

Characteristics, Knowledge, and Strategies of Expert Team Sport Coaches

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**A thesis submitted to the School of Graduate Studies and Research
in partial fulfillment of the requirements
for the degree of**

Doctor of Philosophy

**Faculty of Education
University of Ottawa
Ottawa, Ontario**

November, 1996

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ISBN 0-612-19930-4

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ACKNOWLEDGEMENTS

The completion of a doctoral dissertation is a task that requires personal sacrifices and assistance from other people. I would like to take this opportunity to thank some special individuals who helped to make this journey less turbulent and more rewarding. I must begin by thanking my doctoral advisor, John H. Salmela. In his own unique manner, John brought out the best in me, challenging me to go places I never thought possible. His unselfish nature, stimulating working environment, and Toronto Maple Leafs' jokes makes him a special person to work with. Thanks for everything John. I would also like to express gratitude to the members of my dissertation committee, Drs. Jean-Paul Dionne, Pierre Trudel, Raymond LeBlanc, and Terry Orlick, and to my external advisor, Dr. John Partington. Their years of experience and knowledge were invaluable in the successful completion of this project. I feel fortunate to have learned from such astute individuals.

Another memorable part of my Ottawa U. experience was getting to know and work with some very special and talented students, especially those in Dr. John's research group. I am referring to Natalie Durand-Bush, Luiz-Carlos Moraes, Patricia S. Miller, Sean P. Draper, and Guy Desjardins Jr. Through our weekly meetings, re-editing of book chapters, and informal gatherings in office 123B, these people enriched my life in so many ways. Each of their unique talents helped with the completion of this document. Thanks guys, you are the best! I would also like to thank all the other graduate students with whom I have worked over the years, especially Jean Côté, Wade Gilbert, Rob Schinke, and Tim Robinson. Appreciation is also expressed to Coach Mickey Goulet for both his practical and personal knowledge and support.

Finally, I come to the most important and integral component of my life, my family. Their all around support and encouragement were invaluable throughout my graduate career. Both Bonnie and I feel fortunate to have such wonderful and caring parents, and saying thank you to Sam, Carol, Joe, and Roz is just a small token of the appreciation we feel for our parents. Last, but certainly not least, is my caring wife, Bonnie. You are a remarkable, devoted person, who has demonstrated great strength, patience, and perseverance throughout this whole experience. Recently, our son Jacob Austin, brought great joy to our life and we now face a new, exciting

challenge together, as a united family. For being your wonderful self Bonnie, I dedicate this dissertation to you.

ABSTRACT

In-depth, open-ended interviews were conducted with 16 expert Canadian coaches from the team sports of basketball, volleyball, field hockey, and ice hockey. The purpose of the interviews was to better understand the perceptions of expert team sport coaches regarding the characteristics, knowledge, and strategies that operate within their profession, and then to conceptualize the relationships between these various elements. Interviews were transcribed verbatim, and the unstructured qualitative data were analyzed inductively following the procedures and techniques outlined by Côté, Salmela and Russell (1995b). This process allowed the meaning units of the interview transcripts to be grouped into 79 tags and then regrouped into 22 properties. Six categories emerged from the analysis: coach-centered processes, organization, training, competition, athlete-centered processes, and contextual factors. The coach-centered processes category included the coaches' characteristics, knowledge, and strategies about personal growth and development, and ways of nurturing this process through continuous learning. The tasks of organization, training, and competition were central to their profession, with organization representing the point of departure of the other two categories since it was the foundation for training and competition. These coaches were more than just efficient organizers, they were also highly motivated individuals who understood the magnitude of effectively outlining a global perspective to their team and then having the players comply with this mission. Training was based upon coaches' characteristics, knowledge, and strategies in physical, tactical, and technical training. Competition was a continuation and testing of the training process and the coaches played an active, integral role during each component of pre-, during-, and post-competition. Athlete-centered processes related to how the coaches' perceived and dealt with athletes in such areas as empowerment and personal development, and how they chose athletes' whose characteristics were compatible with the team mission. Contextual factors, such as level of competition and job conditions, also altered the organization, training, and competition categories of coaching. This research shed insight on the pedagogical strategies of expert teachers in sport by demonstrating how their characteristics, knowledge, and strategies drove the other processes of coaching.

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CHAPTER 1

INTRODUCTION

The domain of coaching, a form of specialized teaching, includes diversified fields of research. Books and articles written on this topic number in the thousands (Côté, 1993) and have been written from sociological, physiological, educational, and psychological perspectives. In psychopedagogy and sport psychology, for example, researchers have implicitly or explicitly suggested that teaching and coaching involve similar principles and knowledge bases (Berliner, 1986; Bloom, 1982, 1985; Horn, 1987; Tharp & Gallimore, 1976; Tochon, 1991). More specifically, Tharp and Gallimore (1976) cited a quote regarding legendary basketball coach John Wooden: "Life to him is a one-room schoolhouse. A pedagogue is all he ever wanted to be" (p. 78).

Like a school teacher, a coach is responsible for relaying a body of knowledge to a group of individuals in a simple manner. This study examined individuals who were identified not only as expert pedagogues, but those who demonstrated an ability to translate knowledge into effective action in coaching, as evidenced by their appointments to top coaching positions in the country. More specifically, the characteristics, knowledge, and strategies of expert coaches were studied regarding the mediation of skills in organization, training, and competition, including the view that coaching involves the mastery of sport teaching, as well as an ability to relay a collective body of information in different situations (Martens, 1990; Walton, 1993).

Given the importance and high public profiles of coaches such as Vince Lombardi, Sparky Anderson, Scotty Bowman, and John Wooden, researchers have paid little attention to this area of teaching expertise in sport. Historically, sport psychology researchers have directed efforts towards expert athletes rather than expert coaches (Abernethy & Russell, 1987; Allard & Burnett, 1985; Bloom & Smith, 1996; Orlick, 1986b, 1990; Rushall, 1979; Suinn, 1987), while researchers in education concentrated some of their efforts in the formation of master teachers (Epstein, 1981; Krebs, 1967) or the effects of teacher mentoring programs (Bowers & Eberhart, 1988; Carter, 1988; Hofmann & Feldlaufer, 1992; Stroble & Cooper, 1988). Research conducted on physical education teachers has been questioned in regards to its practical significance (Housner & French,

1994) or methodological elegance (Berliner, 1986; Locke, 1990). Despite this, Housner and French effectively summarized this current state of research: "Debates concerning the relevance of any discipline, including pedagogy, are of little value until empirical research begins to unpack the contents of knowledge of expert physical educators and teacher educators" (p. 242).

Expertise

The seminal work of Benjamin Bloom (1985) on the development of talented performers provided insights into the career paths of expert swimmers and tennis players. Bloom indicated that talented youth in any performance domain exhibited similar developmental patterns. Central to this evolution of expertise was the role of the coach or mentor at each stage in the individual's career. Recent research by Ericsson and colleagues (Ericsson & Charness, 1994; Ericsson, Krampe, & Tesch-Römer, 1993; Ericsson & Lehmann, 1996) also examined the development of expertise in various domains, in which they posited the key component to reaching a level of expertise was deliberate practice. More specifically, they stated that "the amount of time an individual is engaged in deliberate practice activities is monotonically related to that individual's acquired performance" (Ericsson, Krampe, & Tesch-Römer, 1993, p. 368). Of critical importance in the development of exceptional performance was the input and teaching by coaches, because these levels were rarely achieved without quality instruction.

Research in expertise has been further expanded to the sport domain by those who examined the knowledge structures of expert gymnastics coaches (Côté, Salmela, Trudel, Baria, & Russell, 1995). The research of Côté and colleagues indicated that the knowledge of expert coaches could be classified into three central components of competition, training, and organization, and three peripheral components; the athlete's characteristics, the coach's characteristics, and the sport context. It should be noted that Côté et al.'s research examined factors affecting the knowledge of coaches for developing elite gymnasts, rather than categories affecting the process of expert coaching. Thus, their coaching model did not provide a starting point by outlining the coaches characteristics, knowledge, and strategies about growing, learning, maturing as coach, along with ways of nurturing this growth process. Furthermore, they did not identify interpersonal variables which made these coaches special. It is this type of information that is likely to emerge in the present study, thus providing a starting point for understanding how

coaches interact and work within their organizational, training, and competition elements. Although the research of Côté, Salmela, Trudel, et al. has contributed to a better understanding of expertise in sport, they also noted that more research was needed across a greater variety of interactive sports. Specifically, a gap exists in the literature on the characteristics, knowledge, and strategies of team sport coaches.

The Profession of Coaching

Coakley (1990) reported the word coach first came into existence following the 1860 American Civil War. Before that time, coach was an English word that described a person who taught teaching manners and academic subjects (Coakley, 1990). Since the 1870's, coaching sports has emerged as a profession, however, it has often been criticized for the emphasis that coaches have placed on winning (Coakley, 1990). Michener (1980) listed the following quote from an American university coach to illustrate this point: "My job is to win football games. I've got to put people in the stadium, make money for the university, keep the alumni happy, and give the school a winning reputation. If I don't, I'm gone" (p. 50). Although these statements represent the common perceptions of many high level coaches, some individuals believe it is not so important what coaches accomplish, but how they do it.

Retrospective profiles of successful coaches have shown there can be much more to coaching than winning games and making money for team owners. Martens (1990) stated that while coaches historically focused on tactics and techniques, they have recently expanded their knowledge bases to include areas such as sport psychology, sport pedagogy, sport physiology, and sport management. Other authors have agreed with this sentiment and stressed the central benefits of experience for acquiring coaching knowledge (Kimićek & Gould, 1987; Walton, 1992; Wrisberg, 1990). Gould, Giannini, Krane and Hodge (1990), in particular, addressed these issues in their survey of successful American coaches, where they asked coaches what was most helpful in their acquisition of coaching knowledge. Coaches reported there were no definitive set of concepts or principles for them to follow and that most of their knowledge was acquired through coaching experience and from other successful coaches. The recent research on expert coaches indicates that there is a broad conceptual map of the coaching process which has yet to be expanded to team sports (Côté, Salmela, Trudel, Baria, & Russell, 1995).

Methodology

Bearing the previous points in mind, the purpose of this research was to examine the different characteristics, knowledge, and strategies of expert team sport coaches regarding their activities in the central and peripheral components of their profession by using a constructivist approach to understand the meanings of various situations. Accordingly, the precepts of qualitative data gathering and analysis were chosen over more traditional quantitative approaches. Like most other disciplines, psychopedagogy and sport psychology were developed using traditional methods of science which included behaviour observation and the use of questionnaires, and was conducted in controlled settings (Martens, 1987a). Orthodox science is one of the terms used to describe this research, which examined the "social world as if it were hard, external, and objective, focusing upon an analysis of relationships and regularities between various concepts of individuals under study and using quantitative techniques for analysis" (Côté, Salmela, Baria, & Russell, 1993, p. 128). Sport psychology researchers have only recently begun to question the conventional wisdom that orthodox science is the only source of true knowledge, and are now beginning to advocate research based on experiential knowledge that recommends different idiographic approaches of investigation (Côté, Salmela, Baria, & Russell, 1993; Dewar & Horn, 1992; Martens, 1987b; Orlick & Partington, 1988; Streat & Roberts, 1992). The present research was based on a secondary analysis of data that was previously used to produce technical reports for each of the four sport governing bodies, but had never been analyzed in a strict, scientific manner.

The Research Topic

Housner and French (1994) revealed that coaches most effectively learned from top level experts. A select number of successful Canadian coaches across the four team sports of volleyball, basketball, field hockey, and ice hockey were interviewed in order to better understand their perceptions regarding the components and tasks that operated within the conduct of their profession, and to conceptualize the relationships between these various elements. The goal of this research project was to answer two questions. First, what were the characteristics, knowledge, and strategies that collectively distinguished these coaches as a unique group of

experts? Second, what was the nature of the knowledge base and operational strategies that allowed these coaches to effectively carry out their objectives?

The present research is structured into five chapters. In Chapter Two, the literature pertinent to the topic of this thesis will be discussed and critically evaluated. The methodology and procedures are described in Chapter Three. Chapter Four includes the results of the analysis, while Chapter Five provides a detailed discussion on the applications and implications of this research, along with recommendations for future studies.

CHAPTER 2

LITERATURE REVIEW

In this chapter, an extensive and critical literature review relating to the understanding of coaching will be presented. The research was divided into the following five areas: expert performers, expert teachers and coaches, primary coaching demands and responsibilities, peripheral coaching demands and responsibilities, and qualitative research traditions.

Expert Performers

Many researchers have been interested in expert performance pertaining to athletes, as well as expert coaches who influenced them. In this section, the work of Bloom (1985), Csikszentmihalyi, Rathunde and Whalen (1993), Ericsson and colleagues (Ericsson & Charness, 1994; Ericsson, Krampe, & Tesch-Römer, 1993), and Partington (1995) will be discussed, with a particular emphasis on the coaches and teachers who helped performers excel in their fields.

Bloom's Research on Talent Development

The work of Bloom (1985) focused on the talent development of world class performers in the arts, science, and sport domains. Bloom was interested in the process of talent development in young people, beginning with their early years and ending with their rise to prominence. Using in-depth, structured interviews with 120 talented performers from many different areas, Bloom initially stated that: "Although it is likely that no two individuals would have had identical talent development experiences, we believed that the clearest picture of what is required for full development in a talent field would emerge from studying a sizable number of individuals (twenty to twenty-five) who had reached very high levels of talent development in the field" (p. 7).

Bloom's (1985) research was innovative in that it identified three phases of talent development of expert performers and provided important insights on how Olympic swimmers, world-class tennis players, concert pianists, sculptors, research mathematicians, and research neurologists reached the pinnacle in their areas of expertise. Bloom labelled the stages of talent development as the early years, the middle developmental years, and the final years of perfecting

the skills. Central to the development of the expert performer was the role of the teacher, coach, or mentor.

Stages of Development

Bloom (1985) found the first phase began when individuals were introduced to activities in their realm. It involved instruction from a local coach/teacher who was caring, thoughtful, and well respected in the community. The coach/teacher provided the performer with lots of positive feedback. Rewards were garnered for effort rather than for achievement, and rarely was the coach/teacher critical of the child. Bloom also found that parents played a large role by providing their children with encouragement and motivation needed to maintain their interest, but did not expect performance outcome to dominate their child's activity. The following quote typifies what many of these parents said to their children: "You can do anything you set your mind to, if you want to do it" (p. 143). In addition to this support, the children relied on the guidance of their coach or teacher to help them perform well in their domain.

It was interesting to note that although 16 of the 21 expert swimmers reported that the quality of their coach and the caliber of their team was most affected by the proximity to where they lived, about two-thirds of these subjects had coaches who trained or were training at least one nationally ranked swimmer. Whether intentional or not, the young swimmers obviously improved through their exposure to a positive, learning environment.

In the second phase or middle years, individuals set performance goals and were committed to them. For the tennis players, the sport became more than a "game," it became "real business." As one player described it: "I was now eating, sleeping and breathing tennis" (Bloom, 1985, p. 236). During this period, players began receiving acclaim and rewards in the form of articles and pictures in the newspapers and recognition by important people in their sport. Bloom reported that most athletes began to feel that a new and more advanced type of coaching was needed.

We have seen in the early years that the first coaches had been good at getting them interested in and excited about tennis. The tennis players felt that now they needed someone to teach them precision and technique as well as strategy; they also needed to tailor their tennis game to emphasize their own personal strengths and compensate for

any weaknesses they might have. (p. 236)

The teacher/coach during the middle years was more advanced and regarded as one of the best within a larger geographical area. The cultivation of talent now became a top priority for the performer. Coaches demanded more hard work, commitment, and discipline from their athletes, who experienced their first competitive experiences. The athletes' training regimens became more intense and advanced as coaches introduced them to new areas of the game. The following quote exemplifies this point:

[My coach] would watch me play this boy...and then say if I lost, he would point out why I lost. If it were a stroke deficiency, we'd work on that stroke. If it were tactics, he would show me and explain what I should have done. (Bloom, 1985, p. 242)

Exceptional athletes auditioned for the opportunity to work with another coach, an individual widely recognized as a master teacher or expert in their domain. Individuals who were fortunate to reach this stage, were totally obsessed by their chosen activity and did whatever it took to reach higher levels of excellence. The progression to the third stage involved a number of sacrifices for both performers and their families, such as greater expenses and often moving to a new city.

For many athletes, the later years also involved relocating to a specially chosen college, where their coach became an important influence. The relationship between athlete and expert coach evolved into one of mutual respect and collegiality with both parties focusing less on instructional methods and more on tactical refinement. This reorientation in the coach-athlete relationship is best seen in the following quote: "It was just a new philosophy. Rather than hitting every ball as hard as I could, to try and play the percentages a little bit more. I improved" (Bloom, 1985, p. 260).

In sum, Bloom's (1985) innovative study revealed important information relating to the development of expertise. Through the use of retrospective interviews with performers from vastly different domains, a three-stage process of development was outlined for talented performers, as well as the individuals who influenced them.

Csikszentmihalyi's Work on Talented Adolescents

Csikszentmihalyi, Rathunde and Whalen (1993) conducted a longitudinal study that examined the development of talent in five areas - mathematics, science, music, athletics, and art. This work included several dimensions that are necessary to better understand the process of expertise and those who facilitated its development. More specifically, over 200 talented high school students were studied over a period of approximately four years. The purpose of their study was to determine which factors contributed to the development of talent, and those that contributed to the eventual lack of success in others.

The methodological framework used by these researchers blended both quantitative and qualitative measures. The first phase of the research focused on the adolescents' experience of talent, and included quantitative measures such as questionnaires. The main core of data, however, was gathered from qualitative measures which included open-ended interviews and the Experience Sampling Method (ESM). In the ESM or "beeper method," subjects carried with them an electronic pager for seven consecutive days, receiving between 7-9 random signals per day. After receiving a signal, they filled out a sampling form designed to record their current thoughts, activities, and feelings. The second phase of the study involved mostly quantitative measures such as grades and teacher ratings, variables that provided additional support to data gathered in the initial phase.

One of the key factors accountable to talent development was motivation. The students who had the highest levels of intrinsic motivation to learn, as well as external rewards like recognition and praise from significant others, had greater chances of succeeding. Further to this, Csikszentmihalyi and colleagues (1993) found that "flow experiences" contributed to talent development. Teenagers were unable to develop their talent unless they enjoyed it. Part of this enjoyment was the atmosphere and environment created by the teacher or coach. These young adolescent subjects required constant stimulation and challenges to their skills to avoid boredom and losing interest in their activity.

A comparison of some of the methodological and practical similarities between the research of Csikszentmihalyi, Rathunde and Whalen (1993) to that of Bloom (1985), provides a more in-depth understanding of the early stages of talent development, and more importantly, of those who facilitate this process. All the subjects in Csikszentmihalyi et al.'s study had reached

the first or second stage of development postulated by Bloom. From a methodological perspective, the use of vivid quotations from the subjects allowed the reader to get a true feeling for what the talented performers were feeling and doing. From a practical standpoint, those who enjoyed emotional and material support from their families tended to have an easier time developing and honing their skills. As in Bloom's study, the need for a qualified and experienced master teacher or coach also emerged. According to Csikszentmihalyi et al.:

Whether a young person gifted with outstanding skills will grow into a talented performer depends on many unrelated factors... There are also the personal qualities that contribute to the realization of talent. A person has no control over some of these: genetic contributions to intelligence, to special skills, and to temperament, for example. But there are also traits where the individual can make some difference. We cannot increase the inborn gifts of our children, and as individuals we can do little to alter the cultural and societal parameters that affect the unfolding of talent. But if we understood better those elements of the equation over which we have some measure of control, we might be able to protect and nurture the unique human potentials that young people in our families, schools, and communities possess. (p. 38)

In particular, Csikszentmihalyi et al. (1993) found three common characteristics of teachers who helped cultivate the talent of their students. For one, teachers were effective because they enjoyed what they were doing and encouraged their students to excel beyond their current level of talent. Second, teachers created optimal learning conditions so that students were not bored or overly frustrated, enabling them to maximize their level of concentration, self-esteem, potency, and involvement. Finally, a third characteristic of distinguished teachers was their ability to understand the needs of students. They were remembered for their "reassuring kindness" as well as their genuine concern for the overall development of the student both inside and outside of school.

