2019

Goal Orientations and Beliefs About Success in Age Group Swimmers

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By

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A Thesis Submitted to the

Graduate School

In Partial Fulfillment of the

Requirements for the Degree of

MASTER OF ARTS

College of the Pacific
Health Exercise and Sport Sciences

University of the Pacific
Stockton, California

2019

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DEDICATION

This thesis is dedicated to my mother for her unwavering love and support of my education and my dreams.

ACKNOWLEDGEMENTS

I thank Dr. Courtney Jensen for his valuable teachings in statistics that made my study successful. I want to thank Joclyn Ford, Rick Klatt, Ryan Randall, Corine Meyer-Riley, Nathan Leroy, and John & Cindy Griffin for allowing me to survey their swim clubs and setting an example for what model coaching should be. I thank Richard Anema for his continued guidance on how to better myself as an educator/coach and as a person. Finally, I want to express my deepest gratitude to Dr. Mark Van Ness for his endless support during this process. He gave me the opportunity to research something I was passionate about and helped me every step of the way.

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Abstract

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The purpose of this study was to expand on goal orientation theory and its relationship with beliefs about the causes of sport success by differentiating by age group in youth USA Swimming registered swimmers, ages 11-18. 80 swimmers from six different USA Swimming clubs completed the Task and Ego Orientation in Sport Questionnaire (TEOSQ) and the Beliefs About the Causes of Sport Success Questionnaire (BACSSQ) after providing parent consent and child assent to take part in the study. Similar to previous research, the ego orientation was found to have a significant positive relationship with ability and deception as beliefs about the causes of sport success and the task orientation was found to have a positive relationship with higher effort as well as a significant negative relationship with deception as a belief about the cause of sport success. New findings included the 13-14 year old and 15-18 year old age groups having a significantly higher ego orientation than the 11-12 age group, the 15-18 age group having a significantly lower task orientation than both the 11-12 and 13-14 age groups, and the 13-14 age group believed deception caused success in swimming significantly more than the 11-12 age group. It is concluded that older swimmers could develop a higher ego orientation and lower task orientation as they age due to more visible differences in ability and an increased focus on performance.

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Chapter 1: Introduction

Achievement-goal theory has been one of the primary methods for understanding athlete's motivations since the 1980's (Lochbaum, Cetinkalp, Graham, Wright, & Zazo, 2016). The theory originated from Nicholls (1980, 1984) using a dichotomous framework to classify how a person sets achievement goals. According to Nicholls, the goal of each action a person takes is motivated by the inherent desire to demonstrate competence. How a person demonstrates competence can be classified into two different orientations: Task orientation and ego orientation (Lochbaum et al., 2016). Task orientation refers to persons who feel they demonstrate competence through mastery of skill or personal improvement. Ego orientation refers to persons who feel they demonstrate competence by defeating others and comparison to other people (Lochbaum et al., 2016). The achievement-goal theory is most commonly used within sport, physical activity, and physical education contexts to help categorize and describe the motives people have for their behaviors. The two goal orientations, according to previous research, show a difference between the behaviors that task-oriented athletes demonstrate compared to ego-oriented athletes.

According to Duda and Nicholls (1992), task-oriented athletes experience greater joy when practicing their respective sport and they are less likely to quit because they are focused more on mastery of skill rather than comparing themselves to others. Lochbaum et al. found in his quantitative review of the goal orientation literature that task orientation was "…meaningfully correlated with what were considered adaptive achievement motivated outcomes such as positive emotions, motives of skill development and team membership, and belief that effort lead to success," (2016, pg. 4). The literature on goal orientations has

consistently found that the task orientation creates more positive athletes that last longer in sport and experience long-term success.

Ego oriented athletes tend not to prioritize fun while participating in sport and are less enthusiastic about sport than task-oriented athletes (Abraldes, Granero-Gallegos, Baena-Extremera, Gomez-Lopez, Rodriguez-Suarez, 2016). The ego orientation lends itself towards negative achievement behaviors that Lochbaum described as "maladaptive" (2016, pg. 4). Ego-oriented athletes also tend to believe that success in sport comes from natural ability or talent rather than through effort and cooperation (Van-Ypren & Duda, 1999). These beliefs can lead to athletes quitting their sport and to cases of burn-out. Fostering the proper goal orientation is critical to keeping athletes in their sport and creating happier and more successful athletes.

Previous studies sought to investigate the two goal orientations with a variety of variables including: Motivational climate, perceptions of success, beliefs about the causes of success in sport, purpose of participation in sport, gender differences in goal orientation, differences in goal orientation based on ability level, satisfaction of sport, and basic psychological needs. The present study focused on goal orientations and the beliefs about the causes of success in sport. Discovering what athletes believe determines success in sport can be used as a predictor as to which goal orientation an athlete has a stronger affinity. In a study done by Duda and White using elite skiers as subjects, it was found that those with high task orientation found that effort was the primary cause of success, while athletes with a higher ego orientation believed attributes such as natural ability, cheating, or external factors such as luck contributed more to sport success (1992). Other studies have yielded similar results, but they are typically focused on older athletes and there are more studies within team sports, most likely due to there being easier access to those sports.

