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Creation and Instruction of a Coach-Implemented Mental Periodization Plan

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Abstract

Periodization is defined as “the division of the annual plan to ensure an optimal performance for the main competition” (Bompa, 1999, p. 194). Periodization is an effective framework for physical training and often results in better performance outcomes (Gamble, 2006; Stone et al., 2000). Many researchers have proposed that extending the concept of periodization to mental skills training may be beneficial and has been shown in one study to help athletes improve their sport confidence and lower their sport trait anxiety (Guenthner et al., 2010). Sport psychology consultants can help coaches learn how to construct a mental periodization program, help coaches foster the sense of “flow” in their athletes, increasing their potential for peak performance. In an effort to more fully understand the framework needed to teach coaches how to design and implement a mental periodization plan, this paper will propose a specific example in which a high school softball coach designs and implements a mental periodization plan with his pitchers.

Key Words: Athlete performance, self-confidence, purposeful focus

Coaches and athletes often refer to the phenomenon of effortless performing at a peak level as "being in the zone." Sport psychology consultants refer to this optimal mindset as a flow state. It is the ultimate goal for any athlete in any type of sport competition. Often times, an athlete's desire to reach this state of mind may cause the athlete to focus their thoughts on achieving flow, causing distractibility which actually may prevent achieving flow (Judge et al, 2010). Therefore, it is believed that daily implementation of consistent processes, in both practice and competition, may increase the likelihood that an athlete reaches optimal focus resulting in a state of flow (Holliday, Burton, Sun, Hammermeister, Naylor, & Freigang, 2008; Judge et al., 2010; Reardon, 1992).

This paper provides a description of periodization and the benefits for its use in developing a sport psychology program. The concepts are applied to an example of a group of high school softball pitchers in order to demonstrate how readers may take these concepts and apply them to their practice. The example located at the end of the paper will offer a hypothetical example of how to extend these concepts into practice.

Periodization

Periodization is defined by Bompa (1999) as "the division of the annual plan to ensure an optimal performance for the main competition" (pg. 194). Periodization plans are typically designed to include long-, moderate-, and short-term training cycles; macrocycles, mesocycles, and microcycles respectively, with the primary outcome goal to maximize training effects over time and to peak at the desired times (Kraemer & Bush, 1998). Long-term training cycles (*macrocycles*) may vary in length from a few months (e.g., a college football season) to several years (e.g., an Olympic quadrennium). These long-term cycles are typically further divided into two or more moderate length training phases (*mesocycles*) that can range in length from a number of weeks to a year with the goal to reach peak performance at a specifically determined competition (e.g. World Championships, conference tournament). Finally, each mesocycle is usually comprised of four individual short-term cycles or phases (*microcycles*) that range from a couple weeks to a month long. A standard periodized training mesocycle consists of a sequence of four microcycles, *preparatory*, *competitive*, *peaking*, and *recovery*, with the length of each phase dictated by training objectives, athletes' needs, and the amount of time available between peaking for events (Holliday et al, 2008).

The central theme of individualized cycle development is critical to the success of periodization, both physically and mentally, because each athlete possess various strengths, weaknesses, goals, and schedules (Kraemer & Bush, 1998). For example, a wrestler who is lacking aerobic stamina and consistent skill execution may decide to lengthen his preparatory phase to acquire the necessary skills and stamina prior to entering into his competitive phase. On the other hand, a collegiate distance runner struggling with shin splints may choose to modify his periodization plan through increasing the frequency and length of the recovery phases (Holliday et al, 2008). Cycles

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of a periodization program must also accommodate the requirements and structure of the athlete's sport. Holliday et al. (2008) stated that

an Olympic thrower might develop a four-year macrocycle, with mesocycles geared toward peaking each year for the NCAA and World Championships, whereas a professional tennis player would use a year-long macrocycle divided into four mesocycles, each leading up to one of the Grand Slam events. (p. 203).

Ultimately, periodization planning is best utilized when it is designed to consider individual needs, maximize individual development and the timing needed to reach peak performance for major competitions (Holliday et al., 2008).

There are many studies that conclude the beneficial effects of periodization on differential training outcomes (e.g., Gamble, 2006; Stone et al., 2000). In a group of college-aged men, those who participated in a periodization based training program experienced higher gains on a 1RM Squat test than those who were not. Further, in a critical review, Fleck (1999) concluded that using a periodized framework is a superior strategy to train for peak performance. Turner (2011) agreed in a more recent review stating, “periodization represents an optimal strategy for organizing [strength and conditioning] programs” (pp. 44). Therefore it is recommended by many researchers that coaches use a periodized framework for physical training.

