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DEDICATION

This essay is dedicated to all of the coaches who have played an instrumental role in my development as a person, athlete, and, ultimately, as a coach. Without their longstanding and continual guidance I would never have been in a position to explore the present undertaking. It is with much thanks and undying gratitude that this paper is dedicated to the legacy of those who have, through their individual efforts, led a collective charge to positively affect my life. I find myself, because of their work, on the way towards becoming one of them and, hopefully, attempting to mirror their impact. Thank you.

Analyzing Coaching Science Research and Literature Toward a More Efficient, Comprehensive, Useful, and Learner-Centered Coaching Model

By

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A Treatise

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TABLE OF CONTENTS

ABSTRACT

The purpose of this essay is to examine coaching science and extrapolate the salient aspects of a coach's persona and coaching practice. The reader will then hopefully be able to make use of these salient aspects; whether in a competitive sports-based environment, in the classroom, or in whatever educational environment they practice their trade. The work of this paper allowed the author to discover a way in which to organize broad categories in the field of coaching science. In addition, it led to the creation of the beginnings of what is hopefully an effectively applicable coaching model. The conclusions reached in this paper will hopefully provide the spark for others to continue on. Ultimately, the reader has a resource that represents a broad-based yet clearly biased background in the field of coaching science. Whether it inspires those interested in coaching science toward a more well-rounded approach to future examinations, remains to be seen. However, insights into the nature of the coach and coaching, and towards the positive growth of athletes, will undoubtedly be gleaned by the careful observer leading towards new insights that can hopefully improve the field.

CHAPTER 1

The Role of Physical Activity in the Human Experience

Athletics and sports have become an integral aspect of 21st century society. Beginning in pre-civilization times, humans have always engaged in types of informal and formal physical activities. Ziegler (1988) states, "People ran and jumped and played games before the city-states existed. As man sat in caves and crude shelters at night around warm fires, his mind was set to invention, and games such as knucklebones and simple board games inevitably developed" (p. 3). While physical activity has ranged from that which is necessary to survival, "they hunted and fished, though basically for economic reasons" to that which brings pleasure while training one to aptly participate in the responsibilities of society, it is clear that humans have always not only had the need, but have shown the desire to be physically active (Ziegler, 1988, p. 3).

Progressing from these early beginnings, the late 1900s and the new millennium have seen athletics and sports become fundamental to daily life, although, in opposition to pre-civilization times, definitely optional. The development, evolution, and current prevalence of sports and athletics in modern American society is primary to an understanding of coaching, the topic of interest for this current paper. A short exploration of the history of American athletics and sports and its eventual marriage with

the American educational system will help to display the concurrent developments that have taken place in the coaching of athletics and sports leading to current understandings of what it is to be a coach and practice coaching.

The Evolution of Athletics and Sport in U.S. Society

To be human is to be active, and this has proven no different in the specific setting of America. As Welch (1996) feels, "Physical activity as characterized in games, sports, and dance has been an integral part of American culture since its beginnings. The nation's exercise heritage has assumed diverse forms with origins from Native Americans and immigrants" (p.1). Welch shows that the salad bowl tradition of American development has also been evident in the sports arena. Just as the racial, ethnic and cultural traditions of "the many" have been tossed together on the American continent, so to have the sporting and athletics traditions from different origins come together in this country. Eitzen and Sage (1993) feel that the physical nature of early American settlers' life on the frontier was fundamentally similar to the early humans referenced earlier: based on mere survival. Additionally, the intense religiosity of colonial life placed many restrictions on any "free" time settlers may have had to pursue such leisurely activities as athletics and sports (28). In whatever limited capacity, while athletics and sports on the continent have always existed, their explosion in society did not begin until the early decades of the Republic leading into the Civil War.

As society began to change with the sudden urbanization of the United States and the continued settling of the vast unconquered stretches of the West, the early citizens of the United States, along with those in other Anglo-Saxon countries experiencing rapid industrialization saw athletics and sport become increasingly woven into the fabric of

their lives. "Urbanization created a need for new forms of recreational activities, and industrialization gradually supplied the standard of living and the leisure time necessary to support broad-based forms of recreation and organized sport" (Eitzen and Sage, 1993, p. 29). Early Americans could now regularly, and in an increasingly organized and structured manner, participate in forms of physical activity other than work.

A host of formal sporting events began to capture American attention as the 1800s progressed. The three major sports that dominated this early American scene were horseracing, boxing, and the earliest baseball competitions (Welch, 1996). Americans began to take such an interest in these competitions that intense sports gambling began to develop within a "highly structured" infrastructure (p. 4). The explosion of interest in sports witnessed by the proliferation of betting, signifying sports' connection with common people, brought about the need for structural improvements within the world of athletics and sport. Oftentimes these adjustments developed out of changes occurring across the Atlantic in Great Britain, where many of the traditions of athletics and sports originated and were continually being improved. An example of the prevalence towards trans-Atlantic migration of concepts in the world of athletics and sport is shown through the improvements in rugby and soccer that would later have a direct effect on the development of American football. Dunning (1999) shows in his sociological examination focusing on the study of sport in Britain, the formalization of sport often led to its propagation and this formalization usually centered around agreeing on the "rules of play and conduct" (p. 62). Rules were necessary for all of the developing sports and allowed them to expand and for individuals to begin to form teams and clubs that could compete against others from across the country.

After the Civil War, sports began to transform from, in the example of baseball, "genteel amateur recreational pursuits", to activities intertwined with highly developed organizations that stressed successful results during competition (Eitzen and Sage, 1993). The concept of the "all-out quest for victory" that Eitzen and Sage mention is now one that continues to become inseparable from participating in athletics and sport (1993, p. 31). This proved to increase the value placed on those who not only had an expert understanding of the rules of play and the organization of the game but who were also on the forefront of the development of athletes as well as the strategies and techniques of the specific sports. By the end of the 19th century, formal and for profit institutions of athletics and sports existed throughout the United States and participating in these types of athletic activities ceased to be about maintaining physical activity. Team sport not only dominated the American sport scene; the for-profit nature of these endeavors necessitated those who were capable of leading groups who were competing with something at stake. Those who did lead were called coaches. The beginning of the early part of the 20th century in American sport saw the intensity of competition between teams reach incredible levels with the importance of strong leaders beginning to become paramount.

The Connection of Sports with Education

The growth in sports and athletics was accompanied by their incorporation into the educational system that we now find inseparable. The growth in the American economy accompanied by the expansion of institutions of higher education, in conjunction with the increasing desire for entertainment by late nineteenth century Americans, brought the rapid expansion of athletics and sport at the university and

college level. "College sport rose from obscure and infrequent regatta gatherings and baseball contests to entrenched fixtures of athletic participation and observation" (Ziegler, 1988, p.189-90). The increases in sports off-campus described earlier, at both the amateur and professional level, were clearly mirrored by the important developments in educational athletics and sports. "Informal competitions began before the Civil War, but the real organization of athletics came in the 1870s when students at many colleges started teams and set rules" (Horowitz, 1987, p. 39). Since their humble beginnings at the intercollegiate level in the late 19th century, athletics have grown in the United States, to the point where they have become an inherent part of the educational system. According to a study of high school athletics by the National Federation of State High School Associations (2001), by the 2000-2001 academic school year, there were approximately 6.5 million American high school students participating in school-associated athletic programs. As the organization of school-associated sport began informally and has grown to be heavily structured, so to, has the coaching that is necessary for its implementation.

