. For example, if a baseball player hit .225 last year and wants to set a goal to hit .325, the coach might say that this is too difficult and a goal like .275 might be more realistic. As will be noted below, this goal can be changed as necessary.

Plan goal achievement strategies.

Do not forget to give the participants strategies to reach their goals as this is an often forgotten area of goal-setting. For example, if a basketball player has a goal to increase her free-throw percentage from 70% to 75%, then specific strategies need to be introduced to help the athlete achieve this goal such as changing their mechanics, practicing more (e.g., more free-throws), or using imagery as part of a pre-shot routine.

Evaluation Stage

Probably the stage that is most difficult for practitioners is the evaluation phase. Many people get all jazzed up about setting goals at the outset of a competitive season or program, but then they lose steam and sight of these goals as time marches on. So here are some tips for the evaluation phase of the program to keep maintenance and focus of the goals set at the outset.

***Plan for goal-evaluation procedures.**

As noted above, this is a difficult part of the goal-setting process and coaches and instructors should plan carefully for goal evaluation. For example, do not plan to reevaluate goals at the busiest time of the year for you. Someone should be assigned to keep track of goal progress like (eg.,

a manager in a sport team setting). A physical educator may schedule performance or skill tests periodically to monitor goal progress. In either case, the feedback process costs the instructor or coach little time.

Provide for goal reevaluation.

Depending on the nature of the program, the coach or instructor should meet with individuals regarding their progress toward meeting their goals. The individuals may be exceeding their original goals and therefore goals should be made more difficult. Conversely, due to injury or other external factors, it is possible that the participants are not near to reaching their goals, so the goals may need to be pushed back some. In any case, feedback from the instructor or coach and constant reevaluation of goals help keep the participant on track and focused.

Provide support and encouragement.

Throughout the season or sessions, the coach or exercise leader should ask participants about their goals and publicly encourage their goal progress. Showing enthusiasm about the goal-setting process supports the participants and keeps them motivated to fulfill their goals.

Making Goals Effective

As noted earlier, goals, in and of themselves, do not enhance performance. Goals must follow certain principles to maximize their effectiveness. Along these lines, Locke and Latham (1990) have outlined a seven-step process that will maximize goal effectiveness. These steps are briefly outlined below.

Set Appropriate Goals

This is simply making sure that the principles of goal setting described above are employed when setting goals. Thus goals should be more process-oriented than outcome oriented, subjective and objective depending on the situation, short and long-term, written down, moderately difficult, measurable, set in both practice and competition, both individual and team, as well as positive versus negatively stated.

Develop Goal Commitment

A variety of studies have demonstrated the critical importance of goal commitment in enhancing performance and fostering goal achievement (see Burton & Weiss, 2008 for a review). The specific techniques to enhance goal commitment include public disclosure of goals (bulletin boards, share with others), goal participation (make athletes part of the goal-setting process), incentives for achieving goals, write down goals, make goals competitive, against themselves, have individuals imagine reaching their goals.

Evaluate Goal Barriers

For most people, there are usually barriers that crop up while trying to achieve their goals. This is especially the case if the goals are long-term in nature, as things tend to get in the way from achieving one's goal. These goals tend to be more internal or external in nature. For example, in research on Olympic athletes, Weinberg et al., (2000), found both internal barriers (e.g., lack of confidence, lack of physical ability, goals were too difficult, and increased pressure) and external barriers (e.g., lack of time to properly train, lack of social support, work commitments, and family responsibilities). Of course, specific barriers might be different for high school and college athletes as well as exercisers, although barriers still exist. The key is that the specific barriers need to be identified and strategies to overcome these barriers need to be implemented.