Mental Periodization

Recently, the idea that formatting skills training programs as periodized has been proposed (e.g., Balague, 2000; Blumenstein, Lidor, & Tenenbaum, 2005;) Although the majority of these papers are conceptual in nature, one case study indicated that a periodized mental skills training program may be effective (Guenthner, Hammermeister, Burton, & Keller, 2010). The authors reported that the athletes involved in this program learned the mental skills, felt more confident, and felt less anxious in general after the mental skills training program.

Holliday et al. (2008) discussed the numerous problems that are often associated with attempting to implement a mental skills training program. One of the barriers may be connected with the abstract skill set that is required when teaching and learning through a mental skills training program. The notion of teaching mental skills is often met with reluctance from the athletes, as it is a skill set that is much more abstract than the physical training to which they are accustomed. Another barrier may be connected to frequency and duration of time spent with the athlete. Sport psychology consultants may have limited and inconsistent access to the athlete which may reduce the impact of mental skills training. This limited exposure and contact with the athlete may create a barrier due to reduced opportunity for the consultant to earn the athletes' trust, which may also affect the athletes' level of devotion to practice newly learned mental training skills (Holliday et al, 2008).

In addition to the recognized barriers to implementation of a mental skills program, doubts have also risen regarding the effectiveness of such programs. The

effectiveness of the program's ability to promote consistent skills transfer to a competitive situation, minimize performance slumps, prevent boredom, avoid burnout, and contribute to an athlete's long-term development have all been called into question (Holliday et al, 2008).

However, the implementation method of periodization seeks to address these issues by creatively and systemically cycling the structure and delivery of mental skills training. Historically, the training of physical and mental skills has been provided separately when working with teams and individual athletes alike. Periodization has been used for decades to train athletes physically and technically and has been utilized predominately in the individual sport arena. Mental skills training, on the other hand, is typically considered only after the physical and technical training has been established. Because of this, seeking the support from sport psychology consultants is generally initiated only after an issue develops with an athlete.

Training the Coach

Training coaches to use a periodized mental training program may be an effective way to impart psychological skills training to their athletes. As mentioned previously, sport and exercise psychology consultants may experience barriers, such as an inability to gain the athletes' trust, which make it difficult to train their minds (Holliday et al., 2008). Additionally, training coaches to implement a periodized mental training program may help bring the need for sport psychology to the forefront of their minds. That way, the athletes can have all the physical and mental tools at their disposal that they need to reach the "flow" state. Lastly, training coaches in this matter may help foster a consistency with mental training that seems to be a factor in helping athletes achieve "flow."

Coaches are proficient in training the necessary sport skills and physiological systems along with the tactics associated with their sport. However, many coaches lack the knowledge or a proper framework for addressing the psychological components that are also necessary for success in sport (Judge et al., 2010). Coaches seeking success cannot limit their knowledge base to the physical side of training. Sport psychology has emerged in recent years as the latest tool for helping coaches prepare athletes to perform at the highest level; however, few coaches take full advantage of psychological skills preparation (Judge et al., 2010). The issue though is that high school athletic programs rarely have the funds and resources to hire an AASP-certified consultant in sport psychology to work long-term with their athletes. Therefore, the implementation of a psychological skills training (PST) program often falls to the head coach and staff who have little experience or knowledge of PST. It is for this reason that purposeful training specifically with the coach regarding how to design, as well as implement, their own PST program is the next logical step in sport psychology consulting. Through helping the coach learn how to construct a mental periodization program and how to teach the necessary PST skills to their athletes, a sport psychology consultant can pass on their knowledge to the coach. Teaching the coach may be the most efficient pathway to reach

