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Training versus Competition: An in-depth Look at Sport Competence and Performance Levels

Senior Project

In partial fulfillment of the requirements for
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By


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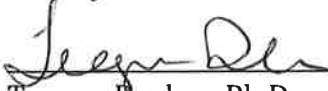
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Abstract

Sports are a very large and important part of today's society. They provide participants in all age and skill levels the opportunity to learn life skills that can be used both inside and outside of competition settings. Most consider sport skill to be more physical in nature, however it has been proven that a large amount of mental skill is needed in order to excel at all levels of competition. As athletes gain experience and see more success in their respective sport, it is important that they acquire and develop the necessary mental skills and learn how to appropriately handle the stresses that come with being a competitive athlete. Since each individual is different, the level of performance for each athlete can shift based on a specific event, scenario, or setting depending on the athlete's mindset. Therefore, it is safe to claim that athletes can potentially perform differently in training than they do during competition because of the specific psychological factors that affect self competence and performance levels in sport.

Training versus Competition: An in-depth Look at Sport Competence and Performance Levels

Sport plays a very large and important role in today's society; it offers the opportunity to develop certain skills in life. Competition provides a unique experience for participants by way of meeting others and developing connections, and even serves as a source of income for elite level athletes, coaches, trainers, and other sport personnel. An individual can be involved in sport whether it be a coach directing his or her team from the sidelines, to a fan simply interested in the game or team competing for a win. Even though there are many positions and careers throughout sport that have a large impact and influence on the way of the game, nothing compares to the actual competitor in the arena: the athlete. Athletes are what help fuel the interest in sport. Many people tune in to a big game specifically to watch certain athletes compete. An athlete has a tremendous impact on the adaptations of the game and the constant amendments to the rules, and also establishing a baseline of expectations and potentials for the next wave of competitors that will participate in the sport after them. With such a large role in both the sport and the sport-enriched society in which we live, it is astonishing, to say the least, how an athlete today must not only possess the necessary physical skills to succeed in their certain sport, but more importantly the mental skills that help set them apart from their competitors.

According to Dr. Thomas R. Baechle, EdD at Creighton University, "The essence of athletic competition involves comparing oneself to others and putting ego and self-esteem on the line in a setting that is bound by rules and regulations" (Baechle &

Earle, 2008). Based on the assumption of this quote, it is easier to understand why athletes could potentially struggle with the mental aspect of sport. They have the added pressure of performing well, dealing with the external factors such as the crowd, the setting of the competition, and even extreme arousal of becoming frustrated. These are all viable examples that could possibly inhibit the athlete's ability to perform at their maximal potential. Because of this, it is important for athletes to develop their mental strength as well as their physical strength in training and practice settings in order to ensure they will be both physically and mentally prepared to compete and excel in the next competition they participate in (Baechle & Earle, 2008). According to this statement, it is safe to infer that if two athletes who are equal in physical capabilities compete against each other in competition, the victor will be the one who has the greater mental strength or the one who devoted more time in training to developing the necessary mindset to compete in their sport.

However, any individual who has experience in sport training and competition knows first hand that the two do not always correlate in either practice settings or actual competition. For example, an athlete who may have a large belief in themselves during practice may, for whatever internal or external reasons, have less belief in their abilities during competition. The same goes for an athlete who does not perform well during practice but is able to excel in competition. How is this possible? If an athlete displays the characteristics of a successful competitor in practice, why can they not do the same in competition? On the contrary, how can an

athlete who lacks these characteristics in practice do well in competition settings? There seems to be a fault in the usual “you play how you practice” concept of sport training and performance and how the two settings correlate in sport to develop successful athletes. It is obvious that the mental aspect of sport plays a large role in separating success levels of athletes, but how can this aspect come into play and effect the way an athlete practices and competes, and ultimately how they compare to those they are competing against?