The Elevated Importance of the Coach

The relative importance placed upon athletics and sports has grown within educational systems to a point where selecting the right coach has become tantamount to success. This importance is reflected most strongly at the collegiate level where coaching is now the sole vocation for tens of thousands of individuals in multiple sports. A prime example of this emphasis is in intercollegiate football. According to The American Football Coaches Association (2005), the AFCA is now the primary association to which college football coaching professionals belong, with association members numbering

close to ten thousand including more than ninety percent of head coaches. The positive development of coaches in athletics and sport is now inseparable from the developments seen in the games themselves. The fundamental association with the educational system demands coaches who have both a mastery and understanding of the fundamentals of their respective sports, along with methodology that reflects their incorporation of sound educational practice.

The Nature of Coaching Excellence

Martens, (1997, p. ix) provides an excellent definition of coaching. Specifically, as inferred by the title, he feels that the characteristics and practices that he brings forth are those that will lead any coach towards success.

> Successful coaching is much more than just winning games. Successful coaches help athletes master new skills, enjoy competing with others, and feel good about themselves. Successful coaches not only are well-versed in the techniques and skills of their sports, they know how to teach these skills to young people. And successful coaches not only teach athletes sport skills, they also teach and model the skills needed for successful living in our society (ix).

Martens (1997) shows the inseparable nature of athletics and sports from education and society, while listing several specific aspects that make up the act of coaching. Although the above passage is a good starting point, it is clear that to truly understand the persona that makes up a coach and the practices that he or she employs one must make the analysis much more specific. The key point made by Martens is that one cannot define coaching, especially at the scholastic level, without implicitly stating that one's mission is

the successful *guidance* of young people. This guidance should lead young people toward a more successful and enjoyable existence within society through the medium of athletics and sports. With the development of professional sports, all coaching models do not exist for the sole purpose of the athletes' personal development; some solely exist for the purpose of winning while increasing the revenue of an organization. This paper will focus on examples of coaching practice as they primarily exist in student-centered environments occurring at the secondary and post-secondary levels. It will become clear that the effective coach is one who, as Martens (1997) strongly feels, places an emphasis on the integration of research and conclusions drawn from credible and current sport science studies with the "practical knowledge" of others in conjunction with realizations drawn from reflections on personal experiences in coaching (x).

The Purpose of the Paper

The purpose of this paper is to investigate the field of coaching science in the hope of discovering the attributes and modes of behavior that make up the persona of an effective coach. In addition, it is the author's desire to determine the specific elements that make up effective coaching practice. Ultimately, it is the author's goal to develop and present a non-sport specific coaching model that one could effectively implement, most specifically, in intercollegiate college football. The impetus for this paper evolved from a problem recognized by the author. Current coaching practices used across all levels of athletics and sport are, in many cases, ineffective for the participants as well as being detrimental to coaches' well-being. A prime example of the negative effect that poor coaching practice can have for coaches is the high level of "coach burnout" that the sporting world has witnessed in recent years. According to Wilson and Bird (1988), the

pressures to win as a coach have increased to the point where the accumulated stressors that coaches encounter in their work environment can cause a completely negative feeling to occur towards all aspects of their work and personal lives. Increasingly, current coaching practice at even the lowest levels of competition is geared towards the bottom line of successful competition with the underlying emphasis always placed on winning at all costs.

The stated problem and subsequent purpose leads the author to narrow the focus of the investigation to certain specific personality characteristics and certain elements of coaching practice. Through an extensive literature review that will be presented in Chapter Two, the author will identify and examine reoccurring, specific personality characteristics and aspects of successful coaching practice. To create a more succinct presentation of the literature, I will use Bloom's (1956) Taxonomy of Learning to frame my discussion, focusing on the cognitive, psychomotor, then affective domains as they apply to exemplary coaching practice

CHAPTER 2

The Development of a Coach

The person serving as coach must be the center of analysis, and an analysis of successful coaching science must address the personality characteristics and behavior patterns that exemplary coaches display. Coaches' collective experience, their ability to engage in effective reflective practice, and the effect that mentoring, if available, has on their development are three crucial aspects that one must closely examine.

From Player to Coach

The development of character attributes and behaviors often occurs very early for many coaches as most, if not all coaches have played the sport(s) they currently coach. Further, the importance of coach attributes and behaviors lies not only in the specific nature of each but in the means through which they are acquired. Coaches develop in three important ways: from experience, through reflection, and because of mentoring. As Sage (1989) puts it in his analysis of high school coaches, "In a way, then, most coaches serve an informal apprenticeship of prolonged observation during their youth, which, unlike many other occupations, enables them to become familiar with the work of coaching (p. 87)." Sage (1989) clearly demonstrates how coaching is distinctively

different from other occupations and indicates the importance that exposure over a long period of time plays in coach development.

The Role of Experience

While most people have the freedom to choose their life's work, it seems that, for coaches, oftentimes it is the vocation that chooses them through their experiences as athletes. In other professions, one often serves in the role of apprentice for a standard period of time. For coaches, particularly at the high school level, there is no set standard for how long one must stay at a given level before moving up the coaching ladder (Sage, 1989). One can become a head coach, the highest level of any athletic team, with one or after as many as fifty years of experience, or, one can toil as an assistant, effectively at the apprentice level, for an entire career. Sage (1989) continues his thoughts on the development of the coach by claiming the following:

> Regardless of whether a neophyte coach began as an assistant or a head coach, the technical aspects of the job and the occupation's culture – both of which the neophyte must learn – were acquired by observing and listening to the more experienced coaches. It is through these experiences that collective understandings started to form and the shared meanings about the coaching occupational culture took shape (p. 90).

Whatever the career aspirations of a given coach, it is clear that it is through early experiences that one learns not only the realities of becoming a member of the coaching profession, but also the requisite attributes and behaviors that one must possess to be considered a qualified coach.

Formal Training

Another way that experience is gained is through coach training and instruction. Most coaches, whatever their stage in the profession, experience some level of formalized training and instruction, and studies have shown that this has proven to improve their level of efficiency as both a teacher of the skills necessary for their given sport and as a motivator of athletes (Knowles, 2001). In their interviews with and research into the lives of elite sport coaches, Abraham, Collins, & Martindale (2006) found that experiences could be characterized in many ways by coaches. In addition to field experience actually working with athletes in practice and competitions, the experience gained through formal coach training, and of academic enhancement in the specific sub-fields of coaching science, were again, found to be important to coaches. "Furthermore, academic qualifications were perceived to be important by several of the coaches; however, they were recognized as only being part of the overall development picture" (Abraham, Collins, & Martindale, 2006, p. 563).

Further research displaying direct interview responses from coaches of varied levels shows the importance of the quality of experience, especially in the realm of specific coach training. Wiersma and Sherman (2005) found in their work with coaches that several expressed explicit concerns about the focus of coach training workshops and clinics. Coaches often felt the programs that they attended did not fit their individual needs. This reflects the micro-specific nature of the individual situations that coaches find themselves in. The prevailing message from coaches about their own formation is that although intensive and varied training and instruction are absolutely necessary, it

appears the quality of these experiences are the primary predictor of positive coach development.

The Importance and Use of Reflective Practice

A definitive point that has been made clear through the literature is that coaching at least in part is an experiential pursuit. Trudel and Gilbert (2006) make this clear through their assertion that even when coaches reach a perceived level of mastery after becoming head coaches, they still are continuously learning, and this is primarily done through their interactions with "others" (p. 543). However, as with experiential learning by students, true knowledge is gained through reflection on their experiences. "As a result, it would seem that a large part of coaching knowledge and practice is based on experiences and personal interpretations of those experiences" (Cushion, Armour, & Jones, 2003, p. 18). The key word from the above quote is personal; it appears that for reflection to be effective, it must be something that the individual coach must choose to engage in and learn from independently.