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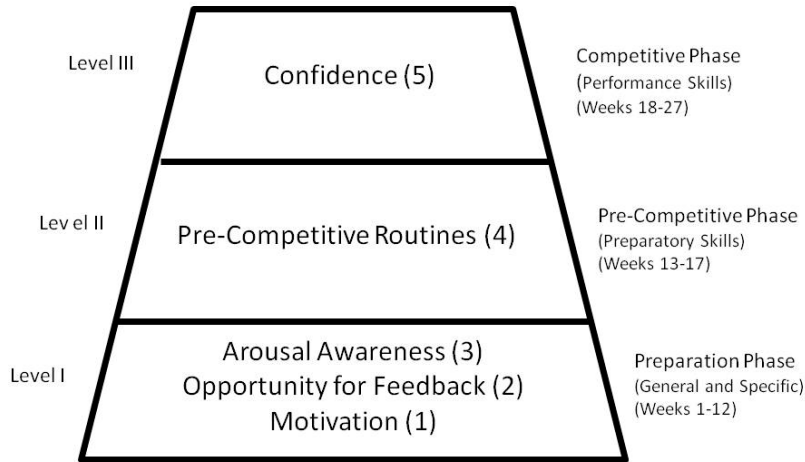
the athletes because the coach already has solid rapport and trust with the athletes, greater awareness of athlete's needs, and a deeper understanding of their specific sport and the associated pressures. In an effort to more fully understand the framework needed to teach coaches how to design and implement a mental periodization plan, this paper will investigate a specific case in which a high school softball coach works with the first author, a graduate student in sport psychology, to design and implement a mental periodization plan with his pitchers.

Designed Mental Periodization Plan for Softball Pitchers

It has been proposed that progress of periodized mental training cycles begins with education and acquisition of mental training skills and extends to practice, automation, implementation, and performance (Judge et al., 2010). Within each intermediate mesocycle, mental training skills and plans are first taught to the athletes during their recovery and preparatory phases. The skills are then practiced until they become automated during both the preparatory and competitive phases. Finally, the PST skills are integrated into the athletes' game and consistently performed during the competitive phase in an effort to achieve optimal performance during the specific peaking events (Judge et al., 2010).

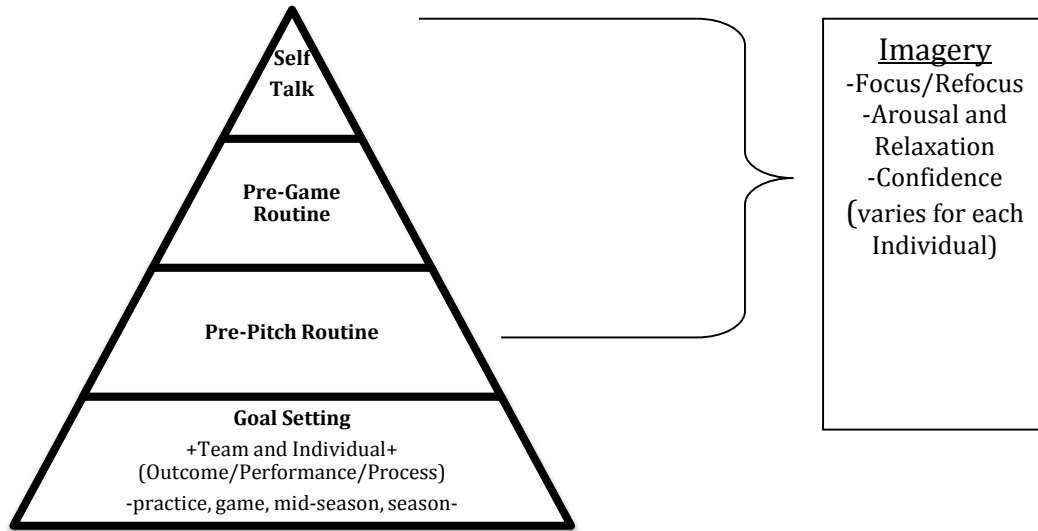
Furthermore, mental training programs need to be designed based on the athletes' needs, while allowing more time for athletes that may be struggling to grasp the new mental training skill set. For example, effective imagery requires that the performer first master the essential skills vividness and controllability before imagery can be used to enhance sport performance. For example, a softball pitcher with poor imagery control may attempt to imagine the throwing of consistent strikes to the lower outside zone, but due to poor imaging control, the pitcher occasionally imagines throwing balls or giving up hits. In this case, the pitcher should limit the imagery practice to simple non-sport exercises until developing better imagery control. Basic PST skill acquisition and plan development must be the first priority when designing a periodized training program. The long-term development of an athlete through periodization is best understood as a dynamic and flexible process that must allow for adjustment based upon the individual athlete's differences in skill development (Judge et al., 2010). The data collected for this paper was obtained through the author's development of a plan which follows the model (see Table 1) set down by Judge and Gilreath (2011). The plan was implemented through a softball coach and was utilized with the team's pitchers.

Table 1. Mental Periodization Model (Judge & Gilreath, 2011).



