

Motivation and Goal-Setting in College Athletes

by

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Dissertation submitted to the Faculty of the

Virginia Polytechnic Institute and State University

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Curriculum and Instruction

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March 27, 2009

Blacksburg, VA

Keywords: Motivation, Goal-Setting, Student-Athletes, Self-Determination Theory

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ABSTRACT

Motivation and goal-setting are important concepts in athletics and sport and exercise psychology. However, little research has compared motivation and goal-setting by gender. The self-determination theory was used and the purpose of this study was to determine if there is a difference between male and female athletes when looking at amotivation, external regulation, identified regulation, intrinsic motivation, and goal-setting.

One hundred and six student-athletes (fifty one males and fifty five females) from a Division I college in Virginia participated in the study. These student-athletes compete in either cross country (n= 7), track (n = 16), field (n= 16), track and cross country (n= 8), track and field (n= 2), track, field and cross country (n= 2), swimming (n= 47), or diving (n= 8). The student-athletes completed two instruments; the Situational Motivation Scale (SIMS) and a goal-setting questionnaire.

The results revealed that there was a significant difference between gender and question number two of the Situational Motivation Scale (“because I’m doing it for my own good.”) There was no significant difference when comparing gender to amotivation, external regulation, identified regulation, and intrinsic motivation. There was no significant finding between gender and the use of goal-setting. Lastly, a significant difference was found on number twelve of the goal-setting questionnaire (“I believe setting goals helps improve my performance”) based on year in college.

In conclusion, there were no significant differences found between male and female athletes when looking at amotivation, external regulation, and intrinsic motivation. Significance was found on one identified regulation question. Females reported that they are participating in the sport “for their own good” more than males. There were no significant differences found between male and female athletes when looking at goal-setting.

DEDICATION

I dedicate my dissertation work to my mom, Tina. She has always encouraged and pushed me to keep going and “finish it!” I love you mom! I also want to thank my dad, Nick, and two brothers, Lee and Brian, who are always checking up on me. I could not have made it this far without such an amazing family!

ACKNOWLEDGMENTS

I would first like to thank my committee members for their time and effort. Thank you to Dr. Redican and Dr. Lepczyk for agreeing to serve on my committee. I would especially like to thank Dr. Stratton-if it weren't for you I would still be working on the "perfect" statement of purpose! I cannot express how much I appreciate you answering my millions of questions. I would also like to specifically thank Dr. Bennett for using that red pen and keeping me grounded. Special thanks to Stephen from the statistics lab for helping me make sense of my numbers. I would also like to thank my boss, Mike, my friends and my co-workers, especially Katie and Keith. Thank you for dealing with my varied "stress levels." I wouldn't have made it these past three years without you guys! Lastly, I would like to thank all of the athletes who participated in the study and the coaches who allowed me to take time from their practice.

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Chapter 1

INTRODUCTION

Collegiate athletes put themselves through both mental and physical challenges everyday. As many students who attended college can testify, it is a very demanding time in one's life. There are classes and lectures everyday. Throw in practices, weight training, team meetings, study sessions, tutors, and study hall and you wonder why any college athlete would work so hard day in and day out. This is a fact that interests many researchers. Vince Lombardi once stated: "the difference between a successful person and others is not a lack of strength, not a lack of knowledge, but rather in a lack of will." (Sullivan, 2004) What will it be that keeps these athletes going?

One of the most popular areas of research in psychology is to understand and enhance motivation (Roberts, 2001). This is not only an important factor in psychology itself, but more specifically in sport and exercise psychology. Motivation is important to the psychology field because it is the heart of biological, cognitive, and social regulation (Ryan & Deci, 2000). Motivation seems to be influenced by many people including parents, teachers, and coaches, or by managing one's own motivation (Roberts, 2001). In the college athletic world, motivation is of great concern to coaches, health care providers, athletic trainers, parents, and to the university itself. Coaches, in particular, are hoping to inspire athletes to act or motivate themselves so they can be both mentally and physically prepared both in sport and in life. Knowing the importance of motivation in the athletic setting, it is easy to understand why researchers have an extremely strong interest in learning more about it (Pelletier et al., 1995). Motivation is so appealing in sports because it deals with competition, coaches' behaviors, persistence, learning, and

performance (Pelletier et al., 1995). Sport psychologists agree that while motivation is crucial to athletes' success, there is not one sole reason that individuals are motivated, and motivation will often vary from athlete to athlete (Foster, 2005). Intrinsic motivation develops differently in each individual and therefore it is not of concern as to what causes intrinsic motivation, but rather what sustains and diminishes this innate tendency (Ryan & Deci, 2000).

Another important aspect of sport psychology is goal-setting. Some coaches will set goals for their team, other coaches will force athletes to set goals for themselves, and still other coaches do not even address goal-setting. Coaches and athletes have subjectively indicated that using goal-setting as a tool will increase motivation and improve performance (Harmison, 2005). Some sport psychologists will immediately ask an athlete what their competitive goals are and others will never bring it up. There is little empirical research in the sport setting before 1985 that supports the use of goal-setting by athletes (Harmison, 2005). However, since that time, an increase has been noticed in goal-setting research in sport. There has now been a remarkable amount of goal-setting research in sport psychology literature that supports the value of setting goals to athletes and coaches. Although this is a step in the right direction, there has yet to be a true connection between what researchers have empirically discovered and what applies to the sport setting (Harmison, 2005).

In order to achieve competitive success, athletes must maintain high levels of motivation. Goal-setting is often viewed as an extremely effective way to motivate and focus athletic behavior by encouraging athletes' behavior during training and competition to consistently perform their best (Harmison, 2005). Usually coaches do not have a

problem getting athletes to set goals, however, they struggle to get athletes to set goals that improve the quality of their training and competitive performance. One positive note is that athletes usually understand the importance of goals; they just need to learn how to set goals to most effectively help them in their training (Harmison, 2005).

The purpose of this study is to determine if there is a difference between male and female athletes when looking at amotivation, external regulation, identified regulation, intrinsic motivation, and goal-setting. The first hypothesis is that there will not be a difference between genders on amotivation, external regulation, identified regulation, and intrinsic motivation. The second hypothesis is that there will be no difference between genders on the use of goal-setting. Lastly, there will be no difference on amotivation, external regulation, identified regulation, intrinsic motivation, and goal-setting based on year in college.

Chapter 2

REVIEW OF LITERATURE

Self-Determination Theory

Self-determination theory (SDT) was developed by Edward Deci, Richard Ryan, and their collaborators. The self-determination theory takes a very different approach when distinguishing the idea of goal-directed behavior (Deci & Ryan, 2000). According to the self-determination theory, there is not just one type of motivation that causes human behavior, but many different types (Guay et al., 2000). Self-determination theory looks at motivation as a continuum of varying degrees of motivation (Sarrazin, et al., 2002). Self determination allows complete sense of choice and of feeling free in doing what one has decided to do.