Successful teachers strive to enhance optimal "flow" learning experiences in their classrooms. They nurtured or bettered their own talent by partaking in activities in their domain outside the work setting. Because of this, "they seemed determined to help students experience the same rewards that they found in the continuing exploration of their domain" (Csikszentmihalyi et al., 1993, p. 191). Second, teachers tried to eliminate external rewards such as grades,

competition, and bureaucratic pressures, instead encouraging the inherent satisfaction of learning something new and challenging. The authors suggested that teachers developed crucial ways of providing feedback to students by avoiding the trap that many others fell into whereby they "divert attention away from the activity at hand and toward the new game of winning prizes, avoiding punishments, and ingratiating oneself with those who mete them out. In the process, students cease to cultivate sources of self-reward that yield only undivided concentration and sustained immersion in a challenging task" (Csikszentmihalyi et al., p. 192). Finally, teachers were concerned with the shifting needs of learners. They praised and reprimanded performers at appropriate moments.

Although this research demonstrated the importance of teachers working with talented individuals, it was interesting that it appeared to overlook the influences that coaches had in the development of elite athletes. According to these researchers, their student athlete subjects had the least to say about the role of their coaches. Csikszentmihalyi et al. (1993) attributed this to the positive and enjoyable environment provided by sport, one that focused more on the development of the team rather than individual athletes.

In conclusion, this research highlighted many important points of expert teaching across all domains. The authors concluded that students will only learn if they are placed in enjoyable learning environments with individuals who know how to provide information in a manner that is both challenging and gratifying.

Ericsson's View of Deliberate Practice

Ericsson and associates (Ericsson & Charness, 1994; Ericsson, Krampe, & Tesch-Römer, 1993; Ericsson & Lehmann, 1996) researched the development of expertise in various areas, including sport. Besides taking the understanding of expertise to new levels, Ericsson's research also had ramifications for expert coaches.

To begin, Ericsson et al.'s (1993) research extended Bloom's (1985) framework to include a fourth developmental phase, entitled eminence: "The criteria for eminent performance goes beyond expert mastery of available knowledge and skills and requires an important and innovative contribution to the domain" (p. 370). Second, and more importantly, Ericsson and colleagues argued that reaching a level of expertise involved more than innate abilities, it was a

result of effortful, sustained activities designed to optimize improvement, a process that was labelled "deliberate practice." Ericsson et al.'s fundamental view is best summarized as follows: "In contrast to play, deliberate practice is a highly structured activity, the explicit goal of which is to improve performance. Specific tasks are invented to overcome weaknesses, and performance is carefully monitored to provide cues for ways to improve it further...the amount of time an individual is engaged in deliberate practice is monotonically [linearly] related to that individual's acquired performance" (p. 368). Resources, including time, energy, access to competent teachers and training facilities, as well as effort and motivation, were identified as constraints inhibiting the process of deliberate practice. A time frame was also forwarded for the development of expertise, following Simon and Chase's (1973) "10 year rule." In their research on international chess masters, Simon and Chase found 11.7 years was required to achieve the highest performance level in chess from the first time an individual learned the rules. This time frame was extended to 16.5 years if the person began playing chess before the age of 11.

Ericsson and colleagues (1993, 1994, 1996) alluded to the importance of the coach or teacher in facilitating the process of deliberate practice. For example, in the absence of coaches or teachers, they found that subjects usually played rather than practiced. Second, feedback was crucial and expert performers needed to be taught and corrected when errors occurred:

To assume effective learning, subjects ideally should be given explicit instructions about the best method and be supervised by a teacher to allow individualized diagnosis of errors, informative feedback, and remedial part training. The instructor has to organize the sequence of appropriate training tasks and monitor improvement to decide when transitions to more complex and challenging tasks are appropriate (Ericsson et al., 1993, p. 367).

It was also found that a teacher could hinder the development of a student by denying him or her the proper drills, exercises, and number of repetitions needed to reach an elite level.

Although Ericsson's research has yet to explicitly look at the sporting domain, many conclusions from these studies can be directly applied to coaches and teachers. For example, Ericsson et al. (1993, 1994) found that coaches and teachers played an important role in setting an appropriate environment for athletes to engage in the 10 years or 10,000 hours of deliberate practice that is required to reach high levels of expertise. The importance of this task should not

go unnoticed. In fact, it was revealed that musicians who reached the highest levels of their profession deliberately practiced for 24.3 hours per week compared to 9.3 hours per week for less accomplished musicians. By the age of 18, the difference amounted to 7,140 hours of practice compared to 5,301 hours for the lesser skilled musicians.

Finally, Ericsson et al. (1993) found that coaches can impact the amount of enjoyment athletes derive from practicing. It is interesting to note that while Csikszentmihalyi et al.'s (1993) view of practicing was seen as enjoyable, Ericsson et al. (1993) postulated another view: "We claim that deliberate practice requires effort and is not inherently enjoyable. Individuals are motivated to practice because practice improves performance. In addition, engaging in deliberate practice generates no immediate monetary rewards and generates costs associated with access to teachers and training environments" (p. 368). A recent study by Hodges and Starkes (1996) shed some light on this issue. In their analysis of elite figure skaters, Hodges and Starkes found that engaging in deliberate practice was rated as more enjoyable than it was by the musicians in Ericsson's research. A future question stemming from this debate then becomes: How many athletes feel this way and what effect does the coach have in motivating the athlete and perpetuating deliberate practice?

In sum, although the role of the coach was deemed important, it was limited to the process of instruction, which in reality, is only one of many roles of expert coaches (Côté, Salmela, & Russell, 1995a; Côté, Salmela, Trudel, Baria, & Russell, 1995). Other important dimensions also include training both the physical and mental systems, organizing team and individual matters, and building a cohesive team (Côté, Salmela, Trudel, Baria, & Russell, 1995; Salmela, 1994a). Perhaps these findings should be further examined in relation to deliberate practice in a sporting context.

Partington's Research on Elite Music Performers

Partington (1995) examined the expertise of 21 principal players in symphony orchestras through the use of semi-structured interviews. Like Bloom (1985), Csikszentmihalyi et al. (1993) and Ericsson et al. (1993, 1994, 1996), Partington's subjects were those who had attained a high level of expertise in their domain. Partington specifically chose certain musicians whose roles affected the play of others.

I decided to target principal players because of the multiple roles each must play within the orchestra. These roles make enormous demands, especially on the player's attentional focus. For example, as part of the ensemble, principals need to be team players, intimately tuned in to what is going on around them in the orchestra; simultaneously, they have to provide leadership to guide others in their section; finally, principals must be ready to step forward as soloists when designated in the score. (p. 4)

Partington (1995) presented his results in a manner analogous to Bloom (1985), identifying personal, pedagogical, and experiential factors conducive to a performer's rise to the top. Many similarities can be found in this work with those listed earlier in this chapter. Of particular interest was Partington's finding that deliberate practice seemed more important than innate talent in the development of expert music performers. As Partington stated:

The first highlight for me was that background experiences, interest, and effort were more often cited than innate talent as necessary for a career in music. Informal opportunities in the family home, such as hearing and singing a variety of music, being taken to concerts, and receiving encouragement for playing from at least one caring adult, usually a mother, appear to be necessary foundations for the development of most of the predisposing tendencies associated with a successful career performing music. Important music-related characteristics include interest in, curiosity about, openness to, and love for the sounds of music and how they are made. Coupled with these learning's is a prodigious readiness and capacity to work hard in order to achieve self-imposed high standards, based on a conscious decision and commitment to master the necessary skills in order to become the best performer possible. (p. 61)

Partington (1995) also examined the devoted teachers who helped performers reach such a high level of expertise. In particular, three separate areas were discussed. One was the description of the performers' most effective and memorable teachers. Second, was the methods of teaching and how teachers inspired their students to excel beyond perceived capabilities. Finally, Partington explained how expert performers dealt with the problems and conflicts they experienced with their master teachers. Teachers in Partington's study were mentors, playing vital roles in the development of expertise. They acted as friends and confidants, and also as disciplinarians when required.

Partington (1995) found that in addition to nurturing their students' physical and emotional development, the teacher played a critical role in their mental development. For some teachers it was important for the musicians to adhere to a mental training program geared for playing their instrument. For other teachers, mentally training their pupils meant ensuring they acted independently and solved their own problems. Problems arose when teachers emphasized skill perfection and winning at competitions, at the expense of fun. According to Partington, deliberate practice could only be attained if musicians derived some enjoyment from their activity:

A lot of teachers make their students work on one piece all year. That is my criticism of the festivals. Some teachers make you prepare a whole year for one piece so that you can be the winner at the festival. That approach doesn't create a love for music, but it takes its toll. Once the kids get beyond a certain age, when their parents can't make them, then they just pack it in. (p. 40)

In sum, an important finding from Bloom (1985), Csikszentmihalyi et al. (1993), Ericsson et al. (1993, 1994, 1996), and Partington's (1995) research was that talent development requires great amounts of practice and training, and central to this was the teacher or coach. Perhaps, Salmela (1994b) best summarized the issue of talent development when he noted: "For the moment, it is clear in our minds that talent development appears to have a much greater environmentally determined stimulus, specifically in terms of how expert coaches can facilitate the development of expert performance rather than the genetically-based viewpoint of innate gifts or talent that we considered a decade ago" (p. 25).

Expert Teachers and Coaches

While research in the previous section suggested the importance of expert teachers or coaches in the development of expert performers, it did not focus on or outline the several roles of these individuals. Some researchers have begun to delve into the development of expert teachers and coaches, and a closer look at the results of these studies provides a more complete understanding of expertise.

Expert-Novice Differences

Chi, Glaser and Rees (1982) defined expertise as the possession of large amounts of knowledge and skill. Historically, a great deal of research examined the differences between

experts and novices in sport and other areas. Early research from DeGroot (1966) and Chase and Simon (1973) identified the content, structures, and processes differing expert from novice performers. It was found that experts had better knowledge bases and were able to extract higher-order cues or information from the environment compared to novices. Allard and Starkes (1991) extended this framework to the sport context. In their examination of expert basketball and field hockey players, Allard and Starkes found the knowledge of skilled players was organized and structured at a higher and more complex level compared to less skilled players. Similar findings have also been found in non sport domains such as physics, medicine, and music (Ericsson & Smith, 1991). After reviewing research on expertise, Régnier, Salmela and Russell (1993) offered the following summary:

From this and other research it is becoming increasingly evident that experts across a wide range of disciplines appear to share fundamental similarities in the way their respective knowledge is both organized and utilized. Furthermore, the characteristics of expert knowledge organization and utilization appear to differ from those of novices and less skilled individuals in important and systematic ways, and these differences appear to be intrinsically related to the quality of performance. (p. 294)

With respect to identifying expert teachers, van der Mars, Vogler, Darst and Cusimano (1995) have forwarded unique criteria. Their sample consisted of 18 certified physical education teachers who were divided into three levels of teaching expertise. Those in the highest group had to meet at least three of the following criteria: 1) voted the state's physical education teacher of the year, 2) recommended by their principal as an exemplary practitioner, 3) recommended by local university faculty who had worked with the teacher, 4) served as school district physical education supervisor/mentor, 5) served as an officer in the physical education professional state organization, or 6) presented workshops at national, regional, and local level conferences.

Other researchers, such as Leinhardt and Greeno (1986), were interested in identifying differences between expert and novice teachers. Studying the teachers' task of homework review, they found that expert teachers corrected the homework at a quicker pace without losing control of the class, were able to discern which students were having problems with the current lesson, and used clearer signals to begin and finish the lesson segments. Among their conclusions was the request for continued research on identifying expert teachers, primarily because of the complexity

of knowledge they must possess in order to become effective teachers. Berliner (1986) was even more direct in his assessment of teacher knowledge and in the differences between experts and novices: "In the ill-structured domains where surity about right action does not exist, the choice of a sensible solution strategy for a problem is an even more complex task than is solving problems in well-structured domains such as mathematics, radiology, or chess (p. 13)."

Dodds (1994) compiled a summary of research on teaching expertise, most notably in physical education. Of particular interest was the conclusion that expertise in teaching was most influenced by the teachers' cognitive schemata or knowledge structures. Similar factors were also evident in Berliner's (1988) research, in which he suggested five phases for recognizing the various levels of expert teaching, which he labelled as novices, advanced beginners, competent teachers, proficient teachers, and expert teachers. Initially, novice teachers based their teaching on theoretical principles until they became advanced beginners and were able to construct teaching strategies based on both theory and personal experiences. In the third stage, teachers improved the timing of their feedback to students, but their methods of classroom procedures were not yet automated. In the two higher stages, teaching approaches progressed from a cognitive to an automated state, and then finally to a higher conceptual level of interpretation. Berliner found that most teachers became "proficient," but few became innovative and could be characterized as an expert.

Expertise in teaching received further attention from researchers who attempted to identify variables that were most associated with effective teaching. Carter, Cushing, Sabers, Stein and Berliner (1988) studied expert, novice and "postulant" teachers in order to discern differences among them in perceiving and processing visual classroom information. The junior and high school teachers were identified by school superintendents, principals, and members of the research team. The final group of eight "expert" teachers all had over five years of teaching experience in a wide variety of subjects and grade levels. The six novice teachers were first-year science or math teachers, and the six postulants were individuals who had no formal pedagogical training, but who expressed an interest in teaching when they were recruited for this study.

All subjects in this study viewed a series of slides taken from actual science classes, and then discussed their perceptions about and reactions to the visual stimuli. Subjects were required to respond to structured interview questions both verbally and in writing. The experts were better

at noticing meaningful pieces of visual information and at transforming this knowledge into more effective teaching procedures. This conclusion has implications for the behaviour of all coaches. Due to the constant change of their environments, coaches must be able to monitor many events at the same time. More precisely, an expert coach of team sports has to simultaneously watch a large number of individuals compete or train, find the mistakes, and then relay them to the team in the most simple and effective manner.

Sabers, Cushing and Berliner (1991) also examined the differences among three groups of teachers in order to uncover their perceptions and ability to monitor and understand classroom events. The data were gathered by videotaping one junior high science class for an entire week. Portions of the videotape were then edited so that different stimuli were provided to the participants. The data were analyzed using descriptive and inferential statistics along with qualitative analysis techniques. The results were in agreement with previous studies on expert-novice differences such that expert teachers were able to monitor, understand, and interpret classroom events at a more advanced level than their inexperienced counterparts. Furthermore, it was found that successful teaching involved more than content knowledge, it required years of experience so that teachers were able to focus on areas where their students were liable to have the most problems. Similarly, through experience, teachers were able to discern when their students were not understanding what was being taught, and thus were able to improvise and adjust their lessons accordingly.

Developmental Perspectives of Coaches

Although studies in the sporting context certainly lack in quantity compared to research carried out in classroom settings, there is some recent empirical work on the development of expert coaches that added to the understanding of sport expertise. Salmela, Draper and Desjardins (1994) sought to uncover the structure and evolution of expert coaches' careers. A preliminary model outlining the development of expert ice hockey and field hockey coaches was postulated. This model included six transitional phases of coaching development, which were labelled as: 1) diffused to focused involvement in sports, 2) initial coaching roles, 3) passive to active transfer of coaching knowledge, 4) established coaching roles, 5) generalist to specialist in coaching, and finally, 6) eminent coaching awareness. At the beginning, coaches were interested

in many sports, and subsequently coached a number of them to acquire basic coaching knowledge. As the coaches developed, they began to actively seek out sources of coaching knowledge from mentors or coaching clinics. As the coaches progressed further they continued to learn from their mentors until they were ready to proceed in their own direction. Being labelled as "eminent" meant the coaches made innovative advances in training or teaching, had a successful winning percentage, and also helped other expert coaches develop. In sum, this research helped to identify some of the developmental paths of expert ice hockey and field hockey coaches, an area which had previously been overlooked. However, the work of Salmela et al. focused on the knowledge acquired by these coaches rather than identifying stages of their career development.

Consequently, Schinke, Bloom and Salmela (1995) identified career steps in the development of coaching expertise. Six top Canadian basketball coaches were interviewed about their career evolution, beginning with their athletic interests, and moving to their career path that took them from apprentice, to developing, to expert levels of coaching. Results of this study suggested that coaches progressed through seven stages, which were labelled as: 1) early sport participation, 2) elite sport, 3) international elite sport, 4) novice coaching, 5) developmental coaching, 6) national elite coaching, and 7) international elite coaching.

The first three stages pertained to the coaches' athletic careers, beginning with their initiation to and early involvement in the sporting domain. The final four stages centered on the evolution of their coaching careers. In the novice coaching stage, the coaches acquired their first career appointments, either at community centers or public schools, or as player-coaches. In the fifth stage, the coaches often obtained their first paid positions working with aspiring pre-elite competitors. The sixth and seventh stages represented two elite coaching stages. In the national elite stage, coaches had their first opportunity to work with university or provincial teams. The differences between coaches at the top two levels were minimal and were not indicative of differential coaching knowledge. Coaches at the international level adjusted their priorities so that performance results were placed above all other concerns. This change in orientation was partly attributed to the fact that coaches were accountable to more people, including national sport governing bodies, the media, and the public. In conclusion, the research of Schinke, Bloom and Salmela (1995) presented the first study that examined career coaching appointments. A coach was not considered an expert unless he or she was coaching at the national or international level.

Characteristics of Expert Coaches

Although research in the previous two subsections focused on the roles and developmental differences between expert-novice coaches and teachers, a great deal of information can be derived from other studies in which characteristics or qualities of sport are examined. Studies depicting this knowledge will be discussed in the following section.

In a number of retrospective profiles of successful coaches, valuable information on different areas of coaching, such as strategies, coaching philosophies, or future recommendations have been provided (Kimiecik & Gould, 1987; Mechikoff & Kozar, 1983; Riley, 1993; Walton, 1992; Wooden, 1988; Wrisberg, 1990). For example, Kimiecik and Gould (1987) interviewed James "Doc" Counsilman, the dean of American swim coaches, who has coached 6 NCAA team championships and 23 Big Ten championships. This individual was head coach of the men's U.S. Olympic swimming team on several occasions, his swimmers held world records in every swimming event, and his scientific advancements in swimming have helped to revolutionize the sport. Some of Counsilman's recommendations included: sport psychologists should consider coaches' opinions regarding mental training issues, the need for formal, written goal-setting issues are not always required, and future studies that employ nonexperimental techniques with rich descriptive data as personal experience are a "viable and valid form of sport psychology knowledge" (p. 355).

In a similar study, Wrisberg (1990) interviewed Pat Head Summit, who at the young age of 38 had already coached three NCAA championship teams and a gold medal winning American Olympic basketball team. The interview focused on coaching style, such as how to prepare athletes for a game, how to conduct practices, and how to interact with players. This work was helpful because it offered coaches, athletes, players, sport administrators, and sport psychology consultants insights on the knowledge of an elite coach in such crucial areas as player development, leadership styles, goal-setting tasks, and the relationship between sport psychology consultants and coaches and players. In sum, both the research of Kimiecik and Gould (1987), and Wrisberg have provided important information on how coaches think and apply their knowledge in certain situations.

