

The Mental Game Curriculum

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Chapter 1: Athletic Identity, Sport Ethic, and the Pursuit of Excellence

An athletic identity is the extent to which an individual identifies with their role as an athlete and can be influenced by thoughts, feelings, and environmental factors (Giannone et al., 2017). A healthy athletic identity involves a tricky balance of commitment to one's sport with also identifying as a person who shares relationships with family, friends, and hobbies outside of their athletic world. This balance will keep a sense of passion for sport with simultaneously holding a sense of belonging to a life independent of athletic pursuit. In contrast, an unhealthy athletic identity involves placing worth on athletic achievements that prioritizes their athletic role and negatively impacts other areas of their life. If one does not explore life outside of athletics, when sport ceases due to injury, retirement, or aging out of the game, one can struggle with anxiety, depression, and emotional difficulties (Weinberg & Gould, 2019). An athlete may also face a difficult transition from being an athlete to a "non-athlete" and feel as though an important part of their life is lost. Prior isolation and separation from a non-athletic world can increase the severity and likelihood of these issues occurring (Weinberg & Gould, 2019). However, elite performers must sacrifice the ability to live life as a passenger going through motions as if they are on autopilot and instead must stay present in every moment physically and mentally on and off the field (Orlick, 2016). This positive focus reduces the distractions in life for these athletes to stay fully connected to their sense of purpose and requires missing out on certain events outside of the sport domain (Orlick, 2016). Persistence through mistakes, obstacles, setbacks, or challenges leads to learning from every experience to make improvements in sport and on an individual level (Orlick, 2016). Negativity must be given up in their life as presented through thoughts, attitudes, or other people that distract and zap energy needed for competition (Orlick,

2016). These individuals do not have room to leave thoughts of mistrust in their capabilities and this places a great responsibility on their shoulders to balance being an athlete and person outside of athletic endeavors.

Protective factors for developing a healthy athletic identity involve broadening an athlete's perception of who they can become outside of an athletic role (Giannone et al., 2017). This can help aid any career or identity related worries if, for example, the athlete suffers a career ending injury and has created a multidimensional identity that allows for meaning and purpose outside of sport domain. In contrast, an unhealthy identity is one dimensional as one essentially puts "all their eggs in one basket." If athletes solely define themselves through sport, this may lead to an increased future risk of psychiatric issues (Weinberg & Gould, 2019).

A proactive approach is needed when discussing an athlete's identity by addressing early on in sport participation and development of identity can be screened using various interventions (Giannone et al., 2017). The Athletic Identity Addiction Scale and the Athletic Identity Measurement Scale can both be utilized to show the challenges athletes face with the severity and singularity of identifying with an athletic role (Huml & Nite, 2019). These discussions and assessments of the individuals' motivations for sport can also identify if the athlete puts sport over all other roles in life such as friendships, hobbies, or post-athletic career plans.

Sport Ethic

The "sport ethic" is based on what it takes to be a "real athlete" and can be harmful to an individual with an unhealthy athletic identity as they may have a die-hard commitment to the values and criteria of sport (Hughes & Coakley, 1991). As "sport ethic" serves to lead an athlete's behavior, an athlete that is caught up in taking unnecessary risks to please coaches, society, and athletic departments may find themselves in a position for an increased injury risk,

loss of outside relationships, and a distorted sense of self (Hughes & Coakley, 1991). Further harm can be caused if coaches use these athletes as models for behaviors of “playing through pain” and result in other athletes feeling the pressure to fulfill their duty to the team. Individuals that are at a higher risk for over-adherence to the “sport ethic” are those who are vulnerable to the pressures of coaches or teammates to sacrifice themselves, those whose identity is solely within sport, or those with addiction behaviors or eating disorders. These athletes may then play with carelessness by sacrificing their bodies instead of risking losing their membership in an athletic fraternity and suffering “social death” (Hughes & Coakley, 1991).

Pursuit of Excellence

Motivation can be understood through an individual’s perception of what it takes to achieve success as described by achievement goal theory (Weinberg & Gould, 2019). Motivation also involves the direction and intensity of effort given to a task and considers not only the person but also the situation the individual is in (Weinberg & Gould, 2019). The way in which the person and situation interact can help explain certain behavioral responses to situations and finding more information about a person’s core values can aid in further understanding of these responses (Weinberg & Gould, 2019). For those individuals that adopt an ego-oriented view and place motivation solely on outcomes of performance, the ability to fulfill performance excellence may be negatively impacted as evaluation is based on factors outside of their control (Weinberg & Gould, 2019). These athletes may also adopt an entity view in believing that their abilities are rooted and lack the capability to be changed or improved (Weinberg & Gould, 2019). If instead, one adopts a task-oriented view, focus is placed on learning and mastering tasks where improvements are compared to self-performance instead of comparing to other individuals’ accomplishments and may increase motivation more than social comparison

(Weinberg & Gould, 2019). A task-oriented individual will perform in a motivational climate that leads to positive attitudes, adaptive motivational patterns, increases in effort, and effective learning strategies (Weinberg & Gould, 2019). This may give more insight into when it is appropriate to compare socially with others and when it is more appropriate to utilize self-referenced standards to focus on individual improvements. In pursuit of excellence, an athlete should adopt a task-oriented focus that increases motivation and self-perceived abilities as “...you can’t outperform your self-image” (Casstevens & Mack, 2001 p.102)

Athletic Identity Worksheet

Explore your personality and the roles you play, how you respond in certain situations, and what you believe in.

Role-related behaviors: 1.How do you act in various social situations (as an athlete, or student). 2. Do you find importance in having interests outside of an athletic role? 3. Do you have little hobbies, relationships, interest in life outside of sport?	
Typical responses: 1.How do you typically respond in various situations (learning new skills, in uncomfortable situations, or meeting someone new). 2. Are you likely to attach your personal worth to sporting successes? 3. Do you struggle with moving beyond a performance setback or mistake and find it impacts your mood or sleep?	
Psychological core: 1.What are your values, motives, interests? 2. Do you strive to try to please parents, coaches, or teammates even if it puts you at risk for injury, burnout, or increased levels of high stress? 3. Do you feel supported by parents/guardians or pressured to excel in sport?	

Chapter 2: Performance Routines

A main goal of athletics is the ability to optimally perform regardless of any issues, hurdles, missteps, or difficulties that may occur as they frequently do in sports. Adopting a mental state that prepares for optimal performances is not achieved through a random agenda; however, instead through systemic planning by developing performance routines (Burton & Raedeke, 2008). Another benefit to a methodical approach to preparing for performances is in the increased opportunity to achieve flow. Flow is described as an ideal state for an athlete to experience and is achieved by incorporating mental and physical skills through techniques of goal setting, self-talk, imagery, energization, and relaxation (Jackson & Csikszentmihalyi, 1999). When an athlete is experiencing a flow mind-set, they are combining actions and awareness, directing their minds to focus attention, generating clarity in intentions, and becoming fully involved in the task at hand to produce an optimal experience (Jackson & Csikszentmihalyi, 1999). A state of flow is also the product of a process focus that is directed on the present moment instead of worrying over past mistakes or future outcomes as according to Jackson & Csikszentmihalyi, (1999) “We cannot enjoy what we don’t notice” (p.109). An athlete that enjoys participating in sport may evolve into an autotelic individual by viewing an experience itself as the main goal instead of focusing on the outcome for motivation (Jackson & Csikszentmihalyi, 1999).

An important distinction needs to be made between performance routines and rituals or superstitions. As previously discussed, a performance routine is systemically planned with the goal of enhancing performance and includes planning to account for issues that are out of one’s control. On the other hand, rituals or superstitions offer no help to performance or the readiness of an athlete and are ridged in nature serving instead to control the athlete. Superstitions or

rituals are mythical and contain beliefs that if they are not executed, an athlete's performance will suffer. For an example, Nomar Garciaparra was a successful Major League Baseball player with a pre-bat ritual that took on average fifty seconds to perform and roughly consisted of stepping out of batter's box, adjusting both batting gloves several times and his wrist band, then foot tap, foot tap, foot tap, helmet tap, chest tap, shoulder tap, stepping into the batter's box, foot tap, foot tap, bat swing, foot tap, foot tap. This is a clear example of a superstition that held no benefit to batting success; however, holds the power to become a self-fulfilling prophecy if batting success is attributed to performing this ritual. If Nomar had to stop performing this ritual, he may have held a false belief that his batting average would suffer as rituals take control out of the athletes' hands and puts the control into a superstitious belief. If Major League Baseball had imposed a time limit in-between at bats to speed up game times, an athlete like Nomar may have had difficulties adjusting due to the habitual need to execute this pre-bat ritual.