Self-determination theory uses traditional empirical methods, but also utilizes an organismic meta-theory to explain the importance of how humans will use their inner resources to develop personality and behavioral self-regulation (Ryan & Deci, 2000). Using the empirical process, three needs have been postulated: the needs for competence, (Harter, 1978; White, 1963), relatedness (Baumeister & Leary, 1995; Reis, 1994), and autonomy (deCharms, 1968; Deci, 1975) (cf, Ryan & Deci, 2000). These three needs are considered essential for growth, integration, constructive social development and personal well-being (Ryan & Deci, 2000). Competence means that a person needs to feel effective in the environment they are surrounded by (Guay et al., 2000). Autonomy is defined as a sense of freedom from pressure and the ability to make a decision based on many different courses of action (Guay et al., 2000). Lastly, relatedness is based on the need to have contact with other people. This is when humans make interpersonal

attachments and bonds develop between each other (Guay et al., 2000). Ryan and Deci (2000) argue that it is imperative to create conditions that meet these needs in order for people to function at their best (Foster, 2005). With this said, coaches, athletic trainers, sport psychologists, and health care providers should be working to find and create a motivational climate that promotes these elements of intrinsic motivation (Foster, 2005). The SDT looks at both the nature of positive developmental tendencies and the social environments that break the positive tendencies down (Ryan & Deci, 2000).

When dealing with motivation, SDT asks what kind of motivation is evident at one time (Ryan & Deci, 2000). By looking at the perceptions of what makes humans act, the SDT has identified different types of motivation, each of which has consequences for learning, performance, personal experience, and well-being (Ryan & Deci, 2000). In 1985 Deci and Ryan presented a sub-theory of SDT called cognitive evaluation theory (CET) that aimed to explain variability in intrinsic motivation. CET “is framed in terms of social and environmental factors that facilitate versus undermine intrinsic motivation, using language that reflects the assumption that intrinsic motivation, being inherent, will be catalyzed when individuals are in conditions that conduce toward its expression.” (Ryan & Deci, 2000, p. 70) Cognitive evaluation theory states that rewards are understood in terms of their impact on control and motivation (Biddle, 1999). If the reward provides information about the individual’s competence, then intrinsic motivation will likely be enhanced. If the reward is seen as controlling a behavior, then withdrawal will likely occur and intrinsic motivation will deteriorate (Biddle, 1999). CET focuses on allowing individuals to experience feelings of autonomy and competence (Kingston et al.,

2006). In other words, if a person feels competent and in control of a task, he/she will complete the task with no external motivation required.

Later, Deci and Ryan introduced a second sub-theory called organismic integration theory (OIT) which details specific forms of extrinsic motivation (Ryan & Deci, 2000). Figure 1 shows the OIT arrangement of motivational types arranged from left to right in terms of the degree to which people are self-determined (Ryan & Deci, 2000). Many theorists treat motivation as a single entity; however OIT describes categories that are experientially, theoretically, and functionally distinct types of motivation (Ryan & Deci, 2000).

Self-determination theory has been applied to many different settings such as education, health care, parenting, work organizations, religion, addictions, sports, and mental health.

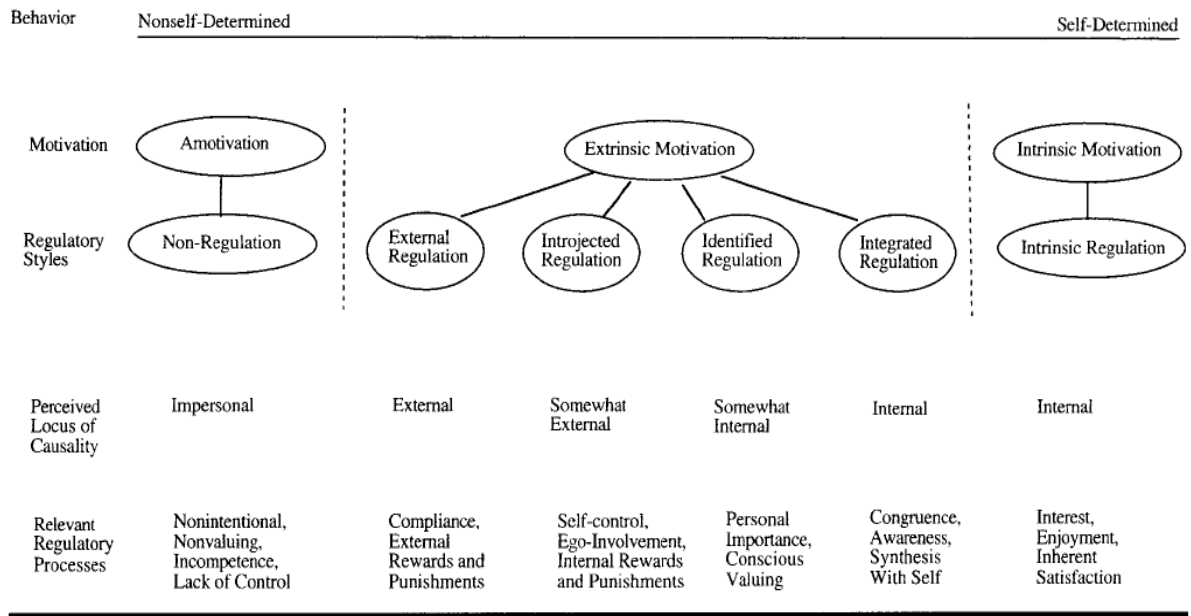


Figure 1. *The Self-Determination Continuum Showing Types of Motivation with their Regulatory Styles, Loci of Causality, and Corresponding Processes.* From Ryan, R. M. & Deci E. L., Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being, *American Psychologist*, 55(1), 68-78, 2000, APA as publisher, reprinted with permission.