Important information was also presented in two books, in which a number of highly successful coaches from both team and individual sports were profiled (Mechikoff & Kozar, 1983;

Walton, 1992). Some of the individuals studied included football coaches Bear Bryant, Vince Lombardi and Lou Holtz, basketball coaches John Wooden and Abe Lemmons, and track and field coaches Brutus Hamilton and Payton Jordan. Valuable information emerged on how coaches felt about many different areas of their profession including athlete selection, athlete discipline, and their pre- and post-competition procedures. Like other coaches who preceded them, these coaches espoused the importance of experiential knowledge and learning from mentors. However, the scope of the methods used to collect the data was suspect, as they were not consistent with all coaches.

In a series of studies, Gould and colleagues (Gould, Giannini, Krane, & Hodge, 1990; Gould, Hodge, Peterson, & Giannini, 1989; Gould, Hodge, Peterson, & Petlichkoff, 1987) identified the needs of elite coaches, in areas such as coach education, coach development, and the use of psychological strategies. One disturbing finding to academics was that expert coaches felt the two most important knowledge sources that helped them develop their coaching styles were "coaching experience" and "other successful coaches." Coaching textbooks and seminars were the least important sources (Gould et al., 1990). Similarly, it was also concluded that only 46% of the coaches believed "there exists a well defined set of concepts and principles for coaches to use" (Gould et al., 1990, p. 337). In a previous study, college coaches recommended that research "should be supplemented in future investigations by actual observations of coaches in practices and competitions and by in-depth interviews that allow for the acquisition and interpretation of rich qualitative data" (Gould et al., 1987, p. 307).

In conclusion, the research discussed in this section of the chapter has provided information on the characteristics and different types of knowledge possessed by elite coaches. The results from these books and empirical articles were helpful because the data was gathered from expert coaches, and in many cases, an approach was used where the experts were free to express their own opinions in their own words.

The Coach as an Expert Teacher

It was implied in the previous section that expert coaches who relay information in an effective manner have often been perceived as "expert pedagogues." The word pedagogue has led to the creation of an area of research called sport pedagogy. Siedentop (1987) noted that

sport pedagogy is a practice involving the scientific study of teaching and coaching, preparation of teachers and coaches, and content of what is taught by teachers and coaches. Bearing this definition in mind, it is surprising that only a few researchers have examined the similarities between the tasks of teachers and coaches (Berliner, 1986; Bloom, 1982, 1985; Carter, 1990; Graber, 1995; Joyce & Showers, 1982; Tharp & Gallimore, 1976). This can perhaps be attributed to the current state of pedagogy, where the community of researchers are often separated by many factors, most notably distances, languages, and cultures (Siedentop, 1987). Nonetheless, the research having been carried out, particularly in the sports domain, has uncovered similarities between coaches and teachers.

Quite possibly the greatest coach/teacher of all-time was UCLA's John Wooden, a man who coached his team to an unprecedented 10 basketball championships in a 12 year period in the 1960's and early 1970's. This success inspired researchers Tharp and Gallimore (1976) to conduct a study: "It was our good fortune to study the last and finest of John Wooden's seasons (1974-75) at the University of California at Los Angeles, and to preserve a record of the methods of the most successful coach-teacher in the history of college athletics" (p. 75). Their research was noteworthy because it involved the use of a behaviour observation method for the collection of data, a procedure that had never been used with expert coaches. The observation-category system utilized to assess Wooden's coaching methods was derived from Tharp and Gallimore's clinical research, and initially included reinforcement, punishment, instruction, and modeling. The authors pilot tested their categories by observing Wooden over eight practices, adding scold/reinstruction and a verbal cue for the players called "hustle," bringing the final category total to six.

Tharp and Gallimore (1976) collected their data by sitting in the front row of bleachers at Wooden's practices, allowing them to see everything and hear at least 90% of his verbal exchanges. They observed Wooden for 15 sessions, and their results provided interesting implications for understanding the coach as a teacher, rather than as someone who predominantly ran drills and mapped out key offensive or defensive strategies. Tharp and Gallimore noted that while some successful college coaches "see their roles mostly as group facilitators or emotional managers, or even administrators, Wooden's system of basketball requires teaching and learning, everything from complex set-offense options to how to pull your socks on right" (p. 75). They

also found that at least 75% of Wooden's teaching acts encompassed pedagogical information. Perhaps, Wooden's eminence can be captured in the following quote:

Wooden taught basketball according to the simplest pedagogical principles. He used what he calls the whole-part method. Show the whole and then break it down, "just like parsing a sentence," he says, "or solving a math problem." He followed his four laws of learning: explanation, demonstration, correction and repetition. For 16 years there was talk of a new gym, and when UCLA finally opened Pauly Pavilion in 1965, Wooden made sure he didn't get just an arena, but a classroom with bleachers that roll back" (Wolff, 1989, p. 100).

The use of Wooden as an example of "the expert pedagogue" is helpful for all coaches, especially those working at a university, providing them with valuable knowledge and philosophies of coaching. Other studies have focused on the pedagogical knowledge and program experiences of both expert and novice teachers. Pedagogical knowledge has been defined as the principles and strategies that are needed to maintain a classroom, the knowledge that transcends a teacher's understanding and actions in their classroom, as well as the activities to meet these obligations (Shulman, 1987).

Graber (1995) noted that researchers in physical education are just beginning to conduct studies that focus on identifying general pedagogical knowledge. According to Graber: "A number of these studies have focused on knowledge structures of teachers and have relied on asking subjects to complete a concept map in which relationships between and among ideas are analyzed. It is assumed that maps generated by experts would be more complex, better organized and include larger aggregations of meaningful information units" (p. 158).

Rink, French, Lee, Solmon and Lynn (1994) studied how teachers organized and structured their knowledge. They compared the pedagogical knowledge structures of two groups of undergraduate students enrolled in teacher education programs in physical education who were at different points in their preparation programs. The teachers were asked to develop a concept map to measure their understanding of effective teaching, a common procedure in educational research. According to Rink and colleagues, "concept maps require subjects to select and categorize a list of starter words on a larger concept, such as effective teaching, and to draw a graphic representation of concepts to show how they are conceptually related...they allow one to

assess *what* concepts are most meaningful to the subject and provide information about the way concepts are organized and conceptually framed” (p. 141).

Rink and associates (1994) attempted to expand the findings of earlier research in physical education in which the knowledge structures of inexperienced physical education teachers were less complete and coherent compared to those with more experience (e.g., Ennis, Mueller, & Zhu, 1991; Griffey, Hacker, & Housner, 1988). Employing both qualitative and quantitative data analysis techniques, Rink and colleagues measured teachers’ knowledge structures after their first teaching methods course and then again after the completion of the course. The three quantitative measures included number of words, number of concepts, and average number of words per concept. The findings were consistent with previous research in this field. Qualitative methods were used to identify the major concepts utilized by these teachers and also to recognize those subjects who had a less than complete understanding of the knowledge required in the field of education. The concepts identified by most of the physical educators included planning, objectives, curriculum/long-term goals, content development, task presentation, teaching strategies, time management, behaviour, organization, monitoring, content, feedback, evaluation, and interactive teaching. In sum, aside from identifying the knowledge structures of physical education teachers, this study was important because it provided young teachers and coaches with an evaluation tool to help them target areas for improvement.

Along the same line, Graber (1995) stressed the need for more qualitative research studies in this area. More specifically, Graber was interested in the teachers’ perceptions and individual responses and perspectives, rather than information that described participants as an aggregate whole or “typical teacher.” This researcher wasn’t interested in how much knowledge teachers possessed, rather the type of knowledge they used and how they used it.

Graber (1995) interviewed 20 physical education student teachers from two universities to determine differences among the general pedagogical knowledge of young teachers and their perceived ability to make use of it in lessons. This research focused on investigating classroom management, discipline, motivation of students, communication, and feedback. The interviews were “in-depth” and “intensive,” and a questionnaire was used to guide and structure the interviews. Probe questions were employed to expand the individuals’ responses, and participants were given the opportunity to add any additional information they felt was important. As a final

precaution, teacher educators and cooperating teachers were also interviewed to determine their assessments of the student teachers.

The results of this research extended beyond the pedagogical knowledge previously hypothesized by Graber. This research "allowed for individual differences to emerge and individual voices to be heard" (Graber, 1995, p. 175). In fact, Graber and Rink et al. (1994) both noted that ideal research in this domain would combine intensive interviewing with behaviour observation methods. In the meantime, qualitative methods appears to provide the rich data that is necessary to understand the pedagogical knowledge structures of expert teachers.

Primary Coaching Demands and Responsibilities

Developmental perspectives as well as pedagogical knowledge of expert teachers and coaches have been outlined. Differences between experienced and less experienced teachers have also been discussed. Attention will now be focused on coaching demands and responsibilities. Until recently, there was no theoretical framework or common knowledge base "for explaining which factors are most important in the coaching process and which relationships among these factors are most significant" (Côté, Salmela, Trudel, Baria, & Russell, 1995, p. 1). Côté, Salmela, Trudel et al. addressed this issue by providing a model representing coaches' knowledge. This section will begin with an explanation of the coaching model (CM), followed by its three primary components - competition, training, and organization.

The Coaching Model

Côté, Salmela, Trudel, Baria and Russell (1995) interviewed 17 expert Canadian high-performance gymnastics coaches using open-ended questions designed to explore the structure of coaching knowledge. The selection of these expert coaches was based on multiple criteria. All coaches had accumulated a minimum of 10 years of coaching experience, produced at least one international and two national level athletes, and were identified by national coaching associations. An inductive analysis of the data resulted in a coaching model consisting of three central components of competition, organization, and training, as well as three peripheral components, including coach's characteristics, gymnast's personal characteristics and level of development, and contextual factors (see Appendix A).

Other studies which have focused on separate components of the coaching domain, including leadership (Chelladurai & Carron, 1983), team cohesion (Westre & Weiss, 1991), and the coach-athlete relationship (Smith, Smoll, & Curtis, 1978) could be integrated into the CM. Côté, Salmela, Trudel, et al. (1995) commented that most studies in the past focused "on only one component, such as the context or the athlete's personal characteristics... thus, any, incongruences between the results of these studies could be more easily explained by examining the interaction between the components of the CM" (p. 13). In sum, these authors stated that work in this domain has only just begun to receive its due recognition. This section will now focus on areas of competition, training, and organization.

Competition

There have been many non-empirical sources of information alluding to the different procedures coaches face in competition. For example, Orlick (1986b) provided coaches with some guidelines to help both themselves and their athletes psychologically prepare for competition. The importance of communication was emphasized, particularly when changing a game plan or dealing with a loss. Cox (1994) also alluded to certain tactics coaches could use before a game, such as the team pep talk. Finally, Martens (1987a) offered some suggestions to help coaches prepare their athletes for competition, but little addressed what coaches could do to get themselves ready.

Martens (1987a) also forwarded suggestions for coaches to follow after a competition. He recommended different procedures depending on the outcome and effort of the athletes. For example, when athletes won and played well, he suggested that coaches emphasize effort and performance rather than outcome. Second, when athletes won but played poorly, coaches should emphasize areas that need improvement and acknowledge those who played well and gave a solid effort. Furthermore, the coaches should give themselves sufficient time to evaluate the game and wait until the following practice before offering any detailed feedback to their athletes.

Martens' (1987a) recommendations for coaches' post-competition debriefings were somewhat different when athletes lost. For example, when a loss occurred but the athletes played well, Martens encouraged coaches to stress skill improvement, while also expressing satisfaction with their athletes' effort and performance. When athletes lost and played poorly, coaches were

advised to focus on the improvement of their players' physical and psychological skills. Their discontent should be directed towards inferior effort and performance, and not towards the loss.

A recent study by Côté, Salmela and Russell (1995a) provided empirical evidence of the procedures followed by coaches at the competition site, on the competition floor, and during the competition itself. However, information relating to the coaches' perceptions of the pre-, during, and post-competition procedures was limited due to the nature of the sport of gymnastics. In an earlier study, in which a behavioural observation approach was implemented, Salmela, Petiot, Hallé and Régnier (1981) found that gymnastics coaches' interactions with athletes were minimal during competitions. Nonetheless, more empirical research is needed in the area of competition.

Training

It has already been implied that Côté, Salmela and Russell's (1995a) research is beneficial to coaches, athletes, and sport psychology consultants. These authors found that gymnastics coaches dealt with the following areas in training: intervention style, technical skills, mental skills, and simulation, which had not been empirically examined thus far.

With respect to intervention style, the authors were referring to the type and frequency of feedback given by coaches to their athletes. In Rothstein's (1979) research, feedback was identified as the most important variable for coaches when dealing with athletes. In his book on expert coaching, Wooden (1980) stressed the importance of feedback during training. Wooden strongly believed that detailing performance corrections was a key ingredient to successful coaching. Although feedback is often thought of as an important aspect of training, other coaches and sport psychology consultants have stressed the significance of teaching technical and mental skills (Orlick, 1990; Ravizza & Hanson, 1995; Riley, 1993; Wrisberg, 1990). Despite the apparent benefit of applying these skills in training, little or no research has examined the effectiveness of implementing these skills into coaches' training regimens. A final sub-category of training cited in Côté, Salmela and Russell's (1995a) research pertained to simulating the mental and technical demands of competition. The positive effects of carrying out this task can be seen in much of the applied sport psychology literature (Nideffer, 1985; Orlick, 1990; Ravizza & Hanson, 1995; Rushall, 1992; Weinberg, 1988).

In conclusion, training is an important part of the coaching profession. The lack of systematized, empirical research indicates that research of this nature needs to be carried out to better understand the profession of coaching.

Organization

Côté, Salmela, Trudel, Baria and Russell (1995) identified organization, along with competition and training, as a central component of a coach's knowledge structure. Organization referred to planning training regimens, working with assistants and parents, and helping athletes with personal concerns, including monitoring their weight and esthetics. One of these sub-components to receive substantial empirical support has been planning, but mainly in the classroom domain.

Planning

Placek (1984) revealed how physical education teachers created lesson plans. Using a multi-case approach, four teachers were examined over a two-week period by observing their actions, interviewing them, and reading excerpts from documents and records. An important finding was that teachers were more concerned with providing activities that enhanced the participation of their students, rather than following guidelines suggested in theoretical textbooks. Although Placek did not find this lack of conceptualized planning produced disorganized classes, it was concluded that: "These four teachers were more concerned with the concrete, immediate act of teaching rather than the ultimate, but admittedly more difficult, goal of student learning" (p. 48).

Barrett, Sebren and Sheehan (1991) also analyzed the planning activities of physical education teachers. Their study was longitudinal and incorporated video techniques to assist the observation and analysis of the teachers/coaches' behaviours. Barrett et al. analyzed the teachers' practice plans when they were in teacher's college, and then again during their first and second year in the school setting. They found that as teachers gained experience, they were less likely to rigidly adhere to their practice plans. This does not imply these teachers spent less time planning their lessons. Rather, with experience they were able to adapt the subject matter to meet the immediate needs of athletes/students.

Although empirical research is lacking in this area, there is also a dearth of non-empirical literature on planning as it relates to the coaching process (Jeffrey, 1988; Martens, 1990; Mellen, 1988; Riley, 1993; Walton, 1992; Wooden, 1980). Martens' (1990) textbook on coaching devoted two chapters to the planning skills of coaches. Coaches were encouraged to invest time in planning their activities, and three steps were listed for effectively developing a seasonal plan. First, coaches should establish their instructional goals. Second, they should select the subject matter needed to achieve each goal. Finally, they should organize the subject matter for instruction. After the coaches mapped out their plan for the season, two final steps were recommended. First, coaches should evaluate their athletes' initial level of skill and knowledge. Following this, they should orient their drills toward areas that need improvement. Martens summarized the basic elements of a practice plan to include the following information: date, practice objective, equipment needed, practice activities, warm-up, practice of previously taught skills, teaching and practice of new skills, practice under competitive conditions, cool-down, coach's comments and evaluation of the practice.

Goal-setting For coaches, planning involves more than structuring and organizing their own tasks. It also includes helping athletes stay physically and mentally ready for the season. This can be done by setting proper goals. Many applied researchers believe that competent goal-setting techniques can be a valuable performance enhancement tool for athletes and coaches (Burton, 1993; Dorfman & Kuehl, 1995; Duda, 1993; Locke & Latham, 1990; Orlick, 1986a, 1986b, 1990). Setting proper goals helps coaches determine what is most important for their team and how these tasks will be achieved. Burton (1993) and Martens (1990) found that effective ways for coaches to motivate athletes included helping them meet goals.

Burton (1993) noted that the small amount of empirical studies on goal-setting may suggest that problems exist in this area. He cited the unconvincing results associated with the "goal difficulty theory" as a main contributor to these problems. Locke and Latham (1990) found that as performers set more difficult goals, their performance improved, however, this has rarely been the case in sports settings. Weinberg and associates (Hall, Weinberg, & Jackson, 1987; Weinberg, Bruya, Jackson, & Garland, 1986) provided examples of the many problems found in sport-related studies on goal-setting. Briefly, both studies found little or no evidence (i.e., goal difficulty effects) that subjects who were assigned to specific-goal conditions had better results

than individuals who were not. A study by Burton, Williams-Rice, Phillips and Daw (1989) offered further evidence to support this claim. Subjects were divided into three separate groups, with different levels of goal-setting for a fourteen-week basketball task. Although some trends for improvement appeared, the overall results of this study failed to offer sport-related support for the goal-difficulty theory.

Burton (1993) suggested four factors to explain why goal-setting was not successful in a sports context: 1) the small sample sizes of most studies, 2) athletes may have been close to their performance levels prior to research, 3) tasks were so complex the participants needed more time to perform the skill more effectively, and 4) individual differences, such as self-efficacy, may have influenced effective goal-setting. It is clear that more research on goal-setting in a sport context is needed.

Peripheral Coaching Demands and Responsibilities

In the previous section, research pertaining to the primary components of the CM was discussed. While research explicitly examining the peripheral components of the CM is sparse, four related dimensions including communication, team cohesion, mentoring, and leadership have been examined. Côté, Salmela, Trudel et al. (1995) suggested that a more comprehensive understanding of the knowledge and tasks that coaches regularly encounter in their environment would emerge by interpreting the results of other studies in light of the CM. Although this section of the chapter will not explicitly examine research pertaining to the coach's personal characteristics, the athlete's personal characteristics or the contextual factors, some findings will be discussed.

Communication

Some people argue that communication is the most important factor in coaching. Bearing this in mind, one would expect a multitude of empirical studies on this topic. However, Hanrahan and Gallois (1993) found that communication in the sporting context has received almost no empirical support, instead borrowing from research in other domains on the dynamics of verbal and nonverbal communication.

Martens' (1990) textbook on coaching provided the most detailed examples of communication in a sports context. Martens listed a number of steps for coaches to follow when

communicating with athletes. He also discussed the reasons for ineffective communication between coaches and athletes, and ways for coaches to evaluate their communication skills. According to Martens, communicating with a positive approach was most important in activities both inside and outside of sport. Although this book provided excellent guidelines for coaches, the research was not empirical.

Empirical research on communication has generally been studied in combination with other variables. Smith, Smoll and Hunt (1977) examined youth sport coaches using an assessment tool that measured the quantity and form of communication. They looked at the amount of coach's positive reinforcement, non reinforcement, punishment, ability to ignore mistakes, and general technical instruction. Coaches were able to assess their approaches to communication and make any necessary changes.

Gould, Hodge, Peterson and Giannini (1989) also conducted research on the relationship between coaching strategy and the enhancement of self-efficacy or self-confidence in athletes, which had implications for coaches' communication styles. One hundred and one successful intercollegiate wrestling coaches were surveyed to determine the most effective coaching techniques or strategies. The results revealed that acting confident, encouragement, and physical conditioning and instruction drills were used most frequently by coaches. Gould and associates found that team sport coaches favoured instruction and drilling more than individual sport coaches. Differences therefore existed between the communication styles of team and individual sport coaches.