Pre-performance Routines

A pre-performance routine (PPR) helps to optimize performance through strengthening attentional control to deal with distractions, increasing self-efficacy in high pressure situations, and helping to manage anxiety levels (Hazell et al., 2004). Maintaining appropriate attentional control under pressure is important for an athlete to not "choke" and a thorough PPR can improve performance through the increased ability to control and focus attention (Mesagno & Mullane-Grant, 2010). PPRs are best structured like a check list for an athlete to ready their body and mind together by working through each preparation skill and strategy when warming up for a practice or competition (Burton & Raedeke, 2008). Mental training tools are put into the PPR with the goal of increasing confidence, eliminating negative thinking and distractions, in setting realistic goals, enhancing motivation, controlling arousal, finding motivation when

fatigued, and in keeping an ongoing positive and optimistic outlook (Burton & Raedeke, 2008). Mental training skills that can be included involve goal setting, imagery, relaxation and energization techniques, and positive self-talk through scripts, affirmations, and optimal attitudes (Burton & Raedeke, 2008).

During-Performance Routines

Facilitating the consistency and quality of performances will involve having a standard and backup plan performance routine for when the athlete is actively participating in practices or competitions (Burton & Raedeke, 2008). Preparing a backup plan will be important for managing issues that arise during performance and modifying goals if performance circumstances are not favorable (Burton & Raedeke, 2008). During performances, an athlete can also plan for distractions by utilizing Ravizza's Recognize, Release, and Refocus technique (Williams & Krane, 2015). By first checking in with arousal levels the athlete can recognize the need to bring focus towards energizing or relaxing techniques, then release any distractions, negative thoughts, or mistakes, and finally refocus by utilizing performance cues or positive self-talk to come back to the present moment (Williams & Krane, 2015).

Post-performance Routines

A post-performance routine is beneficial for practicing having a recovery plan in place to aid in making the best out of difficult situations that happen during competitions (E. g., performance mistakes, heckling crowd, unfair call from official, situations that lead to becoming flustered) by adopting coping strategies (Burton & Raedeke, 2008). This can help athletes recover from competitions physically through relaxing and adjusting arousal levels and mentally by adjusting goals and utilizing positive self-talk and affirmations for stress reduction and increasing confidence levels (Burton & Raedeke, 2008). A performance evaluation can be

implemented through filling out a performance feedback sheet to track and reflect on the performance and the findings can be discussed to make any possible adjustments to the performance plan if warranted (Williams & Krane, 2015).

Routine Strategies and Skills

Systemic and continued practice is needed to engrain the habits required to execute a PPR in a high stress situation like a performance environment and must be personalized based on the individual athlete's needs (Hazell et al., 2014). Outside of the previously discussed mental training skills (E. g., self-talk, goal setting, imagery, arousal control) proper nutritional and sleep routines must be addressed for optimal performance and overall athlete well-being. Routines are not only important for performance success, but they also serve as a foundation for success in life. A routine can be prepared for any task that the individual finds of importance and can include plans for a pre-shot basketball routine for controlling distractions, a routine to increase the quantity and quality of sleep, or a routine to address test anxiety in school. The opportunities are endless for developing routines and with continued use, the athletes' body and mind will begin to recognize the benefits with the opportunity to reach that elusive state of flow.

Performance Routines Worksheet

The following worksheet will help to adopt a performance routine and readiness plan. Reflect on answers from the athletic identity exercise in chapter one to enhance an individualized approach to routines. Information from the first exercise can be applied to this sample worksheet, for example, did you gain information regarding how you act in certain situations? Do you thrive in challenging situations or have the tendency to get flustered and distracted? Personal beliefs can also be placed into routines through affirmations or as part of a positive self-talk script for clarity and focus. Reflect on these thoughts and proceed with the routine and readiness worksheet.

Routines and Performance Readiness

Routines and readiness consist of four main areas:

Preparation: This is technical skill, tactical strategies, physical readiness, and psychological readiness.

Resilience in handling setbacks and performance errors: Positive adaptation to adversity, setbacks, and performance errors.

Intensity, energy, and drive: The level of physical activation needed at the start of a competition.

Focus and concentration: The width and direction of one's mental focus; mindfulness

Intensity and focus are linked and interact with each other. A certain level of activation and intensity is required for attention and focus, and every sport and every athlete is different.

This all starts with setting specific goals for each area, identifying internal obstacles, and behaviors to overcome these obstacles.

Readiness Plan:

Preparation: Technical, strategic, physical & psychological readiness for training and competition

1. Goal _____
2. Obstacle _____
3. Behavior _____

Resilience and coping with adversity: Positive coping with performance challenges, setbacks, and errors

1. Goal _____
2. Obstacle _____
3. Behavior _____

Intensity: Physical activation for optimal performance

1. Goal _____
2. Obstacle _____
3. Behavior _____

Focus: Concentration on the most important parts of the task at hand and being able to shift attention when needed and letting go of distractions

1. Goal _____
2. Obstacle _____
3. Behavior _____

Lastly, before developing a performance routine reflect on the questions below. Reminder to set a date to review the routine to assess for any modifications that are needed. Journal reflections can also be included into a routine for ongoing reflections.

What is the purpose of routine?	What needs to be prepared for routine?	How often do I need to practice this routine?	Am I committed to this routine?	What are my backup routines?	Does this routine support a balanced and healthy athletic identity?

Chapter 3: Self-Talk

Self-talk is described as the internal dialogue that runs through our minds throughout the day and can consist of two voices that seemingly bicker back and forth. These competing voices can be rational and irrational, supportive and critical, positive and negative, or functional and dysfunctional (Burton & Raedeke, 2008). Silencing negative thoughts can seem like an easy task; however, according to the ironic process theory, trying to repress thoughts may increase the probability that they will surface (Weinberg & Gould, 2019). An athlete creating an internal dialogue with statements such as “Don’t miss this shot” or “Stop thinking negatively” creates an increased possibility that the shot will be missed, or that negative thoughts will continue to repeat. As situations influence an athlete’s behaviors and emotions, utilizing Ellis’s ABC model of self-talk can help improve an athlete’s reaction in certain situations (Burton & Raedeke, 2008). For example, an activating event can be an athlete having to score a goal in the last play of a soccer game and the athletes’ beliefs can either be negative (I will miss this goal) or positive (I am prepared for this shot). The emotional consequences can either be negative (increased anxiety) or positive (excited) and the behavioral consequences can either be negative (loss of concentration) or positive (confident and focused) (Weinberg & Gould, 2019). As during sport there is little control over outcomes, it will be beneficial for an athlete to create facilitative self-talk skills for positive responses to events for an increased probability of performance excellence (Burton & Raedeke, 2008).

Benefits of Self-Talk

Self-talk is tool that increases self-confidence (belief in your ability to achieve goals), self-efficacy (confidence in believing you can perform a specific task) and motivation through creating positive emotions of optimism, knowing what to focus on, and in providing specific

performance cues (Weinberg & Gould, 2019). Self-talk also aids in improving mental preparation through changing non-productive habits (getting frustrated), utilizing metaphors (fast as lightning, calm as the sea), and enhancing concentration through instructional cues (eyes on lane) that all serve to increase confidence (Weinberg & Gould, 2019). An athlete that has a strong belief that they can accomplish what they set out to do will be motivated to increase their efforts, adopt optimal attitudes, and put energy into tasks (Weinberg & Gould, 2019).