Perceived Locus of Causality

The locus of control construct has been in psychological literature since the early 1960s and there has been a great deal of research ever since (Lefcourt, 1976). This concept has been closely related to motivation theories as it relates to the variables that cause or give momentum to behavior (Ryan & Connell, 1989). Fritz Heider introduced the perceived locus of causality (PLOC) concept in reference to interpersonal perception (Ryan & Connell, 1989). More specifically, Heider applies the PLOC concept to how one infers the motives and intentions of others. Heider determined that there is both personal and impersonal causation. Personal causation is when a person has intention and impersonal causation is when the environment produces a specific effect (Ryan & Connell, 1989). Furthermore PLOC has been elaborated on by Christopher DeCharms with regard to the explanation of behavior as opposed to outcomes (Ryan & Connell, 1989). DeCharms explained that there is both an internal and external perceived locus of causality. Internal PLOC is when a person is perceived as an “origin” of his or her behavior and an external PLOC is when a person is seen as a “pawn” to outside forces (Ryan & Connell, 1989). Internal and external PLOC has since been crucial in intrinsic and extrinsic motivation studies. Lefcourt (1976) concluded that personal important events that are to some degree controllable will be related to internal control expectancies and as a sign of vitality whereas external control relates to apathy and withdrawal (Lefcourt, 1976). If a person feels helpless to specific events then he/she will deal with resignation or indifference and will show little signs of concern, involvement, and vitality. Therefore, locus of control is a mediator of involved commitment in life pursuits (Lefcourt, 1976).

Biddle (1999) conducted a study that regarded PLOC to athletics and found locus of causality did not strongly relate to exercise behavior. It was assumed that locus of causality was a set of regulative beliefs preceding action and outcome, and therefore it would be expected that LOC would have a strong impact on behavior (Biddle, 1999). However, the study suggests that LOC has been inadequately assessed or poorly operationalized (Biddle, 1999). Biddle (1999) suggests that research is weak in the area of locus of causality literature based on exercise and sport psychology and that is likely the reason that there is not a stronger relationship between LOC and behavior.

Motivation

Motivation is a vague term that has at least thirty-two theories, each of which has its own definition (Roberts, 2001). In some respects the term has been used so broadly that it can define almost anything one examines, and on the other hand, the definition can be so narrow that it is no use at all (Roberts, 2001). Some have claimed that the term should be abandoned completely and replaced by descriptions of cognitive processes like self-regulation and self-systems like goal-setting (Roberts, 2001). However, most theorists will agree that motivation is important and is more of a process than an entity (Maehr & Braskamp, 1986). It is important to know that people act for many different reasons and that these actions can vary by experiences and consequences (Ryan & Deci, 2000).

Mastery motivation is categorized in two major types; instrumental and expressive (MacTurk & Morgan, 1995). The instrumental aspect is usually controlled by emotion and expressive aspects are important in communicative functions. Instrumental aspects include persistence of activities that are moderately difficult, wanting to control

one's own environment, and preference of challenge (MacTurk & Morgan, 1995). On the other hand, expressive aspects include pleasure, pride, frustration, anger, sadness, interest, and shame dependent on developmental level (MacTurk & Morgan, 1995). Mastery motivation is fundamental to each individual in two senses; the fact that it is started from birth and that there are no outside rewards for mastering behaviors. In 1991 Morgan et al. suggested that during the latter part of the first year of life and during the second quarter of second year of life there are developmental transformations in mastery motivation (MacTurk & Morgan, 1995). Some research claims that mastery motivation has occurred in infants who are at least 6 months old (MacTurk & Morgan, 1995). Ryan and Deci (2000) agree that from the time of birth children are curious, playful, and active without receiving rewards (Ryan & Deci, 2000). However, Ryan and Deci (2000) state that throughout life intrinsic motivation is evolved and that the real question is not what causes motivation, rather what sustains and diminishes this natural tendency (Ryan & Deci, 2000).

People can be motivated because they truly value an activity, because they are pushed by other interests or a bribe, because they feel a personal commitment or because they fear failing (Ryan & Deci, 2000). These influences range from being internally motivated to feeling externally pressured. It has been observed that people who have authentic motivation have more interest, excitement, and confidence which also enhances performance, persistence, creativity, heightened vitality, self-esteem, and general well-being (Ryan & Deci, 2000). Sandra Foster (2005) states that there are four key sources of motivation: motivation as a function of an athlete's self worth, motivational levels in response to motivational climate, motivation as a function of whether an athlete is

“moved” by intrinsic or extrinsic factors, and motivation as a function of social influences. When a person (coach, athletic trainer, etc.) tries to instill a certain behavior in an individual, that person’s motivation will range from amotivation, extrinsic motivation, and intrinsic motivation (Ryan & Deci, 2000). The next sections will go into detail on these different aspects of motivation.

Amotivation

Figure 1 shows that amotivation falls on the far left of the self-determination continuum. Amotivation is when people are neither motivated nor unmotivated; more specifically when they are neither intrinsically nor extrinsically motivated (Vallerand & Bissonnette, 1992). When a person is amotivated, they just go through the motions and either do not act at all or act without intent (Ryan & Deci, 2000). Although amotivation is not mentioned as much as intrinsic and extrinsic motivation, it is still a very important factor and must be considered in order to understand human behavior (Vallerand & Bissonnette, 1992). Amotivation occurs when individuals either do not feel competent to do an activity, they do not value an activity, or they do not expect a desirable outcome (Ryan & Deci, 2000). Individuals are said to be amotivated when they do not recognize a relationship between their own actions and the resulting outcomes (Pelletier et al., 2001). Amotivated individuals usually perceive incompetence and lack of control (Chantal et al., 1996). Amotivated individuals are the least self-determined because they do not feel a sense of purpose, have no anticipation of reward, and see no possibility of changing the course of events (Pelletier et al., 2001). Deci and Ryan (1985) found that individuals that feel they cannot control outcomes are more likely to experience depression (Deci & Ryan, 2000). This finding was consistent with research done by Pelletier et al. (1999) on

the beliefs associated with amotivation (Deci & Ryan, 2000). An athlete who is training with little sense of meaning or no real purpose is displaying amotivation (Chantal et al., 1996). Amotivation has been compared to learned helplessness because the individual has feelings of incompetence and uncontrollability (Vallerand & Bissonnette, 1992). Athletes who are amotivated will have the poorest performance and mental-health outcomes (Deci & Ryan, 2000). Since there are no intrinsic or extrinsic rewards, the participants will eventually cease activity (Vallerand & Bissonnette, 1992).

Extrinsic Motivation

Extrinsic motivation (EM) is when an activity is done in order to attain a distinguishable outcome (Ryan & Deci, 2000). As people grow up, they have to assume responsibilities and feel social pressures to participate in activities that they are not interested in (Ryan & Deci, 2000). This is when motivation starts to become tested and extrinsic motivation comes into play. Knowing that individuals are not completing these tasks for fun or for themselves, the question is how individuals will carry out these tasks and whether the motivation will be ongoing (Ryan & Deci, 2000). Extrinsic motivation includes many different behaviors that are not performed for themselves, but are a means to an end (Pelletier et al., 2001). Originally, extrinsic motivation was seen as a non-self-determined behavior that could only be provoked by external rewards (Pelletier et al., 2001).