Other researchers such as Lacy and colleagues (Lacy & Darst, 1985; Lacy & Goldston, 1990) examined the behaviours of successful coaches during practice sessions. They used the Arizona State University Observation Instrument (ASUOI), a systematic observation procedure to collect the data. In the first of these two studies, Lacy and Darst analyzed the teaching/coaching behaviours of ten winning high school head football coaches. The results of their research indicated that technical instruction occurred three times more frequently than any other form of communication, including praise. In the second study, Lacy and Goldston examined ten high school basketball coaches. Similar results were found, almost half of the interactions between coaches and athletes during practices appeared to be instructional. In sum, both of these studies indicated a relationship between positive verbal feedback and coaching success.

Cohesion

Like communication, cohesion is a key element of coaching in training and competition, and is affected by many variables, such as the characteristics of the coach or athlete. Many people believe the success or failure of any group is most affected by its cohesiveness or unity. Simply, the greater the morale or cohesiveness of the group, the happier and productive they will be. Indeed, research on cohesion has been carried out in many non-sport related areas such as the military (Manning & Fullerton, 1988; Tziner & Vardi, 1983), psychotherapy groups (Roark & Sharah, 1989), classrooms (Shaw & Shaw, 1962), and exercise settings (Carron, Widmeyer, & Brawley, 1988). In sport settings, cohesion "is one of the most frequently examined small-group variables" (Williams & Widmeyer, 1991, p. 364). Westre and Weiss (1991) noted that an important task for coaches of team sports is to foster a cohesive unit. Cohesion has also been studied by Widmeyer, Brawley and Carron (1985, p.1) who found that: "Coaches actively promote group closeness through such practices as establishing athletic dormitories, having players wear clothing that identifies them as members of the team, facilitating teams' social activities, and involving players in team goal setting." In sum, many studies have implicitly stated the importance of the coach's influence on team cohesion (Carron & Ball, 1976; Martens & Peterson, 1971; Slater & Sewell, 1994; Widmeyer, Brawley, & Carron, 1990; Widmeyer & Martens, 1978), but only few explicitly examined this aspect in great depth.

Fostering Team Cohesion

Using Carron's (1982) conceptual system of cohesion as a starting point, Westre and Weiss (1991) examined the coaches' role in fostering team cohesion. They identified four antecedent categories of cohesion, which included environmental factors, personal factors, leadership factors, and team factors. One hundred and sixty three male high school football players completed the Group Environment Questionnaire (GEQ) (Widmeyer, Brawley, & Carron, 1985), an instrument having received much recognition and generally thought of as "the most psychometrically, sound measure of team cohesion available" (Hanrahan & Gallois, 1993, p. 639).

Westre and Weiss (1991) found that teams with high levels of cohesion had coaches who were perceived by their players as exhibiting higher frequencies of instruction, positive feedback, social support, and a democratic style of leadership. Furthermore, they found that cohesion and

leadership perceptions were highest with players and teams who thought they were more successful and by players who were in the starting lineup. Practical implications pertaining to effective teaching methods for creating a cohesive team were then provided for coaches. These included involving athletes in decision-making, reinforcing performance with positive feedback, and demonstrating care and concern for team members.

Westre and Weiss' research (1991) typified most of the work in this area because it examined antecedents of cohesion in team sports. Widmeyer and Williams (1991), however, determined which factors enhanced cohesion among members of "coacting" sports, that is, sports such as bowling and golf where "performance outcome is simply the sum of individual performance outcomes" (p. 549). Based on Carron's (1982) model, the authors hypothesized a number of relationships pertaining to cohesion, such as team size, similarity of members, and the coach's efforts to foster cohesion. Subjects were 85 elite female golfers who were members of 18 traveling squads, with most teams having between five to nine members. The athletes were required to fill out the Group Environment Questionnaire using a nine-point likert scale.

Correlation analyses revealed that member satisfaction was the best predictor of all four aspects of cohesion. Widmeyer and Williams (1991) implied that the coach or leader had a significant impact on the task cohesion of the team. When coaches stressed this measure, the individuals were generally more attracted to group tasks. In sum, the cohesion of a coacting team was more highly related to individual factors such as member satisfaction than with other factors, such as the environment or coach. The authors suggested employing a large group of subjects when using a questionnaire to collect data.

In conclusion, few studies have explicitly examined the coaches' viewpoints of this area. Given the history of cohesion in sport, it should be given more attention in the future.

Mentoring

In the previous sections, it was demonstrated how communication and cohesion are important components of coaching that may be greatly influenced by the characteristics of the coach/teacher, the athlete/student, and the context. In this section, mentoring, which may also be affected by the same characteristics, will be discussed.

It has become apparent that expert teaching and coaching involves more than instructing individuals how to solve problems or how to shoot free throws in the quickest manner. There is a personal dimension that enables teachers and coaches to go beyond the academic and sport settings to help students and athletes achieve goals. This process is referred to as "mentoring," and it has been examined both implicitly and explicitly in the educational and sport science domains (e.g., Abell, Dillon, Hopkins, McInerney, & O'Brien, 1995; Bloom, 1985; Gould, Giannini, Krane, & Hodge, 1990; Heinrich, 1995; McNamara, 1995; Perna, Zaichowsky, & Bockneck, 1996; Perreault, 1990; Walton, 1992). Although few researchers have attempted to define the term mentoring, there are a number of similarities in the way academics have alluded to it. A consensus definition might be that mentoring occurs when there is a trusting relationship between the teacher/coach and their student/athlete, when there is an interest on the part of the teacher/coach in the personal development of the student/athlete, when the teacher/coach purposefully allocates his/her time to the needs of the student/athlete, and when an imitation of behaviour takes place.

Mentoring in the Educational Field

The largest body of research on mentoring was found in the field of education. Stroble and Cooper (1988) noted that teacher mentoring programs only began to emerge in the early 1980's. At the time, the state decided if and how they were going to have a mentoring program for students graduating from teacher's college. Since then, researchers have been examining the different mentoring programs created for young teachers, as well as the mentors who assisted and evaluated them (Carter, 1988; Stroble & Cooper, 1988). An important suggestion was the need for a more standardized program for training and supervising teachers (Stroble & Cooper, 1988), and the need for numerous funding changes in order for mentoring programs to be successful (Carter, 1988).

Bowers and Eberhart (1988) and Hofmann and Feldlaufer (1992) investigated the positive outcomes of a successful mentoring program. Their research was unique in that they also studied the benefits experienced by the mentors themselves. More precisely, Bowers and Eberhart noted that: "In such an environment teachers will continue to learn more about how learning occurs when working with students, reflecting on their teaching, and observing their most successful

colleagues. Professional development of this nature will make the school a learning place for both the novice and the master teacher, thereby enhancing the school as a learning place for students as well" (pp. 229-230).

In more recent studies on teacher mentoring programs, qualitative research methods were used to interview student teachers and their mentors (Abell, Dillon, Hopkins, McInerney, & O'Brien, 1995; McNamara, 1995). Abell et al.'s research is noteworthy as they provided an exhaustive summary of previous studies outlining the effects of teacher mentoring programs. In summarizing the literature, they found that beginner teachers involved in these programs improved their self-confidence, classroom management, lesson planning, discipline, voice inflection, eye contact, and review techniques. These researchers were more interested in the views of both the interns and the mentors regarding the state's mandated program. For example, they found that mentors believed it was important to work with beginning teachers as it helped them refine the young teachers' style. Other significant findings were that mentors assumed a helping role as opposed to an evaluative one, and that respect and trust between the two individuals was crucial for the program to work effectively.

Mentoring in the Sporting Domain

Compared to the educational domain, research on mentoring in a sporting context has been largely underdeveloped. In fact, the process has never been explicitly examined in a sport setting, although there have been some findings. As mentioned earlier, Gould, Giannini, Krane and Hodge (1990) studied the educational needs of 130 expert American coaches and found that structured coaching education programs that incorporated more learning sources than coaching manuals were needed. In fact, they raised the need for practical mentoring programs. Similarly Bloom, Salmela and Schinke (1995) studied methods for training young coaches and found that a formalized and structured mentoring program was the most important factor in their development.

Bloom (1985) provided empirical data suggesting that mentoring occurs between expert coaches and athletes. In this work with expert tennis players and swimmers, Bloom found that expert athletes were mentored at different stages of their development. Coaches worked with their athletes on a daily basis and were involved in all aspects of their lives. Although most

athletes did not view their coaches as mentors at the time, they retrospectively reported their coach was instrumental in helping them reach the top.

Similar findings emerged from Walton's (1992) book on the lives and philosophies of six expert coaches. Walton found these coaches were more than just teachers of sport skills. They taught athletes life skills that remained ingrained throughout their lives. One coach was the legendary swim tutor, James "Doc" Counsilman. Walton outlined how Counsilman mentored his swimmers using an adapted version of Maslow's hierarchy of human needs. The following is an example of how he mentored them: "He took a deep personal interest in them [his swimmers]. 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). Although very little research in sport has focused on the process of mentoring, it appears to be an integral part of the coaches' job and the coach-athlete relationship.

Leadership

Research relating to coaching demands and responsibilities has been presented in earlier parts of this chapter. Another characteristic of expert coaches is effective leadership. Like a university Dean, company president, or head army officer, a successful coach is expected to be a good leader. Walton (1992) noted football coach Woody Hayes felt this component was so important that Hayes always carried with him his list of what he considered to be the ten virtues and characteristics of a good leader. Leadership has received a great deal of attention from researchers both inside and outside of the sport domain. However, Soucie (1994) cautioned that academics have historically used a narrow perspective, using parts that best fit their research interests. Soucie also listed a number of words that have become synonymous with leadership, including power, authority, management, administration, and supervision.

Chelladurai's (1978) doctoral dissertation has had the greatest impact on the surge of research relating to leadership in sport. It led to the creation of the Multidimensional Model of Leadership, which posited that group performance/outcome along with group satisfaction were related to the congruence of three states of leader or coach behaviour - required behaviour, behaviour preferred by athletes, and actual behaviour. These leader behaviours were then affected by three antecedents, including the characteristics of the situation, leader, and member.

Chelladurai and colleagues subsequently tested a number of hypotheses stemming from their original research (Chelladurai, 1980, 1984b, 1986; Chelladurai & Arnott, 1985; Chelladurai & Carron, 1983; Chelladurai & Haggerty, 1978; Chelladurai, Imamura, Yamaguchi, Oinuma, & Miyauchi, 1988; Chelladurai & Saleh, 1978, 1980). This also spurred studies from other researchers in sport psychology (Dwyer & Fischer, 1988; Garland & Berry, 1988; Robinson & Carron, 1982; Salminen & Liukkonen, 1994; Terry, 1984; Terry & Howe, 1984). For the purpose of this paper, only the areas of leadership applying to coaching will be discussed. This includes sections on the leadership styles of the coach, coach-athlete relationships, and the decision-styles in coaching. Like communication, cohesion, and mentoring, leadership in coaching is also affected by the personal characteristics of the coach and athletes, as well as the context in which it occurs.

Leadership Styles of the Coach

Chelladurai and Saleh (1978, 1980) needed two phases to fully develop the Leadership Scale for Sport (LSS), a reliable sport-specific instrument used to test the applicability of the Multidimensional Model of Leadership, including how it relates to coaches. The LSS consisted of five dimensions of coaches' leadership behaviours. The first dimension was called training and instruction and involved coaching behaviours geared towards improving the performance of the athlete through a rigorous and structured training program. Two other dimensions were democratic behaviour, which occurred when coaches gave athletes a greater say in decisions pertaining to running the team, and autocratic behaviour, which occurred when coaches were solely responsible for running the team. The last two dimensions were social support and positive feedback. The former was a coaching behaviour that included a general concern for the well-being of athletes, while the latter was a coaching behaviour used to reward and praise athletes for their work. The LSS provides information in three different areas: the athletes' preferences for specific leader behaviours, the athletes' perceptions of their coaches' leader behaviours, and the coaches' perceptions of their own behaviours. The LSS has been translated into the following six languages: Finnish, French, Japanese, Korean, Portuguese, and Swedish (Chelladurai, 1993).

Chelladurai and Carron (1983) used the LSS to test athletes' preferences for specific coaching behaviours. A total of 262 high school and university basketball players divided into

four levels of age and ability participated. Trend analyses were conducted on only two of the five total dimensions of the LSS: training and instruction behaviour, and social support behaviour. High school athletes' preferences for training and instruction decreased with age, while there was an increase for university level athletes. In terms of social support, it was found that athletes wanted progressively more social support from their coaches. In sum, university basketball players preferred coaches who were more socially supportive, structured, and rigorous in their training and instructional methods compared to younger, high school athletes.

The gender variable was also tested using the five dimensions of the coaches leadership behaviour (Chelladurai & Saleh, 1978; Erle, 1981). Chelladurai and Saleh (1978) examined leader behaviour in sport with 80 male and female physical education students. Among their findings, female physical education students preferred more social support and a democratic behaviour, whereas male athletes preferred an autocratic leader. Along the same line, Erle (1981) examined the effects of gender, motivation, and experience on the leadership preferences of 355 male and female intramural and intercollegiate ice hockey players. Erle showed that males preferred leaders who exhibited more training, instruction, autocratic behaviour, and social support. The only dimension where female hockey players scored higher was democratic behaviour.

Coach-Athlete Relationship

A number of studies have used the LSS to examine different components of the coach and athlete/student relationship, such as coach satisfaction (Chelladurai, 1984; Dwyer & Fischer, 1990), performance (Weiss & Friedrichs, 1986; Westre & Weiss, 1991), and coach-athlete compatibility (Horne & Carron, 1985). The diversity in these studies demonstrates the relevance of the Multidimensional Model to the sports setting.

Chelladurai (1984a) initially examined whether an athlete's perceptions of coaching behaviour was associated with his or her satisfaction with the coach. The LSS was thus administered to approximately 200 university athletes from the sports of basketball, track and field, and wrestling. Chelladurai found "discrepancies" existed in the components of training-instruction and positive feedback. More specifically, the higher the perception of those behaviours relative to the preferences, the higher the satisfaction of the athlete. In a similar study,

Dwyer and Fischer (1990) looked at leadership styles of wrestling coaches as a predictor of athlete satisfaction. An important finding was that wrestlers were most satisfied with their coaches' leadership if the coaches were perceived to exhibit greater amounts of positive feedback and training-instruction, and lower levels of autocratic behaviour. Finally, Chelladurai, Imamura, Yamaguchi, Oinuma and Miyauchi (1988) conducted a cross cultural study in order to look at athlete satisfaction. Their study explored the differences between Japanese (n=115) and Canadian (n=100) male university athletes in the area of sport leadership. They found both similarities and dissimilarities between the two groups. Canadian athletes expressed more satisfaction with both leadership and personal outcome than Japanese athletes; more specifically, the higher the perceived score (except in autocratic behaviour), the higher the satisfaction with the coaches' leadership. The authors stated that more research was needed before concrete conclusions could be reached. Chelladurai (1993) suggested conducting more comprehensive studies incorporating sophisticated procedures such as path-analyses or structural equation models.

Another interesting dimension of the LSS concerned the outcome of team performance. Weiss and Friedrichs (1986) are among a few researchers who have examined this issue. They solicited 251 American collegiate basketball players and 23 coaches to study a number of variables related to team performance, that is, win/loss record. Results of a multivariate analysis did not concur with the authors' initial hypothesis that teams with greater winning percentages would rate their coaches higher on the leader dimension of training-instruction. Surprisingly, only the dimension of social support was significant, but in a negative fashion. Thus, higher levels of social support was associated with poorer performances, or lower winning percentages. Researchers suggested that more work is needed in this area (Chelladurai, 1993; Weiss & Friedrichs, 1986). In fact, Chelladurai (1993, p. 655) noted: "Even when the individual is the unit of analysis, the coach's behavior toward the individual is not fully captured because several of the items in the LSS refer to the behaviors of the coach toward the group as a whole, and not toward the individual per se."

A final area concerning the consequences of coach leadership involved the compatibility between the coach and the athlete. Home and Carron (1985) noted that no research had "examined the relationship between discrepancy in athletes' perceptions and preferences on the LSS and athletes' performance perceptions" (p. 139). While Chelladurai measured the

discrepancy between the coach's self-perception of behaviour and the behaviour preferred by the athlete, the following study looked at the observer's perception of the behaviour which determined the observer's feelings and actions in the situation. It was found that coaches perceived themselves as exhibiting four of the five dimensions of the LSS; only autocratic behaviour was not significant. The authors emphasized the importance of the observer's perceptions on the LSS and recommended future studies of this sort.

In sum, the studies cited above examined unique angles of the LSS relating to important components of the coach and athlete relationship. Chelladurai (1993), however, has referred to these studies as "piecemeal" primarily because all segments of the multidimensional model have yet to be explored. He suggested that future studies examine more closely causal linkages of the results, the experiences and insights of both coaches and athletes, and the operational definitions of some leader behaviours, specifically when the team is the unit of analysis.

Decision-Styles in Coaching

Chelladurai and Haggerty (1978) developed a model pertaining to decision-styles in coaching. Before explaining the intricacies of the model, it is necessary to examine its origin. Vroom and colleagues (Vroom & Yetton, 1973; Vroom & Jago, 1978) helped them formulate the coaching model, and is noteworthy for two reasons. First, it presented the first model of its kind, whereby subjects diagnosed the status of a problem or decision in the form of cases (Vroom & Yetton, 1973). The subjects responded to a number of "yes" or "no" questions which in turn recommended one or more decision processes as appropriate to that situation. A second study by Vroom and Jago (1978) provided additional empirical evidence for the validity of the original model.

Chelladurai and Haggerty's (1978) model contained three types of decision styles - autocratic, participative, and delegative. These three situations were combined with attributes of decision-making situations deemed relevant by the authors and Vroom and Yetton (1973). This led to a normative model of the coaching decision-making style in the form of a flow chart depicting an algorithm. Chelladurai and Haggerty (1978, p. 9) noted that "the model is limited to the extent that it considers only team sports, and that the decision style recommended is based on the coach's subjective estimates of the decision attributes."

Chelladurai and Arnott (1985) were the first researchers to conduct an empirical study using the Normative Model. They administered the decision-style questionnaire to 144 male and female university basketball players to see which of the four coaching decision styles (autocratic, consultative, participative, and delegative) players preferred. The results showed an autocratic style was most preferred by players, while the delegative style received the least support. The aforementioned research served as the impetus for a follow-up study (Chelladurai & Quek, 1992), in which high school basketball coaches were sampled instead of players. Similar results were found whereby the autocratic style was the most preferred choice, and consultation with individuals was the least preferred one. Both these studies demonstrated that basketball coaches and players preferred autocratic decision styles when dealing with all types of issues.

In another study, Gordon (1988) tested the model by administering the questionnaire to both coaches and players of Canadian university soccer teams. The results of this study concurred with those of Chelladurai and Arnott in that players almost completely rejected the delegative style, and the autocratic style was the most popular choice. This led Chelladurai (1993) to conclude that if players lose their ability to participate in the team decision-making process, they prefer the issue to be addressed by the coach rather than by other players.

Chelladurai (1993) recommended more research because "real-life decision situations in coaching could be markedly different than the cases used in the above studies" (p. 667). It might be useful to ask coaches to describe their decision-making styles, including how they resolve issues. More studies are needed in team sports to determine if an autocratic style of decision making is preferred by other athletes besides soccer and basketball players.

The initial research of Chelladurai is noteworthy for two reasons. For one, it has given academics a number of new research possibilities regarding the coach-athlete relationship. On the other hand, it has provided practical information on leadership for coaches, athletes, sport psychology consultants, and athletic administrators. The need for more studies using the Multidimensional Model of Leadership should be viewed positively as it has no doubt paved the way for more research in this area.