However, due to limitations related to the coach's prior knowledge, the age of the athletes, and the nature of performance for softball pitchers, the author constructed a simplified model that would address the athletes' most prominent needs while reducing the level of complexity for implementation (see Table 2). The author decided to focus on the skills of goal setting, pre-pitch routines, pre-game routines, and self-talk. The final three steps in the pyramid also included imagery. This allows individual athletes to incorporate imagery and self-talk into their routines through strategies that best met their individual needs. Each component will be discussed from this point forward.

Table 2. Simplified Softball-Specific Model.



Goal Setting

Goal setting is one skill that is utilized by athletes and coaches across all sports and skill levels. However, the goals that are established are often times outcome-oriented, and achieving those lofty goals are not entirely under the control of the athletes. Examples of outcome-based goals include beating a specific opponent, having a certain win-loss record, or winning the big tournament. However, outcome goals can often cause anxiety for performers due to the high challenge and relatively uncontrollable nature of competition (Judge et al., 2010). However, there are other types of goals that can be implemented to help the athletes reach the outcome goal. Performance and process goals, the two types of "sub-goals", are more effective because they are based on components of which the athletes have a great sense of control. Process goals require athletes to establish small step challenges that build the athletic skill set to improve performance (e.g. I want 50 percent of my pitches in practice to be strikes) which may further the achievement of performance goals (e.g. I want to average 6 strikeouts a game). Both of these types of goals, in conjunction, can help the athlete work toward the outcome goal, while still having something concrete and achievable to build confidence (Judge et al., 2010).

An issue arises, however, when the nature of a process or performance goal are either too difficult or too easy, which can lead to anxiety or boredom (Judge & Gilreath, 2011). Consistent feedback, tracking, and revision of an athlete's individual goal as well as team's goals must be provided. Czisenthimhayi (1990) stated that feedback of execution must be present in order for flow to occur. This holds true for goal setting and tracking which allows the athletes to experience and see the progress toward their goals.

Visualizing success and growth provides a basis for confidence to grow and gives the best opportunity for successful skill execution and optimal functioning (Judge et al., 2010).

Pre-Pitch and Pre-Game Routines

The creation, establishment, and maintenance of a pre-competitive routine are paramount for flow to occur. Research has shown that the establishment of a routine is effective for performance and the most effective means for athletes to focus on the task at hand and control arousal levels (Judge and Gilreath, 2011). For the plan being developed for the softball pitchers, a pre-pitch routine that focused on physical movements and imagery to refocus, visualize, and gain confidence as well as a pre-performance routine that centered on music selection and warm-up preparation were included.

Self-Talk

Cognitive psychology theory explained by Beck and Emery (1985) points out the powerful relationship between our thoughts, feelings, and behavior. Negative self-talk can pollute an athlete's confidence, making a situation even more difficult than it might otherwise appear (Judge & Gilreath, 2011). Self-talk modification is one very effective way to correct thinking errors that hinder performance of an activity. However, it is notoriously difficult to teach athletes strategies which result in productive and engaging self-talk (Judge et al., 2010).

According to Reardon (1992), positive self-talk includes a focus on process variables, technical aspects of training and competing, rather than product or outcome, winning or losing. A focus on the present moment time dimension (what can I do, what am I doing now to enhance performance) rather than being distracted by future worrying (will I get a personal best, what if, etc.) or past failures (I should have, If only I had, etc.) is the goal for any athlete working to improve self-talk (Judge & Gilreath, 2011). The methods of addressing self-talk with the softball coach were picked because of their simplicity and ease of implementation. A self-talk journal, reframing education, and self-confidence statements with the other pitchers were picked as the techniques on which to focus.

Imagery

The final mental skill to be implemented with the softball pitchers was imagery. Imagery was chosen because it can be incorporated along with a variety of other mental skills and can be used to address several possible issues that an athlete may be facing (Holliday et al., 2008). The plan created for the softball pitchers included a specific use of imagery in the pre-pitch routines, the pre-game routines, and the self-talk skills in an effort to address issues surrounding focus, arousal control, and confidence. In imagining, athletes can draw on all senses: sound, sight, touch, taste, smell, and kinesthetic with an external focus (watching themselves from the audience) or internal focus (imagining as if

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they are actually performing) (Judge & Gilreath, 2011). A study conducted by Smith, Wright, Allsopp, and Westhead (2007) looked at the effectiveness of the most prominent imagery model for replicating functional equivalence. To maximize this type of similarity, the PETTLEP model was developed. This model incorporates "Physical, Environment, Task, Timing, Learning, Emotion, and Perspective components" (Smith, Wright, Allsopp, & Westhead, 2007, p. 80). Each of these aspects focuses on certain areas of the imaged scenario or the location and manner in which the image session is conducted. The effect of mental rehearsal appears to be that it provides a form of neuromuscular programming so that the performer is more likely to automatically behave in the preferred way during the actual performance (Judge & Gilreath, 2011).