Based on the self-determination theory, motivational levels will depend on the degree to which the value or the behavior has been internalized and integrated (Ryan & Deci, 2000). Internalization is when someone absorbs a value, and integration is taking those values one step further so that it is a sense of self (Ryan & Deci, 2000). However,

when these processes are hindered, values might be only partially internalized or remain external (Deci & Ryan, 2000). Extrinsic motivation relates to a variety of behaviors that are not done for an individual's own sake (Pelletier et al., 1995). Unlike other theories, the self-determination theory claims that extrinsic motivation varies greatly in its relative autonomy (Ryan & Deci, 2000). Extrinsic motivation can be caused by a choice or obedience to an outside source (Ryan & Deci, 2000). For example, athletes who practice because they know it will help them in competition are extrinsically motivated in the same way that the athlete practices because their parent's said they had to. In both examples, the athletes are not practicing for the enjoyment itself (Ryan & Deci, 2000). When performing an activity, extrinsically motivated athletes will either show a sense of direction and purpose or will be hoping to receive an award, avoid sanction, or to appease internal pressures (Chantal et al., 1996). Extrinsic motivation is an important factor in athletics, because research shows that when people are extrinsically motivated, they usually do the minimum amount of work possible in order to receive rewards, avoid punishment, or defeat an opponent (Pelletier et al., 2001).

As discussed earlier, a sub-theory of SDT is called organismic integration theory (OIT). The purpose of this component of self-determination theory is to illustrate the specific forms of extrinsic motivation and the factors that hinder or promote internalization and integration (Ryan & Deci, 2000). Extrinsic motivation encompasses a wide variety of behaviors, but all actions are made without the activity itself in mind (Guay et al., 2000). There are four types of extrinsic motivation: external regulation, introjected regulation, identified regulation, and integrated regulation (Deci et al., 1991). However, the instrument that will be used in the present study (the Situational Motivation

Scale) only refers to external regulation and identified regulation, so those will be the focus in the following sections.

External Regulation

External regulation is what many people think of when extrinsic motivation is mentioned. Behaviors that are the least autonomous are referred to as externally regulated (Ryan & Deci, 2000). When an individual is externally regulated they are driven by external forces, in other words, the individual is either working to obtain rewards or to avoid negative consequences (Guay et al., 2000). This means that no matter the goal of the behavior, the individual feels an obligation to behave or act in a specific way (Guay et al., 2000). This relates to externally regulated athletes because they will only be working for either rewards or to avoid punishment (Deci & Ryan, 2000). This athlete is then not participating for intrinsic reasons but rather for outside circumstances (Pelletier et al., 1995). Unfortunately for coaches, not only has extrinsic motivation been looked at in a negative light, it has been found to undermine intrinsic motivation (Deci & Ryan, 2000). This means that extrinsically motivated athletes will struggle with internal motivation, and they may be dependent on an outside source to feel motivated. As soon as the contingency is withdrawn, the athlete will likely show poor performance (Ryan & Deci, 2000).

Identified Regulation

Identified regulation is when a person values and judges the behavior as important and in turn performs the behavior out of choice (Kingston et al., 2006). Identified regulation involves generating thoughts, emotions, and behaviors that are planned and

adapted to the achievement of personal goals (Harmison, 2005). When someone has fully identified with a given behavior, they will accept it as their own. Although a behavior is valued and perceived as one's own, identified regulation is still an extrinsic motivator because the activity is only done for an outcome and not for intrinsic factors (Guay et al., 2000). When identified regulation happens there should be a higher commitment and performance (Deci & Ryan, 2000). Identified regulation is very important in motivation. For example, when athletes identify with the importance of fitness for the improvement of their game, they will be more focused and have a greater desire. In turn this will help athletes stay motivated to do what they need to and possibly help others stay motivated as well. Many athletes have identified regulation, but may not even know it. As an example, college athletes usually feel that their involvement in their sport contributes to growth and development as a person (Pelletier et al., 1995).

Intrinsic Motivation

Intrinsic motivation might be the single-most positive potential of human nature (Ryan & Deci, 2000). Intrinsic motivation is when an individual performs an activity for itself, in order to experience pleasure, and to feel satisfied in the activity (Guay et al., 2000). When an athlete is intrinsically motivated, he or she will perform his or her sport voluntarily for the pleasure and satisfaction from participating, without the need of rewards (Pelletier et al., 1995). Athletes, specifically, will practice because they are satisfied by learning about their sport or trying to better themselves daily (Pelletier et al., 1995).

Intrinsic motivation stems from the psychological needs of competence and self-determination (Ryan & Deci, 2000). Early experiments showed that positive feedback enhances intrinsic motivation when compared to no feedback and that negative feedback decreased intrinsic motivation compared to no feedback (Deci & Ryan, 2000). Deci and Ryan took these results and linked them to suggest that positive feedback enhances intrinsic motivation whereas negative feedback tends to undermine intrinsic motivation (Deci & Ryan, 2000). Research also reveals that concrete rewards, threats, deadlines, directives, pressured evaluation, and imposed goals actually diminish intrinsic motivation (Ryan & Deci, 2000). This occurs because those factors move towards an external perceived locus of causality (Ryan & Deci, 2000). On the other hand, acknowledgement of feelings and opportunities for self-direction will enhance intrinsic motivation because they give the individual a sense of autonomy (Ryan & Deci, 2000). Field studies have shown that school teachers who are not controlling, but are in fact supportive of autonomy increase their students' intrinsic motivation as well as curiosity and desire for challenge (Ryan & Deci, 2000). This can be generalized for sport as well (Ryan & Deci, 2000). A coach needs to know that by enhancing autonomy that will in turn help their athletes gain intrinsic motivation. Intrinsically motivated athletes are more self-determined and are more fully involved in their sport and therefore, tend to perform better (Pelletier et al., 1995). When athletes engage in sport for self-determined motives, especially for intrinsic reasons, there have been benefits such as greater persistence, more positive affect, enjoyment in an activity, and less risk of dropout (Kipp & Amorose, 2008). Ratelle, Baldwin, and Vallerand (2005) conducted a study hypothesizing that situational motivation can generalize from one situation to another using activation by

associated cues. It was concluded that future research should include gender that might reveal specific motivational dynamics that occur in different situations and with different motivational indicators (Ratelle et al., 2005).

Goal-setting

Another important aspect of sport psychology is goal-setting. Goal-setting has been studied extensively to explore the effects of psychological skills on athletic performance (Thiese & Huddleston, 1999). “Goal” is attaining a specific level of proficiency on a task, usually within a specified time limit (Harmison, 2005). Goals can be either objective or subjective. An objective goal is quantifiable such as improving a basketball free throw percentage from 35-40%. Subjective goals are more difficult to measure because they deal with one’s perception, such as increased satisfaction in training (Harmison, 2005).