In the context of swimming, it is important to foster achievement behaviors that are task-oriented. Swimming is an individual sport, and with more independence it creates opportunities for negative and aggressive behaviors (Amaro et al., 2017). Swimmers are forced to compare themselves to others as they are racing the competition. As a sport, you are attempting to demonstrate superiority over your competitors. The egoistic nature of the sport makes it common for athletes to burn-out or quit because they feel inferior or that they aren't successful. It is pivotal to educate swimmers on the various ways to define success in the water besides comparing oneself to others. Developing a task orientation and focusing on skill mastery and self-improvement will help retain many more swimmers.

There is less literature on differences between the various ages of youth athletes and their goal orientations and beliefs about the causes of success. Previous studies have found that younger athletes tend to be more extrinsically motivated while older athletes are more intrinsically motivated (Ngien-Siong, Khoo & Wah-Yun, 2012). We are investigating to find trends based on different age groups in youth swimmers. We will attempt to determine the relationship between what swimmers ages 11-18 believe makes them successful in sport and their goal orientations. By disaggregating by age in this study, we can examine if there are trends in the athlete's goal orientations and beliefs about success based on age group. We will also disaggregate based on sex.

Purpose

The purpose of this study is to determine youth swimmer's goal orientations and what youth swimmers believe causes them to be successful and to identify differences between age groups and sex. The two goal orientations we are attempting to determine are task orientation and ego orientation. We will be using four variables to measure what the swimmers believes

makes them successful. Those variables are effort, ability, deception techniques, and external factors. The three age groups that will be used are 11-12 year old's, 13-14 year old's, and 15-18 year old's.

Null Hypotheses

1. There will be a significant positive relationship between the task orientation and the belief that effort makes a swimmer successful.
2. There will be a significant positive relationship between the ego orientation and the belief that ability makes a swimmer successful as well as deception techniques.
3. Males will receive a higher average ego orientation score compared to females.
4. Swimmers ages 11-12 will have a higher ego orientation than 13-14 and 15-18 year old swimmers and 13-14 and 15-18 year old swimmers will have a higher task orientation.
5. Swimmers ages 15-18 will believe ability, deception, and external factors causes sport success more than 13-14 year old's and 11-12 year old's.
6. Swimmers ages 11-12 will believe effort causes sport success more than 13-14 and 15-18 year olds.

Delimitations

1. The subjects were delimited to swimmers ages 11-18 who are registered with USA Swimming.
2. The subjects were delimited to swimmers from USA Swimming clubs in California.
3. The study was delimited to two questionnaires, the Task and Ego in Sport Questionnaire (TEOSQ) and the Beliefs About the Causes of Success in Sport Questionnaire (BACCSQ).

4. The variables measured in the BACSSQ were delimited to effort, ability, deception techniques, and external factors.
5. The variables measured in the TEOSQ were delimited to task orientation and ego orientation.

Limitations

This study was limited by the following:

1. The possibility of athletes not answering the questionnaires truthfully.
2. The amount of time to collect data.
3. The ability of the researcher to explain how to answer the questionnaires using the Likert scale.
4. The possibility of athletes answering questionnaires incorrectly due to misunderstanding directions on the Likert scale.
5. The ability of the researcher to import the athlete's responses into the electronic database correctly.

Definition of Terms

1. Goal Orientation- a person's belief in how they demonstrate competence in achievement settings.
2. Task Orientation- a person's belief that they demonstrate competence in achievement settings through task mastery or self-improvement. Their motivations are more intrinsic and focused on themselves.

3. Ego Orientation- a person's belief that they demonstrate competence in achievement settings by comparing themselves to others. Their motivations are more extrinsic and focused on others.
4. Effort- how much energy and time someone puts into something.
5. Ability- a person's natural talent or affinity towards an activity, in this case swimming.
6. Deception Techniques- actions that are sneaky in nature and don't rely on the person's own merit to succeed. Acts such as cheating, kissing up to the coach, etc.
7. External Factors- outside elements that influence performance such as luck, equipment, and other components outside of the person's control.

Chapter 2: Review of the Literature

Introduction

Understanding what motivates athletes is critical to keeping athletes in their sport and sustaining long-term success. This is especially true for athletes of younger ages. Coaches can shape the psyches of their athletes through their teaching and guidance. If coaches are not focused on the appropriate goals and motivations, it can lead to cases of burn-out and athletes quitting. One of the foundational theories for researching athlete's motivations and behaviors is achievement-goal theory. This study will look at achievement-goal theory in the context of youth swimmers ages 11-18 and its relationship to the swimmers' beliefs about the causes of sport success.

Achievement-Goal Theory

There has been a large body of literature covering achievement-goal theory, specifically the model which Nicholl's created (Lochbaum et al., 2016). The theory suggests that people in achievement-related situations act according to two goal orientations to demonstrate competence. These two orientations are the task orientation and the ego orientation (Duda & White, 1992). These two orientations help people define success and failure in achievement contexts such as sport and influence a person's behavior in these settings.