Cushion, Armour, & Jones (2003) stress that to fully understand the importance of reflection and its connection to varied experiences it is crucial to know the weight that time and context bear on how meaning is interpreted and then applied to professional growth. In their work with NCAA collegiate head coaches, Weinberg, Butt, Knight, & Perritt (2001) applied the concept of overall reflection to the specific behavioral practice of goal-setting by coaches. Goal-setting is common practice found within the world of athletics and sport but is most often thought of as applying to players. The findings of Weinberg et al. (2001) reveal the importance and variability in assessment of both player goals and goals for coaches. "However, coaches' own goals were measured almost

totally subjectively, relying a great deal on observation, feedback from both players and coaches, and personal reflection" (Weinberg et al., 2001, p. 384). Again, the importance of personal reflection is seen as major factor in the development of the coach's character and behavior.

Coaching provides the practitioner with challenges that those in other vocations do not face. Because of intense, high pressure scenarios and the unforeseeable variability in daily work environment that coaches encounter, Gilbert and Trudel (1999), using experiential learning theories developed in education circles over the course of the twentieth century to frame their work in coaching science, have found that:

> Each situation is compared to the practitioner's repertoire of strategies, that consists of examples, images, and actions based on past experiences. Therefore, each situation is seen as both familiar and different. This process provides a frame reference for the practitioner to construct new, or modify existing strategies. Learning, therefore, occurs when a professional adds to his or her existing repertoire of strategies (p. 3).

Just as no two athletes that a coach may work with throughout the course of his career are the same, neither are the situations in which they will have to operate. Correspondingly, a coach must develop a multitude of successful modes of behavior. In terms of explicit behaviors, perhaps the most crucial for coaches, fueled greatly by the diversity in athletes, is how coaches conduct their practice sessions. Voight (2002) also discovered the importance of reflection especially framed by the importance of practice time with players (p. 45). He states, "Another important area of self-examination for coaches involves critiquing one's structuring of practice sessions" (Voight, 2002, p. 45). The

overall experience of engaging in athletics and sports can be perceived as either positive or negative by any given athlete and often, as Voight (2002) states, this problem is usually made worse through a coach's lack of insight into his own behavior. The solution to this problem seems to lie, according to the literature, in the coach's willingness to engage in reflective practice to alter character and behavior.

As Trudel and Gilbert (2006) state: "To be an effective reflective practitioner, one needs to do more than merely experience an activity" (p. 541). Knowles (2001) in her work with coaching science students in the United Kingdom provides further evidence of the importance of reflection in the development of coaches. Work with students during their student-coaching assignment and concurrent involvement in reflective practice workshops demonstrated the different types of reflection that coaches must be exposed to and develop as part of their coaching behavior patterns. "Coaches also reported using a combination of *in* action and *on* action immediately or soon after the practice experience, and further analysis over a more extended period between 1 day and 1 week later" (Knowles, 2001, p. 197). Knowles shows that a coach's skill sets must be varied and in-depth; instant reflection is not often satisfactory. Immediate reflective conclusions during or immediately after experience may yield utterly different conclusions then those garnered a week later. The importance of time and context is shown through Knowles' (2001) work, and she goes on to suggest specific strategies and their possible limitations, that can be used to develop reflective practice such as regular journal writing both on a daily and even an annual basis.

The Value of Mentoring

Mentoring, as alluded to clearly in the findings of Bloom, Bush, Schnike, & Salmela (1998), is a concept developed from the earliest times of Western Civilization as witnessed in Homer's *The Illiad* and *The Odyssey* and the bard's development of the wise character Mentor and his subsequent tutelage of the great Greek heroes, is a concept at the center of coach personality and behavioral development. Abraham, et al. (2006), in their work with expert elite coaches, found that working with another coach who served in a mentor role was expressed as important by coaches reporting on their development. Their research results concerning mentoring can be effectively summarized through one coach's words, "'I would think that (coach's name) influenced me a great deal. With the work that he did and the way that he did it. The little details and little things he was doing, I learnt all the time from him'" (p. 566). The above quote shows the immense impact mentors can have on coaches and how they often can alter a coach's development on both a big picture and small picture scale.

Wiersma and Sherman (2005) focused on the study of sports coaches in an entirely different context: volunteer youth sports. However, their findings were very similar to those of Abraham, et al. (2006) as to the importance of mentors to coach evolution. Specifically, in the suggestions for improvement of coach educational programs, they found that coaches felt that coaches early in their development would benefit greatly from the direct influence of a coach who, in the eyes of the given sporting community, was considered an expert in the sport. However, for this context the possible limitations were presented when Wiersma and Sherman claimed that "a possible

roadblock to mentorship was the lack of continuity with board members and coaches from year to year" (2005, p. 331).

The lack of consistent guidance from expert resources that is so critical in the volunteer-youth sport context also occurs at the expert-elite sport level of intercollegiate coaches in America. Coaching turnover even between different seasons can be so extreme that one who resides in the novice role can be exposed to multiple, conflicting guiding forces without the time for the effects of one to be substantial. Yow, Humphrey, and Bowden (2000) speak to the rigors that the college coaching environment can have on a novice coach's ability to develop effective learner-mentor relationships; the level of coach turnover is disadvantageous to developing these meaningful relationships. The ability to develop at least one influential mentor is enforced by the work of Bloom and Bush, et al. (1998) as they perceive mentoring to be perhaps the deciding factor between success and failure in athletics and sports-related relationships that coaches experience as they choose what behavioral characteristics and methods of practice they will adhere to during their career.

Bloom's Learning Taxonomy as a Structural Framework

The three domains presented by Bloom (1956) and his colleagues and followers provide a framework to effectively examine specific aspects of coaching practice. Bloom (1956) started the classification movement that offers the researcher three clearly defined areas which one can easily apply towards the specific educational task of coaching and playing athletics and sport. The technique of using Bloom's domains has been widespread; notably, in American Football, by Verduzco (2006). The first is consideration of the cognitive domain, which applies to the mental aspect of athletics and

sports. Coaching efforts to instruct athletes in the intellectual understanding and implementation of specific strategies exemplify cognitive coaching practice.

The Cognitive Domain

The cognitive domain, including the thought processes of coaches, athletes and the intellectual interchange between them, is the pivotal point at which to start the analysis of coaching practice. "The cognitive domain, which is the concern of this Handbook, includes those objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills" (Bloom, 1956, p. 7). An athlete cannot successfully display their physical abilities and skills or complete tasks in the subsequent psychomotor and affective domains without first having his mind right; the cognitive processes of coaching practice must first be addressed by coaches.

Providing Feedback to Players

Athletes in any sport are called upon to have highly developed intellectual capacities and are often required to put those capacities to work under the extremely stressful conditions of high-level competition. Analyses by Walton (1992) of highly effective coaches indicate that the cognitive aspects of coaching practice revolve around coach and athlete communication. According to Walton (1992), Vince Lombardi, the famed American football coach, attempted to increase motivation in his players by instituting post-game marks "to generate pride and to allow timely feedback on performances" (1992, p. 9). Lombardi practiced football coaching at the professional level where the tendency is to focus attention on competitive outcomes. The importance of Lombardi's example lies in the fact that he wanted his player to *think* about how they played as *individuals* and not just the team's outcome. Because of the cognitive practice

that he employed, players under his guidance were forced to think about the detail that went into having success given the strategic intricacies, and, at that time, the player ownership of on-field play calling.