Strategies to enhance self-talk

The following guidelines are helpful in using self-talk to improve performance; use simple phrases to not deplete cognitive resources, keep to the present tense and form in the first person, phrases should be positive, focus while repeating and believe in what you are saying, keep kind intentions, and repeat phrases so they are memorized and automatic for use in stressful situations (Weinberg & Gould, 2019). Self-talk should also focus an athlete's attention on strategies and skills, serve to increase motivation, and manage levels of arousal (Van Raaij et al., 2017). Self-talk can create performance decrements if it leads to overthinking through 'paralysis by analysis' or by using up mental resources that are required for performance (Van Raaij et al., 2017). A professional should also look toward an athlete's individuality (thoughts, feelings, preferences) for self-communication that leads to optimal performance (Van Raaij et al., 2017). In creating a self-talk intervention, questions regarding the type of self-talk that would be best utilized for the situation should be considered; does the self-talk match the arousal level needed, is there too much being used, is there need for change, and does it "feel right" (Van Raaij et al., 2017). Self-talk can become harmful to performance if it is being forced, if the athlete is using self-talk that is not right for them, or if it uses an athlete's cognitive resources that are needed for sport (Van Raaij et al., 2017). Also, of importance is in understanding if

there is need for a self-talk intervention or if the athlete is overtired and suffering from an uncharacteristic cognitive overload (Van Raaij et al., 2017). Reflection in a workbook or performance sheet on whether the self-talk was functional or dysfunctional to performance and if the self-talk reflected deep core beliefs of the athlete will enhance the quality of the self-talk for performance needs (Turner et al., 2018).

Types of self-talk

Self-talk can be categorized into either instructional, motivational, or negative.

Instructional self-talk is utilized for improving focus and is ideal for fine motor tasks or for improving concentration when first learning a skill (Weinberg & Gould, 2019). Motivational self-talk is used to increase a positive attitude, efforts, or energy levels and is more general as in “I can do this!” (Weinberg & Gould, 2019). Negative self-talk is counterproductive if it acts to increase levels of anxiety, critical evaluation of self, or self-doubts (Weinberg & Gould, 2019).

Negative self-talk can, however, be functional if an athlete uses negative cues in specific situations while holding a core self-belief in their ability to accomplish the task at hand.

Spontaneous self-talk is unintentional and tends to pop into the athlete’s mind when feeling angry and in contrast, goal-directed self-talk creates positive predictions and serves to regulate the athletes’ behaviors for performance enhancing benefits (Weinberg & Gould, 2019).

Implementing self-talk

The type of self-talk that is used should reflect the sport, athletes that are on the team, present behaviors of team, team climate, training circumstances, and the level of competition (Van Raaij et al., 2017). Observing the athlete/team and speaking with the coaches can help determine if the self-talk would fit into the team climate or if it is appropriate based on the athletes’ cultural beliefs (E. g., positive or individualistic culture) (Van Raaij et al., 2017). As

part of a pre-competition routine, self-talk can be rehearsed or listened to with the goals of adjusting arousal levels; for stress reduction; increasing motivation; focusing and concentrating; and enhancing self-confidence (Burton & Raedeke, 2008). The athlete will also feel as though they are prepared and have a plan in place instead of getting distracted. After practicing goal-directed self-talk the athlete can then use it during competitions to solve problems, focus on tasks, and regulate behaviors (Weinberg & Gould, 2019). Motivational self-talk can also be used during competitions to increase energy levels, stay positive, or to get “psyched up” (Weinberg & Gould, 2019). During competitions thought stoppage can be a technique used to stop negative thoughts (with a sharp cue word or by snapping rubber band around wrist) to bring focus back to the task at hand through redirecting attentional focus as under high stress situations it is easier to fall into a negative trap (Weinberg & Gould, 2019). Self-talk can have a positive influence on an athletes’ overall attitude and attitudes influence how we feel and think in and out of the sport context (Casstevens & Mack, 2001). A positive attitude can be developed through self-talk and ideally an athlete will start to see disappointments as temporary, believe in their ability to view problems as challenges, and will attribute successes to their own efforts and not give credit to external reasons (Casstevens & Mack, 2001). Increases in self-efficacy related to sport can transfer toward overall self-confidence and not just occur through a single belief that they are only successful in an athletic role (Weinberg & Gould, 2019). These increased overall self-beliefs can lead to a healthier athletic identify.

Self-talk Worksheet

Think back to a highly stressful situation and identify any negative thoughts that were running through your mind. These thoughts would be seemingly “out of your control” and could pertain to yourself, teammates, field conditions, bad referee call, etc.

Next, pick out five of these negative thoughts and list in the left-hand column. In the right-hand column think of a positive self-talk statement to counter the negative thought.

Negative Self-talk	Positive Self-talk Change

Being proactive and practicing positive self-talk will help in stressful situations where anxiety levels and emotions run high. Think of positive statements, cues, or phrases that would fit these situations and have the “right feel” for you.

Situation	Prepared Positive Self-talk
Miss an important play	
Fatigue is setting in	
Weather conditions/environment is unfavorable or unfamiliar	
Equipment/uniform issues	
Opposing players/team is more skilled	

Chapter 4: Goal Setting

Goals are programmed to direct motivation towards a target by creating the belief that one can achieve what was once thought unattainable (Weinberg & Gould, 2019). It is easy to set a goal; however, attaining a goal is easier said than done. Many factors can be blamed when failing to reach a goal such as a lack of thoughtful design, misunderstanding the process and planning required, adopting a haphazard approach, or in failing to monitor progress (Weinberg & Gould, 2019). Goals can, however, aid performance by influencing psychological factors (motivation, confidence, satisfaction, anxiety); direct attention to skills (decrease interceptions); organize efforts for a specific purpose (practice goals lead to increased effort in practices); increase grit (setting short term goals helps to persevere through long term goals); and create openness to try new ways to complete a task (external focus of attention vs internal cue focus) (Williams & Krane, 2015).

Types of Goals

Goals can be classified into subjective goals as in making a broad statement, “I want to run faster” versus an objective goal that is distinct and specifies a purpose, “I want to shave two seconds off my 200m time by March” (Weinberg & Gould, 2019). Goals can also place focus on an outcome (winning the race), performance (self-referenced standards), or process (actions needed for execution) and although using all three is essential, there is significance in understanding when to target each type of goal (Weinberg & Gould, 2019). Setting an outcome goal can be helpful for providing motivation to win a competition; however, outcome goals lack flexibility (cannot change difficulty of a competition) and are unstable (cannot control how others perform) (Burton & Raedeke, 2008). It would be ideal to set process goals as steps to improve strategy, form, and technique to achieve overall personal performance that will lead the

athlete to the targeted outcome goal (Burton & Raedeke, 2008). Another important classification is in how important the goal is to the athlete as the path leading to goal attainment is not straightforward and during challenging times the athlete will need a high level of commitment to take the challenging step forward instead of becoming frustrated when having to take a step back (Orlick, 2016). Also, of relevance is applying the SMARTS acronym to characterize the goal as **S**pecific (show precisely what is to be achieved), **M**easurable (quantifiable), **A**ction-oriented (specific actions to attain the goal), **R**ealistic (attainable even with obstacles), **T**imely (attainable in a feasible amount of time), and **S**elf-determined (athlete sets goal or has input in setting goal) (Weinberg & Gould, 2019). An example of applying the SMARTS principle to the goal previously stated, “I want to shave two seconds off my 200 time by March” would be in the goal being specific in indicating what is to be achieved, measurable in understanding the quantity of time to be taken off, action-oriented by showing there is a need to run faster, realistic in the percentage of improvement needed being slightly better than the prior time, timely as an end date is given, and self-determined as the athlete set the goal with help of a coach.

Benefits of Goal Setting

As goals are associated with confidence, anxiety, and motivation when focusing on performance and process goals an athlete can create realistic expectations, build confidence, decrease anxiety, increase motivation, and enhance performances (Williams & Krane, 2015). Short-term goals aid an athlete in gaining a sense of control through seeing the next step needed to get closer to the target goal ahead, by staying in the present instead of worrying over future outcomes, and by being prepared mentally, physically, and technically (Orlick, 2016). The quality of an athlete’s performance can reflect how they view and form expectations for themselves, and goal setting can help to facilitate focus in a positive light (Orlick, 2016). Goal

setting can also be paired with other strategies such as positive self-talk, imagery, coping strategies, relaxation, and concentration (Rares-Mihai et al., 2021). Also, in setting realistic process and performance goals an athlete will develop stable self-confidence in finding competence in winning or losing, in exceeding personal performance goals and process standards, and in striving for personal excellence (Burton & Raedeke, 2008).