Lochbaum et al. (2016) described the task orientation when he said, "The task orientation operates when the athlete's actions are primarily motivated by personal mastery, improvement, and achievement of higher ability" (p. 4). Task-oriented athletes judge their ability through comparison to themselves and not others (Nicholls, 1984). As noted earlier, task-oriented athletes also tend to experience more enjoyment from their sport and are less likely to experience

burn-out because of their focus on personal improvement (Duda & Nicholls, 1992). In a sport such as swimming, it can be hard to develop a task orientation because the sport predicates itself on defining success based on comparison to others. When a competitive swimmer races at a swim meet, it is easy for them to focus on their performance in comparison to their peers. Swimmers can improve their time or successfully complete their coach's race plan, but the athlete can feel like they are unsuccessful due to a performance of a peer that surpasses their own. The sport of swimming provides opportunities to develop either a higher task orientation or an ego orientation. It is common for swimmers to have both a high task and ego orientation, which Amaro et al. found in their study working with Brazilian elite swimmers (2017). Abraldes et al. (2016) performed a study using swimmers of all ages and found that the average task orientation was higher than the average ego orientation, so ability level could be a contributing factor to the score of both task and ego orientation. At younger ages though, ability level is more subjective and less concrete compared to older swimmers where differences in performance and talent are clearer.

The ego-oriented athletes are motivated by comparison to their peers and by demonstrating superior ability through gloating (Lochbaum et al., 2016). Duda and White (1992) explains the dangers of the ego orientation when they state:

> Because putting in extra practice time and/or focusing on doing one's best do not seem viable options for success, ego-oriented skiers who have questions about their ability appear to have no positive and adaptive alternatives under their control. Further, because the ego-oriented goal-belief dimension reflected the perception that illegal and harmful tactics result in sport success (e.g., taking performance-enhancing substances, cheating), this motivational orientation should be questioned on the basis of health-related and ethical issues.

The lack of alternative motivations associated with the ego orientation is concerning. Lochbaum et al. described the behaviors associated with the ego orientation as "maladaptive and

aggressive" (2016, p. 4). It's been found in a study with young kung-fu fighters, and individual sports like swimming, that negative attitudes can connect with the ego orientation, attitudes such as insecurity, a lack of persistence, and giving up easier than others (Hatamia Raymundo et al., 2016, p. 138). While it is possible for an athlete to have both a high task orientation and a high ego orientation, the negative associations that come with a high ego are many.

Gender differences in goal orientation. Differences in goal orientation among genders has been consistent through the years. Women have typically scored higher in task orientation than men and men scored higher in ego orientation than women (White & Zellner, 1996; Duda, 1989). Attributes of the task orientation such as task mastery and personal improvement are also more prominent in women than men (White & Zellner, 1996). Amaro et al. found in their study using elite Brazilian swimmers that men had a higher average task orientation and ego orientation (2017), which is inconsistent with the majority of the literature. They rationalized that men tend to be more aggressive and that cultural influences could attribute to this abnormality (Amaro et al., 2017). Abraldes et al. had more male swimmers with a high ego orientation compared to females (2017) which aligns with the literature. It's also been found with a study using youth tennis players that boys tend to be higher in ego orientation and girls score higher in task orientation comparatively (Garyfallos, Asterios, Stella, & Dimitrios, 2013). In the physical education context, boys tend to score higher than girls in ego orientation (Grasten & Watt, 2016).

Motivational climate and goal orientations. The climate the coach creates at their practice is an important factor in how we look at how goal orientations. Coaches control the environment in which athletes practice and have influence in the feedback they give. The two climates most often described in research are mastery and performance. Mastery climates focus

on individual successes while performance climates determine success based on competition between peers (Engan &Saether, 2018) similar to the task and ego orientation. Motivational climate has been covered extensively in the physical education setting, and the results have shown that creating a mastery climate yields more students with a task-orientation and students with more positive attitudes towards physical activity. Teachers who foster a performance climate that focuses on comparison to others yields more ego-oriented students who don't enjoy and participate less in physical education (Grasten & Watt, 2016).

The results have been similar in sport, where in a study involving Norwegian football players, elite clubs had athletes who were higher in task orientation and mastery climate (Engan & Saether, 2018). It has been found in a study with elite junior hockey players that coaches who adopt a mastery climate with athletes that have a higher task orientation tend to experience more joy in their sport (Jaakkola, Ntoumanis, & Liukkonen, 2016). Abraldes et al. also found that swimmers with a higher task orientation perceived a mastery climate as opposed to a performance climate (2017). Merono, Calderon and Hastie used the sport education training model to try and increase the perceived mastery climate and task orientation in a club swim team in Spain and did so successfully (2016). Coaches have a large impact on how athletes perceive their sport, including the motivational climate the coach builds. This is especially true in younger athletes who are more influenced by coaches and parents than their peers (Davies, Babkes Stellino, Nichols, & Coleman, 2016). The motivational climate the coach creates has a direct impact on the motivations of the athlete. This is not to say that peer interaction does not play a factor in an athlete's goal orientation, as it has been found that younger athletes who interact with older athletes tend to develop an ego orientation (Seunghyun, Machida & Youngjun, 2017). But the majority of youth athletes will participate in sport with kids in the

same age-group, making the coach's role that much more significant. To develop athletes with a higher task orientation, coaches need to foster an environment that supports the athlete, is encouraging, and focuses on positive feedback towards self-referenced goals the athlete has set (Sari, 2015). It is also important to consider the impact of goal orientations and their impact on athlete burnout.