Development of the CBAS

A related line of research to Chelladurai's is the work of Smith, Smoll and their colleagues, who have conducted several studies dealing with the relationship between coaches and athletes. Initially, Smith, Smoll and associates identified a number of questions, including what coaches do and how often they exhibit the behaviours of encouragement, punishment, instruction, and organization (Smoll & Smith, 1989). A major difference between this and the preceding body of research was the measurement; Chelladurai only used paper and pencil tests, while Smith, Smoll and associates combined the same instrument with direct observation. They presented some of the earliest research between coaches and athletes and also created instruments for coaches to use as an assessment tool to help improve coaching techniques. Finally, their work contains a number of dimensions that take into account areas of the CM, such as the personal characteristics of the coach and athlete.

Smith and Smoll's research led to the creation of the Coaching Behaviour Assessment System (CBAS), a tool permitting the coding of coaches' behaviours during games and practices. In the first of many studies, Smith, Smoll and Hunt (1977) developed the CBAS from direct observation of youth sport coaches and unveiled 12 behavioural dimensions, classified into two categories. The first, the coach's reactive behaviours, included the coaches immediate responses to players' or the team's mistakes, effort, or misbehaviours. In the second category, the coach's spontaneous behaviours were not a response to an observable preceding event, rather they dealt with either relevant or irrelevant behaviours exhibited during the game.

Using the CBAS, Smith, Smoll and Curtis (1978) conducted a field study with little league baseball players and their coaches in order to determine if relationships could be found between coaching behaviours and a number of player variables. They observed 51 little league coaches over 201 games, and approximately 1,000 behaviours of each coach. A total of 542 players, aged 8 to 15, were also interviewed. The strength of this research was that it emphasized actual leader behaviours, allowing players the opportunity of recalling and assessing the coaches' behaviours and other aspects of the sport experience (Chelladurai, 1993).

Smith and Smoll trained 17 observers over a four week period to use the CBAS to measure and observe coaches. The purpose of this research was to examine overt behaviours of the coach. Paper and pencil tests were administered, primarily to assess both players' perceptions

of coaching behaviours as well as their evaluative reactions to coaching and the sport experience. In the former, players were asked to rate their coaches on a 7-point likert scale on the 12 dimensions of the CBAS. In the latter, another 7-point scale was used to assess the players' reactions and feelings to coaches and their overall sport experience. Some of the questions included: "How much do you like playing for your coach?" "Do you like baseball more or less than you did at the beginning of the season?" "How well do you like the other players on your team?"

The results of this study indicated the importance of the coach in the overall growth and enjoyment of young baseball players. Two observed behavioural dimensions from the CBAS, supportiveness and instructiveness, were positively related to the players' attitudes towards their coach, sport, and teammates. The players' ratings on how often their coaches exhibited the CBAS behaviours revealed that supportive behaviours were positively related to attitudes about the coach, while punitive behaviours were negatively related.

A tool for coach assessment The results of earlier research led Smith, Smoll and Curtis (1978, 1979) to train little league baseball coaches to help them effectively interact with players. The sample consisted of 34 male baseball coaches who participated in the initial study, with 18 assigned to the experimental group receiving the training and 16 assigned to a no-treatment control condition. Based on the results of the initial study, a behavioural assessment tool was created to categorize the behaviours of coaches during games. Furthermore, players were interviewed at the completion of the season to elicit their views and perceptions. In general, the intervention program for the coach "stressed the desirability of reinforcement, encouragement, and technical instruction designed to elicit and strengthen desirable behaviors. The explicit goals of the guidelines were to increase positive interactions between coach and players, as well as among teammates, and to reduce fear of failure among players" (Smith, Smoll, & Curtis, 1978, p. 62).

The results of this study showed that trained and untrained coaches differed in both overt and player-perceived behaviours. Trained coaches communicated more effectively than untrained coaches, and more importantly, were evaluated more positively by players and saw their players acquire significant increases in self-esteem from the previous year. Smith et al. (1978, 1979) recommended more studies of this sort with this population.

Athlete enjoyment

Smith, Zane, Smoll and Coppel (1983) furthered research in this area through their analysis of coaches and athletes in a youth basketball league. An adapted version of the CBAS employed in previous baseball studies was used to collect data from 31 coaches. It was found that in general, coaching behaviours had a significant impact on players' enjoyment of basketball, team solidarity, evaluation of coaches, and self-esteem. In agreement with earlier studies, coaches who provided more mistake-contingent technical instruction, less punishment, less general feedback and who engaged in fewer "controlling" behaviours were rated more positively by athletes.

Another study by Smith and Smoll (1990) dealt with the coaches' affect on athletes' self-esteem. Fifty-one head male baseball coaches and 542 male athletes were observed over the course of a little league baseball season. As in previous studies, an adapted version of the CBAS was created to observe the coaches during games and practices. Results of this study showed that children who were low in self-esteem responded most favourably to coaches who were reinforcing and encouraging, and negatively to coaches who were not supportive.

Horn (1985) was one of the first "outside" researchers to test the CBAS. This study explored the relationship between coaches and female junior high school baseball players' perceptions of competence (cognitive, social, and physical), and their expectations for future athletic success. Horn's research differed from Smith and Smoll's because it examined the coach's feedback on individual team members rather than the team as a whole, and used teammates' ratings of player ability. Horn found skill improvement was the most important variable for the players' improved self-perceptions of ability. Furthermore, it was found that coaches' behaviours during practices also affected the players' perceptions of their competence and success expectancy.

Horn (1985) found low perceptions of competence in those players who frequently received verbal feedback from the coach following successful performance, compared to those players receiving high frequencies of criticism in response to unsuccessful performances. Horn explained these results with research examining adult expectation levels and type of feedback provided to children. Low-expectancy students are more likely to receive positive feedback from teachers following successful outcomes. Thus, in sport settings, it is possible that this type of

“positive” feedback might be reinforcing low ability because the coach did not praise other players for a similar type of performance level.

In sum, studies in this section contributed to Chelladurai’s findings. It is interesting to note that the type of research using observation methods such as the CBAS has yet to be carried out with expert coaches, especially those working with top-level athletes. The final section of this chapter will deal with some of the research methods used by Smith and Smoll and others, that being qualitative research.

Qualitative Research Traditions

Qualitative research was first used in the early 1900’s by academics in the social sciences, primarily anthropology and history. Many famous historical researchers used these methods including those from the “Chicago school” who studied human group life, as well as anthropologists such as Radcliffe-Brown and Malinowski who ventured to foreign settings to learn about the habits and lifestyles of distinct societies and cultures (Denzin & Lincoln, 1994). As qualitative research gained wider recognition in the social sciences, it also surfaced in education and social work (Denzin & Lincoln, 1994), and then in disciplines such as health studies, business studies, and program evaluation (Miles & Huberman, 1994).

Wolcott’s (1992) synopsis of different qualitative strategies in educational research presents a clear example of the many strategies available in this field. In the form of a tree diagram, Wolcott listed more than 20 different ways of collecting data. The multiple uses and meanings of qualitative research have discouraged academics from creating a standard definition of it, although Miles and Huberman (1994) forwarded a list of its recurring features, where it allows the researcher: 1) to gain a holistic overview, 2) to analyze data with words, 3) to acquire data from the “inside,” through a process of *verstehen* or understanding of behaviour, and, 4) to listen to a number of interpretations of material and choose the most compelling ones. Moreover, Miles and Huberman called qualitative data “sexy,” because its well-grounded and rich descriptions of data allow one to “preserve chronological flow, see precisely which events led to which consequences, and derive fruitful explanations. Then, too, good qualitative data are more likely to lead to serendipitous findings and to new integrations” (p. 1). Despite its growing popularity across many disciplines, combined with an increase of journals and software tools

designed specifically for qualitative research, it does not have a paradigm or set of research methods to call its own (Denzin & Lincoln, 1994).

Major Paradigms

The word paradigm is Greek in origin, and was first used to denote the essence of science; in its present context, it has come to include the way people perceive, interpret, and understand their world, the basic set of beliefs guiding their actions (Covey, 1989; Guba, 1990). Bogdan and Biklen (1992) defined a paradigm as “a loose collection of logically held together assumptions, concepts, or propositions that orient thinking and research” (p. 33). Guba (1990) listed some of the paradigms which guide our actions, among them the adversarial paradigm in the legal system, the religious paradigm in the spiritual and moral life, and the judgmental paradigm in the selection of Olympic winners of artistic sports. In academia, the focus is on paradigms guiding “disciplined inquiry” (Guba, 1990).

All paradigms can be characterized by the way their followers respond to the ontological, epistemological, and methodological questions. Ontology refers to the question: “What is the form and nature of reality?” Epistemology refers to the question: “What is the relationship of the inquirer and the known?” Finally, methodology asks, “How should the inquirer explore that reality?” (Lincoln & Guba, 1985). Most researchers in the social sciences prefer to concentrate on the methodological question and leave ontology and epistemology for philosophers. Despite this, discussing all three terms seems important since they are a starting point for what inquiry is and how it will be practiced (Guba, 1990; Lincoln & Guba, 1985). Moreover, each offers “diverse views of what is real, what can be known, and how these social facts can be faithfully rendered” (Miles & Huberman, 1994, p. 4).

The ontological issue deals with reality. Those advocating the many paradigms which support qualitative research (i.e., naturalistic, constructivist, hermeneutic, interpretive) argue that realities are multiple and as such need to be examined holistically by more than one person. Supporters of the positivistic, conventional or scientific paradigm believe there is only one single reality, and it must be studied until it can be predicted.

The epistemological issue relates more directly to the researcher. Those who use qualitative methods believe the investigator and the object of investigation interact to influence

one another, that is to say they are inseparable, producing idiographic statements (Lincoln & Guba, 1985). This leads to a subjective epistemology where the findings are created by interactions between researcher and participants. In quantitative research, however, the researcher and the investigated objective act independent of one another, as a dualist, producing nomothetic statements (Lincoln & Guba, 1985). Objectivity is the goal, where the researchers believe they are not influencing the results of the study or being influenced by it in any way (Guba & Lincoln, 1994).

The methodological issue is the least confusing of these elements, and involves uncovering ways in which the researcher is able to distill pertinent information (Guba & Lincoln, 1994). In qualitative research, individual constructions are elicited through a series of iterative interactions between the researchers and their participants (Guba, 1990). The dialectic between the researcher and the participants permits constructions to be compared and contrasted to search for true meaning. From a positivistic perspective, an experiment is conducted whereby the researcher specifies hypotheses beforehand and analyses observations in order to confirm or refute them.

With the elements affecting paradigms now outlined, a description of the conceptual framework guiding the present study can be presented. Before proceeding, however, it is necessary to first provide a sport-specific overview of these phenomena.

Research Traditions in Sport Psychology

Like other disciplines in the social sciences, sport psychology researchers have been experiencing a paradigm revolution as they search for an appropriate framework (Gage, 1989; Lincoln, 1989; Sparkes, 1991; Streat, 1993). Martens (1987b) noted the pioneering work of Kuhn (1962) and Polyani (1958) as influencing a paradigmatic shift of thinking in the social sciences. These scientists were able to discount the notion of orthodox science being objective, demonstrating how it is harmful and destructive to many of the domains which study human behaviour.

Initial research in the sport sciences began by applying the methods of science in a traditional manner which included behaviour observation methods, questionnaires, and experimental research conducted in laboratory settings (Martens, 1987b). Orthodox science is one of the terms used to describe this research, which originated from work in the traditional

sciences, such as physics and mathematics. Côté, Salmela, Baria and Russell (1993) stated that orthodox science examines the "social world as if it were hard, external, and objective, focusing upon an analysis of relationships and regularities between various concepts of individuals under study and using different quantitative techniques for analysis" (p. 128). Those who did not follow this procedure were said to not carry out "good science," leaving no option for alternative choices.

As noted earlier, a variety of paradigms have been forwarded which help people better understand their world. Recently, the naturalistic paradigm has risen to challenge the orthodox or hard science method (Guba & Lincoln, 1981). This is especially true in sport psychology, where researchers have begun to consider that orthodox science is not the only option available, and are now beginning to advocate research that considers experiential knowledge and uses different idiographic approaches of investigation. In this approach, the researcher comes to know each subject so he/she feels comfortable enough to relay important information. Martens (1987b) listed a number of methodologies for collecting data that included case studies, in-depth interviews, extended participant observation studies, and comprehensive content analyses of oral or written records, all of which can be used in many different paradigms.

The growing number of studies in the sport sciences using qualitative methods demonstrates the benefits and popularity of this approach. Consider Scanlan, Stein and Ravizza's (1991) examination of the sources of elite figure skaters, Gilbert, Trudel and Bloom's (1995) study of intramural ice hockey officials, Orlick and Partington's (1991) examination of the mental readiness of elite athletes, Weiss, Barber, Sisley and Ebbeck's (1991) research on novice coaches, Russell and Salmela's (1992) study on the performance components of elite athletes of individual sports, and Côté, Salmela and Russell's (1995a, 1995b) research on the knowledge of high-performance gymnastics coaches. Many of these qualitative studies, along with others in this time frame, were influenced by the work of Lincoln and Guba.

Orientation of the Present Research

Guba and Lincoln or Lincoln and Guba have published numerous articles and textbooks on qualitative research (Guba, 1989, 1990; Guba & Lincoln, 1989, 1994; Lincoln & Guba, 1985). They refer to their philosophical stance as "constructivist," replacing their earlier choice of

"naturalist." Guba and Lincoln are different from other qualitative researchers because they believe that qualitative inquiry should remain completely separate from scientific inquiry and the traits associated with positivism. Guba and Lincoln (1989) defined their position as follows:

The major task of the constructivist investigator is to tease out the constructions that various actors in a setting hold and, so far as possible, to bring them into conjunction - a joining - with one another and with whatever other information can be brought to bear on the issues involved. (p. 142)

A statement from Schwandt (1994) seems particularly relevant to the present research:

"The question of whether constructions are true is sociohistorically relative. Truth is a matter of the best-informed and most sophisticated construction on which there is consensus at a given time" (p. 128). Thus, the present study will examine coaches' characteristics, knowledge, and strategies as affected by their current circumstances. The paradigm most closely associated with this type of research is constructivism, which is best exemplified in the work of Guba and Lincoln (1989). A closer look at the ontological, epistemological, and methodological underpinnings of a constructivist approach indicates why.

The ontological axiom of constructivism states that reality exists "as a set of holistic and meaning-bounded constructions that are both intra- and interpersonally conflictual and dialectic in nature; that, whereas the positivist construction of reality is realist in orientation, the constructivist is relativist" (Guba, 1990, p. 77). In the case of the present research, expert coaches were asked to provide their views of reality on different components of their profession. From this idiographic knowledge, concepts, models, or schemes can be created to help make sense of these multiple constructions. As Schwandt (1994) suggested, people do not find or discover knowledge as much as they construct it. In the present research, each coach's views of their profession were elicited, leading to the creation of higher order categories.

The epistemological position involves an interactive monism between the researcher and the researched. In this case, the data "begins with issues or concerns of participants and unfolds through a 'dialectic' of iteration, analysis, critique, reiteration, reanalysis, and so on that leads eventually to a joint (among inquirer and respondents) construction of a case" (Schwandt, 1994, p. 129). In the present research, the knowledge uncovered was a combined process between the researcher and the subject being interviewed, or more precisely, as a monistic, subjective

epistemology. This is one of the reasons that semi-structured, open-ended questions were used. Coaches were free to talk about whatever areas they believed were most important.

Finally, from a methodological standpoint, there was a separate interview between the researcher and each coach, in a setting where coaches felt comfortable to express their thoughts. Guba (1990) discussed the importance of theory arising from this type of data, and called for an inductive approach. A more complete discussion of the current method can be found in the following chapter under the heading of data analysis. Guba and Lincoln (1989) used the term hermeneutic dialectic to describe the process just outlined:

It is hermeneutic because it is interpretive in character, and dialectic because it represents a comparison and contrast of divergent views with a view to achieving a higher-synthesis of them all, in the Hegelian sense. Nevertheless, the major purpose of this process is not to justify one's own construction or to attack the weaknesses of the constructions offered by others, but to form a connection between them that allows their mutual exploration by all parties. The aim of this process is to reach a consensus when that is possible. (p. 149)

In sum, the constructivist paradigm is best suited from an ontological, epistemological, and methodological perspective to the present research. The primary goal of a constructivist approach is to understand meaning and the subject's meaning of a situation (Schwandt, 1994).

Stean (1993) cautioned that while Lincoln and Guba's research dominated the sport psychology research of the early 1990's, there are "many other perspectives and a variety of concerns raised by other scholars that merit consideration" (pp. 16-17). Two of the more popular perspectives are Patton's (1987, 1990) "pragmatist" approach and Miles and Huberman's (1984, 1994) "transcendental realist" approach. Although both of these approaches have merit, a brief consideration of their philosophical underpinnings shows why they are not as well suited to the present research as a constructivist approach.

A concern of Patton's (1987, 1990) work is that it does not believe a researcher needs to identify with a paradigm. Thus, "Patton's position is that all of these issues should be pragmatically negotiated with users and that explicit criteria would be incompatible with this" (Pitman & Maxwell, 1992, p. 737). Because of the vagueness of this approach, it was not selected as the paradigm for the current research.

A completely different approach to Patton is the one advocated by researchers Miles and Huberman. Coming from a quantitative background, these researchers forwarded a very "scientific" approach using qualitative analysis to look for cause and effect relationships (Pitman & Maxwell, 1992). One advantage of Miles and Huberman's work is their advanced computer programs and visual matrices. Despite this, their work has come under a significant amount of controversy for its unique ontological and epistemological suggestions. With respect to epistemology, Miles and Huberman stressed the importance of beginning with a general set of pre-structured research questions, which limits the nature of open-ended questions. In the same vein, the issue of how to analyze the data becomes contentious. Miles and Huberman (1994) are less committed to the total use of inductive strategies, as evidenced by their statement: "Starting with them (deductively) or getting gradually to them (inductively) are both possible. In the life of a conceptualization, we need both approaches" (p. 17).

Critics of the constructivist approach would suggest that it does not provide guidelines to carry out a research study and that it ignores that constructions are socially situated and may not be reproduced in all occasions. Moreover, Pitman and Maxwell (1992) have further elaborated on the shortcomings of constructivism, by stating that "their understanding of culture is to a significant extent "uniformist" in its assumption that what is most important to the functioning of a group is what the members share or come to share...for them, "resolution" of an issue is equated with arriving at a shared construction of it, at which point the required action is self-evident" (p. 742).

Respondents of the constructivist approach would state they are most concerned with matters of knowing and being, rather than method (Schwandt, 1994). Furthermore, Guba (1994) has argued that "the sets of answers given in all cases are human constructions; that is, they are all inventions of the human mind and hence subject to human error. No construction is or can be incontrovertibly right, advocates of any particular construction must rely on persuasiveness and utility rather than proof in arguing their position" (p. 108). For this reason, along with others mentioned earlier in this section, a constructivist approach is best suited to the goals of the present research.

A discussion in the next chapter will elaborate on the data collection and interpretation, as well as the methods used in their analysis. The purpose of this study is to better understand the

perceptions of expert team sport coaches regarding the characteristics, knowledge, and strategies that operate within their profession, and then to conceptualize the relationships between these various elements.

CHAPTER 3

METHOD

After reviewing pertinent literature pertaining to the psychological and pedagogical aspects of coaching, it appears that very little research has explicitly examined the characteristics, knowledge, and strategies of expert coaches, especially team sport coaches. Some unanswered questions which remain include how do these coaches prepare themselves and their athletes for competition, how do they structure their training environments, and what are their views on working with athletes? Initially, it would seem this knowledge would be found in coaching textbooks and seminars. However, this was not the case. For example, Gould, Giannini, Krane and Hodge (1990) studied elite American coaches, and found coaching knowledge was acquired from other coaches. A qualitative methodology was suggested as the best way for obtaining this type of data. This chapter will focus on the qualitative methods used to acquire information in the present study.