Strategies to Overcome Barriers

Problems may occur in a goal setting plan and it will be important to foresee and prepare by following the principles of setting specific goals that are moderately difficult but realistic to accomplish; setting short- and long-term goals; setting a combination of process, performance, and outcome goals; setting mastery-approach goals that focus on self-referenced standards; developing goals for practice and competition; recording goals where they are easily accessed and viewed frequently; developing goal achievement strategies that are specific but flexible; understanding personality differences and motivations of participants; and fostering goal commitment through feedback and allowing for input from the participant (Weinberg & Gould, 2019). From these twelve principles of goal setting three stages can be utilized to develop a goal setting plan in first preparing and planning by evaluating athlete/team needs; secondly in educating the athlete/team on effective ways to set goals; and thirdly in implementing the plan and adjusting based on reevaluation of goal strategies (Weinberg & Gould, 2019).

Pre-season, In-season, and Off-season Goal Setting

As discussed, there is importance in utilizing all three classifications of goals (process, performance, and outcome) for proper implementation to promote self-confidence, motivation, and a united team climate (Burton & Raedeke, 2008). Process goals are used to improve form, strategies, and technique and would be helpful in pre-season training to prepare athletes for the

upcoming season (Burton & Raedeke, 2008). Adopting a goal to spend 15 extra minutes on speed drills focusing on quick feet would be an example of a process goal for a track athlete in the pre-season. Performance goals are used to compare personal performance by using prior times as standards (Weinberg & Gould, 2019). These goals can be used in-season as for an example running a tenth of a second faster than one's personal best at the next meet. In the off-season, an athlete can adopt an outcome goal to win the state meet next year as this goal can foster motivation to continue training during the off-season (Weinberg & Gould, 2019).

Sample Worksheet

Write down a long-term goal for this year. This goal should be individualized and important to you. This goal can involve an athletic pursuit, exercise interest, or career/professional goal.

Next, check your goal against the SMARTS principle and adjust accordingly to fit the principles below (Weinberg & Gould, 2019).

Goal	Specific (Indicate what is to be achieved)	Measurable (Quantifiable)	Action-oriented (Actions needed to achieve goal)	Realistic (Goal is close to current ability)	Timely (Can be achieved in reasonable amount of time)	Self-determined (Participant input in setting goal)

Next, assess if you foresee any problems in achieving your goal and strategize how you will overcome these challenges.

Problem	Do you foresee a problem? Y/N	Strategies
Staying committed to goal		
Goals are not specific enough		
Inability to adjust goal		
Focusing solely on outcome goals		
Missing feedback and evaluation		

Lastly, create short-term goals to support your journey towards your long-term goal. Remember to set process and performance goals to support your goal plan while periodically reevaluating for necessary adjustments.

Current level of ability	Short-Term Goal #1	Short-Term Goal #2	Short-Term Goal #3	Short-Term Goal #4	Long-Term Goal

Chapter 5: Mental Toughness

Mental toughness is valued as being a crucial component in optimal performance; however, as it is multifactorial (involving much more than simply “being tough”) the concept can be difficult to articulate and even harder to attain. Mental toughness is the ability to perform optimally regardless of the situational demands through the development of plans and skills that enable an athlete to foster belief in abilities, form coping skills for a sense of control, motivation to tackle challenges head on, steady determination towards goal attainment, resiliency to learn from setbacks, and the ability to balance the needs of sport with life requirements.

Clough, Earle, & Sewell (2002) developed the 4C’s model to define mental toughness with the first construct being ‘control’ where an athlete can manage multiple tasks simultaneously (Weinberg & Gould, 2019). An example of a developmental strategy for obtaining control would be to introduce distractions into practice training for an athlete to rehearse how to deal with various disturbances (Crust & Clough, 2011). The second construct is ‘challenge’ where potential threats are perceived as opportunities for personal growth resulting in the ability to thrive in uncertain sporting environments (Weinberg & Gould, 2019). An example of a developmental strategy would be in presenting different challenges during training to enhance familiarity with changes (Crust & Clough, 2011). The third construct is ‘commitment’ in passionate involvement to go after goals and persevere despite difficulties (Weinberg & Gould, 2019). A developmental strategy for commitment would be to set goals focusing on goal achievement through short- and long-term planning (Crust & Clough, 2011). The final construct is ‘confidence’ in the ability to have an unwavering sense of self-belief despite setbacks and refraining from getting “psyched-out” in high stakes competitions (Weinberg & Gould, 2019). A

developmental strategy for confidence would entail imagery work to visualize confronting difficult situations and then thriving through them (Crust & Clough, 2011).

As encountering challenges is an inevitable part of sport, the way in which an athlete views sizable challenges (positive or negatively) and focusing capabilities (connected or disconnected) can influence personal growth (Orlick, 2016). For an athlete to deal effectively in high-stress environments, advanced preparation is needed when facing these challenges as stress and anxiety can be a constant in athletes' lives due to long training seasons, demands of competitions, and sport failures (Razvan et al., 2021). Coping strategies will help athletes handle pressure and require both cognitive and behavioral efforts that are influenced by personal and situational elements (Weinberg & Gould, 2019). There are a variety of coping strategies to help deal with issues at hand; however, problem-focusing coping strategies entail productive techniques such as information gathering, problems solving, competition plans/routines, goal setting, task focus, self-talk, and thought control techniques (Weinberg & Gould, 2019). Resiliency also plays an important role in the ability to bounce back after adversity through learning skills that provide benefits such as high subjective well-being, anxiety reduction, and performance increases (Weinberg & Gould, 2019). Resiliency also has a positive impact on personal qualities by developing the psychological characteristics for fostering excellence through adopting an autonomy-supportive climate and in disciplining one's mindset to see stressors as challenges instead of being intimidated (Weinberg & Gould, 2019).

An athlete's goal perspective is related to perceptions of perceived stress and competence which influences how achievements are regarded, ultimately guiding decisions and actions (Williams & Krane, 2015). For example, in being task involved an athlete will place focus on gaining skills or knowledge, valuing efforts, performing at one's best, tracking personal

improvements, and focusing on what they are doing and thinking to complete the task (Williams & Krane, 2015). In adopting a mastery-oriented view, an athlete will view success through a task involvement; the athlete will think, act, and feel motivated regardless of capability; attribute effort as the cause of success; learn problem-solving and flexible learning strategies; have intrinsic passion in life; and hold a belief that abilities are plastic (Williams & Krane, 2015). An athlete will further benefit from setting performance and process goals with a task focus to create stable confidence as solely setting outcome goals or having an ego-orientation can create unstable levels of confidence. Shaky levels of confidence will redirect an athlete away from the path of developing mental toughness through loss of focus and second-guessing abilities.

Encouraging athletes to reflect on sporting performance can influence personal development from openness to try different perspectives to examine ways of coping (blocking out distractions, diaphragmatic breathing), learning from mishaps, developing reasoning skills, genuinely self-appraising, and in learning about cause-and-effect relationships (Crust & Clough, 2011). Through diary or journaling the athlete can start to view failures as part of the process for developing the psychological edge needed to deal with the many demands of being an athlete (Crust & Clough, 2011). During this reflective process the athlete can build skills that lead towards mental toughness while simultaneously balancing life priorities resulting in a healthy athletic identity.

Mental Toughness Worksheet

Mental toughness is a skill that can be trained by preparing and practicing supportive applied strategies for facilitating personal development of this skill. Using Clough, Earle, & Sewell's (2002) 4C's model as a template, reflect on the worksheet questions below. After filling out the questions, reflect on your own personal definition of mental toughness by identifying the features that lead towards performance excellence and away from solely "being tough."

4C's Model	Control: Ability to manage multiple tasks at the same time	Challenge: Threats perceived as opportunities for growth	Commitment: Motivation to attain goals regardless of difficulties	Confidence: Unwavering sense of self-belief
Strategy for Development	Practice dealing with distractions/disturbances	Practice dealing with challenges for familiarity with change	Set short- and long-term goals, focus on goal achievement	Develop an imagery script to visualize difficult situations and apply coping strategies
Strategy for Development				
Strategy for Development				
Strategy for Development				

Chapter 6: Attention, Focus, and Concentration

While sitting and reading this paper many external distractions can pull you away from absorbing the material (electronic devices beeping or someone attempting to talk to you) and typically are followed by internal distractions (frustrations in reading the same sentence over and over or dysfunctional self-talk). Distractions, whether they be external or internal, are an ever-occurring part of life; however, they can prevent us from accomplishing what we want to do. When life demands increase, distractions have the potential to become louder and without the ability to refocus in constructive ways, they can become issues (Orlick, 2016). For example, an athlete that has a wandering mind during practice will find it more difficult to concentrate in a competition or high stakes setting when the pressure is on (Weinberg & Gould, 2019). As we all have an attentional capacity that only allows processing of a certain amount of information at once, having the ability to direct mental effort for a sustained amount of time can create an uninterrupted focus in the presence of distractions (Weinberg & Gould, 2019). As your focus is your focus, you decide where to direct it, and something can only then become a distraction if you allow it to be (Orlick, 2016).