Burnout and goal orientations. While some studies show that elite level athletes can possess both a high task orientation and a high ego orientation (Amaro et al., 2017; Van-Yperen & Duda 1999; Duda & White, 1992), not every athlete will reach an elite level in their sport. Older children around high school age have been found to be more likely to report significant feelings of burn-out than younger athletes due to factors such as exhaustion or lack of achievement in their sport (Harris & Watson, 2014). When an athlete has a higher ego orientation than task orientation, their perceptions of their own success are limited to comparison to others. Athletes at a younger age in the sport of swimming tend to experience rapid bursts of success, but as they age the improvements in time and speed happen less and athletes of higher talent levels tend to widen the gap between them and their peers. It is important then to establish a strong task orientation for all athletes so that no matter what level of competition they compete at when they age, they will still be motivated to compete because they aren't focused on the performances of their peers. It will also help deter athletes from believing that sport success is only attained through ability or natural talent.

Mascret, Falconeti and Cury found in their study using both swimmers and basketball players that athletes with a more intrinsic motivation for their sport tend to associate success with training and effort as opposed to talent or raw ability (2016). The task orientation relies more on intrinsic motivation through task mastery, self-improvement, and cooperation. Nicholl's claims

that task-oriented athletes believe more effort means more mastery and more achievement. An ego-oriented athlete could try their best but still feel they are unsuccessful due to the performance of another. Task-oriented athletes do not experience this problem (1984). The reality of a sport such as swimming is that usually there is a peer who is faster than yourself, and an ego-oriented swimmer has a higher chance of burning out than a task-oriented swimmer.

The level of enjoyment athletes of the different goal orientations is also well documented. Schneider, Harrington and Tobar found that youth hockey players with a higher task orientation experienced more enjoyment of their sport compared to those with a higher ego orientation (2017). This is supported by other studies in the literature (Abraldes et al., 2016; Duda & Nicholls, 1992; Duda, 2001) and should not be ignored when considering goal orientation and its impact on athlete burn-out. Ego-oriented athletes not only limit their perceptions of competence, they also are more commonly associated with boredom as well (Abraldes et al., 2016). Boredom paired with a shallower perception of competence and maladaptive behaviors are all precursors to burnout. What athletes believe makes them successful is also be a critical factor in understanding athlete's motivations.

Beliefs about success in sport and goal orientations. Nicholls (1989) contended that goal orientation can correlate to what people believe make them successful in educational settings. Nicholls found that task-oriented students believed they achieved academic success through effort, cooperating with classmates, and attempting to understand the content. Students with a higher ego orientation believed that natural intelligence and ability were the contributing factors to success in the classroom. Duda and Nicholls (1992) investigated whether they would find similar results in a study involving high school athletes and non-athletes and the results were similar as to those in education. These findings were substantiated by a study done by Duda,

Fox, Biddle and Armstrong (1992) researching children in Britain involved in youth sport. In the context of swimming athletes have shared similar results as well (Abraldes et al., 2016). Later studies have looked at goal orientations and beliefs about success in sport with athletes of different caliber and sport specifications as well.

Duda and White (1992) performed a study on goal orientations and beliefs about success in elite level skiers and found an abnormal difference among the more task-oriented athletes in their study. Unlike previous studies where task-oriented athletes were only found to correlate success in their sport with high effort and training, they also believed that ability played a critical factor in success in their sport. This could be attributed to athlete's increased awareness of differences in ability at an older age. To reach an elite level, it can be assumed that talent plays somewhat of a factor. The ego-oriented skiers in the study believed ability attributed to success, but they also believed cheating and external factors such as luck or equipment made someone successful as well (Duda & White, 1992). Van-Yperen and Duda (1999) investigated goal orientations and their correlation to beliefs about success while also researching if those variables improve performance in young elite Dutch soccer players. Task orientation was found to be related to the belief that effort and cooperation led to success, and those athletes with a higher task orientation were related to improvement in performance (Van-Yperen & Duda, 1992). These findings were also found in the context of goal orientations, beliefs about success, and levels of physical activity in children where the task orientation was found to have positive correlations to the level of moderate to vigorous physical activity children engage in (Viira & Raudsepp, 2000). Athletes want to improve performance and task-oriented athletes tend to be focused on variables that they can control to improve performance such as effort, cooperation,

and training. Ability and cheating are factors that are out of the athlete's control, which make it difficult for ego-oriented athletes to improve (Van-Yperen & Duda, 1992).

One of the purposes of the present study is to see if there are differences between goal orientation and beliefs about success between various of age group of adolescents. While previous studies have used youth athletes, they have not disaggregated by the various ages of the adolescents themselves. White and Zellner (1996) have researched differences between high school, college-recreational, and intercollegiate athlete's goal orientations and beliefs about success in sport. They found that high school athletes tended to be more ego-oriented than the college-recreational athletes and the intercollegiate athletes in their study (White & Zellner, 1996). High school male athletes more than any other subgroup believed that success could be found by cheating or using a type of performance enhancing drug (White & Zellner, 1996). If our present study finds younger adolescents to have a higher ego orientation than older adolescents, it could open doors to future research as to why this occurs, whether it be the various stages of cognitive development or a lack of adequate youth coaches.