Practice that addresses the cognitive domain is dominated by the instruction or messages that coaches send athletes and, subsequently athletes' ability to accept and use them. The methods of implementation that allow for a coach's attempts to send those signals are important to understand. Method of delivery is imperative to any effective educational instruction and it is clear that for the coach, diversification in delivery method is of critical importance. On a more specific level, there are many cognitive strategies that the effective coach can implement with players in order to hone mental skills. Bandura (1977) furthers the example of Lombardi and the importance of intellectual communication in learning environments through his Social Learning Theory. Through his explication of the importance of modeling, an important aspect of coaching practice that later, will clearly cross over into the psychomotor domain, one can see the profound effect that the coach can have on the cognitive processes of athletes. Understanding the social interaction between coach and athlete on an intellectual level is key to understanding the coaching process. As Leith (2003) explains, the coach's ability to capture the attention of each player's mind and to be able to inspire mental focus in an entire team is usually a direct predictor of on-field success.

Addressing leadership in sports, Challedurai (1990) presents the importance of athlete satisfaction with coach behaviors. Specifically, his use of the Leadership Scale for Sports (LSS), shows how athletes' feelings of satisfaction are directly related to leader (the coach) behaviors. Furthermore, of the five crucial dimensions presented in the LSS

by Challedurai (1990), both "training and instruction" and "positive feedback" contain cognitive aspects that speak to the importance of conditioning the mind of the athlete (p. 333). Feedback from coach to athlete is cognitively crucial. Turman's (2005) work with both the type and nature of regret messages that coaches can deliver to athletes is especially enlightening. Working with a group of high school football coaches over the course of a season, Turman's (2005) study has clear "pedagogical" implications (p. 116). The affective domain implications of Turman's (2005) study notwithstanding, he found that: "The use of regret messages, especially those that present downward counterfactual outcomes, during the course of the game has the potential to focus athletes' attention on the importance of their individual performance" (p. 132). The key words of *focus* and *attention* are again brought to light and the individualized nature of cognitive coaching practice is presented.

Timing and Context of Coach Feedback

How a coach communicates to a player verbally, but also (one must assume) through their body language and use of environment (did they throw a clipboard?), has clear cognitive outcomes for athletes. Whether coaches are aware of their effect or not, athletes will inevitably think about what they hear and see from their coaches and use those thoughts to affect future perception of ability and action. Further, how an athlete interprets the long-term weight of the messages received from a coach is also important. "If coaches' feedback to players about their performance is ultimately influencing athletes' desire to continue their sport participation, coaches should attempt to revisit the messages produced in this competitive environment to focus also on what is best for the athlete" (Turman, 2005, p. 135).

The importance of an understanding of cognitive domain practice clearly lies in the coach's ability to elicit responses through signals received in the athlete's brain. The ability that a coach has to mold and control the thought processes of athlete-learners is where the power of effective practice in the cognitive domain lies. For Freischlag (1985) the ability to mold the perceptions of individual athletes and the teams as a whole presents unique challenges and offers great rewards as he feels that:

> Communicating with athletes can pose special problems when the coach's perception of performance is not compatible with how the athletes or team see their performance. For example, coaches may criticize what they think is poor practice effort but athletes may think their efforts were the best they were capable of (p. 69).

It is imperative that the coach be able to make an athlete mentally behave and believe in a manner that is congruent with his vision and expectation in order for the coach, team, and individual athlete to attain success. Often, it is the last thing that a learner hears that makes the most profound impression in achieving positive mental outcomes in athletes. Freischlag (1985) states emphatically that of all the types and timing of statements that a coach can give to a player, it is important that the coach does not leave the player with a negative perception; closing instructions in coach-athlete interactions should always be laced with supportive statements.

The critical importance of the timing of cognitive interactions between coach and athlete is made especially clear at the professional level, where the stakes are extremely high. Fagenson-Eland (2001), in her interview with famed NFL coach Bill Parcells, found that in his experiences with professional football players, comments, especially

coming at the end of an important competition, win or loss, proved to have a dramatic impact on the way that players thought about their individual and the team's performance. How well-timed comments meant to elicit cognitive change are interpreted by the coach, is often vastly different from athlete perceptions.

More and Franks (1996) have shown that corrective remarks must be to the point and contain specific areas of emphasis which the athlete can then use to add to an existing schemata. Theoretically, this should lead the athlete towards thinking about not only the specific error but also future errors, in new ways. Furthering the importance of focusing on the mental and thought process implications of athlete error, More and Franks (1996) state that: "The implication for coaches appears to be that they must seek solutions to the origin of the problem, rather than increase behavioral feedback to maintain the learning environment" (p. 528). Again, effective practice begs that the coach dismiss the apparent affective aspects of athlete behaviors and focus on how they, as the role model and leader, can *think* about solutions to problems other then reacting based on emotion. "The coach is the individual responsible for establishing the climate of the learning environment" (More and Franks, 1996, p. 530).

The Role of Technology

The most important aspect of an analysis of the cognitive domain is an understanding of the specific instruments through which a coach communicates to the athlete. Mirroring the increase in mass media use in the purely academic environment, the world of athletics and sport has rapidly incorporated technology as a teaching tool for athletes. The National Association for Sport and Physical Education (NASPE) emphasizes the importance of instructional diversity very clearly through its written

domains, standards, and benchmarks. The NASPE (2006) offers coaches one of the most comprehensive sources of coach information in the field, and the stress it places on the importance of communication mediums is clear. Domain 5 "teaching and communication", is especially instructive through Standard 23 in its call to "use appropriate technology to analyze performance in both practice and competition" (p. 16). Appropriately, the word *domain* chosen by NASPE brings one back to Bloom (1956) and his explanation of the hierarchical way in which he presents levels of thinking. "Probably the most basic type of knowledge in a particular field is terminology" (Bloom, 1956, p. 62).

Because coach to athlete communication in all sports is extremely dependent upon terminology usage, requiring the use of a common, sport-specific language under adverse, high pressure circumstances, the importance of introducing and reinforcing instructional material in diversely effective ways is even more crucial. Leggett (1983), in his comprehensive presentation of coaching philosophy, stresses this general point, stating that: "It is not *what one says, but how one says it* that makes the big difference" (p. 40). Verbal instruction is often not sufficient to show significant cognitive domain gain; both auditory and visual learners must be addressed and the most common way that is done in today's coaching environment is through the use of computers and video.

Cognitive communication usually begins with the coach in his attempts to instruct and/or correct. Hughes (2007) shows the importance of technological tools such as computers and video clearly in addressing the nature of the human mind and its limitations. Players very rarely retain all information shared in their interactions; coaches also struggle to retain all pertinent information for players either post-practice or post-

competition. The human eye and hand are limited, and technology that offers computerized notation systems of athlete data, serve to compensate for those physical limitations. Through video, coaches can film all pertinent activities, including: conditioning, drill-work, practice, and competition.

The limits of incorporating technology into the coaching environment are many; computers, which most digital video editing systems are based on, can malfunction easily and this is addressed by Hughes (2007) when he says "Computers introduce extra problems, of which system-users and programmers must be aware, such as operator errors, (e.g. accidentally pressing the wrong key,) hardware and software errors" (p. 3). Researchers stress that technology should not completely replace more traditional forms of instruction. Vickers (1988), through her development of specific skill-set instructional programs using both written and technological media emphasizes that "books and hypermedia are complementary, rather than competitive, technologies. Books can be used in a highly structured fashion to impart skills, but some aspects can be significantly improved through hypermedia" (p. 43). A prime example of this complementary use is shown through most athletic and sports teams' continued reliance on both yearly playbooks and scouting reports on weekly opponents that are delivered in written form.