In order to better understand the mind of the athlete, it is important to discuss sport competence, which is the athlete’s belief they are competent or have the necessary skill, knowledge, ability, etc. to succeed (Cox, 2012). The concept of competence is based on the concept of self-efficacy, which is the perceived self-confidence about a given task in a specific situation or the sense of success an athlete feels they can control. Bandura’s Theory of Self-Efficacy describes it as “the belief in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Cox, 2012). Therefore, self-efficacious people don’t doubt their ability to succeed at a given task, even when failure is experienced (Baechle & Earle, 2008). In order to develop competence, the athlete attempts mastery of a skill or technique in practice, and if they succeed it therefore builds self-efficacy for competition. Based on these definitions, it appears that the more time one dedicates to building belief in their abilities during practice time, regardless if they experience failure while doing so, they will improve their sport competence for when it is time to compete. Competence relates a lot to the concept

of self-confidence, which Cox states as being the belief you can succeed at a specific task, for example a basketball athlete making a free throw shot in the closing seconds of the game (Cox, 2008). The concept of self-confidence in this case deals specifically with sport and claims that an athlete has the belief in their ability to perform a specific sport-related task in practice or competition. Self-confidence also serves as a fundamental building block for motivation, which ultimately affects the effort, interest, and internal or external arousal of the athlete. It is important to understand these concepts in order to best comprehend the differences between an athlete's mind in practice versus in competition.

There many factors and theories that could explain the complexity of an athlete's mind and why they may perform differently in either practice or competition settings. One theory builds off of the concept of specific sport confidence, which is said to be more dispositional or state-like across a continuum of time, and can be influenced by many factors (Cox, 2012). Self-confidence is everything to an athlete regardless of the level of competition; if an athlete does not believe that they can perform a specific task, they will more likely fail at achieving the task. Sometimes, the gender of the athlete and the nature of the task being performed can attribute to a lack self-confidence. For example, the sport of football is deemed more as a masculine sport than a feminine sport, which may inhibit the female athletes confidence that she can perform any task related to football. This ties into the Stereotype Threat Theory, which states that framing a task as a measure of athletic ability in masculine in nature, while framing a task as a measure of technical skill is

feminine in nature (Cox, 2012). A male athlete trying out for the football team will most likely be more confident in their abilities to excel and make the team than a female athlete who is also trying out for the team would have even if neither athlete has any prior football experience. However, a sport that requires more technique and mastery of skills such as gymnastics may benefit the female athlete in developing early self-confidence in her ability to achieve in the sport. This is likely due to the fact that female athletes tend to follow a concept called the Ambiguity of Available Information, which claims women tend to lack confidence if they don't receive feedback, which lowers their opinions on their abilities (Cox, 2012). Based on this concept, it is easy to understand why a female may enjoy a more technical sport where they can be critiqued more and receive feedback rather than a sport based solely on an internal change of arousal such as football. This also relates to the term used by Cox called social comparison cues, which he attested to one of the reasons female athletes tend to lack confidence in more competitive settings (Cox 2012). This is not always the case for female athletes; however, it does pertain the ambiguity of available information because it seems that a female athlete prefers to perform in a sport where success and mastery is evident and can be corrected through technical adjustment and internal focus to perfecting the technique.

This concept of gender in athletics plays a huge role in why some athletes perform better in practice or competition settings. If a female athlete finds herself in a more relaxed, technical training atmosphere, she will most likely perform better than if she were to participate in a very competitive practice setting where everyone is trying to play better than their partners. The same can be said about competition:

that same female athlete that performed well in practice may find herself in a competitive environment in competition and decrease performance. A real example of this could be seen on a college volleyball team. If the libero for the team enjoys the technique of the sport and the relaxed nature of her teams practices, she will most likely not perform well on game day in a very close match, against a team with powerful outside hitters, or in a setting where everyone is aroused and nervous. The self-confidence of an athlete combined with the gender of the athlete plays a very large role in determining why some athletes may perform differently in practices than in competitions.

Another factor that could help explain the difference in athlete performances in training and in competition is motivation. Motivation and the drive to participate and succeed in sport go hand-in-hand: If the athlete perceives or believes they can make an influence for the good of the game, they will eagerly work hard to ensure success (Cox, 2012). There are two main types of motivation. Intrinsic motivation is motivation that comes from within, or the desire to be competent and self-determining. Intrinsic motivation is linked with passion and a strong inclination toward an activity that you like, find important, and invest time and energy into. Extrinsic motivation is motivation from external forces, such as an award. Intrinsic motivation has proven to be the favorable type and seems more likely for an athlete to have if they wish to maintain effort consistently across practice and competition (Baechle & Earle, 2008). The performance of an athlete in practice and competition may be heavily influenced by which type of motivation is driving them to participate. Some athletes do not perform well in practice because there are no

spectators, fans, crowd noise, or extrinsic motivation, to see them or cheer for them. Similarly, some athletes thrive in practice because there are no outside distractions or loud noises from the fans, which cause them to focus better and perform with more attention to detail. They have the intrinsic motivation to practice and improve on their skills but lack that same motivation to compete and risk failure.