Summary

Achievement-goal theory has been one of the more researched motivational theories in sport psychology. It is divided into two goal perspectives that describe a person's motivations and behaviors in achievement settings. The two perspectives are the task orientation and ego orientation. The task orientation sets goals on more self-referenced criteria such as task mastery and self-improvement while the ego orientation focuses their motivations and their views on competence by comparing themselves to others (Lochbaum et al., 2016). Previous research has suggested that athletes with a higher task orientation experience more joy in their sport and are less likely to quit compared to those with a higher ego orientation (Duda and Nicholls, 1992).

The relationship between goal orientation and other variables such as motivational climate, gender differences, burn-out, athletic identity, different calibers of athletes, different types of sports, and beliefs about the causes of success in sport has been investigated. Through the body of literature extending to the 1980's, it has been found that the majority of studies involving achievement-goal theory promote the development of a higher task orientation than ego orientation (Lochbaum et al., 2016).

Chapter 3: Methods

Participants

A total of 80 age-group swimmers (37 males and 43 females) between the ages of 11 and 18 from various USA Swimming registered clubs around California served as subjects. Of those subjects 34 were between the ages of 11 and 12, 23 were between the ages of 13 and 14, and 23 were between the ages of 15 and 18.

Apparatus

Two questionnaires were used in this study. The first was the Task and Ego Orientation in Sport Questionnaire or TEOSQ (Duda, 1989). The TEOSQ is a 13 item questionnaire that uses a likert scale ranging from 1) strongly disagree to 5) strongly agree that measure task and ego orientation criteria. The second questionnaire was the Beliefs About the Causes of Sport Success Questionnaire or BACSSQ (Duda, 1992). The BACSSQ measures four variables (effort, deception, ability, and external factors) using a Likert scale ranging 1) strongly disagree to 5) strongly agree. There are 7 items measuring effort, 4 items measuring deception, 4 items measuring ability, and 3 items measuring external factors for a total 18 items.

Procedure

Subjects were chosen for this study using convenience sampling. Coaches from 6 different USA Swimming registered youth swimming teams were contacted asking if they were interested in participating in the study. If coaches agreed to participate, the researcher would email parent consent forms to the coaches to give to athletes ages 11-17 and an adult consent form to those who are 18 and are interested in the study. Athletes would also provide assent by signing a child's assent form provided with the questionnaires. The questionnaires took

approximately 15 minutes to complete. Responses were then recorded using an electronic database and athletes were given an anonymous identifier.

Statistical Design

Descriptive statistics were used to identify the means and standard deviations between aggregate scores to the items on the questionnaires. Multivariate analyses were used to identify the overall significance between variables used in the study. One-way ANOVA was used to test the effect between subjects for each variable. Post-hoc tests were then run to test the significant effects between groups found in the way one-way analyses. Bivariate correlations were then used to identify significant relationships between the variables used on the questionnaires. Multiple linear regression analyses were used to explain the relationship between the significant correlations found in the bivariate correlation table.

Chapter 4: Results

A significant multivariate effect was found between the intercept of sex and categorical age for a linear combination of the dependent variables, Wilks' $\Lambda = 0.010$, $F(6, 69) = 1{,}195$, $p<0.001$. Follow-up univariate analyses confirmed this effect for the dependent variables: age category and ego orientation $F=3.368$, $p<0.05$; age category and task orientation $F=3.626$, $p<0.05$; and age category and deception $F=2.951$, $p=0.058$. No significant differences were found between the subject's goal orientation or beliefs about the causes of sport success and their sex (all $p>0.05$). No significant differences were found between age category and effort, ability, or external factors (all $p>0.05$). No significant differences were found between sex within age category and goal orientation, effort, deception, ability, or external factors (all $p>0.05$).

Scheffé post-hoc LSD analyses of the main effects revealed significant differences between the dependent variables of ego orientation, task orientation, and the belief that deception techniques can cause sport success, and the three age categories that served as independent variables. For ego orientation the 11-12 age category was significantly different than both the 13-14 age category and 15-18 age category(Table 2). The 13-14 and 15-18 age category were not significantly different with regard to their level of ego orientation. For task orientation the 15-18 category was significantly different than both 11-12 category and the 13-14 category (Table 3). There was not a significant difference between the 11-12 age category and the 13-14 age category with regard to their level of task orientation. For the belief that deception causes sport success the 11-12 age category was significantly different than the 13-14 age category (Table 4). There were no significant differences between the 15-18 age category and the 11-12 or 13-14 age category with regard to the belief that deception causes sport success.

A bivariate correlation was used to identify significant relationships between the variables used in this study. There was a significant correlation between age and the belief that ability causes sport success (Table 10). A multiple linear regression was calculated to predict age based on the belief that ability causes sport success. A significant regression equation was found ($F(1, 78)= 4.329$, $p<0.05$), with an R^2 of 0.053. Participants predicted that the belief that ability causes sport success is equal to 1.72 + 0.102 (Age) where the belief that ability causes success is measured on a Likert scale of 1 to 5. Participant's belief that ability causes sport success increased by 0.102 points on the Likert scale for every year older the participant is.