The Cultivation of Focus and Concentration

Several authors have presented specific mental strategies that coaches can implement to engage in effective cognitive coaching practice and produce positive athlete outcomes. Voight (2005), in his work focusing on the importance of the integration of mental skills training for athletes, emphasizes the importance of athlete organization and consistency in how they think about their tasks. Coaching becomes a shared experience

between coach and athlete in which the burden of cognitive development is shared. Voight (2005) says:

> Applying mental-skills training to enhance learning and performance requires athletes and students to improve their awareness of what they do to help themselves (mentally, emotionally, physically, and behaviorally), as well as what they do to damage their efforts (engaging in debilitating habits of thinking, feeling, and acting). Once this is established, athletes and students are taught how to engage their own coping skills (or taught new ones if needed) to overcome barriers to performance and learning (p. 38).

The underlying principle that one can draw from Bloom (1956) in his beginning with the mental-oriented domain, is that the cognitive provides the foundation for the learner. This concept is clearly shared by Voight (2005), who describes the crossover importance that mental skills have for the emotional, physical, and behavioral development of the athlete.

In terms of specific cognitive tools that the coach should attempt to impart to his player, the importance of pre-action thought strategies and processes is clear in both the work of Voight (2005) and Osbourne and Ravizza (1991). A corollary to specific routine, the importance of concentrating clearly when engaging in any task is stated by Voight (2005) when he remarks that "concentration skills entail the ability to keep one's focus on the most relevant performance. Coaches can do a lot to help improve their athletes' attentional and concentration skills by stressing the attentional demands of their sport and position" (p. 44). Osbourne and Ravizza (1991), in their work with the

University of Nebraska's football team, found that continuous pre-practice and pre-competition routines were extremely successful. Domain interconnectivity was again shown with an emphasis on the stabilizing nature that solid coaching practice within the cognitive domain provides. "The mental training program at Nebraska emphasizes and educates athletes in two key concepts: (a) individual responsibility for performance, and (b) recognition of appropriate physical and mental activation levels necessary for optimal performance" (Osbourne and Ravizza, 1991, p. 256). The literature clearly shows that effective coaching practice, though continually meshed through the three domains, can be most successfully employed when coaches first have a sound understanding of the importance of cognitive communication, the ways in which they should communicate with athletes intellectually, and the specific mental tools that players should develop.

The Psychomotor Domain

Coaching practice in the psychomotor domain is built directly on the cognitive practice of coaches. This progression is mirrored by the scholarly advancements made by Bloom (1956) and those that followed and built upon his original work in the cognitive domain. Although the scholarly development of a taxonomy for the affective domain occurred before the psychomotor, the physical nature of athletics and sports calls one to present the psychomotor domain as the connective piece between the cognitive and the affective. What is *done* serves to bind what is *thought* and *felt*. Harrow (1972) provides the rationale for the development of the psychomotor domain and reveals its essential nature in the understanding of athletics and sport and an overall analysis of effective coaching practice. "Movement is the key to life and exists in all areas of life. When man

performs purposeful movement he is coordinating the cognitive, the psychomotor, and the affective domains" (Harrow, 1972, p. 6).

The Connective Importance of the Psychomotor

Recognizing the bridge-like characteristics of effective psychomotor coaching practice between the cognitive and affective domains is critical. As Harrow (1972) clearly states: "Therefore, man must be prepared to understand muscular, physiological, social, psychological, and neurological movement in order to recognize and efficiently utilize the components of movement totality" (p. 6-7). Preceding Harrow, Simpson (1966) immediately followed Bloom (this time working with new colleagues) in their publication Krathwohl, Bloom, & Masia (1964) of educational objectives for the affective domain. With her statements on the nature of psychomotor skills, Simpson (1966) found and presented the need that the educator and coach have for an understanding of the psychomotor domain and its subsequent implementation. "Development of a taxonomy of educational objectives, the psychomotor domain, is basic to other research on the development of psychomotor abilities and skills needed in vocational-technical education" (Simpson, 1966, p. 117). The technical nature of coaching practice within the psychomotor domain mirrors the technical nature of the skill-sets put to use by athletes on the fields of play.

Skill Analysis

The connection between the cognitive and psychomotor domains appears to be strengthened greatly by the coach's ability to implement skill analyses as an integral part of everyday practice. Gilbert and Gilbert (1996) feel that both qualitative and

quantitative forms of analysis are necessary to effectively evaluate psychomotor practice and do an excellent job of delineating the differences between the two types of analyses.

> Quantitative skill analysis consists mainly of biomechanical analysis. This type of information is very specific and scientific, focusing on the aspects such as the precise angles of the body parts during specific parts of a skill. Qualitative skill analysis concentrates more on the general aspects of performance of a skill. It is more descriptive and easily available for immediate access to the athlete (p. 36).

Effective coaches should be able to effectively employ both types of skill analysis. Leggett (1983) states his belief in the importance of coaches continually focusing on skill evaluation and development when he implores: "Never let up on your study of body movement. You will continually get better at isolating new fundamental skills and applying them in the right blend during practices to make more effective athletes" (p. 97). Especially at the quantitative level, the importance of technology and its link to the cognitive domain – athletes' and coaches' ability to think about what has occurred after the fact – is again made clear through the literature.

Qualitative approaches, the less specific of the two, are espoused by Gilbert and Gilbert (1996) as being especially pertinent to the non-professional coach, or the coach who is not operating at an elite level. This fact is critical, as the majority of coaches practice at the amateur level and the stated purpose of this undertaking is to better the practice of all coaches, especially those in educational settings. In addition, the limitations of technology are made apparent; as useful as technology can be in aiding effective coaching practice, its implementation is dependent on monetary access which

can exclude the great majority of coaches. "This [coach knowledge of the skills necessary for that particular sport] combined with feedback to the athletes on how to improve the particular skill, is the essence of effective coaching" (Gilbert and Gilbert, 1996, p. 36). Whatever the financial limitations, the importance of implementing effective practice in skill analysis is both critical and one of the foundations of an effective coach's abilities.

Coach Modeling and Instruction

Essential psychomotor skills vary greatly from sport to sport and even between specific situations within the same sport. Whatever the skill, the coach's ability to effectively model it Hodges and Franks (2002), is a basis of practice within the psychomotor domain. The focus of Hodges and Franks' (2002) research in motor skills was the importance of what they call "pre-practice," or the instruction and information that is delivered to athletes before taking the field (p. 802). Connecting to Osbourne and Ravizza (1991) and their stress on cognitive "pre" implementation of coaching practice, Hodges and Franks (2002) show that the effect of modeling athletic skills by coaches is often felt more strongly when the skill is more complex and the athlete is familiar with the pieces that make up a complex movement. "The importance of this pre-practice information [modeling skills before going out onto the field] has received most support when tasks have been examined that require 'stringing together' of movements that are already part of a person's movement repertoire" (Hodges and Franks, 2002, p. 803). Martens' (1997) thoughts on physical or motor skill acquisition echo those of Hodges and Franks (2002), especially regarding the overall importance of a coach's ability to effectively model a skill.

"The skill should be demonstrated by someone who can perform it proficiently and whom the athletes respect for being good in the sport" (Martens, 1997, p. 78). The importance of employing practice that the athlete will "buy into" is reiterated by displaying the important role that experience plays in the development of the coach and his practice: validating instruction for the athlete. The word "good" in the mind of the athlete could refer to the either a coach's proven record of athletic success and achievement or his demonstrated positive pattern of professional development and progress in the coaching profession. Martens (1997) continues by using the simple example of teaching juggling to show the importance of proper demonstrative modeling. "To help you learn the skill of juggling I must find a way for you to understand the sequence of the components of juggling. I can do this best through demonstration and explanation" (Martens, 1997, p. 74). The inherent interrelatedness of effective coaching practice is undeniable and magnified as one sees the value that the clear modeling and instruction of psychomotor skills contains.