After the athlete has become proficient with the basic imagery skills, the coach can then implement a series of "what if" scenarios: unplanned competition situations that may include unforeseen obstacles like bad conditions, tough opponents, and minor mishaps during the pre-competitive phase so they are prepared for the "uncontrollables" that always accompany sport. This preparation works to help athletes respond appropriately during a competition when such situations arise (Judge et al., 2010).

Training Cycles for Team Sports

Up to this point, mental and physical periodization has been used most commonly with individual sports that allow athletes to peak for one or a few selected competitions each season. However, softball is a team sport with an extend season and several competitions within the season. The challenge is to adapt periodization when a consistently high level of performance is desired for an extended number of competitions that is standard with team sports (Holliday et al., 2008). To address this, the competitive and peaking phases are combined. Rather than working to improve performance systematically with peaks at desired times, team sport periodization seeks to build a stable performance plateau where team performance is consistently held at a moderately high level (Holliday et al., 2008).

In an example given by Holliday et al. (2008), the authors stated that when implementing a self-talk training program with high school cross-country runners, self-talk theory, benefits and limitations, and specific self-talk strategies should be introduced to the runners during the recovery phase. As the runners improve and progress through the preparatory phase (preseason), the self-talk skills are practiced, refined, and worked into competitive performance plans. By the time the runners begin their peaking phase (season), the essential self-talk skills such as "developing self-talk scripts, thought-stopping, reframing self-defeating beliefs, and using race-specific self-talk cues have been highly automated, ensuring that such skills can be quickly and easily accessed when needed during the state championship meet" (Holliday et al., 2008, p. 206).

Softball Pitcher-Specific Plan

The development of the softball pitcher-specific mental periodization plan began with the acquisition of the coach's year-long schedule, detailing when the pitchers worked directly with the coach, start date of school, other fall-sport engagements, and the official start of the preseason and regular season. Meetings with the coach were conducted to determine when specific skills would be introduced and maintenance of these skills would be evaluated. The following plan was developed based on the model by Judge & Gilreath (2011). It was determined that goal-setting with the individual pitchers would take place at the start of the summer (off-season performance and process goals) and at the start of the preseason (pre-season performance and process goals/season outcome, performance, and process goals) with weekly meetings with the pitchers to track goal progress and make necessary revisions. The introduction of pre-pitch routines would be introduced in the summer with constant maintenance throughout the entire year. Pre-game routine would not be implemented until the start of spring practice. Finally, self-talk skills and imagery skills would also be introduced and taught in the summer and fall with another second introduction in the start of the pre-season. This second introductory refresher would be followed by imaging of "what-if" exercises led by the coach to help in the building of mental toughness prior to and throughout the entirety of the regular season. All skills would be maintained and polished throughout the competitive phase of the regular season. See Table 3 for the mental skill periodization plan.

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Instruction of the coach by the sport psychology consultant would be completed with in-person instructional conversations, hard-copy documents, and presentation tools that the coach can also provide to his athletes. The coach this hypothetical plan is designed for would have previous but limited experience with sport psychology, having taken masters-level coaching courses which included mental skills training. The authors hold high hopes for potential success with the developed mental periodization program due to its basis in literature that indicates the effectiveness of periodization. Anticipated success is expected through the delivery of a wide-array of options and presentation material resources, keeping open the lines of communication between coach and consultant, and keeping the content for the athletes as streamlined and concrete as possible.

Conclusion

Athletes experience extremely high levels of stress, expectations, and physical challenges. Coaches often employ training programs that focus too heavily on physical training. Poor mental preparation can easily overcome and undermine a well-designed physical/technical preparation. All sports can benefit from development of a psychological training plan that is sequenced and unfolds harmoniously with the physical training plan. That gap between the science used to develop the training program and the art of execution (maximizing the performance on the playing and practice field) separates good coaches from great coaches. All coaches attempt to have their athletes perform in an uninhibited, relaxed, skillful manner. Introducing a periodized plan to develop the psychological skills along with the physical abilities during the year will take the conjecture out helping athletes perform at their best when it counts the most.

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