Develop Action Plans

Although it has been demonstrated that goals are more effective when a systematic action plan guides the athlete toward reaching them (Locke & Latham, 1990), research has revealed that athletes, coaches and exercisers are generally not very systematic when implementing their goals (Burton et al., 2010). . For example, if someone has been sedentary for a long time wants to start exercising, she might set a goal to walk for 15 minutes five-times a week. But specific plans might include when they would walk, where they would walk, with whom will they walk (if they want/need a partner), how fast will they walk, and here may be child-care to consider. The point is that you need to know exactly what you will need to do to achieve your goal.

Feedback on Goal Progress

Locke and Latham (1990) found that in 17/18 studies, goals plus feedback produced significantly higher performance than goals alone and 21/22 studies found that goals plus feedback was significantly better than feedback alone. Furthermore, adding feedback to goals raised performance by approximately 17% (Mento, Steel, & Karren, 1987).

Evaluation of Goal Progress

Goal evaluation may be the most important step in the goal-setting process (Locke & Latham, 1990). Evaluation provides specific information of how individuals are progressing toward their goals (e.g., averaging 10 points a game in basketball whereas my goal is 12 points per game). The main point is that goals are starting places and not ending places and athletes and exercisers should be re-evaluating their goals on a regular basis. This frequent evaluation will tend to keep individuals' motivation and confidence high.

Reinforce Goal Attainment

Reinforcing goal attainment (or significant progress toward achieving a goal) will help individuals continue that behavior (Smith, 2010). In addition, the reward should encourage the individual to start a new goal setting process as the individual builds towards higher and more challenging goals. Oftentimes when teaching new skills whether in sport or exercise settings, skills are broken down into smaller units so individuals

can more easily learn these movements. Rewards can be provided for individuals attaining each or some of these smaller goals as they move toward their larger goal of learning the entire skill.

Summary

This paper focused on the effectiveness of setting goals in sport and exercise environments. Locke's theory of goal setting, has indicated that specific, difficult, challenging goals lead to higher levels of task performance than easy goals, no goals, or "do your best" goals, was presented. More recent research investigating the goal-performance relationship in sport and exercise settings has also found support for the effectiveness of goals although the findings are not as robust as those in the industrial literature. Basic goal setting principles were presented, including setting specific goals, setting realistic and challenging goals, setting both short-and long-term goals, setting performance goals, writing goals down, providing support for goals, and providing for goal evaluation. A process for actually with teams setting goals was outlined along with a seven-step process to set goals most effectively. It should be remembered that the effectiveness of any goal-setting program would in large part rely on the interaction of the coach, exercise leader, or sport psychologist and the motivations of the specific participants. In essence, individual differences and environmental considerations should always be taken into account when setting goals.

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RESUMO

Este trabalho focalizou a efetividade do estabelecimento de metas no esporte e em ambientes de exercícios físicos. A teoria de Locke de estabelecimento de meta, que indica que metas específicas, difíceis, desafiadoras conduzem a níveis mais altos de desempenho de tarefa do que metas fáceis, nenhuma meta, ou a meta do tipo "faça o seu melhor", foi apresentada. Pesquisas mais recentes investigando a relação meta-desempenho em esporte e exercícios físicos também encontraram apoio para a efetividade de metas embora os resultados não sejam tão robustos quanto os da literatura industrial. Foram apresentados os princípios básicos de estabelecimento de metas, incluindo estabelecimento de metas específicas, de metas realísticas e desafiadoras, de metas em curto e longo prazo, estabelecimento de metas de desempenho, anotação de metas, provimento de apoio para as metas e incentivo à avaliação de metas. Um processo para estabelecimento de metas com equipes foi esboçado junto com um processo de sete-passos para estabelecer metas efetivamente. É importante lembrar que a efetividade de qualquer programa de estabelecimento de metas em grande parte dependida interação entre o treinador, do coordenador de exercícios físicos, do psicólogo desportivo e da motivação dos participantes. Em essência, ao estabelecer metas sempre se deve levar em conta ambiente e as diferenças individuais.

Palavras-chave: Estabelecimento de metas, Desempenho, Planejamento, Metas individuais e em equipe.

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