Athletes and coaches alike need to be sure they have complete knowledge of the essential components of goal-setting. There are three types of goals; outcome, performance, and process (Harmison, 2005). Outcome goals are the desired result of a competition and depend, at least in part, on the performance and ability of other athletes. An example of an outcome goal is finishing first in the league. Performance goals deal with actual performance related to athletes’ own standard of excellence. Performance goals can also make competence prominent (Elliot & Harackiewicz, 1994). A long jumper going from 20 feet to 20 feet 3 inches is an example of a performance goal. Lastly, process goals refer to how athletes execute specific strategies and how they perform particular skills. Process goals are usually the focus in sport, because this is what the coaches want to see improvement in. An example of a process goal is to follow

through on a soccer shot. Outcome goals are an important part of goal-setting, but process and performance goals are especially important because athletes can control these goals. Process and performance goals are also considered more important because they usually lead to achieving outcome goals (Harmison, 2005).

Defrancesco and Burke (1997) did a study that tested 115 professional tennis players. Results showed that these tennis players were most commonly using imagery/visualization, mental preparation, relaxation, goal-setting and self-talk. (Defrancesco & Burke, 1997). Thiese and Huddleston (1999) also did a study using the Athlete's Mental Survey and found that athletes reported a 66.7% use of "always" using goal-setting.

Goal-setting is incorporated with motivation because goals influence performance in several ways. Athletes claim that setting goals keeps them focused on the task at hand. This is supported by the fact that goals direct individuals' attention to the task and cues in the athletic environment (Harmison, 2005). Goals also help increase persistence. This happens when feedback is offered and an explanation is given on the effort needed to reach a goal (Harmison, 2005). In other words, a swimmer may not feel like putting in the required yardage day after day or may get bored with the repetitiveness of training. If this athlete sets short-term goals, he or she will be able to follow his or her progress and see how it is working towards his or her overall goal. This way the athlete can maintain motivation daily as well as over time. Lastly, by developing different learning strategies, goals influence performance (Harmison, 2005). If an athlete wants to improve his or her lacrosse shot, they might try different strategies in training such as changing shooting mechanics, trying a different angle, or adding extra shots at the end of practice.

Motivation and goal-setting are both very important aspects in the college athletic world. Coaches, in particular, are hoping to increase motivation levels of their team and at times will incorporate goal-setting to accomplish that. Knowing how athletes are motivated would help coaches, athletic trainers, and sport psychologists to base training and techniques.

Chapter 3

METHODOLOGY

Introduction

The purpose of this study is to determine if there is a difference between male and female athletes when looking at amotivation, external regulation, identified regulation, intrinsic motivation, and goal-setting. Hypotheses for this study were:

- The first hypothesis is that there will not be a difference between genders on amotivation, external regulation, identified regulation, and intrinsic motivation.
- The second hypothesis is that there will be no difference between genders on the use of goal-setting.
- Lastly, there will be no difference on amotivation, external regulation, identified regulation, intrinsic motivation, and goal-setting based on year in college.

Subjects

Over 400,000 student athletes make up the total population size (NCAA.org). The participant sample (n =106) is comprised of male (n =51) and female (n =55) student-athletes from a Division I college in Virginia. These athletes currently participate in either cross country (n= 7), track (n = 16), field (n= 16), track and cross country (n= 8), track and field (n= 2), track, field and cross country (n= 2), swimming (n= 47), or diving (n= 8). The athletes range in age from eighteen to twenty-four years (M =19.81, SD =1.47) and vary from freshman to post-graduate students. The subjects were acquired by

a team roster and therefore this study is a convenience sample. Permission was granted by the swimming and diving head coach as well as the cross country, track and field head coach in order to administer the questionnaire.

Instrument

Two instruments were used; the Situational Motivation Scale (SIMS) and a goal-setting questionnaire. The SIMS is comprised of sixteen questions dealing with intrinsic motivation, identified regulation, external regulation, and amotivation. (See Appendix A) Answers are on a Likert-scale that range from one to five, with one “not at all like me” and five “just like me.” Reliability testing shows that internal consistencies for all scales, bivariate and interfactor correlations, were computed and the results supported a simplex pattern across samples (Standage et al., 2003). All subscales had considerable internal consistency with Cronbach $\alpha > .71$. Test retest r coefficients for all subscales were also satisfactory with test-retest $r > .75$ (Tsorbatzoudis, et al., 2004). The SIMS factorial validity across the three samples was tested by confirmatory factor analysis (Standage et al., 2003). Also, the multisample confirmatory factor analysis (CFA) supported partial invariance. These results were based on a seven point Likert scale with different descriptors of the SIMS questionnaire. However, the five point scale as well as the changed descriptors was used to enhance usability of the scale for this study. The goal-setting instrument contains fifteen questions in which the athletes have to correspond their answers to a Likert-scale ranging from one to five. (See Appendix A) One is “never” and five is “always.” A pilot study was conducted using ten athletes. The pilot

study was done to test for functionality and no problems were found. Data was inputted to JMP Statistical Package for Windows (Version 7.0) for statistical analysis.

Procedures

The swimming and diving team filled out the questionnaire during a team meeting and the track and field and cross country athletes took the questionnaire in a quiet area outside of their normal training environment. When giving the questionnaire, a written script (see Appendix B) was used in order to explain the purpose of the study. Prior approval was granted with exempt status by the Institutional Review Board (IRB). Based on this status, once an athlete completed the questionnaire, informed consent was implied. Also, the individual information gathered will not be shared with the coaches. The athletes were informed that the coaches will not be involved in the study, their results will remain confidential, and that they should respond honestly. Each participant was first asked to complete a demographic section that included gender, athletes' age, year in college, and primary sport played. Students under the age of eighteen were not permitted to complete the questionnaire. The conditions for participation were made clear and IRB information was given as well. The swimming and diving team completed the questionnaire at a team meeting. Participants were spread throughout the meeting area to increase truthfulness and to avoid copying. The cross country and track and field team filled out the questionnaire as the athletes were seen in the training room. This is a limitation as there was outside noise, but this method decreased the chance of copying teammates' answers. (See Appendix C for a copy of the Human Participant Clearance Form.)

Chapter 4

RESULTS

Introduction

The purpose of this study is to determine if there is a difference between male and female athletes when looking at amotivation, external regulation, identified regulation, intrinsic motivation, and goal-setting. The two instruments used were the Situational Motivation Scale (SIMS) and a goal-setting questionnaire. The participant sample ($n = 106$) is comprised of male ($n = 51$) and female ($n = 55$) student-athletes from a Division I college in Virginia.