There was a significant correlation between ego orientation and age (Table 8). A multiple linear regression was calculated to predict ego orientation based on the age of the swimmer. A significant regression equation was found ($F(1, 78)= 5.223$, $p<0.05$), with an R^2 of 0.063. Participants predicted that age is equal to 11.78 + 0.553 (Ego Orientation) where the athlete's age is measured from 11 to 18. Participant's age increased by 0.553 years for every point increase in ego orientation the athlete had.

There was a significant correlation between ego orientation and the belief that deception causes sport success (Table 7). A multiple linear regression was calculated to predict ego orientation based on the belief that deception causes sport success. A significant regression equation was found ($F(1, 78)= 6.029$, $p<0.05$), with an R^2 of 0.072. Participants predicted that the belief that deception causes sport success is equal to 1.283 + 0.242 (Ego Orientation) where the athlete's belief that deception causes sport success is measured on a Likert scale of 1 to 5. Participant's belief that deception caused sport success increased by 0.242 points on the Likert scale for every point increase in ego orientation the athlete had.

There was a significant correlation between ego orientation and the belief that ability causes sport success (Table 6). A multiple linear regression was calculated to predict ego orientation based on the belief that ability causes sport success. A significant regression equation was found ($F(1, 78)= 27.152$, $p<0.05$), with an R^2 of 0.258. Participants predicted that the belief that ability causes sport success is equal to 1.676 + 0.479 (Ego Orientation) where the athlete's belief that ability causes sport success is measured on a Likert scale of 1 to 5. Participant's belief that ability caused sport success increased by 0.479 points on the Likert scale for every point increase in ego orientation the athlete had.

There was a significant correlation between task orientation and the belief that effort causes sport success (Table 5). A multiple linear regression was calculated to predict task orientation based on the belief that effort causes sport success. A significant regression equation was found ($F(1, 78)= 41.018$, $p<0.05$), with an R^2 of 0.345. Participants predicted that the belief that effort causes sport success is equal to 1.534 + 0.634 (Task Orientation) where the athlete's belief that effort causes sport success is measured on a Likert scale of 1 to 5. Participant's belief that effort caused sport success increased by 0.634 points on the Likert scale for every point increase in task orientation the athlete had.

There was a significant correlation between task orientation and the belief that deception causes sport success (Table 9). A multiple linear regression was calculated to predict task orientation based on the belief that deception causes sport success. A significant regression equation was found ($F(1, 78)= 4.674$, $p<0.05$), with an R^2 of 0.057. Participants predicted that the belief that deception causes sport success is equal to 3.574 -0.367 (Task Orientation) where the athlete's belief that deception causes sport success is measured on a Likert scale of 1 to 5.

Participant's belief that deception caused sport success decreased by 0.367 points on the Likert scale for every point increase in task orientation the athlete had.

Chapter 5: Discussion

The main findings of the current study are the significant differences in level of task orientation, ego orientation, and the belief that deception causes sport success between the three age groups used (11-12, 13-14, and 15-18 years old). Contrary to our original hypothesis, the 11-12 age group had a significantly lower ego orientation than the 13-14 and 15-18 age group. There was no significant difference between the 13-14 and 15-18 age groups. Children at the age of 13 commonly begin to mature both physically and mentally, some more than others. Peer to peer interactions become more complex as athletes reach puberty and the desire to demonstrate competence in relation to others becomes more important to the athlete as well. Differences in ability become more apparent by age 13 due to the different stages of physical and emotional development. White and Zellner found a similar finding where in their study high school athletes were more ego-oriented than intercollegiate athletes (1996). The different levels of maturity for high school athletes ages 13-18 could show why those ages have a higher ego orientation. For swimming, the meets athletes ages 13-18 attend more often require a qualification time and could lead to athletes developing a higher ego orientation than those below the age of 13. Athletes in the 11-12 age group are usually less focused on performance and more on the social aspect of the sport and don't attend as many meets that require a time qualification.

Also contrary to our null hypothesis, swimmers ages 15-18 had a significantly lower task orientation than the 11-12 and 13-14 age groups. There were no significant differences between the 11-12 and 13-14 age groups. Similar to why older swimmers had a high ego orientation, differences in ability become more apparent in older swimmers as the necessity to meet time qualifications for meets increases. Athletes at age 15 begin to enter the "senior" level of swimming where their success is typically measured by their times compared to other swimmers,

their place in meets, and the meets they qualify for. These factors lend themselves towards a higher ego orientation and a lower task orientation. Younger athletes are still developing and there is typically less of a focus on their times or the meets they attend. It is more focused on technical aspects of the sport, having fun, and learning. Once the "age-group" period of swimming ends around age 14, they enter a more competitive and intense part of their careers.