Data

Sample of Coaches

The identification of an expert in any domain is a difficult and ambiguous task at the best of times. This is no different in sport, especially with coaches, where there is more to consider than just wins and losses. Two studies, in particular, have examined experts in the sporting context and have influenced the present research. Bloom's (1985) study of expert performers is one example of a qualitative study that examined the developmental roles played by expert coaches on elite athletes. Bloom identified elite performers in a number of domains, and then retrospectively interviewed these individuals regarding important episodes of their lives. It was revealed that expert performers progressed through three phases, and each time they advanced to a higher level, they obtained a more advanced coach or teacher. Côté, Salmela, Trudel, Baria and Russell (1995) explicitly identified and conceptualized the knowledge of expert coaches. Using open-ended interviews, they inductively generated a mental model used by expert gymnastics coaches. In a manner analogous to Bloom and Côté, Salmela, Trudel et al., the present study

interviewed expert coaches of team sports to look at the characteristics, knowledge, and strategies of these coaches.

This research is part of a larger project on expert team coaches conducted at the University of Ottawa. At the outset, executives from Sport Canada helped to identify which coaches would be willing to participate in this study from those (team) sport federations who put money into the project. It was specified that from each selected sport, there would have to be five or six top coaches who would agree to a 2-4 hour interview. Sport Canada suggested different coaches from the four team sports of ice hockey, field hockey, basketball, and volleyball. Six coaches from field hockey were named (two males and four females), along with six from basketball (five males and one female), five from volleyball (four males and one female) and five males from ice hockey.

Twenty-two expert coaches were chosen from a predetermined set of criteria, beginning with a minimum of 10 years of coaching experience or more than 10,000 hours of concerted coaching time (Ericsson, Krampe, & Tesch-Römer, 1993; Rutt-Leas & Chi, 1993). They were also selected by peers and sport governing bodies based on won/loss percentages as well as quantity of national and international elite performers produced at the time of selection. Professional positions varied from the intercollegiate level to current and former national team coaches.

In the present study, 16 of the 22 interviews made up the data set. Six coaches were omitted from the original list because they acquired less experience as a head coach or more experience as an assistant coach. Of the six coaches who were omitted, five were males. The average age of the 16 expert coaches used in the present study was 45.5 years, and they had coached at the elite level for an average of 19.9 years. A more detailed breakdown of these coaches experiences can be seen in Table 1.

Secondary Analysis

According to Kiecolt and Nathan (1985), secondary analyses are "a set of research endeavors that use existing materials. It differs from primary research in that primary analysis involves both data collection and analysis, while secondary analysis requires the application of creative analytical techniques to data that have been amassed by others" (p. 10). The principle

Table 1

Demographic Information of the Expert Coaches

Coach	Years Coaching	University Level	National Level	Gender	Years Coaching	
					M	or F
1BB	39	9	16	M	39	1
2BB	26	15	1	M	7	21
3BB	28	18	--	M	10	18
4BB	43	21	8	M	34	10
5BB	21	18	2	F	--	21
6BB	34	20	5	M	29	,
7VB	15	14	--	F	--	15
8VB	25	16	9	M	13	18
9VB	16	12	--	M	16	1
10FH	22	17	10	F	2	22
11FH	17	15	5	F	--	17
12FH	25	20	17	F	2	25
13IH	31	22	3	M	31	--
14IH	36	29	3	M	36	--
15IH	23	11	8	M	23	--
16IH	21	12	2	M	21	--

Legend:	BB=basketball coaches	VB=volleyball coaches
	FH=field hockey coaches	IH=ice hockey coaches

feature of a secondary analysis is that it presents information, interpretations, or conclusions different from those in the first report (Hakim, 1982, Thorne, 1994). Kiecolt and Nathan also note that secondary analyses allow access to data from large national samples that would otherwise be difficult for a lone researcher to gather, either time wise or financially. The aforementioned point, along with the fact that the present author did not conduct the interviews, is why a secondary analysis was used in the present research.

Initially, the original data was used to produce technical reports for each of the four sport governing bodies that provided access to their coaches. This report differed from the present research in context and in methodology. First, the focus of that research was more broad and included all of the interview data, such as sections on both the athletic and early coaching experiences of these experts as well as their future recommendations. These dimensions will not be covered in the present research which is centered on the coaches' knowledge once they became experts. Second, those reports were not prepared for an academic purpose, and did not adhere to strict methodological standards. The sport governing bodies required a synopsis of their coaches' evolution, knowledge, and recommendations so they could take the general principles to assess the effectiveness of coach education.

Selected portions of this data have also been summarized and presented at scientific conferences or at coaching symposia. Furthermore, they have been compared and contrasted with data on coaches of individual sports. A final use of the interview data has been the compilation of a book on expert coaching that was recently submitted by Salmela (in press). Once again, the unique goals or objectives of this book differentiated it from the present research. To begin, the book considered a larger base of the data, similar to the Sport Canada reports. Second, the book was written for coaches, athletes, and others interested in coaching. It was not required to meet strict methodological guidelines of science and was written in a manner more appropriate (hence applied) for those buying the book.

In sum, secondary analyses of data are valuable assets providing certain guidelines are followed. In the present research, a large amount of original text was analyzed to unveil the characteristics, knowledge, and strategies of expert coaches. Without the assistance of a secondary analysis, this would not have been possible.

Data Preparation

In total, 11,572 lines or 320 pages of single spaced manuscript text was gathered in the present research. All raw data were transcribed verbatim from the cassette to a typed format immediately after the completion of each interview. Microsoft Access, designed specifically to analyze qualitative data, was used to facilitate the organization of data. This program allowed each segment of text to be grouped and categorized separately, and also to be moved and re-labelled each time higher-order categories were developed. Sole alterations done by the researcher to the manuscripts were grammatical and spelling corrections that clarified, but did not detract from the content and its implications (Tesch, 1990). In order to better familiarize the researcher with the interview text and its context, a one-page single-spaced synopsis of each coach's history and views of coaching was written before any data analysis took place (Appendix C). To accomplish this task, the present author carefully listened to each interview tape, often two or three times, to understand both the coach's history and ideas. It also gave the present researcher a better feeling for how the interviews were conducted.

Interview Technique

The different types of interviews can be seen on a continuum with those ranging from "structured or focused" (Merton, Fiske, & Kendall, 1956) to those labelled as "unstructured, elite, or exploratory" (Dexter, 1970; Richardson, Dohrenwend, & Klein, 1965). In unstructured and semi-structured approaches, the research problem and questions have not been formulated ahead of time, which avoids forcing or guiding the subject to respond in a manner or framework which has been posited by the researcher beforehand. More specifically, in these two types of interviews, "the format is nonstandardized, and the interviewer does not seek normative responses. Rather the problem of interest is expected to arise from the respondent's reaction to the broad issue raised by the inquirer" (Guba & Lincoln, 1981, p. 156). These interviews allow for revisions to parts of this protocol and for subjects to stress points they believe are most important, rather than relying upon the investigator's notion of relevancy (Dexter, 1970). Furthermore, "when an interview is tightly structured, it begins to approximate a questionnaire in appearance: indeed, the questionnaire might be thought of as a special form of structured interview that happens to be self-administered" (Guba & Lincoln, 1981, p. 164).

In an unstructured or semi-structured interview, the best responses are often elicited by open-ended questions (Guba & Lincoln, 1981). These questions do not limit the respondent's answers to a certain topical area. A precise summary of this method is forwarded by Guba and Lincoln (1981), who stated:

The distinguishing characteristic of open-ended questions is that they raise an issue but do not provide or suggest any structure for the respondent's reply; the respondent is given the opportunity to answer in his own terms and to respond from or create his own frame of reference. Such questions are called for when the issue is complex, the relevant dimensions are not known, or the interest of the research lies in the description of phenomenon, the exploration of a process, or the individual's formulation of an issue (pp. 177-178).

Since elite performers respond well to semi-structured, open-ended questions which allow them to express their ideas in an unrestricted manner, an in-depth interview approach was used in the present research (Marshall & Rossman, 1989).

Although the present research used semi-structured, open-ended interviews and did not employ an interview guide, it was expected that coaches would talk about the most important areas of coaching, such as those related to competition, organizing their team, training, and their interactions with athletes. A semi-structured approach was used since an initial understanding of these issues was forwarded from recent research on expert gymnastics coaches (Côté, Salmela, Trudel, Baria, & Russell, 1995; Côté, Salmela, & Russell, 1995b). Patton's (1990) interview guide approach was employed to elicit knowledge from the expert coaches in those studies. It produced data that "was a collection of concepts, specialized facts, procedures and judgmental rules about the specific domains of high-performance coaches rather than general knowledge or common sense knowledge about coaching" (Côté, 1993, pp. 51-52).

Patton (1987, 1990) discussed many crucial factors pertaining to successful interviewing. In particular, two of these factors were followed in the present research. One method was to word questions as precisely as possible, using jargon or terminology familiar to the expert candidate. Second, Patton talked about a term called "probing" in order to help redefine and elaborate on material mentioned in the interview. Whenever the terminology or details of a topic were confusing or lacked depth, detailed probe questioning was employed, including the basic

who, what, where, when and how. The question why was omitted from the research as it resembles or infers a cause and effect relationship, which is generally not associated with qualitative research. It may also make the subject feel apprehensive about an area, perhaps figuring they have said something controversial or incorrect, or were not explaining themselves well enough. An example of probe questioning occurred with one of the basketball coaches in response to the area of athlete empowerment. The interviewer asked: "In what sort of ways do you give your athletes more control?" A different type of probe questioning was used to help understand the links between the coaches' knowledge. For example, many coaches were asked: "How do you link the competition and training processes?" Still another common probe question was: "How do you conceptualize and communicate the training process?"

Measures to Control for Interview Bias

Despite the many strengths of the in-depth interview technique, there are some authors who have expressed concern with this type of approach, especially with the validity and reliability of the informants' explanations (Brenner, 1985; Denzin, 1970; Wielinga & Breuker, 1985). More precisely, Wielinga and Breuker cautioned that the expert may forget to mention crucial information, that the interviewer may not fully comprehend the importance of certain areas of the interview, and that most experts may not want to reveal their most inner thoughts or may not be good at it because they have so little practice in this task. Guba and Lincoln (1981) suggested that setting the proper environment and context is a means of "filtering out" types of confounding information.

Like all aspects of life, people perform best in comfortable environments. In the current study, subjects were liable to indicate by their body motions or gestures if they were uncomfortable with a question or response. According to Côté (1993), the interviewer has to make the subject feel at ease. Ways of achieving this were nodding to the informants, laughing when they said something funny, listening attentively to what they had to say, putting the questions or phrases in their language, and conducting the interview in a setting in which they were comfortable (Côté, 1993).

Setting the proper context of the interviews was another way of ensuring the validity of the interview process. The interviews were carried out by an experienced qualitative researcher

who had previously interviewed expert coaches from other sports. The interviewer also acquired practical experience in the sports setting with both coaches and athletes through his involvement as a mental training consultant with three Canadian Olympic teams.

Of the 16 coaches interviewed for this study, some were familiar with the interviewer and/or his research, but none knew him personally. For almost all coaches, their first direct contact was a result of this study. All the coaches planned four hours for their interview. The interviews lasted between 1.5 to 3 hours, with one experienced coach needing six hours to complete the interview. Ten of the 16 interviews took place in the coaches' office before or after a training session. Of the remaining interviews, five were conducted in neutral sites at universities and hotel rooms and one at a coach's home.

A number of other measures were taken to ensure the validity of the interviews. The interviewer did not start the interview immediately after sitting down with the coach. Instead, a rapport was established with the coaches by talking about the current state of their team or sport, or some of their past or present accomplishments. The interviewer also informed the coaches about the approach and design of the interview. Finally, coaches were asked permission for the interview to be tape-recorded, an information and consent form was presented and signed (Appendix B), and then the interview began.

One final method of validation also took place at the completion of each interview. Each coach was asked whether any pertinent information was overlooked during the interview process, and if so, they were asked to discuss that area. In sum, the combination of all these precautions helped to ensure the success of the interviewing process.

Analysis

The objective of semi-structured interviews is to analyze them so that an organizing system of categories will emerge which adequately represents the knowledge of those being interviewed (Côté, Salmela, & Russell, 1995b; Strauss & Corbin, 1990, 1994). Two factors are crucial to the success of this process. One is to follow an inductive process of reasoning. In this case the data are analyzed from 'the bottom-up' rather than the 'top-down'. This allows the pieces of information to form their own categories rather than following ones hypothesized

beforehand. Bogdan and Biklen (1992) further elaborated on the inductive process of data analysis:

You are not putting together a puzzle you already know. You are constructing a picture that takes shape as you collect and examine the parts. The process of data analysis is like a funnel. Things are open at the beginning (or top) and more directed and specific at the bottom. The qualitative researcher plans to use part of the study to learn what the important questions are. (p. 32)

The other factor involves following two operations proposed by Tesch (1990). First, there is a detailed examination of the text segment, where topics which describe each aspect of it are identified. This is followed by a process of trying to identify relationships between common topics. Côté and colleagues (Côté & Salmela, 1994; Côté, Salmela, Baria, & Russell, 1993; Côté, Salmela, & Russell, 1995b) have expanded upon these ideas and suggested specific guidelines for organizing and interpreting unstructured qualitative data, and these are called creating tags, followed by creating properties and categories. This method of data analysis was used in the present research.

Creating Tags

The process of creating tags entailed dividing and cutting the text from the interview transcripts into separate pieces of information or "meaning units." Tesch (1990) defined a meaning unit as a "segment of text that is comprehensible by itself and contains one idea, episode or piece of information" (p. 116). Moreover, when the content in each interview stood out as meaningful in itself, it was isolated as a separate piece of text from the material that surrounded it. The coder looked for "in vivo tags," that is terms used by the coaches (Côté, 1993). At this point, the researcher was not concerned with the aptness of the tag since it could be changed later during the analysis process. Some of the provisional tags describing the topic of the text segments included mental preparation of coaches, emotions, respect, or time-outs. The goal of this stage was to separate similar data segments from their context with like tags, a process referred to as "de-contextualizing" the information (Tesch, 1990). The 16 interview transcripts were analyzed on a line-by-line basis, resulting in a total of 1,276 meaning units and 79 different tags.

Creating Properties

The second step of interpretation analysis was creating properties. This involved listing and comparing the tags created in the first phase. Tesch (1990) described the purpose of this process as “re-contextualizing” the information, which served as a preliminary organizing system for the data. Similar tags were re-grouped and organized into distinct categories that were referred to as properties (Côté, Salmela, Baria, & Russell, 1993). In the present study, for example, the tags “game plan,” “pre-game warm-up for athletes,” and “pre-game talk” were inserted with similar tags into a category entitled “pre-competition on-site events.” The label given to this group of tags was designed to capture the “substance of the topic” being discussed (Côté, 1993). Côté et. al noted that it was important that the tags, not the meaning units, were compared in this phase. An inductive form of data analysis took place, whereby the data was continuously modified and analyzed until a consensus of all the properties identified were agreed upon by all of the judges. In the present study, the 79 tags were grouped into 22 properties.

Creating and Conceptualizing Categories

Strauss and Corbin (1990) noted the final stage of analysis is creating a concise theoretical formulation once the data has been collected. This involves a further inductive analysis of the content whereby relationships are identified between the properties, creating a small number of higher-order categories to explain the characteristics, knowledge, and strategies of expert team coaches. In a sense, this step is similar to the earlier stage of creating properties, except it is now done at a higher and more abstract level of analysis (Côté, Salmela, & Russell, 1995b; Strauss & Corbin, 1990).

Strauss and Corbin (1990) reported the importance of the constant comparative method, which involves analyzing data until a saturation of knowledge has been reached. More precisely, when all the steps are carried out and higher-order categories describing the coaches' characteristics, knowledge, and strategies have been achieved, the researcher must ensure that he or she compares, contrasts, and re-analyses the categories to make sure that it accurately details the information from the interviews. Côté and Salmela (1994) suggested three questions for assisting this procedure. The three questions are: 1) “Are all the meaning units that are regrouped into a property similar or different?” 2) ‘What are the similarities in the content of

each property?" 3) "Is there confusion or contradiction in the content of the category?" (p. 466). In sum, the 22 properties were gathered together and re-divided into six different categories.

Establishing Trustworthiness

One question frequently asked when using qualitative methods to collect data is: How can you tell that your conclusions are not subjective observations, but are reliable facts worth considering? More specifically, naturalistic inquirers are often attacked with regards to the trustworthiness of their analysis (Lincoln & Guba, 1985). Lincoln and Guba proposed two sets of criteria, labelled as trustworthiness and authenticity, for ensuring the integrity of qualitative data analysis. These two methods will now be explained, beginning with trustworthiness. In this case, the four conventional concepts for assessing quantitative data were considered to help create a similar list for qualitative data. The positivistic terms of internal validity, external validity, objectivity, and reliability are analogous to the naturalistic terms of credibility, transferability, confirmability, and dependability. These four terms will now be discussed as they applied to the present research.

Credibility

Methods for ensuring the findings and interpretations of data are credible or believable are numerous (Lincoln & Guba, 1985). In the following study, six separate precautions were taken to ensure the coaches' realities and the researchers' interpretations of these realities were correct.

Familiarity This term presupposes that the individual who is conducting the interview is familiar with the area of study. This is similar to Lincoln and Guba's (1985) term called prolonged engagement, of which the purpose is "to render the inquirer open to the multiple influences - the mutual shapers and contextual factors - that impinge upon the phenomenon being studied" (p. 304). Interviewing someone in the sports setting, especially an expert coach, poses a similar concern. The interviewer must know the coach's history, the nature of the sport, and the terms which are used in it. The interviewer should also know the record of the teams on which the coach has been a part of, especially any significant accomplishments and championships.

The question of familiarity was addressed in the present study. The interviewer was involved in many dimensions of sport, including participant, official, coach, enthusiast, and sport psychologist. As a scientific researcher, he has been publishing books and articles related to the

sporting domain for over 20 years. He was especially cognizant of the Canadian sports scene, and understood many of the complexities and nuances of each sport.

Persistent interviewing Whereas the previous step provided scope to the analysis, the present precaution added depth to it (Lincoln & Guba, 1985). A competent qualitative investigator is able to focus on the most important points being relayed to him or her, and similarly pass over or ignore irrelevant facts. More precisely, the inquirer must “continuously engage in tentative labeling of what are taken as salient factors and then exploring them in detail, to the point where either the initial assessment is seen to be erroneous, or the factors are understood in a nonsuperficial way” (Lincoln & Guba, 1985, p. 304). Thus, the coaches were often probed (Patton, 1990) to ensure that what they were saying was understood and that they had enough time to complete their answer. Furthermore, the coaches were always given the chance to come back to any issue or idea which they felt was important or needed further clarification. Finally, the interview always ended with the following question: “Is there anything else that has not been covered that you feel is an important aspect of your job?”

Triangulation A common way of ensuring the credibility of data, triangulation involves double-checking findings with multiple sources and modes of evidence (Miles & Huberman, 1994). Miles and Huberman (1994) defined this term as a “near-talismanic method of confirming findings. Stripped to its basics, triangulation is supposed to support a finding by showing that independent measures agree with it, or at least, do not contradict it” (p. 266). Denzin (1978) listed five types of triangulation, labelled as data source, method, researcher, theory, and data type. It was suggested that researchers choose which one(s) complements their research. In the present study, data source and researcher triangulation were used. Data source means that coaches from different sports were involved with the study, including those who coached males and those who coached females. This allowed for a more complete understanding of the coaches’ characteristics, knowledge, and strategies. Second, researcher triangulation was used whereby the current author along with an experienced senior researcher and graduate students all worked together to sort out and make sense of the data. Eventually, it was agreed upon that the higher-order categories accurately represented the characteristics, knowledge, and strategies of expert team sport coaches.

Electronic data handling The use of the Microsoft software program Access, a database

management system particularly useful with qualitative research, facilitated and improved the research analysis. Côté, Salmela, Baria and Russell (1993) have stated the importance of using electronic data instruments as opposed to manual measures. They reported how it increased the efficiency and reliability of the data process by assisting the tagging and categorizing of text while also decreasing the chances of losing data.