The Role of Repetition

Excitement about modeling is tempered by returning to Bandura (1977) and his inclusion of modeling in the overall scheme of Social Learning Theory. Bandura (1977) recognizes that mere proper modeling of a skill is not sufficient for an athlete to be successful in its use.

> Skills are not perfected through observation alone, nor are they developed solely by trial-and-error fumbling. A golf instructor, for example, does not provide beginners with golf balls and clubs and wait for them to discover the golf swing. In most everyday learning, people usually

> achieve a close approximation of the new behavior by modeling, and they refine it through self-corrective adjustments on the basis of informative feedback from performance and from focused demonstrations of segments that have been only partially learned (p. 28).

The implementation of repeated "perfect practice" or what coaches call "repetitions" is the next critical step from proper modeling and where the real work of coach and athlete can be found. Repeating a desired movement properly thousands of times is the way in which coaches can ensure athlete acquisition of skills. In their work with psychometric testing surrounding psychomotor skills, Ackerman and Cianciolo (2000) seem to draw inspiration from the results that one can expect to garner from perfect repetitions. Although they are primarily concerned with the topic from a psychological perspective, the applications to effective coaching practice can be made. "Thus in terms of variance accounted for, practice and training effects may overwhelm the influences of individual differences in abilities in predicting skill performance" (Ackerman and Ciacnciolo, 2000, p. 259).

Continually, the literature maintains the connections among the three domains and the important role that psychomotor detail can play in achieving success. "We argue that the physical act of repetition is only part of the process undertaken during a repetition of an action. Of considerable importance also are the cognitive processes that determine, and are affected by, movement repetition" (Lee, Swanson, & Hall, 1991, p. 75). The cognitive nature of drawing from past experience in order to perform a physical skill in the present is crucial to a coach's understanding when designing aspects of practice in the psychomotor domain.

The essential nature of repetitive practice is emphatically stated by Lee, et al. (1991). "Furthermore, there would be little disagreement that *movement repetition* is a key ingredient, if not the key ingredient in practice" (p. 75). While the importance of repetitions in the physical sense seems indisputable, the underlying cognitive nature of coaching practice is succinctly revealed by Lee, et al. (1991) in their assertion that motor skills may be just as easily acquired by thinking about skills and "that considerable learning may occur in the absence of any overt physical practice" (p. 79). This may inspire perhaps more questions than answers. While most would state that that act of engaging in athletics and sport is by nature physical and involves those skills that help to move the body in a planned and coordinated way, the research shows that however important physical skills are, they are only honed by the effective coach who understands the role that cognitive processes play in perfecting a skill repeatedly. The literature also reveals the inherent importance of coaching practice that places a premium on the way athletes feel about their physical acts.

The Affective Domain

Practice that addresses, as J. Backus (personal communication, November 11, 2006) puts it, the "X's and O's of players' emotions", falls in the affective domain. "The Affective Learning Domain addresses a learner's emotion towards learning experiences. A learner's attitudes, interest, attention, awareness, and values are demonstrated by affective behaviors" (Martin, 2001, p. 2). Affective examples of practice are often based on notions and beliefs that are contrary to the accepted conventional wisdom surrounding athletics, sports, and coaching. Many examples of affective coaching practice speak to the need to disregard this conventional wisdom and apply different and unconventional

perspectives. Lombardo (1987) plunges into this domain by stressing the importance of applying an overall humanistic philosophy towards coaching.

> Coaches, as well as athletes, parents, and spectators, have, by and large, simply not paid much attention to humanistic approaches to sport. Humanism is flippantly dismissed as impossible, implausible, or inappropriate in terms of the current, real world (i.e. the professional model) of sport. At the present time, organized sport encourages mindless conformism and a sense of pessimism related to the possibilities for (creative) play in the sport setting (p. 19).

Because of the perceived difficulty, affective approaches to coaching practice have traditionally been dismissed by the coaching community. As Drewe (1998) writes, "Advocating the development of autonomous thinking skills, giving attention to a wider set of beliefs, including those concerned with the affective domain, and encouraging responsibility on the part of athletes might place some coaches in a state of tension" (p. 83). However, a wealth of resources in the literature speaks to the types and importance of practice in the affective domain.

The Importance of Affective Incorporation

The apparent contradiction between the affective and accepted notions of coaching practice is continued in the thoughts of Krathwohl, Bloom, & Masia (1964). The authors precede the lamentations of Lombardo in their belief that affective objectives within the purely educational environment have eroded. They speak to the importance that coaching practice within this domain can play in the overall development of the athletes involved and their subsequent transition from the playing field to the everyday

challenges of becoming a member of society. "Closely linked to this private aspect of affective behavior is the distinction frequently made between education and indoctrination in a democratic society. Education opens up possibilities for free choice and individual decision" (Krathwohl, et al., 1964, p. 18).

Without incorporating effective affective coaching practice the literature suggests that coaches will be not be producing the type of athletes who will achieve success as citizens. Beretta (1999) accentuates further the need for affective practice when discussing the specific setting of coach-educators in the private-Catholic school sports setting. This microcosm of the overall coaching context is especially revealing. In the words of Beretta (1999): "Whether in the classroom or in the gym, education is meant to bring the entire person – mind, body, and spirit – closer to his or her potential" (p. 19). The rounding-out effect that the affective provides when applied to the implementation of coaching practice is surpassed only by its effectiveness in producing athletes who are also exemplary citizens.

Cultivating a Healthy Environment

The most important facet of effective practice within the affective domain is the coaches' understanding of and ability to create and manipulate the environment in which they work with their athletes. It is apparent that the successful affective environment is bolstered by the reciprocation of positive feelings between coaches and athletes. Walton (1992) says of famed University of Indiana swimming coach "Doc" Counsilman's approach towards daily interactions with his athletes that "He took a deep personal interest in them. He knew their studies and pinned to memory their grade point averages, best swimming times, and best workouts; he knew their goals and aspirations, their

girlfriends, and their problems" (p. 84). Oftentimes, an overall positive environment is fueled by practice that works at maintaining athlete motivation. Hansen, Gilbert, & Hamel (2003), in their work with high-level basketball coaches, found varying results regarding the types and uses of motivational strategies that create positive and successful coaching and learning environments. The authors summed up their results by stating that "Ultimately, consideration of personality differences among individual athletes and the level of competition [i.e., college vs. high school vs. youth sport] should frame coaches' efforts to motivate their athletes towards realizing their full potential" (p. 52). The competitive level at which the coach practices takes on added importance as the differing emotional capabilities of individual athletes have proven to be a critical aspect of coach understanding.

Larry Lezotte (1991) offers the potentially effective coach insight regarding the necessary qualities that productive educational environments should possess through his work with effective schools. Of particular interest to affective practice is the explicit notion that all involved will *feel* better when the environment is one in which everyone works together for the betterment of all. Lezotte says, "Schools will not be able to get students to work together cooperatively unless they have been taught to respect human diversity and appreciate democratic values" (1991, p. 2). The importance of cognitive practice in laying the foundation for students' affective understanding of complex concepts is evident. It is clear that another key factor in creating an affectively successful environment is attempting to ensure that all athletes feel comfortable opening up both to the coach and the group through a commitment to the concepts of collective and cooperative interaction that Lezotte (1991) espouses.