Attention, Focus, and Concentration Defined

Successful athletes can focus attention and maintain it throughout the timeframe needed by having favorable distraction control (Orlick, 2016). To differentiate between attention, focus, and concentration, clarification is needed as these terms are sometimes used interchangeably. “Attention is the process that directs our awareness to information available through our senses” (Burton & Raedeke, 2008, p.156). Attentional focus is then described along two dimensions in either width (broad or narrow) or direction (external or internal) (Weinberg & Gould, 2019). Concentration can be best described in four parts in first focusing on relevant cues in the

environment; secondly in maintaining attentional focus overtime; thirdly in having awareness of the situation and performance errors; and lastly in shifting attentional focus when necessary (Weinberg & Gould, 2019). As an attentional overload may have presented upon reading the definition of these terms, a flashlight metaphor will also be used. Attention would represent turning on the flashlight to produce a beam of light; attentional focus would entail making the beam wider or narrower and pointing towards or away from you; and concentration would represent how long the battery power can keep the light on while shifting the beam from spot to spot.

Theoretical Approaches

Using the attention as a spotlight metaphor is adopted from Nideffer's theory of attentional styles where it is hypothesized that each athlete has a preferred attentional style that changes based on the demands of the sport they are involved in (Keegan, 2014). This cognitive approach categorizes the type of attentional focus into two dimensions as width (broad or narrow) and direction (external or internal) (Weinberg & Gould, 2019). A broad attentional focus would be ideal for an athlete that needs to recognize numerous cues in a quickly changing environment and, in contrast, a narrow attentional focus would be utilized for an athlete that only needs to acknowledge one or two cues at a time (Weinberg & Gould, 2019). With an external attentional focus an athlete would direct attention outward towards an object and an internal attentional focus would differ in an athlete directing attention inward towards their own thoughts and feelings (Weinberg & Gould, 2019). To match the attentional needs to the athletes preferred style, questions relating to sport demands, typical zone when playing, or what happens to you when under pressure can provide guidance towards which combination of the four attentional styles would be needed based on the specific athlete (Keegan, 2014). Other tests can also be

utilized in assessing attentional styles through the Test of Attentional and Interpersonal Style (TAIS) or through psychophysiological measures in EEG readings of brain activity or recording the athletes' heart rate data (Weinberg & Gould, 2019).

Csikszentmihalyi's (2002) flow concept covers a humanistic approach by describing how having total concentration in the moment while feeling in control merges action and awareness, and the experience itself becomes the reward (Keegan, 2014). In a flow state, the athlete surrenders alpha brain waves (linked to relaxed wakefulness) as the thinking brain does not aid the body in producing refined movements that is instead displayed through automatic processing (Keegan, 2014). If the state of flow includes complete absorption in the activity, concentration on the task at hand, and effortless movement; choking, in contrast, involves a breakdown at the attentional level, overanalyzing body mechanics, and inability to control emotions (Weinberg & Gould, 2019). An athlete would have a narrow and internal attentional focus due to worrying over past or future mistakes and the lack in ability to shift attentional focus can lead the athlete to make poor decisions, create muscular tightness, and increase fatigue (Weinberg & Gould, 2019). Overanalyzing body mechanics creates controlled processing where the athlete is treating the tasks as if they are learning them for the first time instead of the movements becoming automated as they would in a flow state (Weinberg & Gould, 2019).

Techniques to Enhance Attention, Focus, and Concentration

Kabat-Zinn (2003) defines mindfulness as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Weinberg & Gould, 2019, p.393). Mindfulness techniques entail practice work to focus attention through task switching, sustaining attention, and cognitive inhibition for the ability to self-regulate attention, reduce emotional reactions, and enhance flow states

(Weinberg & Gould, 2019). These techniques coupled with accepting thoughts without judgement can lead the athlete to “zone in” instead of “zone out” which saves cognitive resources by not having to ignore or repress thoughts (Weinberg & Gould, 2019). An athlete staying in the present moment will also refrain from being distracted by rewinding or fast-forwarding and instead focus on the here and now. Other strategies to maintain or improve concentration are to increase the ability to maintain focus on relevant cues and using techniques such as imagery, arousal control techniques, performance cues, and setting performance and process goals (Weinberg & Gould, 2019). Exercises for improving concentration would entail learning to maintain focus and shift attention, practicing the [concentration grid](#), scanning exercises, simulation training, and functional self-talk (Weinberg & Gould, 2019). Specific to external attentional focus training, an athlete can rehearse competition experiences and for internal attentional focus training can use process goals, cuing, and focusing and refocusing skills (Keegan, 2014). Regularly practicing focusing skills will enable an athlete to execute tasks despite any ongoing daily distraction for focus to “work for you and not against you” (Orlick, 2016). By listing any distractions that are of concern, an athlete can start to prepare simple refocusing reminders for quick changes as if you were flipping a switch (Orlick, 2016). By turning around these distractions an athlete can ward off the negative impacts on mood, focus, and performance; mental and physical exhaustion; loss of fluidity in skills; or questioning worth as human or capability as a performer (Orlick, 2016). A healthy athletic identity, in contrast, can emerge from a task-oriented attentional focus that successful athletes use to “zone in” (Orlick, 2016).

Distraction Control Plan Worksheet (Orlick, 2016, p.105)

Develop a personal distraction control plan by identifying distractions and providing reminders for refocusing. Examples are provided below.

Distractions	Usual Response	Preferred Response	Refocus Reminders
Worrying about the outcome during a game	Mind continues to wander, focus is lost, muscles tighten	Acknowledge thoughts without judgement and bring focus back to the present (mindfulness)	"Here and now"

Chapter 7: Imagery

An athlete will use imagery to create or recreate experiences in their mind without having to physically execute the skills or be at the actual location. If we think of imagery as “going to the movies inside your head” (Weinberg & Gould, 2019) a movie will be better experienced in full color; with surround sound speakers blaring; smelling freshly popped popcorn while tasting the salty butter; and feeling the sticky floor underneath your feet over imagining a black and white silent film without any environmental stimuli. If the image is vivid (involving kinesthetic, visual, auditory, tactile, gustatory, and olfactory senses) it will be interpreted by our brains it as if it is happening in real life (Orlick, 2016). If these experiences are frequently repeated, they have the possibility to create stronger neural connections in our brain resulting in an athlete being able to perform imagery and execute skills more successfully (Orlick, 2016). The ways in which an athlete can use imagery for performance benefits include practicing skills without getting physically fatigued or injured; to adopt coping skills through imaging potential problems and having a positive response plan in place; to remember successful performances for consistency in future performances; to reflect on unsuccessful performances to find lessons for improvement; or to familiarize with competition venues and courses (Orlick, 2016). Enhancement of physical and psychological skills will then follow from increased motivation in an athlete seeing themselves being successful; building confidence in imagining performing skills correctly; controlling emotional responses through increasing or decreasing arousal; in practicing skill corrections; as a preview of what you want to do; in review to correct errors; to practice and learn new strategies; to keep skills fresh if injured or to facilitate recovery; or to solve problems through evaluating performance issues (Weinberg & Gould, 2019).

Theories

The psychoneuromuscular theory explains that when an athlete vividly imagines executing a skill, the same neural pathways are stimulated as if you were physically performing the skill through producing tiny muscular contractions and neuromuscular impulses (Weinberg & Gould, 2019). By practicing imagery an athlete can strengthen neural pathways that control the muscles related to physical skill execution and practice perceiving stressors as challenges instead of as threats (Weinberg & Gould, 2019).

The bioinformational theory states that images are organized in the brain under stimulus propositions (imagining the venue or equipment) or response propositions (feeling the ball in your hands or a rapidly beating heart) (Weinberg & Gould, 2019). An imagery script would ideally combine both stimulus and response propositions to increase vividness of an image for optimal transfer to real life (Weinberg & Gould, 2019).