Peer debriefing In this case, the researcher was probed by individuals acting as protagonists, whereby "the inquirer's biases are probed, meanings explored, the basis for interpretations clarified. All questions are in order during a debriefing, whether they pertain to substantive, methodological, legal, ethical, or any other relevant matters" (Lincoln & Guba, 1985, p. 308). As the definition states, the debriefer should be someone who is the researcher's peer. In this case, there were four graduate students who had experience with qualitative research in coaching, who acted as the debriefer's. These fellow students took their roles seriously and helped with both the conceptualization and coding of the data. One final method of peer debriefing which enhanced the credibility of the results, both methodologically and content wise, was the presentation of different segments of this data at scientific conferences (Bloom, Durand-Bush, & Salmela, 1995; Bloom & Salmela, 1995; Bloom, Schinke, & Salmela, 1995).

Member checks According to Lincoln and Guba (1985), member checks are the most crucial technique for establishing credibility. It allows the researchers' conclusions to be evaluated by those individuals who provided the information, in this case, the expert team sport coaches. According to Lincoln and Guba, the primary difference between member checks and triangulation is that the former deals with constructions that look at credibility, while the latter is directed at a judgment of the accuracy of specific data items. A number of steps and precautions were taken to account for this measure.

For one, all coaches were mailed a copy of the cleaned up transcript for authentication prior to any form of analysis. They were allowed to edit or correct any information which they believed was incorrect or damaging to themselves or to others named or alluded to in the text.

Second, all coaches received the final categories with an analytical story describing the relationship between the categories. A cover letter accompanied this document and explained the methods used in the study, along with the results, and then invited coaches to assess the

categories and the story (Appendix D). A self-addressed stamped envelope was included with each package.

Of the 16 original packets sent to the coaches, 13 returned the analytical story and aside from a few small comments and suggestions, essentially agreed with the initial findings. They especially liked the importance given to coach-centered processes and the emphasis placed on outlining the mission in the organization category.

Transferability

This concept is much more difficult in qualitative methods compared to its counterpart of external validity in quantitative methods, essentially because it is virtually impossible to replicate a qualitative research study because of the changing context (Guba & Lincoln, 1989; LeCompte & Goetz, 1982; Lincoln & Guba, 1985). Furthermore, researchers working within a naturalistic framework “cannot specify the external validity of an inquiry; he or she can provide the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether a transfer can be contemplated as a possibility” (Lincoln & Guba, 1985, p. 316).

It is important that the methodology section in this research be clearly and accurately detailed so that future researchers wishing to study a similar phenomenon would have little or no trouble replicating or “transferring” the data collection, data analyses, and methodology used. Lincoln and Guba (1985) have further suggested that providing “thick description” is an important method of ensuring the transferability of someone’s research.

Confirmability

This concept is comparable to an accountant who must audit the books of a business. In this case, the interviewer keeps a clear record of all the steps of data collection and analysis. This involves outlining and detailing each step, so that nothing is lost or misplaced. An independent “auditor” should be able to obtain the researchers’ records and follow every step along the way, either agreeing or disagreeing with segments of the analysis. Côté (1993) detailed a process for ensuring the confirmability of qualitative research which was followed in the present research.

The task began with two graduate students who acted as judges throughout the entire coding process of this research. One of these was a doctoral student and the other a master’s student, both familiar with qualitative research methods and the coaching domain. A number of

the precautions listed in Côté's (1993) research regarding training judges was not necessary in the present analysis because these individuals already had experience with qualitative analytic techniques. For example, it was not necessary to have the judges begin by reading an article on analyzing and organizing qualitative data.

The confirmability check began by having the judges randomly check 25% of the meaning units from the data base. This procedure was followed for each of the higher-order analyses described earlier in this section, up to and including the most abstract categories. Instead of showing the judges a given tag, a list of all the tags or categories in that section was provided and they were asked to choose the tag or category which best suited the meaning unit.

The coding was checked four times: twice with the lower-order tags, and once with each of the properties and categories. The length of time to complete each of these tasks for the two judges took approximately: 3.5 hours for stage one, 2 hours for stage two, and 1 hour for the final stage. There was some discrepancy with the judges' tags in the first stage of analysis. When that happened the two judges discussed the reasons for their decisions until they both reached consensus. The only reoccurring area of concern was the one dealing with context. For example, many of the coaches spoke about Olympic or National Championships, when discussing their team preparation. The issue became whether this meaning unit was coded as "preparations of team" or "Olympic context." Eventually, the latter was chosen, with the understanding that special settings which were affected by the context should remain on their own, as the characteristics, knowledge, and strategies of the coaches were different in these situations.

Dependability

Dependability of data is another method of ensuring trustworthiness, and involves a number of steps, many of which implicitly relate to the preceding step of confirmability. With dependability, it is important to note whether the inquiry was appropriate and whether there were any methodological shifts, and if so, were they identified, explained, and supported (Lincoln & Guba, 1985). Further to this, any changes in methodology must be identified so that future researchers are able to understand and follow this approach. The key to successfully completing this task is constant communication between the judges and the researcher, especially "at milestone points, and whenever either of the teams saw a need for deviating from the originally

chosen path” (Lincoln & Guba, 1985, p. 317). These criteria did not surface in the present research, and thus dependability of the data in the present research did not pose a problem.

Establishing Authenticity

As stated earlier, Guba and Lincoln (1989) forwarded a second set of criteria for judging whether a qualitative analysis was methodologically and analytically sound. According to Guba (1990), the first set of criteria, called trustworthiness, had too many similarities to the conventional or positivist paradigm, ignoring whether stakeholder rights were honoured. Thus, a second set of criteria was established.

We first thought about what might come out of a naturalistic and responsive inquiry that would not, or should not, or could not evolve from a conventional one. These forms of knowing and action we called “authenticity criteria” to distinguish them from the methodological process criteria that we had designated as “trustworthiness” criteria. They included “states of being,” particularly for respondents, participants, and stakeholders, which were not expected (or warranted) in conventional inquiry, and one additional criterion, which recognized and attended to the need for such inquiries to express multiple, socially constructed, and often conflicting realities. The latter we termed fairness, and judgments were made on the achievement of this criterion in much the same way that labor negotiators and mediators determine fairness in bargaining sessions. (pp. 71-72)

The original intention in the present study was to implement Guba and Lincoln’s (1989) authenticity criteria. However, a closer look at their five terms, which they labelled as fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity, reveals criteria intended for program evaluation research. Moreover, it is most useful with studies that have stakeholder groups and beneficiaries who are often concerned with ethical and political concerns. As Pitman and Maxwell (1992) have noted: “Fourth generation evaluation (4GE) serves to empower stakeholders who are frequently disenfranchised by conventional evaluations. They see the risk to stakeholders from an evaluation, and the political educative benefit to these stakeholders, as primary reasons for the adoption of 4GE” (p. 740).

The present study was not undertaken to “evaluate” coaches. Rather, it was conceived as a way of obtaining information from a very complex domain. Although the sport governing bodies supported the project and provided access to the top coaches in the country, they did not

ask for any evaluative outcomes in return. They agreed to receive a summary report of their sport which they could use to help their coaching development programs. Ontological authenticity with its concern for improving stakeholders' constructions, or educative authenticity with its concern for stakeholders' appreciation of others' constructions, were not needed. Although authenticity criteria has definite merit and advantages for certain populations, such was not the case with the present study.

CHAPTER 4

RESULTS

The primary objective guiding the present study was to develop categories of knowledge regarding the characteristics, knowledge, and strategies of expert team sport coaches, and then to conceptualize the relationships between all aspects of these categories. The present chapter is organized according to this objective, beginning with a brief overview of the full data set. Then, a description of each elicited knowledge category along with their links to other categories will be presented within supporting citations, or meaning units, from the interviews with the coaches. Finally, the relationships and processes of the tags, properties, and most importantly, the highest order categories explaining the perceived characteristics, knowledge, and strategies of these expert coaches will be conceptualized and elaborated upon.

Nature of the Data

The total number of meaning units from the interviews was 1276. The interview transcripts can be divided into the following four sports: 504 for basketball (BB), 187 for volleyball (VB), 213 for field hockey (FH), and 372 for ice hockey (IH) (Table 2). The inductive analysis process resulted in regrouping these interview transcripts into 79 tags, 22 properties, and 6 categories (Table 3). While the categories and properties that emerged from the analysis were the same for coaches of all four team sports, the tags varied slightly in number and by their nature across the four sports, ranging from 63 to 76. The highest occurrence in basketball was due to the larger number of coaches sampled (six compared to three, three, and four coaches in the other sports), rather than the task demands of the sport itself. Along the same line, the number of meaning units per coach also varied in number and by their nature, ranging from 50 to 156, with an average of 79.75 meaning units per coach (Table 4). The difference in numbers of meaning units can be attributed to the open-ended nature of the interviews, where boundaries were not imposed on the subjects. The fact that some interviews lasted longer is not necessarily an indication of greater knowledge of the coach, as these numbers do not assess the quantity of the interviews. In order to provide a more complete and accurate pattern of each coach's responses, Table 5 provides the distribution of responses for each meaning unit by coach. More precisely, if one tag occurred ten times, it is important to know whether ten different coaches mentioned this

Table 2
Frequency of Occurrence of Meaning Units By Sport

Total Number of Meaning Units	Sport			
	Basketball (n=6)	Volleyball (n=3)	Field Hockey (n=3)	Ice Hockey (n=4)
1276	504	187	213	372
% of Meaning Units Per Sport	39.5	14.6	16.7	29.2

Table 3
Frequency of Occurrence of Tags, Properties, and Categories Used in the Inductive Content Analysis

Level of Analysis	Total Number From All Sports	Frequency of Occurrence			
		Basketball (n=6)	Volleyball (n=3)	Field Hockey (n=3)	Ice Hockey (n=4)
1. Tags	79	76	63	63	65
2. Properties	22	22	22	22	22
3. Categories	6	6	6	6	6

Table 4

Frequency of Occurrence of Meaning Units By Coach

Coach's Code	Number of Meaning Units	Coach's Code	Number of Meaning Units
1BB	156	9VB	54
2BB	52	10FH	70
3BB	61	11FH	89
4BB	99	12FH	54
5BB	78	13IH	107
6BB	58	14IH	81
7VB	50	15IH	103
8VB	83	16IH	81
<hr/>			
TOTAL = 1,276 MU			
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Table 5

Distribution of Each Tag by Coach (Coaches 1-8)

<u>Tag (N)</u>	<u>1BB</u>	<u>2BB</u>	<u>3BB</u>	<u>4BB</u>	<u>5BB</u>	<u>6BB</u>	<u>7VB</u>	<u>8VB</u>
additional responsibilities (3)	--	--	--	--	--	1	--	1
administrative variables (21)	7	--	2	2	1	--	--	2
always learning (29)	1	1	2	1	--	--	--	4
athlete input (9)	1	--	--	1	--	--	1	--
athlete interactions (31)	6	--	1	1	7	--	2	2
athlete needs (28)	4	5	2	3	2	3	1	--
career choice (7)	--	--	--	1	--	--	--	1
character (6)	4	--	--	--	--	--	--	--
clinics / seminar / symposia (25)	3	1	--	3	1	--	2	2
coach maturing (24)	5	--	1	6	--	--	--	--
communicating (12)	2	--	--	4	--	--	--	--
communication (13)	2	--	1	1	1	--	--	1
continuous training (7)	--	--	--	1	--	--	--	3
drills (10)	--	--	2	3	--	--	1	--
early morning routines (23)	--	2	--	3	3	1	1	3
emotions (25)	1	1	3	1	2	--	2	4
emotions and behaviors - coach (17)	1	1	--	--	3	2	3	1
empathy (8)	4	1	--	--	--	--	--	--
environment (12)	--	1	--	1	1	7	--	--
evaluation / testing (10)	--	2	2	--	--	--	1	1
gaining knowledge (43)	1	1	--	6	2	3	--	3
game plan (11)	--	1	--	--	1	--	--	1
general strategies (20)	1	--	--	1	1	--	--	3
good teacher (14)	--	1	1	2	1	--	--	--
hard work (9)	1	--	--	--	--	--	--	--
having fun (6)	--	1	--	--	--	--	--	1

Table 5 (cont'd.)

<u>Tag (N)</u>	<u>1BB</u>	<u>2BB</u>	<u>3BB</u>	<u>4BB</u>	<u>5BB</u>	<u>6BB</u>	<u>7VB</u>	<u>8VB</u>
individual rituals of coach (18)	1	2	2	--	2	1	2	--
injuries (2)	--	--	--	--	--	--	2	--
intense training (11)	--	1	--	3	1	--	--	--
intermissions (33)	9	--	5	1	--	--	--	--
International context (26)	6	--	--	--	1	2	--	i
joy of coaching (14)	--	--	3	1	2	--	--	2
learning from others (35)	1	1	--	3	1	3	2	5
meetings (12)	--	--	--	1	2	--	--	--
mental make-up (10)	2	--	1	--	1	2	--	1
mental preparation of coach (15)	1	2	1	2	1	1	--	1
mental rehearsal of athletes (12)	1	--	2	1	--	--	1	1
mentors (21)	3	--	4	1	1	1	3	--
monitoring goals (19)	1	4	2	--	2	--	--	--
off-season training (17)	--	--	1	--	2	--	6	--
officials (8)	1	--	--	2	3	--	1	1
Olympic context (10)	3	--	--	1	--	3	--	--
opponent preparation (12)	--	--	--	1	2	--	1	1
personal life (22)	2	--	3	3	2	--	--	--
personal reflections (22)	1	1	--	4	--	1	--	1
personal style (20)	4	--	--	2	2	2	--	2
physical preparation of coach (6)	--	--	--	--	--	--	--	1
planning - practices (36)	1	4	2	4	4	2	1	4
planning - quadrennial (6)	1	--	2	--	--	--	--	--
planning - seasonal (26)	1	2	--	--	1	--	--	3
planning - weekly (8)	--	--	1	--	--	--	--	--
playing time (6)	--	--	--	1	1	--	--	--
post-game evaluation (24)	1	1	2	1	--	1	1	--

Table 5 (cont'd.)

<u>Tag (N)</u>	<u>1BB</u>	<u>2BB</u>	<u>3BB</u>	<u>4BB</u>	<u>5BB</u>	<u>6BB</u>	<u>7VB</u>	<u>8VB</u>
pre-game talk (19)	5	2	--	--	--	--	--	1
pre-game warm-up for athletes (11)	1	--	--	1	--	--	2	2
pre-game warm-up for coaches (4)	1	2	--	--	--	--	--	--
problem resolution (31)	14	--	1	3	3	--	--	--
(individual) process goals (6)	--	--	--	--	--	--	1	2
(team) process goals (29)	3	4	1	2	2	1	1	1
Professional sport context (26)	--	--	--	--	--	1	--	--
respect (5)	1	--	--	--	--	--	2	--
self-evaluation (14)	1	--	1	4	1	--	--	2
setting a vision (20)	1	--	2	3	--	4	--	1
sharing information (13)	--	2	1	--	--	--	--	2
simulation (27)	4	--	1	--	5	3	1	4
skill development (9)	1	--	1	--	1	--	--	2
sport in Canada (22)	6	1	--	--	1	3	--	2
struggles (13)	--	--	--	1	1	4	--	2
substitutions (8)	5	--	--	1	--	--	--	--
support staff (c) (9)	3	--	--	--	1	--	1	1
support staff (o) (31)	6	1	--	3	2	--	--	--
talent (5)	1	--	--	--	--	2	--	--
teaching style (10)	3	1	2	2	1	--	--	--
team cohesion (19)	2	--	--	1	1	2	--	--
team meeting, based on outcome (18)	1	1	--	1	1	--	1	1
team meeting, no outcome (20)	3	2	1	1	1	1	2	2
team rules (12)	1	--	2	1	--	--	3	1
time-outs (13)	6	--	--	2	--	--	2	1
University context (8)	--	--	--	--	--	1	--	1

Table 5 (cont'd.)

Distribution of Each Tag by Coach (Coaches 9-16)

<u>Tag</u>	<u>9VB</u>	<u>10FH</u>	<u>11FH</u>	<u>12FH</u>	<u>13IH</u>	<u>14IH</u>	<u>15IH</u>	<u>16IH</u>
additional responsibilities (3)	--	--	1	--	--	--	--	--
administrative variables (21)	2	1	1	--	3	--	--	--
always learning (29)	--	2	1	2	7	--	4	4
athlete input (9)	--	--	2	1	--	--	2	1
athlete interactions (31)	1	--	5	1	1	2	2	--
athlete needs (28)	1	--	2	2	1	1	1	--
career choice (7)	--	--	--	--	3	1	1	--
character (6)	--	--	1	--	1	--	--	--
clinics / seminar / symposia (25)	1	--	1	--	1	3	2	5
coach maturing (24)	4	1	3	--	2	--	1	1
communicating (12)	--	--	1	--	2	1	2	--
communication (13)	--	1	3	--	--	2	--	1
continuous training (7)	--	1	1	--	--	--	1	--
drills (10)	--	--	--	--	--	2	2	--
early morning routines (23)	--	--	--	1	4	4	1	--
emotions (25)	1	1	3	--	--	2	--	4
emotions and behaviors - coach (17)	1	--	--	--	--	--	1	4
empathy (8)	--	1	--	--	--	1	1	--
environment (12)	--	--	--	--	1	1	--	--
evaluation / testing (10)	1	2	--	1	--	--	--	--
gaining knowledge (43)	2	4	2	3	3	1	12	--
game plan (11)	2	3	1	2	--	--	--	--
general strategies (20)	1	1	1	1	2	3	--	5
good teacher (14)	--	--	1	2	1	--	4	1
hard work (9)	--	1	1	2	2	1	1	--

Table 5 (cont'd.)

<u>Tag (N)</u>	<u>9VB</u>	<u>10FH</u>	<u>11FH</u>	<u>12FH</u>	<u>13IH</u>	<u>14IH</u>	<u>15IH</u>	<u>16IH</u>
having fun (6)	--	3	--	--	--	--	1	--
individual rituals of coach (18)	1	2	--	1	2	--	2	--
injuries (2)	--	--	--	--	--	--	--	--
intense training (11)	--	1	2	--	2	--	1	--
intermissions (33)	--	--	3	1	1	2	3	8
International context (26)	1	3	4	4	2	--	--	2
joy of coaching (14)	--	1	2	1	1	--	--	1
learning from others (35)	--	2	5	4	5	--	2	1
meetings (12)	1	1	2	1	--	4	--	--
mental make-up (10)	2	--	--	--	--	--	1	--
mental preparation of coach (15)	--	1	--	--	--	--	3	2
mental rehearsal of athletes (12)	--	2	1	--	--	3	--	--
mentors (21)	1	--	1	1	2	1	1	1
monitoring goals (19)	2	1	--	--	--	1	5	1
off-season training (17)	--	--	--	--	8	--	--	--
officials (8)	--	--	--	--	--	--	--	--
Olympic context (10)	--	--	1	2	--	--	--	--
opponent preparation (12)	--	1	1	1	3	--	1	--
personal life (22)	1	2	1	1	--	2	2	3
personal reflections (22)	1	2	1	2	1	4	1	2
personal style (20)	1	--	3	--	1	--	3	--
physical preparation of coach (6)	--	--	1	--	--	1	2	1
planning - practices (36)	1	1	2	1	4	1	1	3
planning - quadrennial (6)	--	--	2	1	--	--	--	--
planning - seasonal (26)	2	1	1	1	3	2	4	5
planning - weekly (8)	--	1	3	--	--	1	2	--

Table 5 (cont'd.)