Swimmers ages 13-14 believed that deception caused sport success significantly more than the 11-12 age group. There were no significant differences between the 11-12 and 15-18 age groups or the 13-14 and 15-18 age groups. The age of 13 is typically when children begin to reach puberty. Children at this age lack emotional maturity, and when they begin to notice others being more successful, they can attribute this to variables such as cheating or deception techniques. Younger swimmers that are 11 or 12 tend to be more naïve and haven't always reached that stage of development. The 13-14 age group is a difficult age as many children are at completely different stages of both physical and emotional development. This could be a contributing factor as to why athletes at this age believe cheating and deception is an avenue to success more than the 11-12 age swimmers in this study.

With regard to gender differences, Duda and White (1992) found that females tended to have a higher task orientation than males and males have been found to have a higher ego orientation than females and this has been the consistent view across the literature. These findings were not substantiated in the current study as no significant differences between males and females were found with regard to goal orientation or beliefs about success. This inconsistency could be due to the nature of age-group swimming and the clubs we surveyed where athletes regardless of gender practice together. If both genders practice together, they could be more likely to adopt similar achievement norms and beliefs.

Duda (1989), Duda and White (1992) and Duda et al. (1992) all found that the majority of athletes in their studies have a higher task orientation than ego orientation. This finding was supported in the current study as the mean score for task orientation was 4.316 and the mean score for ego orientation was 2.921. Similar to Duda and White (1992) it was found that the task orientation was positively correlated to the belief that high effort causes of sport success. The task orientation also had a negative correlation to deception/cheating, showing that the more task oriented the athlete, the less likely they are to believe cheating is a means to gaining sport success. Also consistent with studies like Duda and White (1992) and Van-Yperen and Duda (1999) was that ego orientation was positively correlated to the belief that ability and deception cause success in sport. No correlation was found between ego orientation and external factors such as luck contrary to our predictions.

Previous research has supported the task orientation over the ego orientation, noting that the task orientation provides healthier motivations and more opportunity for long-term sustainability in their sport (Duda & White, 1992). The ego orientation is known to be connected to negative achievement behaviors and attitudes towards their peers and their sport (Lochbaum et al., 2016). This study's current findings show that athletes ages 13-18 have a higher ego orientation than athletes ages 11-12. It is possible that athletes develop a higher ego orientation as they age due to the increased differences in ability and performance. Coaches must carefully plan how they motivate their athletes and guide them towards a more task-oriented mindset focused on their level of effort and self-mastery rather than focusing on the performance of others and factors such as innate ability and cheating. Less athletes will be lost to burn-out and lack of motivation if coaches foster a stronger task orientation throughout each level of the sport, not just the younger ages. Swimming specifically benefits from a higher task orientation as their

athletes age. Success in individual sports such as swimming is primarily determined by what place you come in. With swimming, if you win your race you are experiencing a certain level of success. There are other variables that can be used to measure success in the pool like time, successfully completing a race strategy, technical aspects of the sport, and personal goals. These variables are more task-oriented and are the important measures that athletes need to focus on as they progress through the sport. Avoiding comparison to peers, the belief that natural talent and cheating can cause success, and other ego-oriented behaviors is critical to keeping swimmers in the water long-term.

Conclusions

In summary, it was found in our sample that swimmers ages 13-14 and 15-18 have a higher ego orientation than swimmers ages 11-12, swimmers 15-18 have a lower task orientation than the 11-12 and 13-14 swimmers, and swimmers ages 13-14 believed deception caused sport success more than the 11-12 swimmers. While the significant differences in goal orientations and beliefs about the causes of sport success between age groups are important, we should note that we aren't sure if the younger athletes goal orientations and beliefs about success will change over time or if the older athletes had different goal orientations or beliefs about success when they were younger.

The task orientation like previous studies was correlated the belief that higher effort causes sport success. The ego orientation was correlated with the belief that natural ability or deception/cheating causes sport success. While it has been shown in other studies that older athletes tend to be more ego-oriented than younger athletes (White & Duda, 1994) this doesn't negate the importance of developing a stronger task orientation, especially in swimming given the increased gaps in ability as they age.

Future research should look at longitudinal designs to track changes in goal orientations and beliefs about success in swimmers during critical points of both physical and emotional development. Understanding if the differences between goal orientations and the beliefs about success in different age groups are a byproduct of aging or if it's simply coincidental would be an important next step in the literature. Future studies should also look at whether or not the motivational climate the coaches create changes as the athletes age, which could be a contributing factor to older athletes having a higher ego orientation.

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APPENDIX A: QUESTIONNAIRES

Beliefs About Success in Sport Questionnaire

Age: _____

Gender:_____

Answer on a scale of 1-5, 1 (Strongly Disagree), 2 (Disagree), 3 (Neither Agree or Disagree), 4 (Agree), and 5 (Strongly Agree)

People succeed if…

They like improving…	1 2 3 4 5
They always do their best…	1 2 3 4 5
They work really hard…	1 2 3 4 5
They like to practice…	1 2 3 4 5
They help each other learn…	1 2 3 4 5
They like to learn new skills…	1 2 3 4 5
They try things they can't do…	1 2 3 4 5
They pretend to like the coach…	1 2 3 4 5
They know how to impress the coach…	1 2 3 4 5
They know how to cheat…	1 2 3 4 5
They know how to make themselves look better than they are…	1 2 3 4 5
They are better than others at tough competition…	1 2 3 4 5
They are better swimmers than the others…	1 2 3 4 5
They always try to beat others…	1 2 3 4 5
They are born natural athletes…	1 2 3 4 5
They have the right clothes or equipment…	1 2 3 4 5
They are just lucky…	1 2 3 4 5
Coaches think they will do well…	1 2 3 4 5

APPENDIX A: CONTINUED

Task and Ego Orientation in Sport Questionnaire

Age: _____

Gender:_____

Answer on a scale of 1-5: 1 (Strongly Disagree), 2 (Disagree), 3 (Neither Agree or Disagree), 4 (Agree), and 5 (Strongly Agree).'