Psychological explanations entail that building psychological skills increase confidence and concentration while decreasing anxiety through using imagery to prepare for the athletes' optimal level of arousal to focus on task-relevant cues and to avoid distractions (Weinberg & Gould, 2019).

Relationships With Imagery

Pavio (1985) focused on understanding why athletes use imagery and developed two functions of imagery: motivational and cognitive (Weinberg & Gould, 2019). Motivational specific imagery is used to set and adhere to goals through motivational general-mastery in imagining performing well to maintain confidence and with motivational general-arousal using imagery to increase arousal (psych-up) or to decrease arousal (relax) (Weinberg & Gould, 2019). Cognitive specific imagery is used for skill learning, execution, and development where

cognitive-general imagery is used for improving strategies or game plans (Weinberg & Gould, 2019).

Athletes can also use imagery from an internal perspective as if they had a camera on their head seeing the execution of the skill from their own viewpoint (Weinberg & Gould, 2019). This helps the athlete to feel the movements and is suitable for closed tasks that take place in stable environments that are not time stressed as in playing golf (Weinberg & Gould, 2019). External imagery would look as though you were watching yourself performing on video and is appropriate for open tasks that are time pressured in rapidly changing environments as in playing basketball (Weinberg & Gould, 2019). More importantly than whether an athlete has an internal or external perspective is in getting a clear image that is vivid (using all senses) and controllable (Weinberg & Gould, 2019). Controllability of an image is important for focusing your images to work for you and in the ability to manipulate them (Weinberg & Gould, 2019).

Implementing an Imagery Program

The first step in implementing an imagery program would be in evaluation of the athlete's imagery skill level through such assessments as the Sport and Imagery Ability Questionnaire or the Vividness of Visual Imagery Questionnaire use sport specific images to assess ability or assess for vividness and controllability of images (Weinberg & Gould, 2019). From there the practitioner can then decide what areas are of importance to the athlete, add the techniques into a daily imagery program, and evaluate if the athlete shows signs of overworking imagery training (Weinberg & Gould, 2019). The imagery program should also be practiced in a variety of settings; fit into the athlete's daily routine; start with relaxation breathing; entail vivid and controllable images; be applicable to very specific and varying difficult experiences; maintain a positive focus; use video-assisted imagery; and aim to create the same timing as the

length would be in real life (Weinberg & Gould, 2019). Ideal parameters are 3-4 times per week, 15 minutes at a time, and systematically added into an existing mental preparation plan with explaining to the athlete that it will take a few months of practice to become successful (Weinberg & Gould, 2019).

Imagery Scripts

Imagery scripts can be used in a variety of situations such as before and after practice to visualize skills and plays; before and after competitions to focus on goals and what needs to be changed; during the off season when physical conditioning can be mixed with mental imagery conditioning; to use during breaks in the action to prepare for what is ahead; before getting out of bed in the morning or going to bed; or when recovering from an injury to reduce anxiety and aid in a faster recovery (Weinberg & Gould, 2019). Following the PETTLEP based imagery method (Holmes and Collins, 2011) by incorporating a **P**hysical, **E**nvironment, **T**ask, **T**iming, **L**earning, **E**motion, **P**erspective will be exemplified through a gymnast preparing to execute a bar routine. **P**hysical would entail the athlete putting on their leotard, chalking up their grips, and standing in front of the bars. **E**nvironment would include the athlete attending practice in the gymnasium as normally scheduled. The athlete would mimic their exact bar routine for the type of **T**ask. The athlete would mentally rehearse the bar routine and complete it in the same **T**ime frame as it physically would by flowing from one skill to the next until landing the dismount. The athlete is at the elite level and the imagery routine would reflect their current level of gymnastics **L**earning experience. The athlete normally feels a bit of butterflies in their stomach with a slight increase in heart rate level and would recreate these **E**motions. As this athlete is practicing form-based skills, an external **P**erspective would be taken as if they were watching their performance on a video screen (Weinberg & Gould, 2019).

Sample Imagery Script

You are next up in the bar rotation and prepare to make way over to the chalk bowl. Preparation begins by first closing your eyes and feeling the tiny flutter of butterfly wings in your stomach and slight increase in your heart pumping that is welcomed by three deep breaths and respected as signs that you are excited to compete. Your focus is on the chalk bowl as you clear your mind of any external distractions by turning down the environmental volume while tuning into yourself. Any tightness in your muscles is released as you begin to spray water on your grips and dust them with chalk that flows through your fingers. As you hear the competitor ahead of you land their dismount you are ready to turn and await the judge's signal. You use this downtime wisely to focus on the task-relevant cues from practice (glide, tight handstand, effortless rhythm). You are comforted by the ease at which you hit these skills and confidence builds as you see yourself performing a successful routine. As the judge raises the flag you take one more deep breath inhaling and exhaling while cuing silently to yourself "ready." You feel the squishy gym mat under your feet as you salute the judge raising your arms overhead and turning to make way to the bars. You adjust your wrist straps and feel the scratchy Velcro on each wrist before clapping your hands together once as a signal that you are prepared. You feel your leg muscles tighten to spring your body towards the low bar to glide effortlessly into a kip to propel yourself to the high bar. As you spring from the low bar to the high bar you hear the equipment squeaking and have a laser focus to grab onto the oval bar as if it were part of your hands. The same effortless glide produces the right amount of energy to get you on top of the bar to then flow into a tight handstand. You ride the momentum down from the handstand to swing, tap, spot the wall, and perform one flip to dismount. You know your feet will hit the mat as if they were magnetized to the ground and then glued to the mat. You take one breath before

you stand to finish and salute the judge. As you walk back to your recovery area you review the experience for positives and negatives to catalogue for future use.

Imagery Script Worksheet

Following the PETTTLEP program for guidance (Holmes and Collins, 2011) can help to enhance imagery.

- Physical nature of the movement
- Environmental specifics
- Task type
- Timing of the movement
- Learning content of the movement
- Emotional meaning of the movement
- Perspective (internal/external)

Design an imagery script for a sport skill (soccer kick, backflip, football spiral) by using the PETTTLEP model. Sport skill: _____

P: _____

E: _____

T: _____

T: _____

L: _____

E: _____

P: _____

Chapter 8: Performance States

Each athlete has an optimal performance state that is, in essence, “cooked up” from a mixture of arousal and emotional ingredients that frequently change based on demands of the situation. In gaining awareness of what the demands are in the situation, an athlete can assess and compare with their current energy levels by tuning in to recognize if the levels are optimal or suboptimal (Jackson & Csikszentmihalyi, 1999). For example, an athlete may need to decrease arousal levels due to feeling as though their heart is beating out of their chest or require an increase in arousal due to feeling sluggish. An athlete that develops skills to adapt their level of arousal will be able to find an optimal energy zone, and by experimenting with different energy level combinations can help to create an ideal balance (Jackson & Csikszentmihalyi, 1999). Also, in reflecting on prior experiences an athlete can identify when they felt “in the zone” or, in contrast, “psyched out” to help identify what an optimal performance state feels like (Jackson & Csikszentmihalyi, 1999). Becoming familiar with an ideal performance state is needed for times when pressure is increased during highly stressful competitions especially if the athlete views the event as important, as any distraction can create increased arousal and anxiety that can produce a vulnerable state for the athletes’ performance (Jackson & Csikszentmihalyi, 1999). Life outside of the sporting arena can also create difficulties in staying balanced as with too many demands and not enough time an athlete can easily become frustrated, distracted, and overloaded (Orlick, 2016). As these challenging demands occur in unpredictable waves, the need to listen to what your body is feeling to prepare for stressful situations, have coping skills to effectively handle these stressful situations, and understanding that everyone has individualized optimal performance states will create the opportunity to produce more consistent performances (Orlick, 2016).