This is not to say that an athlete cannot still be successful if they don't have a specific motivation (intrinsic or extrinsic) driving them to practice or compete. The Additive Principle states that an athlete who is low in intrinsic motivation will participate in an achievement situation if there's a sufficient reward or extrinsic pleasure (Cox, 2012). When an athlete who loves practice but gets anxious before big away games because of the opposing team's crowd or environment, they will generally still play to their best ability, even if it is not their overall best performance, in order to win the game (the extrinsic reward). Another theory called the Cognitive Evaluation Theory claims external rewards can affect intrinsic motivation, such as college wrestler who works to win a national title but starts off the year with a losing record and therefore may lose intrinsic motivation to participate because he appears far away from his extrinsic reward (Cox, 2012).

In addition to the Additive Principle, there are various other ways an athlete could use extrinsic motivation to excel in either practice or competition settings. There are certain reinforcements named to specifically target certain factors that may impact an athlete's sport motivation. One of these reinforcements is called Positive Reinforcement. Simply stated it is increasing the probability of occurrence of a given behavior by following it with an action, object, or event. An example as

this type of reinforcement would be a runner entering a race solely in attempt to win the first place medal. On the opposite side of this is Negative Reinforcement, which is increasing the probability of occurrence by removing an action, event, or object, for example no extra sprints after practice if everyone works hard. Based on these two types of reinforcements, athletes can be extrinsically motivated to either practice or compete. Based on the nature of the athlete, these factors could increase performance or not affect the athlete at all (it would be a stretch to say either of them would decrease an athlete's performance). The other types of reinforcements are Positive Punishment, which is decreasing the probability of occurrence by presenting an action, event, or object after the behavior, for example a running back in football being reprimanded after a fumble, and Negative Punishment, which is the removal of something valued (Baechle & Earle, 2008). These two types of reinforcements serve to punish athletes for maybe a mistake or error they made, a foul they committed, or any other scenario in which the coach might use these two reinforcements. Some athletes collect themselves, gather their thoughts, and play even better after a positive or negative reinforcement because they are eager for another chance to play and correct the mistake they made, whereas other athletes experience a significant decrease in performance after such acts, for example if a kicker in football misses an extra point after the first touchdown of the game and is yelled at by his coaches, he may not be able to collect himself or calm down and therefore miss upcoming extra point or field goal. The interesting point to be made about these types of extrinsic motivation is that no matter how experienced the athlete is or how well they practice and master the sport, these situations could

instantly affect the athlete's mindset and performance during competition. The level of skill and experience in sport certainly plays a role in how fast an athlete can recover from a devastating situation such as a negative punishment, but no matter how experienced or skillful they are, athletes can be affected by any of these scenarios at any point in competition, or practice for that matter. For example, an athlete that competes in track races solely for the medals that each place winner receives may run as hard as he or she does in competition on a practice race if the coach decides one day to give medals out to the top three fastest runners on the team during training. This is an example of positive reinforcement that could affect an athlete's performance in both training and competition, and also the difference between them.

One very important factor that could affect an athlete's performance in training and competition is goal setting. From peewee divisions all the way up to olympic levels, athletes are always stressed to set specific goals in which they can work for and track their progress towards. There are two main types of goals, mastery and performance goals. Mastery Goals are goals where individuals focus on task-referenced (i.e. performing as well as possible) or self-referenced (i.e. learning or improving) competence. Performance goals are goals where individuals focus on normatively-referenced competence (i.e. outperforming others). In order to best understand which goals and routines help athletes increase their performances in training, a team of sport psychologists led by David E. Conroy performed a study on 71 women's track and field athletes at a Division I institution. The results of the research were conducted by each athlete answering questions from the 12-item