I feel most successful when…

1) I am the only one who can do the play or skill	1	2	3	4	5
2) I learn a new skill and it makes me want to practice more	1	2	3	4	5
3) I can do better than my friends	1	2	3	4	5
4) The others cannot do as well as me	1	2	3	4	5
5) I learn something that is fun to do	1	2	3	4	5
6) Others mess up but I do not	1	2	3	4	5
7) I learn a new skill by trying hard	1	2	3	4	5
8) I work really hard	1	2	3	4	5
9) I score the most points/goals/hits/swim the fastest, etc.	1	2	3	4	5
10) Something I learn makes me want to go practice more	1	2	3	4	5
11) I am the best	1	2	3	4	5
12) A skill I learn really feels right	1	2	3	4	5
13) I do my very best	1	2	3	4	5

APPENDIX B: TABLES

Table 1: Descriptive Statistics

	N	Mean	Std. Deviation
Subject	80	40.5	23.2
Age	80	13.3	12.0
Ego	80	2.9	.9
Task	80	4.3	.6
Effort	80	4.3	.6
Deception	80	2.0	.8
Ability	80	3.1	.9
External Factors	80	2.6	.9

APPENDIX B: CONTINUED

Table 2: Post-Hoc LSD Age Groups/Ego Orientation with Statistical Significance

Age Group	*Comparison*	*Mean-Difference*	*Standard Deviation*	*P Value*
11-12	13-14	-.56	.25	.03*
	15-18	-.54	.25	.03*
13-14	11-12	.56	.25	.03*
	15-18	.02	.27	.94
15-18	11-12	.54	.25	.03*
	13-14	-.02	.25	.94

Table 3: Post-Hoc LSD Age Groups/Task Orientation with Statistical Significance

Age Group	*Comparison*	*Mean-Difference*	*Standard Deviation*	*P Value*
11-12	13-14	-.03	.14	.84
	15-18	.36	.14	.01*
13-14	11-12	.03	.14	.84
	15-18	.39	.57	.02*
15-18	11-12	-.36	.14	.01*
	13-14	-.39	.57	.02*

APPENDIX B: CONTINUED

Table 4: Post-Hoc LSD Age Groups/Deception with Statistical Significance

Age Group	*Comparison*	*Mean-Difference*	*Standard Deviation*	*P Value*
11-12	13-14	-.52	.22	.02*
	15-18	-.32	.22	.16
13-14	11-12	.52	.22	.02*
	15-18	.21	.24	.40
15-18	11-12	.32	.22	.16
	13-14	-.21	.24	.40

APPENDIX B: CONTINUED

Table 5: Multiple Linear Regression Analysis Task Orientation/Effort

	R Square	*B*	*Sig.*	*95% Confidence Interval Lower Bound*	*95% Confidence Interval Upper Bound*
Task Orientation (Independent)	.35	.64	.00*	.44	.84
					Dependent Variable: Effort

Table 6: Multiple Linear Regression Analysis Ego Orientation/Ability

	R Square	*B*	*Sig.*	*95% Confidence Interval Lower Bound*	*95% Confidence Interval Upper Bound*
Ego Orientation (Independent)	.26	.48	.00*	.30	.66
					Dependent Variable: Ability

APPENDIX B: CONTINUED

Table 7: Multiple Linear Regression Analysis Ego Orientation/Deception

	R Square	*B*	*Sig.*	*95% Confidence Interval Lower Bound*	*95% Confidence Interval Upper Bound*
Ego Orientation (Independent)	.07	.24	.02*	.05	.44
				Dependent Variable: Deception	

Table 8: Multiple Linear Regression Analysis Ego Orientation/Age

	R Square	*B*	*Sig.*	*95% Confidence Interval Lower Bound*	*95% Confidence Interval Upper Bound*
Ego Orientation (Independent)	.06	.53	.03*	.07	.10
				Dependent Variable: Age	

APPENDIX B: CONTINUED

Table 9: Multiple Linear Regression Analysis Task Orientation/Deception

	R Square	*B*	*Sig.*	*95% Confidence Interval Lower Bound*	*95% Confidence Interval Upper Bound*
Task Orientation (Independent)	.06	-.37	.03*	-.71	-.03
				Dependent Variable: Deception	

Table 10: Multiple Linear Regression Analysis Age/Ability

	R Square	*B*	*Sig.*	*95% Confidence Interval Lower Bound*	*95% Confidence Interval Upper Bound*
Age (Independent)	.05	.10	.04*	.00	.20
				Dependent Variable: Ability	