Preliminary Analyses

To provide preliminary assessment of the validity of the Situational Motivation Scale (SIMS), intercorrelations among the four subscales were computed. Support for the validity of the scale would be obtained if there were positive correlations between adjacent concepts (e.g., external regulation and amotivation) and negative correlations at the opposite end of the continuum (e.g., amotivation and intrinsic motivation). The correlation matrix appears in Table 1, and the correlation pattern supports the validity of the scale. The highest positive correlations were obtained between intrinsic motivation and identified regulation, $r = .58$. The most negative correlations were obtained between amotivation and intrinsic motivation, $r = -.62$. Correlations also become progressively more positive when moving from one end of the continuum to the other. Therefore, these results provide support of the self-determination continuum (Ryan & Deci, 2000) and

also yield preliminary evidence for the validity of the Situational Motivation Scale (SIMS).

Analyses

The first analysis looked at the differences between gender and each question of the Situational Motivation Scale (SIMS). The second looked at the difference between gender and intrinsic motivation, identified regulation, external regulation, and amotivation. The third analysis focused on the differences between gender and goal-setting. The next looked at intrinsic motivation, identified regulation, external regulation, and amotivation relative to year in college. The last analysis looked at goal-setting based on year in college. Before running every analysis, a Shapiro-Wilk W goodness of fit test was done. In every instance, there was definite significance ($W < .0001$) so the analyses are non-normal. Tests were done looking at both a normal t-test ($p < .05$) as well as a nonparametric Wilcoxon t-test ($p < .05$). Unequal variance (Levene) tests were done for each analysis as well. If the p-value was less than .05, the Welch Anova Test was used.

Mean Comparisons between Situational Motivation Scale (SIMS) and Gender

The first analysis looked at the differences between gender and each question of the Situational Motivation Scale (SIMS), see Appendix D. Question number two, “because I am doing it for my own good” was significant by the regular t-test $p = .0327$ and in Wilcoxon t-test $p = .0202$. Females had a mean of 4.164 and males had a mean of 3.78 (3 meaning “not sure,” 4 meaning “like me,” and 5 meaning “just like me.”

Mean Comparisons between Motivation and Gender

The second analysis looked at the difference between gender and intrinsic motivation, identified regulation, external regulation, and amotivation (Table 2). The most highly endorsed motivation was identified regulation ($M = 4.21$), followed by intrinsic motivation ($M = 3.78$) and external regulation ($M = 2.21$). Participants reported a low level of amotivation ($M = 1.82$). Wilcoxon t-test showed significance ($p = .0370$) between females ($M = 4.30$) and males ($M = 4.10$) and identified regulation.

Mean Comparisons between Gender and Goal-Setting

The third analysis looked at the difference between gender and goal-setting. Appendix E shows the means and standard deviations for gender compared to each question on the goal-setting questionnaire. There were no significant differences.

Table 1
Means and Correlation Matrix among the Motivation Subscales

	<u>Intrinsic Motivation</u>	<u>Identified Regulation</u>	<u>External Regulation</u>	<u>Amotivation</u>	<u>Mean</u>
Intrinsic Motivation	1.0000				3.7830
Identified Regulation	0.5817	1.0000			4.2052
External Regulation	-0.6242	-0.2186	1.0000		2.2075
Amotivation	-0.7080	-0.5154	0.5434	1.0000	1.8231

Table 2
Means and Standard Deviations of the Motivation Subscales for Males and Females

Motivation Subscales	<u>Females</u>		<u>Males</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Intrinsic Motivation	3.89	.880	3.67	1.067
Identified Regulation*	4.30	.542	4.10	.564
External Regulation	2.15	1.005	2.27	.988
Amotivation	1.75	.847	1.90	.819

*p < .05

Mean Comparisons between Motivation and Year in College

The next analysis looked at motivation based on the participants' year in college. Table 3 shows that post-graduate students ($M = 4.67$) reported the highest levels of motivation, followed by freshmen ($M = 3.94$), 5th year seniors ($M = 3.92$), sophomores ($M = 3.76$), juniors ($M = 3.63$), and finally seniors ($M = 3.53$). Seniors reported the highest levels of amotivation (2.12), followed by sophomores and 5th year seniors (1.83), juniors ($M = 1.78$), freshmen ($M = 1.76$) and post-graduate students ($M = 1.17$).

Significance was found between year in college and identified regulation. Levene's test came back significant ($F = .0006$) and therefore the Welch Anova test was used ($P = .0450$). However, Tukey-Kramer follow up test failed to identify a pairwise significant difference.

Mean Comparisons between Goal-Setting and Year in College

The last analysis looked at goal-setting based on year in college, Table 4. Question number twelve "I believe setting goals helps improve my performance" was significant ($p = .0220$). This significance was found using the Wilcoxon test. However, Tukey-Kramer follow up test failed to identify a pairwise significant difference. Post-graduate students ($M = 5.0$) reported highest levels of goal-setting followed by freshmen ($M = 4.40$), 5th year ($M = 4.33$), juniors ($M = 4.24$), sophomores ($M = 4.13$). The lowest reported mean came from the seniors ($M = 3.65$) (See Appendix F).

Table 3
Means and Standard Deviations of the Motivation Subscales for Year in College

	Intrinsic Motivation		Identified Regulation*		External Regulation		Amotivation	
	M	SD	M	SD	M	SD	M	SD
Freshman	3.94	.165	4.14	.516	2.20	.985	1.76	.764
Sophomore	3.76	.203	4.32	.534	2.21	1.06	1.83	.967
Junior	3.63	.195	4.30	.510	2.15	1.08	1.78	.748
Senior	3.53	.236	3.97	.475	2.46	.863	2.12	.957
5 th Year	3.92	.563	4.00	1.52	2.25	1.09	1.83	.804
Post Graduate	4.67	.563	4.83	.289	1.33	.289	1.17	.289

*p < .05

Table 4
*Mean Comparisons between Year in College and Goal-Setting**

	Freshman		Sophomore		Junior		Senior		5 th Year		Post-Grad	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Question 12**	4.40	.881	4.13	1.18	4.24	.831	3.65	.862	4.33	.577	5.00	0.00

*See appendix # for goal-setting questionnaire

**p < .05

Chapter 5

DISCUSSION

Summary of the Study

The purpose of this study was to determine if there was a difference between male and female athletes when looking at amotivation, external regulation, identified regulation, intrinsic motivation, and goal-setting. The first hypothesis stated that there was not a difference between genders on amotivation, external regulation, identified regulation, and intrinsic motivation. The second hypothesis stated that there was no difference between genders on the use of goal-setting. Lastly, there would be no difference on amotivation, external regulation, identified regulation, intrinsic motivation, and goal-setting based on year in college.