Achievement Goal Questionnaire for Sport (AGQ-S; Conroy *et al.*, 2003) after training sessions and meets. The questionnaires helped the research team determine the relationship between training and what they called 2 x 2 achievement goals. The various goals used were Mastery-Approach (MAp): striving to surpass prior personal performances (self-referenced competence) or to meet all task demands (task-referenced competence), Mastery-Avoidance (MAv): striving not to perform worse than one has previously (self-referenced competence) or worse than a task demands (task-referenced competence), Performance-Approach (PAp): striving to perform better than others, and Performance-Avoidance (PAv): striving not to perform worse than others (Conroy, Cassidy, & Elliot, 2008). It was estimated that MAp goals would lead to a consistent pattern of desirable training processes because of their “functional congruence with the aims of training”, and that MAv goals would maintain (not decrease) one’s ability to not make a mistake. These MAv goals were said to be common for athletes who have a high fear of failure, perfectionistic concerns, or negative reactions to imperfection (Conroy, Cassidy, & Elliot, 2008). According to the article describing the study, PAp goals were linked with greater competence valuation, task absorption, practice time, investment in learning, and lower levels of state anxiety compared to PAv goals. Because of this, “PAp and PAv goals may be most relevant for predicting outcomes in competitive contexts where athletes’ primary aim is to win or not to lose. In contrast, MAp and MAv goals may be most relevant for predicting outcomes in training contexts where athletes focus primarily on skill development or maintenance” (Conroy, Cassidy, & Elliot, 2008, pg. 113). These hypotheses were tested using the AGQ-S which asked

the athletes questions pertaining to each mastery and performance goal, and even included a daily diary section where athletes would record their pre and post practices thoughts, drinking habits, hours of sleep each night, and the use of imagery and mental training strategies. The results of the study were very interesting. It appeared that MAp goals predicted a significantly increased use of mental training strategies and were also the only achievement goals to predict significantly more positive evaluations of practice performance, while the MAV goals documented the most distress in sport training than any other goal combined. The article summed it up brilliantly by stating:

These findings affirmed the importance of (a) defining competence in self- or task-referenced terms, and (b) focusing on developing competence as opposed to preventing incompetence while training. Athletes who do so are more likely to use mental training strategies, less likely to use alcohol, and more likely to evaluate the quality of their training efforts positively. The cumulative effects of using mental training, limiting alcohol use, and making positive performance appraisals over time should enhance skill acquisition and ability by promoting efficient information processing, facilitating recovery, and developing efficacy for relevant tasks, respectively. In contrast, athletes whose definitions of competence are congruent with the aims of training (*i.e.*, mastery-based) but are focused on preventing incompetence instead of developing competence (*i.e.*, avoidance-valenced) do not exhibit this consistent pattern of desirable training processes and instead experience

significantly more distress from their activity. (Conroy, Cassidy, & Elliot, 2008, pg. 121)

Based on the results of the study, athletes performed better and got more out of their training sessions when they focused on outbesting themselves and becoming better at the sport. By setting these mastery performance goals, they were able to track daily progress easier and even correlate their training methods off the track (i.e. getting plenty of sleep and avoid drinking alcohol). The athletes who reported the most stress were the ones who relied solely on not performing worse than previous times, assuming that, no matter how poor their technique or effort is, as long as they did better than the last time it was a successful practice. Although the study did not discuss much about competition, it was important to note this study because most athletes only set competition goals, such as "Win the race" or "Only allow 20 points", and rarely ever dedicated any time into developing training goals. The athletes in the study who set various goals in practice got the most out of their training sessions, and would possibly be more apt to compete in a similar manner rather than the athletes who set avoidance goals and described the sport as being distressful.

Similar to the study done by Conroy and his team, another study was conducted to assess the difference between various athlete's mindsets during practice and, this time, competition. This study, performed by Timothy J. Cleary and Barry J. Zimmerman of University Center City University of New York, examined a very basic but very important characteristic that also affects an athlete's self-competence and

confidence during both training and competition: experience in sport. Cleary and Zimmerman examined the different thought processes that occur in an athlete's head by having three groups (an elite group, a non-expert group, and a novice group) individually shoot free throw basketball shots and then having them answer questions before, during, and after a series of shots. Although the study was conducted in a practice setting, the scenarios given could relate to performance in competition. Obviously, it can be inferred that the expert group would be able to make the most free throw shots because they have more sophisticated and elaborate knowledge than novices. This knowledge has enabled experts to recognize (Allard & Starkes, 1980) and recall (Starkes et al., 1994; Williams, Burwitz, & Williams, 1993) sport-specific information in a more efficient manner than the novice or non-expert groups. The article further elaborates on the hypothesis that the expert groups will display more knowledge and ability to recall or recognize by stating:

Expert-novice differences appear to emerge from many years of deliberate practice. This type of practice refers to individualized training on tasks that are selected and highly structured by knowledgeable teachers or coaches in order to provide "optimal opportunities for learning and skill acquisition" (Ericsson & Charness, 1994, p. 739). Deliberate practice involves: (a) setting goals involving specific skills, (b) intense involvement in structured training sessions, (c) performing tasks that are not inherently motivating and contain few external rewards, and (d) self-monitoring performance outcomes and

receiving feedback about current performance (Ericsson et al., 1993). (Cleary & Zimmerman, 2001, pg. 187)

The study was conducted by having the individuals in each group perform a certain amount of free throws before asking them a sample of questions about their thought processes. Questions pertained to goal setting, attributions, self-efficacy, self-confidence, and other topics of sport psychology that an athlete might think about in a practice. The results matched the hypothesis and claimed that experts set significantly more specific free-throw goals than non-experts and novices. Experts were more likely to state goals such as “to make 10 out of 10” or “to keep my elbow in as I shoot” than the other two groups. In addition, only 13% of the experts gave general outcome goals (i.e., “to make them”) or no goals whereas in comparison 53% of the non-experts gave general outcome or no goals (Cleary & Zimmerman, 2001). 40% Of the experts reported technique-related strategies such as “to bend my knees” and “to follow through”, while only 8% of the non-experts chose a specific technique related strategy. According to the results of the study, experts appear to plan their practice sessions by choosing more specific, technique-oriented processes than non-experts. The ending paragraph summarizes the findings and the difference between expert athletes and other athletes perfectly:

This study also assessed how the boys self-reflectively perceived and reacted to their failed free throw attempts and whether they attempted to adjust faulty processes. Following two consecutive misses, a significantly greater number of experts than non-experts or novices attributed their failure to

faulty specific techniques (e.g., "I did not bend my knees"). Fifty-three percent of the experts made this type of attribution, in comparison to only 15% of the non-experts and 13% of novices. This attribution pattern is highly beneficial because it reassures the learner that future performances can be improved through the use of more appropriate strategies. These attributional findings are consistent with McPherson's (1993) conclusion that learners' choice of a strategy is dependent on their level of declarative knowledge. Prior experimental research has shown that making strategy attributions is significantly related to one's self-efficacy level, level of satisfaction, and athletic skill (Kitsantas & Zimmerman, 1998). (Cleary & Zimmerman, 2008, pg. 200)

This summary is key to understanding why experienced players are able to reach the higher levels of sport in which they compete in. The ability to self-assess one's components of form and technique gives them an enormous competitive edge over other players. Even when they fail, they are able to almost immediately recognize the mistakes made and correct them within a short period of time. They have an incredible amount of attention to the technique being performed and can focus on task-relevant cues, or those things athletes focus on so that their performance can increase, such as keeping their knees bent. This can be another factor that determines why some athletes compete and practice in different ways. Their knowledge of the sport and experience with both success and failure allows them to make the necessary adjustments during play to succeed. Non-experts and novices

are more than likely unable to make those adjustments during play in practice unless instructed upon, and are therefore even less likely to make those adjustments during actual play in competition.

Sport is unpredictable; whether it be a fast-paced game such as soccer or a slower-paced game such as golf, anything could happen at any given time. These events have a significant effect on the athletes participating in the sport. Whether it be during an athlete's training session or during their actual competition, multiple factors come into play that help determine how the athlete will respond to certain stimuli. Gender, self-efficacy, self-confidence, motivation, goals, and experience of the athlete all play a role in understanding why different athletes perform the way they do. These are also factors that help in understanding why athletes may perform one way in training, and perform a different way in competition. It can be inferred that an athlete who does well in training will excel in competition, but it is noted now that athlete performance is unpredictable based solely on their performance in training. The concept of sport training and competition being so different in nature but also having such a strong correlation is what helps make sport such an interesting part of society today. The fact that even though there is a strong correlation between practice and competition yet sometimes the two do not always display that correlation make sport even more interesting. As sport constantly evolves and progresses, so do the athletes that participate in it (in both training and competition) in order to excel and succeed at the game in which they play.

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