Arousal and Anxiety

Arousal is a mix of physical and mental activity that can be viewed favorably or unfavorably while occurring anywhere along a continuum (on one end feeling lethargic and on the other highly energized) (Weinberg & Gould, 2019). Anxiety is an arousal response from the body that tends to be viewed in a negative light as an athlete experiences emotions such as apprehension, worry, or nervousness (Weinberg & Gould, 2019). Cognitive anxiety describes these thoughts of worry or nervousness while somatic anxiety entails the amount of perceived physical activation that occurs based on these perceptions (Weinberg & Gould, 2019). Anxiety can then be broken down into state anxiety where these perceived feelings are constantly changing from moment to moment through cognitive (amount the athlete is worrying) and somatic (perception of physical change) state anxiety (Weinberg & Gould, 2019). An athlete can believe they are capable to meet the challenges that are presented; however, trait anxiety is a behavioral disposition where lacking belief in ability or resources to handle issues creates a response of state anxiety (Weinberg & Gould, 2019). Optimizing emotional levels will aid individual needs as athletes that are low trait anxious tend to be more laid back with the possibility to handle rising arousal and anxiety levels more optimally than an athlete that is highly trait anxious and perceives challenges as threats and responds with state anxiety (Weinberg & Guld, 2019).

Stress

An athlete can experience stress if, for example, there is an imbalance between competition demands (physical and mental) and effective coping strategies to deal with these demands (Weinberg & Gould, 2019). An athlete may view the last game before graduating as important while increasing the demands through becoming distracted by thoughts (“Do not mess

up as this is the last game”) or fatigued by muscular tightness (narrowing focus and trying to control skills) and without proper coping skills (facilitative self-talk, imagery, relaxation breathing) the athlete may experience increased state anxiety and performance decrements. An athlete that also has low self-esteem will present with less confidence and high state anxiety through uncertainty in their abilities to perform well (Weinberg & Gould, 2019). McGrath (1970) created four stages to describe a stress cycle in first recognizing what the demands are, secondly in the perception of stress that is being experienced, thirdly in what type is experienced (stress, somatic state anxiety, cognitive state anxiety, attention-concentration problems), and lastly in what behavior changes happen as a result (Weinberg & Gould, 2019). For example, an athlete that is experiencing pressure to perform well can perceive this pressure as a threat while experiencing cognitive state anxiety through doubting their abilities as displayed by playing tentatively. In playing tentatively the athlete may have a poor performance and this will create a new demand that feeds back into the first step.

Theories

Drive theory states that as arousal or state anxiety increases, performance also increases as a direct and linear relationship (Weinberg & Gould, 2019). The inverted-U hypothesis took one step further and stated that as arousal increased, performance would also increase but up to a certain point where performance would then gradually decrease (Weinberg & Gould, 2019). The individualized zones of optimal functioning (IZOF) hypothesized that an optimal zone may not always occur at the midpoint (as viewed by inverted-U hypothesis), can vary from athlete to athlete, and that both positive and negative emotions can improve performance (Weinberg & Gould, 2019). For example, a IZOF for a gymnast may entail high arousal and anger for vaulting and switch to low arousal and feelings of calmness to optimally perform on balance beam. In

contrast, another athlete can become overly aroused before vault, requiring relaxation breathing and feelings of steadiness to optimally perform. As the IZOF does not factor in somatic and cognitive anxiety, the multidimensional anxiety theory evolved to state that cognitive anxiety will decrease performance and somatic state anxiety can increase performance up to a certain point until additional anxiety added will decrease performance while the perceptions, type, and amount of anxiety are also important factors (Weinberg & Gould, 2019). The catastrophe model then hypothesized that with some cognitive state anxiety (worry) performance can increase through enhancing effort and narrowing attention; however, performance will decline if the worry is combined with high physical arousal (Weinberg & Gould, 2019). The catastrophe is in the drastic drop off in performance (unlike the gradual inverted-U decline) that is difficult to bounce back from and entails full relaxation, elimination of worries, and confidence enhancing strategies to optimize arousal levels once again (Weinberg & Gould, 2019).

Integration

To aid an athlete in optimizing performance states it is important to first identify the optimal combinations of arousal and emotions that are individualized to the athlete through multidimensional self-reports such as the Sport Anxiety Scale-2 and the Competitive State Anxiety Inventory-2 (Weinberg & Gould, 2019). The athlete can also utilize a diary to track any past experiences of optimal performance states by remembering any prior stressful situations (with appraisal and reactions) and using vivid imagery to recreate how they felt when performing well (Weinberg & Gould, 2019). If an athlete habitually perceives situations as threatening, a goal would be in decreasing stress and increasing confidence through preperformance routines that entail relaxation breathing, enhancing confidence, and focusing/refocusing techniques. An athlete that is experiencing high levels of arousal and anxiety can develop coping strategies to

use in a pre-competition routine and include facilitative self-talk, relaxing imagery, concentration exercises, or motivating music. If an athlete is experiencing increased levels of stress, muscular soreness, or fatigue, techniques to reduce somatic anxiety through progressive relaxation before competitions or with rapid relaxation during competitions can be implemented. Increased anxiety can also lead to reduced attentional capacity and concentration exercises and focusing/refocusing techniques can aid the athlete. High arousal will narrow an athlete's attentional field and decrease the ability to shift focus resulting in missed plays or "choking" and by focusing on task relevant cues; increasing awareness to present moment through imagery and mindfulness practice; and relaxation breathing may benefit the athlete (Weinberg & Gould, 2019). Health professionals and coaches also need awareness to identify signs of arousal and anxiety in athletes (increased muscular tension, negative self-talk, clammy hands) and communicate to ask athletes what they are feeling in the moment (Weinberg & Gould, 2019). Individualized arousal and anxiety levels can then be optimized through either reducing, maintaining, or enhancing levels to meet the needs of the athlete (Weinberg & Gould, 2019).

Performance States Worksheet

Reflect to a competition or practice where you were performing optimally (bonus points if the image is vivid). Try to remember what you were thinking and feeling, also how did you feel physically? Write down a list of emotions, thoughts, and physical signs. Keep in mind that “negative” emotions can be performance enhancing.

List 1:

Now switch gears and think to a competition or practice when you had a suboptimal performance. What were you thinking and feeling, also how did you feel physically? Write down a list of emotions, thoughts, and physical signs. Keep in mind that “positive” emotions can decrease performance.

List 2:

Revisit List 1: Think of strategies that will lead toward these optimal thoughts, feelings, and physical states. For example, to facilitate feeling calm use relaxation breathing to control a high arousal response and/or performance routines. Reflect in a journal on the techniques that worked and for modifications/new techniques to try.

Revisit List 2: Think of strategies that will lead away from a suboptimal performance state and toward optimal thoughts, feelings, and physical states. For example, to increase focus during competitions due to becoming distracted, create a distraction control plan. Reflect in a journal on the techniques that worked and for modifications/new techniques to try.

Chapter 9: Handling Performance Setbacks and Errors

Having awareness of what is happening in the present moment is a key first step when an athlete experiences a setback or error during a performance. When performing, an athlete will essentially be involved in a “choose your own adventure” story where the athlete can either identify what has gone wrong and have the tools in place to adapt beyond a mistake, or seemingly get “stuck” in the error that results in further setbacks to performance. There are many factors at play that can nudge an athlete down a particular path; however, an athlete that is prepared and presently aware can ignore feedback that would lead, step-by-step, towards the wrong destination. In looking down two different paths an athlete can take, the first path would include an athlete that has no preparation plans or routines; has an ego-orientation in only focusing on winning; has a fixed-mindset in using a threat appraisal for all challenges; views failures as stable and likely to occur in the future (negative explanatory style); has poor emotion, stress, and arousal control; becomes internally (rumination of dysfunctional self-talk) and externally (crowd booing) distracted; and displays high trait anxiety and low-confidence, a path that would lead towards dark and scary woods from a Tim Burton movie. In contrast, the second path is walked by an athlete that has a sleep hygiene and pre/post/during competition routine; an achievement orientation in also focusing on process and performance goals; a growth-mindset in viewing challenges as learning opportunities; perceives mistakes as temporary and only related to the specific situation (positive explanatory style); has coping skills in place for emotional, stress, and arousal control; a distraction control plan in place for internal or external distractions; and displays low trait anxiety and high levels of self-confidence, a path that is vividly painted in present awareness while being in control. What path would you choose?