Discussion

The first analysis was mean comparisons between the Situational Motivation Scale (SIMS) and gender. Question number two (found in Appendix D), “because I am doing it for my own good” was significant. This significance means that there is a gender difference on whether or not athletes are participating in their sport for their own good. Females had a mean of 4.164, which indicates that females reported that they are participating in their sport “for their own good” more than males ($M = 3.78$). Past research has shown that females are more intrinsically motivated than males (Chantal et al., 1996; Kingston et al., 2006). Question number two is related to identified regulation and

therefore is not completely consistent with previous findings. However, this could be due to the relatively small sample size that was used.

The first hypothesis was that there would not be a difference between genders on amotivation, external regulation, identified regulation, and intrinsic motivation. The most highly endorsed motivation was identified regulation ($M = 4.21$), followed by intrinsic motivation ($M = 3.78$) and external regulation ($M = 2.21$). Participants reported a low level of amotivation ($M = 1.82$). Identified regulation was more highly endorsed over intrinsic motivation, which is remarkable since according to Ryan and Deci (2000) intrinsic motivation should be the “best” type of motivation. Females had a higher mean when looking at intrinsic motivation and identified regulation and males had a higher mean when looking at external regulation. Going back to Ryan and Deci’s (2000) self-determination continuum, it implies that females seem to be more positively motivated than males.

The second hypothesis is that there would be no difference between genders on the use of goal-setting (see Appendix E). There were no significant findings, which indicate that there is no difference in the use of goal-setting based on gender. However, females reported higher scores on all but four questions. Females reported higher scores on question four, “I set objective goals for myself (e.g. Drop .3 seconds off best time),” and fifteen, “I set subjective goals for myself (e.g. I plan to do better at my sport),” both of which are performance goals. Females also reported a higher score on question fourteen, “I set skill goals (e.g. I will use proper form when squatting)” which is a process goal. Males reported higher on questions six (“I want my team to be first in our conference”), eleven (“I accomplish my individual short term goals”), twelve (“I believe

setting goals helps improve my performance”), and thirteen (“I accomplish my individual long term goals”). Question number six is an outcome goal, and question eleven and thirteen involve the accomplishment of goals.

The last analysis looked at goal-setting based on year in college (see Appendix F). Question number twelve, “I believe setting goals helps improve my performance,” was significant. It seems that post-graduate students ($M = 5.0$) believe goal-setting helps improve performance the most followed by freshmen ($M = 4.40$), 5th year ($M = 4.33$), juniors ($M = 4.24$), sophomores ($M = 4.13$). The lowest recorded mean came from the seniors ($M = 3.65$). This is pertinent, because if a coach wanted to talk to his/her team about goal-setting, it would be wise to find a post-graduate student to talk to the team. Having an alumnus of the sport talk to the team about the importance of goal-setting will hopefully help the seniors and sophomores realize that goal-setting is a useful tool.

Suggested Further Research

Future research should include more participants and different sports. Revenue sports (football, basketball, etc.) would be a valuable population to look at and these athletes might have completely different results. It would also be beneficial to find out why participants chose the answers that they did. Many answers will likely be based on coaches, upbringing, competitiveness, and other personal aspects. By determining how and why athletes answer questions the way they do, coaches will be able to cater practices to personal motivation aspects and goal-setting techniques.

Summary

In conclusion, the first hypothesis was accepted as there were no significant differences found between male and female athletes when looking at amotivation, external regulation, and intrinsic motivation. Significance was found on one identified regulation question. Females reported that they are participating in the sport “for their own good” more than males. There were no significant differences found between male and female athletes when looking at goal-setting. Thus the second hypothesis was accepted and it can be concluded that there are no differences in motivation based on gender. It was also interesting that all the participants endorsed identified regulation more than intrinsic motivation. This indicates that athletes likely value their sport but perform for a specific result or reason, not for the pleasure and satisfaction of participating. The last hypothesis was rejected as significance was found between year in college and identified regulation.

It seems that both the Situational Motivation Scale and the goal-setting questionnaire are useful tools. The questionnaires are helpful to coaches because they can base training and coaching styles on how athletes respond to the questionnaires. Sport psychologists and athletic trainers can also use these instruments to determine what areas the athlete is struggling with. Sport psychologists and athletic trainers can also use the SIMS and goal-setting questionnaire as a self-reflective learning tool. The athlete can take the questionnaires and then the sport psychologist or athletic trainer can go over their answers with them. This way the athlete will know which areas they are struggling in and can discuss how to improve these areas

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APPENDIX A1

Situational Motivation Scale

Please answer the following questions:

Gender: Male or Female

Age:

Year in College: Freshman Sophomore Junior Senior 5th Year Senior Post-Grad

Circle your Sport: Swimming Diving Track Field Cross Country

Directions: Read each item carefully. Using the scale below, please circle the number that best describes the reason why you are currently engaged in your sport. Answer each item according to the following scale:

1: not at all like me; 2: not like me; 3: not sure; 4: like me; 5: just like me

Why are you currently engaged in your sport?

- | | |
|--|-------------------|
| 1. Because I think that this activity is interesting | 1 2 3 4 5 |
| 2. Because I am doing it for my own good | 1 2 3 4 5 |
| 3. Because I am supposed to do it | 1 2 3 4 5 |
| 4. There may be good reasons to do this activity, but personally I don't see any | 1 2 3 4 5 |
| 5. Because I think that this activity is pleasant | 1 2 3 4 5 |
| 6. Because I think that this activity is good for me | 1 2 3 4 5 |
| 7. Because it is something that I have to do | 1 2 3 4 5 |
| 8. I do this activity but I am not sure if it is worth it | 1 2 3 4 5 |
| 9. Because this activity is fun | 1 2 3 4 5 |
| 10. By personal decision | 1 2 3 4 5 |
| 11. Because I don't have any choice | 1 2 3 4 5 |
| 12. I don't know; I don't see what this activity brings me | 1 2 3 4 5 |
| 13. Because I feel good when doing this activity | 1 2 3 4 5 |
| 14. Because I believe that this activity is important for me | 1 2 3 4 5 |

15. Because I feel that I have to do it

1 2 3 4 5

16. I do this activity, but I am not sure it is a good thing to pursue

1 2 3 4 5

APPENDIX A2

Goal-Setting Questionnaire

Directions: Read each item carefully. Using the scale below, please circle the number that best describes your answer. Answer each item according to the following scale:

1: never; 2: rarely; 3: sometimes; 4: usually; 5: always

- | | |
|--|-----------|
| 1. My coach makes me set individual goals | 1 2 3 4 5 |
| 2. My coach sets teams goals for us | 1 2 3 4 5 |
| 3. My coach makes my team set team goals | 1 2 3 4 5 |
| 4. I set objective goals for myself (e.g. Drop .3 seconds off best time) | 1 2 3 4 5 |
| 5. My coach sets individual goals for me | 1 2 3 4 5 |
| 6. I want my team to be first in our conference | 1 2 3 4 5 |
| 7. As a team, we set team goals | 1 2 3 4 5 |
| 8. I write my individual short term goals down | 1 2 3 4 5 |
| 9. I set individual goals for myself | 1 2 3 4 5 |
| 10. I write my individual long term goals down | 1 2 3 4 5 |
| 11. I accomplish my individual short term goals | 1 2 3 4 5 |
| 12. I believe setting goals helps improve my performance | 1 2 3 4 5 |
| 13. I accomplish my individual long term goals | 1 2 3 4 5 |
| 14. I set skill goals (e.g. I will use proper form when squatting) | 1 2 3 4 5 |
| 15. I set subjective goals for myself (e.g. I plan to do better at my sport) | 1 2 3 4 5 |

APPENDIX B

Questionnaire Script

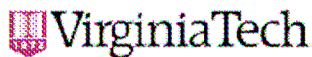
My name is Erin Cash and I'm working on my doctorate here at Virginia Tech. For my dissertation, I will need your help in filling out the following questionnaire. If you have questions or concerns at any time, please let me know. If you are under the age of 18 or do not feel comfortable taking this questionnaire, please let me know before you start.

There are two sections in this questionnaire plus a demographics section. Please read the directions carefully before beginning. Please answer all questions honestly and thoroughly. Your answers will remain anonymous and your coaches will not see these questionnaires. How you answer the questions will not be relayed back to your coach and will only be used for my study. Also, please do not answer how you "think you should." It is very important to my study that you are honest.

If you have questions at any time, please let me know. Thank you very much for your time and effort.

APPENDIX C

IRB Exempt Approval



Office of Research Compliance
Carmen T. Green, IRB Administrator
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24061
540/231-4358 Fax 540/231-0959
e-mail ctgreen@vt.edu
www.irb.vt.edu
FWA000000672 (expires 1/20/2010)
IRB # is IRB00000667

DATE: November 13, 2008

MEMORANDUM

TO: Richard K. Stratton
Erin Cash

FROM: Carmen Green 

SUBJECT: **IRB Exempt Approval:** "Motivation and Goal Setting in College Athletes", IRB # 08-698

I have reviewed your request to the IRB for exemption for the above referenced project. The research falls within the exempt status. Approval is granted effective as of November 13, 2008.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in the research protocol. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File

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APPENDIX D

Mean Comparisons between Situational Motivation Scale (SIMS)* and Gender

	<u>Females</u>		<u>Males</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Question 1	4.145	1.000	4.000	.959
Question 2**	4.164	.877	3.78	.932
Question 3	2.400	1.300	2.353	1.163
Question 4	1.473	.766	1.725	.918
Question 5	3.509	1.230	3.255	1.481
Question 6	4.327	.840	4.137	.693
Question 7	2.418	1.343	2.667	1.337
Question 8	2.218	1.370	2.412	1.344
Question 9	3.800	1.129	3.667	1.352
Question 10	4.509	.540	4.392	.827
Question 11	1.509	.767	1.667	.887
Question 12	1.473	.790	1.627	.799
Question 13	4.091	.776	3.765	.162
Question 14	4.218	.786	4.059	.785
Question 15	2.273	1.340	2.392	1.266
Question 16	1.836	1.014	1.843	.880

*See appendix A for SIMS questionnaire

**p < .05

APPENDIX E

Mean Comparisons between Gender and Goal-Setting*

	<u>Females</u>		<u>Males</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Question 1	3.655	1.022	3.412	1.043
Question 2	3.927	1.034	3.706	1.064
Question 3	3.691	1.136	3.280	1.107
Question 4	4.600	.735	4.431	.900
Question 5	3.509	1.120	3.373	1.113
Question 6	4.545	.857	4.765	.513
Question 7	4.255	.907	4.157	.946
Question 8	2.891	1.181	2.824	1.584
Question 9	4.510	.814	4.333	.909
Question 10	3.055	1.339	2.882	1.545
Question 11	3.636	.825	3.647	.770
Question 12	4.164	.811	4.235	1.088
Question 13	3.564	.714	3.588	.876
Question 14	3.982	.991	3.667	1.089
Question 15	4.273	.912	4.196	.917

*See appendix A for goal-setting questionnaire

APPENDIX F

Mean Comparisons between Year in College and Goal-Setting*

	Freshman		Sophomore		Junior		Senior		5 th Year		Post-Grad	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Question 1	3.66	.873	3.65	1.11	3.52	1.23	3.18	.882	3.33	1.15	3.67	1.53
Question 2	3.89	.932	3.61	1.23	3.96	1.14	3.71	.920	3.67	1.53	4.33	.578
Question 3	3.60	.946	3.61	1.16	3.63	1.24	3.41	1.22	2.00	1.00	2.33	.578
Question 4	4.57	.698	4.70	.876	4.40	.957	4.18	.809	5.00	0.00	5.00	0.00
Question 5	3.49	1.04	3.22	1.20	3.60	1.15	3.12	1.15	4.33	1.15	4.33	1.54
Question 6	4.83	.453	4.39	1.12	4.72	.542	4.47	.717	4.67	.577	5.00	0.00
Question 7	4.37	.808	4.35	.831	4.20	1.04	3.94	.966	3.67	.577	3.33	1.53
Question 8	3.09	1.46	3.13	1.36	2.88	1.30	2.12	1.27	1.67	.577	3.33	1.15
Question 9	4.51	.742	4.30	.926	4.40	1.04	4.23	.831	5.00	0.00	5.00	0.00
Question 10	3.11	1.45	3.17	1.30	2.96	1.49	2.29	1.45	3.00	1.73	3.67	1.53
Question 11	3.74	.780	3.43	1.04	3.76	.597	3.41	.618	4.00	1.00	4.00	1.00
Question 12**	4.40	.881	4.13	1.18	4.24	.831	3.65	.862	4.33	.577	5.00	0.00
Question 13	3.60	.812	3.43	1.08	3.72	.614	3.41	.507	4.00	0.00	3.67	.577
Question 14	3.80	.994	4.09	1.16	3.84	.987	3.59	1.06	3.33	.577	4.00	1.73
Question 15	4.34	.802	4.48	.947	4.12	.927	3.94	.659	4.33	1.15	3.67	1.33

*See appendix A for goal-setting questionnaire

**p < .05