Self-Monitoring of Coach Behavior

Leggett (1983) continues in this vain by stating the importance of athletes feeling that it is acceptable to speak out verbally and that their input, like that of the coach, can have an effect on the group environment and contribute to the success of the team. "Your job as a coach is to accept a youngster who has reported to you. You accept him, and through work, promote his confidence. But being successful in sport or life is really taking your strengths and emphasizing them" (Leggett, 1983, p. 187). The power of well-planned practice within the affective domain is found in the coach's ability to have a lasting effect on the athlete. The coaches' capacity for self-analysis of their affective leadership traits is critical in the development of an environment that is suitable for effective practice.

In an analysis of their own Leadership Scale (LSS), Challedurai and Saleh (1980) suggest that scales such as the LSS are an effective tool for coaches to use to monitor the implementation of practice displayed through their coaching style. This self-monitoring is especially pertinent regarding player input, which Leggett stressed earlier. "The LSS could be used profitably in the analysis of coaching behavior and its effectiveness. For instance, leadership and theory suggest that leader behavior should be varied according to the situation and the need of the individual" (Challedurai and Saleh, 1980, p. 43). Although one cannot expect the effective coach to adjust to the whims of every individual, especially when concerning affective practice, uncompromising coaches risk the alienation of at least a portion of their athletes if they are not tuned in to all of their athletes with equal passion.

Athlete Character Development

However well designed and individualized the coaching environment, the basic goal of affective practice is to develop within each athlete a solid sense of right and wrong based on what is acceptable in a given society. The athlete who comes to an understanding of his place in society and is confident in his ability is the athlete who feels more self-actualized. Using the domain concepts developed by Krathwohl, et al. (1964), as the athlete progresses through the continuum of affective objectives, he reaches a point that is summarized by the authors

> As internalization progresses, the learner comes to attend to phenomena, to respond to them, to value them, and to conceptualize them. He organizes his values in a value complex which comes to characterize his way of life. Internalization is seen as related to socialization but is not a synonym for it. The stages of the affective domain are seen as consistent with an empirically and theoretically based point of view on conscience or superego development (p. 44).

It is the effective coach employing varied and well-designed practice that guides the athlete to this Freudian point of understanding and the confidence that accompanies it. The important leadership role that the coach plays in helping the athlete to attain this elevated psychological state can not be underestimated. Bloom and Bush, et al. (1998) stressed the primary role in personal development that coaches often play in the athletes' lives. The degree to which athletes were willing to "express emotions and commit to relationships" was found to be much higher in those athletes who were mentored by coaches who were consistently positive "role models" (p. 270). Bloom and Bush, et al.

(1998) like many other researchers, found coaches' desires to develop the entire person through effective practice to be consistent with positive and successful environments.

The development of positive morals, characteristics, and values within the individual athlete is clearly inspired by the coach and his practice. The United States Olympic Committee (USOC) places positive elements of affective practice as a priority in coaching. According to the USOC (2004), the general value of integrity is one of the fundamental principles of its Coaching Ethics Code. Coaches are expected to interact with all they encounter in their coaching role with the highest levels of positive regard. This is encapsulated when the USOC states, "Coaches seek to promote integrity in the practice of coaching. Coaches are honest, fair, and respectful of others" (2004, p. 1). It is these same values that coaches, through their development of a positive, athlete interactive environment, can develop in their players. The development of those attributes that individuals and society find desirable is juxtaposed by the ability that athletics and sports possess to engender negative characteristics in athletes through unchecked coaching practice. "Though there is still much more to learn, we have found that experience in at least some sports is associated with lower stages of moral reasoning" (Shields, Brademeier, & Powers, 2001, p. 21). The importance of the coach being the unquestioned authority and ultimate shaper of the educational environment has proven to be the most important characteristic of affective coaching practice.

Engendering Involvement and Ownership

Shields, Bredemeier, & Powers (2001) feel very strongly that positive characteristics can be easily developed in the individual and the team through such specific strategies as initial meetings where team members discuss what values they want

their group to represent. The importance of discussing and sharing thoughts and feelings on a daily basis have been shown to be as important to effective practice as such common-place psychomotor aspects of practice as stretching and proper breathing. The literature is clear that participation in athletics and sport has an effect on the affective development of athletes. It is incumbent upon the coach to understand his behavior, environment, and implementation of practice in order to ensure that these effects are positive. Shields, et al. (2001) state clearly how a coach should act and what he should do: "Nurture within the team community support for one another. Celebrate one another's achievements, and not just those of the more talented. Help everyone feel empowered and important" (p. 22).

CHAPTER 3

Existing Gaps in the Field of Coaching Science

The research described has demonstrated that there is large body of work in the field of coaching science. However, as Gilbert and Trudel (2004) note in their seminal piece analyzing coaching science research from 1970-2001, many have attempted to make coaching science their passion, but much work remains to be done. Furthermore, there has been a deficiency in the implementation of conclusions provided by the research based on a lacking in the researchers' willingness and ability to make a comprehensive and summative examination. Implicit in the problem providing the impetus for this paper, the field of coaching science is one in which experts feel there is a continued and necessary need for expansion and improvement.

There remains the specific concern that the currently understood and accepted knowledge base that exists among researchers in coaching science has not been properly analyzed, synthesized, and applied to the field by those who practice. Gilbert and Trudel (2004) claim that, "The absence of literature reviews and analyses of published research on coaching seriously limits the ability of coaches to access and realize the potential of coaching research, and coach educators to integrate the full scope of coaching research" (p. 388). It has been the hope of this undertaking to help account for some of the known

deficiencies that exist in the field. The following thoughts progress from the analysis presented in earlier chapters of this paper and focus on the future of the implementation of effective coaching practice by passionate coaches.

Suggestions for Future Research

There has been an obvious disconnect between the synthesis of research, coach experience, player advancement, and a host of other elements and what should always be the ultimate coaching goal: positive player growth. Future research in the field of coaching science should focus on ways that coaches can effectively transmit the positive changes that occur in their base of knowledge to their players. This does not necessarily mean that coaches will start producing "better" players or even teams that compete at a higher level. On the contrary, it should mean that future players look back on their overall athletic experiences with positive feelings that carry them towards success in their endeavors beyond the athletic competition field and that which span the length of their lives.

Specifically, research must be done to discover elements of coaching practice that engender player leadership. This focus stems from an understanding, described by Challeduari and Saleh (1990), of the vital role a coach's *own* understanding of how his leadership plays a part in the individual and collective direction of athletes and the team. Research should also be geared towards uncovering ways for coaches to continually weave detail into everything that they do with their sports and their athletes. For example, psychomotor teaching progressions should include, if necessary, step-by-step instruction and demonstration. As Aicinena (1999) displays in his plan for coach and teacher improvement, if coaches consciously attempt to incorporate even one specific

strategy for their own action during each season that improves the level of detailed instruction that is subsequently provided to athletes – again breaking instruction and demonstration down to its smallest parts - coaching practice will be on its way to accomplishing its mission. Thus, research questions should set out with the utmost specificity, aimed at "solving" a manageable problem within coaching science, with the answer being optimistically applicable to the improvement of coaching in general.

Suggestions for Change

The most significant change to coaching practice that should be immediately adopted is an understanding of the benefits of a minimalist approach and a commitment to the deletion of overage in coaching practice, whether in word, action, or interaction. At the very heart of this notion is the fact that people in or on any field are more productive when they have fun, and having fun usually stems from people feeling good about themselves. According to Burns (2000), one way coaches can immediately achieve this in their practice is through a commitment, if to nothing else, to simplifying everything they do, especially those aspects of practice of the overall coaching process that involve players. Burns (2000) seems to feel that through a simplification and readjustment of what the important end results of practice should be, the practice itself is improved.