Brain Plasticity

The promising news from research for athletes on the first path is in the ability to rewire the neural pathways that want to take us to these scary places and occurs through the plasticity of our brains (Tabibnia & Radecki, 2018). Our brains regulate emotions and stress levels and through adopting behavioral and cognitive strategies, an athlete can develop sustained change that leads away from perceiving difficult situations or setbacks as threats (Tabibnia & Radecki, 2018). Viewing situations as threats can be harmful to long-term performance by the continuous triggering of the automatic fight-or-flight response that produces physiological responses (increased heart rate) and ultimately directs resources towards dealing with this threat (Tabibnia & Radecki, 2018) and away from performance. The act of simply thinking about past or future mistakes can activate this automatic response system which disrupts on our brain and produces anxiety which leads to difficulty in learning and using memory effectively (Tabibnia & Radecki, 2018). For example, when an athlete thinks about an upcoming competition if a high perception of demand is coupled with uncertainty, the athlete will find it difficult to challenge these appraisals and instead focus on the threats by headlining the negatives (Burton & Raedeke, 2008). This sequence of events can produce a fear of failure while coupled with ineffective coping strategies, a high level of stress can be created even before entering the competition (Burton & Raedeke, 2008).

Coping Strategies

Coping is an ever-changing process that requires a variety of techniques that are implemented dependent on the situation and origin of the stress an athlete is experiencing (Weinberg & Gould, 2019). Two different strategies that can be used are in either problem-focused or emotion-focused coping. Problem-focused coping is used to change or regulate stressors through information gathering, pre/during/post competition plans, goal setting, problem

solving skills, increasing efforts, facilitative self-talk, or injury rehabilitation plans (Weinberg & Gould, 2019). Problem-focused coping is used when situations are responsive to change and, in contrast, emotion-focused coping is used to change the meaning of the situation and not necessarily the situation itself (Weinberg & Gould, 2019). Emotion-focused coping entails techniques to regulate the athlete's emotional responses to issues that are the source of stress through using meditation, relaxation, and reappraisal of situations (Weinberg & Gould, 2019).

Resiliency

The path towards coping with adversity is an uncomfortable one as dealing with mixed emotions such as confusion, anger, or frustrations can be difficult to deal with (Weinberg & Gould, 2019). Resiliency is one way to gain new perspectives surrounding adversity by recovering quickly from negative events (Weinberg & Gould, 2019). As resiliency is a set of skills that can be trained and learned, implementing techniques such as thought control; facilitative self-talk; task and positive focus; social support; pre/during/post competitive plans; arousal and anxiety management; practicing under simulated pressure situations; mindfulness techniques; and overall preparation for the event can help an athlete thrive through adverse situations (Weinberg & Gould, 2019). As it is important to find the skill that is appropriate for the circumstance, adopting variety of skills will help an athlete be prepared for the known and unknown through finding successful coping skills to use across various situations by understanding the impact of self-awareness, being receptive to feedback, engaging with fears, and having confidence to apply strategies warranted for the situation (Tabibnia & Radecki, 2018). In practicing resiliency skills, an athlete can also strengthen the neural pathway for future use of appropriate coping skills by building up immunity against potential adversity that may occur down the road (Tabibnia & Radecki, 2018). An athlete can also adopt mental toughness

through having various personal resources to call upon in times of adversity through such means as high optimism, persistence, determination, and commitment (Weinberg & Gould, 2019).

Another benefit would be in the increased likelihood to experience a flow state as the athlete would have ideal arousal (level and perception), be focused on positive stimuli, and be in the present moment (Weinberg & Gould, 2019).

Error and Setback Response Plan

Develop an error and setback response plan to be prepared when experiencing mistakes during a performance. Practice this plan first during training and while using imagery to recreate these situations. Then, use this plan during competitions or real-life stressful situations. Remember to reflect in a journal after practicing and competitions for positives and for areas that need modifications.

Mistake/Error	Setback	Response Technique	Response Reminder
Missed critical play in high stakes game	Ruminated about the mistake for the rest of the game, dysfunctional self-talk, loss of concentration	Mindfulness: become aware of the thoughts and accept that they are occurring Thought stoppage: clap hands once as a signal to refocus	Positive cue to self: "You got this"

Chapter 10: Technology

Technology has advanced beyond simply monitoring an athlete's heart rate to wearable technology with RFID chips embedded in uniforms and GPS trackers to collect outdoor metrics. Pressure sensors can, for example, be placed in an athlete's shoe to measure the accuracy of foot striking, or to assess sport skills for optimizing performance. Sensors in football helmets can monitor concussions or sensors can also give measurable information regarding movements that place an athlete at a higher risk for injuries such as repetitive overhead motions (Adesida et al., 2019). Motion sensors can also be inserted into a gymnast's leotard to record skills with comprehensive data given through a kinematic model in three-dimensional space (Kos et al., 2018). Smart sport equipment can provide augmented feedback that is beneficial for learning skills by either providing the information to the athlete directly or to coaches for further assessment (Kos et al., 2018). Biomechanics can also be measured through inertial sensors, accelerometers, and gyroscopes for details regarding acceleration, rotation, or body positions. There are also applications and wearables that can track sleep patterns to gain data on quality and quantity of recovery. The same wearables that solely measured heart rate data have now evolved to record VO₂ max, skin temperature, and blood oxygen levels.

Virtual Reality

The capability for an athlete to quickly perceive, react, and process complex moving patterns during sport while designating attentional resources is an essential skill for optimal performance (Faubert & Sidebottom, 2012). These skills can be trained due to the plasticity of our brains and through the reorganization of neural tissue for optimal learning that is needed in high level sport (Faubert & Sidebottom, 2012). Virtual Reality (VR) is one way to replicate sporting environments through simulating the presence of the athlete as they react to the

environment through sensory experiences (smell, touch, sight, hearing) (Baqai et al., 2019). VR can also show any areas of weakness in the body through testing degrees of movement to inspect for improvements or deteriorations in sport skills or to promote motor movements after an injury (Baqai et al., 2019). New technology such as the REACT Neuro uses advanced eye tracking to provide brain health analytics through cognitive training and through providing real world data from measurements such as pupil diameter and frequency of the user's voice through an Interactive Computer-Generated Imagery.

Researchers Köyağasıoğlu & Özgürbüz, (2022) conducted a study of fifty-seven participants looking at the impacts of mental training, mental training with VR, and a control group to assess if motor skills would improve and transfer after the study. Coordination skills were tested after training with either a VR head-mounted display or nonimmersive computer using motor imagery practice and motor skills such as changing directions, turning, or using repeated hand and arm movement tasks. The results showed that test time and number of errors decreased in the VR mental training and conventional mental training group; however, the control group did not show improvements. This study showed that although the VR mental training group was favored over the mental training group, both groups showed improvements in coordination and skill transfer.

Ethical Considerations

As technology advances, discussions are needed to clarify what justifies an unfair means to gain performance advantages as some of the benefits of technology (modulation of brain activity, termed “neurodoping”) can be viewed as equal to using drugs (Finkenzeller et al., 2018). Guidelines need to keep up with the quickly evolving technology to determine the extent that neurodoping would be considered cheating and for ethical standards as every athlete should

have the access to the privileges of neuroenhancement (Finkenzeller et al., 2018). Other ethical considerations entail confidentiality of the athlete's information provided through the various apps, clothing sensors, and smart sports equipment, while also upholding the athlete's autonomy to participate. Another consideration is within the evidenced-based effectiveness of technology as researchers Köyağasıoğlu & Özgürbüz, (2022) identified similar results from utilizing both mental training skills and VR technology. Practitioners should consider the benefits of the technology before implementing with athletes while being mindful that the technology can be cost prohibited.

Additional Resources

Assessment/Questionnaire	Technology Assist	Applications “Apps”
Athletic Identity Addiction Scale	Oura ring: wearable for sleep tracking	Sleep Cycle
Athletic Identity Measurement Scale	REACT Neuro: Virtual Reality headset	The Silent Power of Self-Talk
Profile of Mood States	Concentration Grid	Goalscape
Achievement Goals Questionnaire for Sport	Biofeedback (biological markers: heart rate, HRV, skin conductance, peripheral temperature)	Headspace
Sport Orientation Questionnaire	Wearable technology: GPS trackers, RFID chips, pressure sensors	Calm
Athlete Coping Skills Inventory	Apple watch, FitBit, Garmin, WHOOP	MentalApp
Test of Attentional and Interpersonal Style	Smart Sport Equipment	SwitchedOn
Athlete Burnout Questionnaire	Neurotracker	
Sport Imagery Questionnaire	Eye Matrix	
Sport Anxiety Scale-2	Rotational Wheel	
Competitive State Anxiety Inventory-2		
Sport Confidence Inventory		

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