"The joy [of winning] tends to fade immediately and precipitously. Winning is trumped by learning the value of struggling well. Striving for results is critical, but even that should be leavened by providing an enjoyable, meaningful, memorable experience" (Burns, 2000, p. 3). Further, changes should immediately be put in place in the way that coaching jobs are described and understood. "Effective coaching may be described as a

coach's ability to react to the characteristics and needs of players" (Douge and Hastie, 1993, p.18). From the time a position becomes available by institutions or employment agencies, to the time an experienced coach attempts to mentor their youngest apprentices on what exactly the duty of being a coach entails, it should be commonly accepted that the foremost charge of any coach should be to actively and efficiently interact with players.

Emphasis on the importance of efficient cognitive practice needs to be dramatically increased at all levels of all sports immediately. Outside of the arena of athletics and sport, fascination with videogames has served to increase existing and develop new skill-sets with learners. The reliance on technology within coaching, while helping to increase efficiency and open up doors of insight to both players and coaches, has caused us to, in many cases, lose sight of sound practice aimed at truly developing the thinking, and, most importantly, the conceptualizing abilities of our players. This must change and continue to develop alongside with and meld into technological advancements. Human reconnections in the cognitive can then help to pave the way for positive growth in the affective domain, as importance is placed back on the inter-personal relationships that the coach, and not the player, *must* make the effort to develop and engender. As J. Backus (personal communication, November 11, 2006) says of one of the underlying truths of coaching, "If you don't, they won't." Finally, goal-setting for professional and personal growth should and must be something that coaches engage in on a continual basis. The structure of the paper hopefully infers that one cannot hope to develop the player, regardless of the quality of practice and/or its domain focus, without paying detailed attention to the development of the coach.

An Effective Coaching Model

Coaching science research leads to the articulation of an "ideal" coaching model which one could successfully apply to intercollegiate college football, a setting where the line between coaching for the overall development of student-athletes and coaching for the sole purpose of winning in order to create revenue for one's institution of higher learning is often blurred. Building upon the foundation of those whose work has preceded my own, I have attempted to frame coaching in a way that is hopefully accessible and useful to the student of coaching science. In their critical study, Feltz, Chase, Moritz, & Sullivan (1999) present a "conceptual framework" for coaching upon which many other researchers have built, focusing on the importance of coaches' feelings of efficacy as they work (p. 765). "We define coaching efficacy as the extent to which coaches believe they have the capacity to affect the learning and performance of their athletes" (Feltz et al., 1999, p. 765). Efficacy in the coaching context can be taken to mean the level of efficiency at which coaches believe that they operate. The Coaching Efficacy Scale or CES effectively breaks down the implementation of coaching into four clear areas. "Our concept of coaching efficacy comprises four dimensions: game strategy, motivation, teaching technique, and character building" (Feltz et al., 1999, p. 766). Many researchers have presented different ways to analyze the many tasks in which a coach must engage. However, no matter the type or number of categories, it is apparent that coaches must feel confident in their ability to succeed in more than just one area of expertise, if not in several.

Because of the multiplicity of skills that an excellent coach must possess, efficacy is further broken down by Feltz, et al. (1999) through their delineation of the three

specific areas of athlete outcomes that coaching efficacy affects. "[Athlete] performance in this sense is also meant to include the psychological, attitudinal, and teamwork skills of athletes" (Feltz, et al., 1999, p. 765). Feltz et al. (1999) make clear that understanding the impact of their actions for athletes is critical for coaches when adjusting their behavior or implementing their practice. Although the categories of the CES differ slightly from the three domains presented within the framework shown in this paper, one can see that common themes exist.

The four major categories of efficacy in the CES fit extremely well into an understanding and subsequent application of a three-pronged Bloom-based structural framework for coaching practice. It is clear that all four categories espoused by Feltz, et al. (1999) directly match the three domains. It is the author's contention that the concept of motivation, in the minds of Feltz and his colleagues, acts as a foundational aspect of coaching practice that crosses domain barriers. The CES meshes well with the broad framework that one can draw from Bloom (1956) and his cohorts and allows the coaching researcher a clear view of the vital role that a coach's own perception of attitudes and behaviors plays in the formation of a coach's persona, his implementation of practice, and his interaction with others.

The multifaceted nature of the coaching process makes it one of the most demanding arenas of education in which to mentor learners. The three learning domains developed by Bloom, his colleagues, and followers, speak to any educational scenario because of their malleability and the breadth of subcategories provided. It is not often that an educational environment is static and fixed with only one stimulus or activity occurring for a prolonged period of time. This is especially true in athletics and sport and

most certainly in intercollegiate football. The accepted coach cliché that "kids are kids" remains valid when the "kids" are 18-22 year old young men that compete in the great team sport of football.

Just how would the ideal intercollegiate coaching model look? Drawing from material presented in the previous chapters, it is apparent that an effective model would contain clear characteristics. Most importantly, intercollegiate football coaching must attempt to simplify at all costs. Hochstetler (2004) is emphatic and extremely passionate in his call for simplification in coaching. Drawing on the great transcendental hero Henry David Thoreau, Hochstetler (2004) delineates the specific benefits that the commitment to simplification can bring.

Although Hochstetler's work encourages us to consider how simplicity could benefit coaching in general, one specific aspect will ring especially true with any college football coach. "One way to simplify responsibilities is by recognizing the seasonal nature of coaching. Thoreau spoke at length about the evolution of seasons with their 'steady flow,' and the minute differences between them. This change during the year involves not only one's surroundings but also the way one views the world" (Hochstetler, 2004, p. 166). Every football player constantly wonders where he fits as he thinks about the challenge of meshing with teammates in the advanced choreography that is one single football play. So, too, must coaches attempt to understand what their daily purpose *is* and *should be* in the grand scheme of a football program.

Idealism would be attained in the college football setting through the football coach's understanding of his role as a teacher. "Faculty urging for change may induce athletics interests to ascertain that the coaches of tomorrow are schooled not only in the

'hows' of coaching, but in the traditional pedagogy of coaching students in academic settings" (Tong, 1999, p. 3). At its root, coaching football is about fundamentals; the basics of both sport and life are hopefully conveyed through the instruction of knowledge and technique towards weekly competition. The importance of these fundamentals is enforced in each coach-athlete relationship by the football coach who is concerned with learning and conveying fundamental concepts that may be outside of the accepted knowledge base of football; the coach who is willing to go beyond the types of X's and O's that one can put up on the traditional classroom chalkboard.

Neatly applying to the present author's own concluding remarks, Potrac, Brewer, Jones, Armour, & Hoff (2000) state in the final remarks of their work on the coaching process:

> It is hoped that the methodology outlined in this paper will help shift the emphasis in coach education from a mechanical mind/body approach to a sharper focus on the person, by illuminating the complex micro level interactions that represent the everyday and complex reality of the dynamic coaching process (p. 195).

The ideal football coaching model would attempt to account for the whole learner and the ideal football coach would make the concept of holism the bedrock of his persona and practice. When coaches display an unwavering commitment to simplicity and the recognition of the athlete as a whole person, coaching college football will be a pursuit in which both player and coach satisfaction is greatly improved. Practice that attempts to account for the cognitive, psychomotor, and affective needs of each and every athlete on a football team will be practice that can then begin to be considered "ideal".

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