<u>Tag (N)</u>	<u>9VB</u>	<u>10FH</u>	<u>11FH</u>	<u>12FH</u>	<u>13IH</u>	<u>14IH</u>	<u>15IH</u>	<u>16IH</u>
playing time (6)	--	--	--	--	--	2	2	--
post-game evaluation (24)	3	4	4	1	2	--	3	--
pre-game talk (19)	--	1	3	1	2	1	--	3
pre-game warm-up for athletes (11)	--	1	1	2	--	--	--	1
pre-game warm-up for coaches (4)	1	--	--	--	--	--	--	--
problem resolution (31)	--	3	--	2	1	1	2	1
process goals - individual (6)	--	1	--	--	--	--	2	--
process goals - team (29)	2	3	2	--	2	2	--	3
Professional sport context (26)	--	--	--	--	12	11	2	--
respect (5)	--	--	1	--	--	--	1	--
self-evaluation (14)	--	--	--	--	--	2	1	2
setting a vision (20)	--	1	--	--	--	--	4	4
sharing information (13)	1	1	1	2	--	2	1	--
simulation (27)	2	1	3	--	--	--	2	1
skill development (9)	--	1	--	--	--	2	--	1
sport in Canada (22)	6	--	2	--	--	--	--	1
struggles (13)	--	--	2	--	2	--	1	--
substitutions (8)	1	--	1	--	--	--	--	--
support staff (c) (9)	--	--	--	--	2	1	--	--
support staff (o) (31)	1	3	--	3	8	--	4	--
talent (5)	--	--	--	1	1	--	--	--
teaching style (10)	--	--	--	--	--	1	--	--
team cohesior (19)	2	1	--	--	1	2	1	6
team meeting, based on outcome (18)	1	1	1	--	2	4	3	--
team meeting, no outcome '20)	--	--	1	1	3	--	1	2
team rules (12)	2	1	1	--	--	--	--	--
time-outs (13)	1	1	--	--	--	--	--	--
University context (8)	--	2	--	1	--	3	--	--

area or whether it was only two coaches discussing this area five times each. Unless it is stated otherwise, it can be assumed that the tag encompassed a fairly even distribution of responses from different coaches.

Identification of Coaches' Characteristics, Knowledge, and Strategies

The description of the process of analysis will follow from the highest order categories, to properties, and finally to the tags; quotations will illustrate the content of each area. While examining the tables within each category, it is important to note the analysis was inductive, beginning with the interview transcripts and progressing to the creation of tags, to properties, and then finally to higher order categories.

Table 6 reports the number of meaning units within each property and category. All sports were represented in each category and property. The representation of each sport varied for each tag, the lowest level of analysis, because of the open nature of the interviews. Some properties had greater frequencies within each sport, i.e., for level of competition in ice hockey. Table 6 also provides an overview of the number of meaning units within each category. It must be noted, however, that higher frequencies of meaning units, e.g., "coach-centered processes" (338), compared to "training" (115), does not mean the former category was more important than the latter, but does possibly relate to its complexity. Perhaps, a category like training is straightforward and easy for coaches to express verbally since it involves common principles and knowledge bases. A topic such as coach-centered processes, on the other hand, might be more abstract and complex, thus requiring greater clarification by most coaches. It is also possible that the inductive analysis of the researcher influenced the number of meaning units in this category.

Tables 7 to 12 present results of the initial steps of analysis; the creation of tags and their further division into properties. In the following section, the properties and tags will be analyzed within each category. A short summary will be provided of each property, followed by selected citations from the coaches. Due to the large number of meaning units and tags, only representative citations will be used (thus providing a general overview of the characteristics, knowledge, and strategies of team sport coaches). Unless it is stated otherwise, it can be assumed the information applies to all four sports examined in this study.

The presentation of results will follow an unconventional path, beginning with one of the peripheral components called coach-centered processes. As will become apparent, it is necessary

Table 6

Number of Meaning Units By Property and Category

CATEGORY AND PROPERTY	N	Basketball (N=6)	Volleyball (N=3)	Field Hockey (N=3)	Ice Hockey (N=4)
ORGANIZATION	279	124	35	38	82
Outlining the mission	32	20	1	1	10
Planning	76	25	11	14	26
Goal-setting	54	22	9	7	16
Team building	62	32	8	7	15
Administrative tasks	24	13	5	3	3
Working with support staff	31	12	1	6	12
TRAINING	115	46	26	16	27
Physical training	40	12	11	6	11
Tactical training	59	30	10	7	12
Technical training	16	4	5	3	4
COMPETITION	345	130	56	58	101
Pre-competition off-site events	86	32	12	13	29
Pre-competition on-site events	45	16	7	15	7
Within-competition coaching adjustments	88	40	11	9	28
Within-competition personal characteristics	47	17	10	8	12
Post-competition events	79	25	16	13	25
COACH-CENTERED PROCESSES	338	119	44	64	111
Growth processes of coaches	175	61	21	31	62
Ways of learning	94	30	19	18	27
Personal approaches to coaching	69	28	4	15	22

Table 6 (cont'd.)

CATEGORY AND PROPERTY	N	Basketball (N=6)	Volleyball (N=3)	Field Hockey (N=3)	Ice Hockey (N=4)
ATHLETE-CENTERED PROCESSES	94	50	13	16	15
Athlete empowerment	14	3	3	4	4
Concern for athletes	59	34	7	10	8
Personal characteristics of athletes	21	13	3	2	3
CONTEXTUAL FACTORS	105	35	13	21	36
Level of competition	70	18	3	17	32
Job conditions	35	17	10	4	4
TOTAL	1276	504	187	213	372

to begin with this category since it explains the coaches' characteristics, knowledge, and strategies in such important areas as how they acquired coaching knowledge and how it has shaped their interactions with athletes and other individuals involved with sport. Although this information is not considered a primary coaching category, it does provide a starting point for all that follows about each of the coaches that affects the way they organize, train, and compete, and thus, appears to be a natural starting point. Following a discussion of the coach-centered processes category, the three primary categories of organization, training, and competition will be presented, followed by two other peripheral coaching categories, that being, athlete-centered processes and contextual factors.

Coach-Centered Processes

The interview episodes classified in this category were labelled as either growth processes of coaches, ways of learning, or personal approaches to coaching. These three areas dealt with issues or factors related to the coach's characteristics, knowledge, strategies, and coaching style (Table 7). These unique characteristics help to explain the personalities and individual beliefs of expert team sport coaches in such areas as how they organize their season, train their team for competition, deal with athletes, and adapt to different contexts.

Growth Processes of Coaches

An important part of the personality and knowledge of coaches was shaped by their willingness to continue learning. Within this property, a number of ideas that coaches held about coach education, updating their knowledge, along with some of their personal reflections emerged. Just because they made it to the top of their profession did not mean these experts ceased striving to improve. On the contrary, to most coaches, it was a challenge to get better and continue growing:

I read a lot about other coaches, and it's great. Every time I go to the bookstore, I go through every book, and if there's one by a coach, I buy it. I'm trying to find out what makes the guy tick. (15IH)

One of the things for me is the working environment where you are around coaches. Maybe they are not coaches in your sport, but you are around them and you talk with each other in a coaching environment. I am not in an environment by myself. I have a lot of coaches around me and a lot that are a phone call away. (10FH)

It is a constant battle to come up with new ideas. We really threw the world at the ICC because they assumed we were going to play man-to-man, but we played zones. Just as they got a handle on our zones, we changed to man-to-man. Those kinds of changes are ongoing, and I believe evolve out of longevity. (12FH)

Along the same line, many of the coaches stated how they have continuously evolved and matured as they have gained more experience. Sometimes this was a conscious decision, whereas other times it was not:

Table 7

Occurrence of Tags by Sport by Each Property of Coach-Centered Processes

PROPERTY AND TAG	N	Basketball	Volleyball	Field Hockey	Ice Hockey
Growth Processes of Coaches	175	61	21	31	62
1. Gaining knowledge	43	13	5	4	16
2. Always learning	29	5	4	5	15
3. Coach maturing	24	12	4	4	4
4. Self-evaluation	14	7	2	0	5
5. Career choice	7	1	1	0	5
6. Personal reflections	22	7	2	5	8
7. Personal life	22	10	1	4	7
8. Joy of coaching	14	6	2	4	2
Ways of Learning	94	30	19	18	27
1. Clinics / seminars / symposia	25	8	5	1	11
2. Mentors	21	10	4	2	5
3. Learning from others	35	9	7	11	8
4. Sharing information	13	3	3	4	3
Personal Approaches to Coaching	69	28	4	15	22
1. Hard work	9	1	0	4	4
2. Communicating	12	6	0	1	5
3. Empathy	8	5	0	1	2
4. Personal style	20	10	3	3	4
5. Having fun	6	1	1	3	1
6. Good teacher	14	5	0	3	6
TOTAL	338	119	44	64	111

You think you have it all and some new thing comes along, and there is an evolution. This occurs with the physical, biomechanical, psychological, and strength training things. It seems that I am never at the point where I will know it all. I think the cliché is true that you never stop learning. (8VB)

I don't feel bad that I haven't seen it, whereas before I used to feel pretty defensive. I guess when you are first starting out, you want to be able to say that you have seen everything and you know everything that goes on. I think as you get older, you get a little smarter and recognize it was virtually impossible. (11FH)

For many of these coaches, it was not enough to maintain an open mind to learn. They also constantly attempted to evaluate their own progress and implement those changes which they felt would help them improve:

I guess the end result is that you really have to know yourself as a coach. I don't believe coaches spend much time criticizing themselves. We are all reluctant to do that. We are all reluctant to find we are flawed. I think it is very important to constantly assess what you are, who you are, and what you are supposed to be doing. (4BB)

Finally, it was interesting to note that although these coaches seemed critical about their own abilities, there was nothing else they would rather be doing. For many of them, the growth process has been both challenging and enjoyable:

It is not easy being a coach. We must demonstrate to younger coaches that it is not easy. Yet, it is the most exciting, rewarding career of the lot. I don't think there is a career more exciting than coaching. (12FH)

There isn't a down side to coaching. There are down days when you are tired or things are not going well, or you have lots of injuries. There is absolutely nothing about my job that I dislike in terms of coaching. I manage my time such that I can do everything that I want to do. I am possessed by basketball. (3BB)

Ways of Learning

While the previous section outlined the coaches' attitudes and beliefs about growing and maturing as a coach, this section will elaborate ways of nurturing this growth process. More

specifically, the perceived importance of acquiring knowledge through mentoring and attending clinics, seminars, and symposia will be presented

Without surprise, those interviewed, most of whom had reached the highest levels of coaching, supported the coaching education or certification programs. Looking at the whole concept, they felt it was important to acquire knowledge through clinics, seminars, and symposia:

The theory courses are good since there's a lot of basic information there. In volleyball right now, our level three technical is fantastic, it's extremely intense. You actually coach a team for a week and you have a tutor who watches your every move. You also get feedback on your practice environment - how you set it up, how you construct your drills, and if you understand the different phases to go through. It's very, very good. (7VB)

I still go to a clinic and learn something, despite the fact I have coached junior high athletes for 9 years, high school for 3 years, club and provincial teams for 2 years, university for 9 years, and the national team for 4 years. I think I have a pretty broad perspective and still I will go to a clinic and somebody will say no, no, at our school we do it this way. (8VB)

Aside from learning through clinics, seminars, and symposia, many coaches spoke about the importance of mentoring and learning from others. Because many were influenced by at least one important mentor coach, they were willing to offer similar experiences to individuals they viewed as special:

I drive my assistant coaches so they work to death, which is what I picked up from my mentor. If I am going to help them become better coaches, I have got to demand things from them right now. I have one of my ex-players presently with me as an assistant, and she thought it was tough when she was an athlete, but she says it is tougher now. I asked my assistant coach if she wanted to coach or not? The bottom line is that I am interested in helping coaches improve. (3BB)

Young people in physical education programs ask me about coaching. One of the things that I suggest is to get out and find a coach that has had some success or is perceived as being a good coach, and try and do some work with him. Volunteer to assist, do the mentoring thing. (14IH)

Similar to mentoring aspiring coaches, they were also willing to share their information. According to these coaches, an important part of the learning process involves passing on valuable insights to others:

I have been really disappointed in my CIAU colleagues because they don't want to talk about basketball. They are afraid you might learn some secrets. I don't go out of my way to talk about basketball, but if I get an opportunity to talk to somebody in basketball who knows something, then I like to do it. (3BB)

Personal Approaches to Coaching

So far in the "coach-centered processes" category, the characteristics, knowledge, and strategies related to the coaches' desire to learn and develop and ways of acquiring this knowledge were presented. The third, and final property of this category, personal approaches to coaching, represented more of the personal or individual aspects of coaching. The meaning units contained within this property included coaches' feelings about hard work, communicating effectively, empathizing with their players, developing a personal coaching style, having fun during training, and being a good teacher.

Many people have faith in the truism between hard work and success. According to the coaches in this study, this relationship was central in the sport setting, and many believed they had to work harder than their colleagues:

Coaching is hard work, so you have got to enjoy it. You have got to get a coach who is going to enjoy hard work. (12FH)

Hard work is important. The work ethic in a coach is just as important and demanding as the one from the players. (13IH)

To go along with hard work, coaches also felt it was important to communicate effectively. The area of communication can be seen throughout the coaching process, and thus becomes a valuable attribute:

The toughest part of coaching is that you're delivering information that players don't want to hear. Sometimes people say you're not a good communicator. I argue that, "No, I'm a very good communicator, I'm just not telling you what you want to hear." (15IH)

In the area of communication with athletes, the present coaches believed it was important to understand the feelings of their athletes. One attitudinal characteristic common with many of the coaches was empathy.

For me as a coach, I realize what I went through as an athlete. I realize the athletes are going to have problems making adjustments. As a coach, you have to understand where they are coming from. (10FH)

One of my players once told me that one of the best things about playing with my team is that whenever they had to go home, I never once asked why. (1BB)

Everything that has been discussed so far within this property were directly or indirectly related to developing a personalized coaching style. Coaches felt that in order to succeed they had to develop a coaching style which best suited their personality. Thus, emulating other successful coaches was not always the best way to proceed.

The biggest challenge for you when you're young is that you want to emulate somebody. You see somebody and say, "Gee, I would like to coach like that." Although you might like some of the things that he does, in essence, you coach the way you naturally react, using your own instincts. If you ever try to be somebody you're not, I think you will have a real problem with coaching. (15IH)

I realized that professional sport is entertainment and even the coach should be more entertaining. He probably should do things just to be colourful, but that isn't really my style. My style is to coach and do the job. (13IH)

A related area to developing a personal style was the notion of having fun during training. Not all of the coaches in the sample felt this way, but four of them did say it was important at certain times to enjoy the process with the team:

Every so often I'll have a practice that I call a "no brain practice," and you have to have one of those. You've gone through a lot of games and the guys are mentally fatigued and physically tired. If I go out there and try to run through a tedious practice, it isn't going to work. So I'll say that tomorrow will be a no-brainer. (15IH)

Today at practice we only had one goalie, so I had to think of something different. Since there was kids' basketball nets in the gym, we set them up, put pinnies in the net and put cones with balls on them. This became absolutely hilarious. One of our best shooters is

going down and is trying to hit this ball off the cone. Everybody got a kick out of it. We all laughed and said this ought to be good, and then we went at it. You see, there are different ways to bring a little bit of laughter to it, that type of thing. (10FH)

The underlying message of the personal approach to coaching, and perhaps in this category, was that coaches aspired to be the best in their field. To summarize this category, consider the following quotations related to the process of becoming a good teacher/coach:

There are no big secrets. Some people coach better than other people because that is the way they are. I don't have any problems showing anybody what I do because I think that I teach better than anybody around. (2BB)

It's those little teaching points that you don't think are very important, that are only minor things, that the athlete says, "How did he think about that?" You think it's a small point, and to him it is a small point, but it is a big point too. He is thinking, "How did the guy figure that out - Gee, that's a smart little point." I think that's part of being a good coach. (15IH)

Organization

Organization was a prerequisite step to help coaches prepare for training and competition. It was the coaches' organizational skills that allowed a season to be seen from the broadest perspective and to sequence events through a planned process. Organization ideally began with the creation of a positive and productive environment which would ensure a better chance that athletes would comply, or buy into, the overall mission or plan of the coach. Successful coaches were effective planners, and depending on their level of competition, were able to see their tasks in a flexible manner, either quadrennially, seasonally, weekly, or daily. Part of their organization involved helping their athletes set goals, and then monitoring them. Creating team rules and the use of specific activities to help mold the team together were two central areas mentioned by coaches that related to team building tasks. Two final areas were dealing with many administrative tasks and effectively using their support staff (Table 8).

Outlining the Mission

All coaches felt it was important to begin any season or championship quest by clearly outlining the mission of the team and the steps necessary to achieve success. Without an explicit

Table 8

Occurrence of Tags by Sport by Each Property of Organization

PROPERTY AND TAG	N	Basketball	Volleyball	Field Hockey	Ice Hockey
Outlining the Mission	32	20	1	1	10
1. Setting a vision	20	10	1	1	8
2. Environment	12	10	0	0	2
Planning	76	25	11	14	26
1. Planning - quadrennial	6	3	0	3	0
2. Planning - seasonal	26	4	5	3	14
3. Planning - weekly	8	1	0	4	3
4. Planning - practices	36	17	6	4	9
Goal-setting	54	22	9	7	16
1. Monitoring goals	19	9	2	1	7
2. Individual goals	6	0	3	1	2
3. Team goals	29	13	4	5	7
Team Building	62	32	8	7	15
1. Team cohesion	19	6	2	1	10
2. Team rules	12	4	6	2	0
3. Problem resolution	31	21	0	5	5
Administrative Tasks	24	13	5	3	3
1. Administrative variables	21	12	4	2	3
2. Additional responsibilities	3	1	1	1	0
Working With Support Staff	31	12	1	6	12
1. Support staff(o)	31	12	1	6	12
TOTAL	279	124	35	38	82

plan from the coaches that pulled everyone in the same direction, teams were not able to excel:

One of the things that I feel is important is to try and make sure to create the same vision in the minds of all the players. I've always tried to make sure that my athletes knew there were lots of different paths to the gold medal, that there was no one set way of doing into it. The key to getting there, is the fact that we decide as a group, that we are going to follow one way, and the guy designated to set the direction is the coach. (16IH)

You've got to believe in yourself and in what you're doing. Hopefully, your track record reinforces that you are going in the right direction, that you have a vision for your team. I have a vision for our team, believe me, of how I want us to play in March and April. (15IH)

I think you get the magic or special performance. For me it was 1979, when the athletes and coaches both had some special talent and skills and were willing to pursue the same goal. They were willing to compromise, cooperate, and work together. (8'B)

In a perfect world, the coach would present his/her plan and the team would buy into it. Unfortunately, this does not always happen, but good coaches knew how to increase the odds of having their athletes comply to their master plan:

We have talked about the importance of having a direction. Any time we didn't have a plan or vision to follow, we screwed up. Even though our plan wasn't the best plan, it was still better than not having a plan at all. (2BB)

I say, "Here's the direction that I want you to follow. There is going to be some pluses and minuses for all of us. It's not always going to be a straight line, but we are going to get there, and here are the things you have got to do to get there." Over the course of the season, because hockey is a long year, you start to clarify for each athlete what his contribution has to be in terms of fitting in to what the group is trying to accomplish. (16IH)

In sum, one basketball coach mentioned the ideal or ultimate situation for a coach:

The ultimate goal is to walk on to the court with every man knowing that he is fully equipped with the tools to perform the job that's expected of him and that he's very confident in his ability to get the job done. You're constantly equipping him with the

knowledge, physical skills, and understanding of the game that will allow him to be successful in a competitive situation. When you walk on the court, you should feel that all five of your guys are walking out and believe they have a chance to win. (6BB)

Although it was imperative for coaches to relay their vision to the team, the mission could not begin unless the athletes were placed in a suitable, learning environment.

The supportive environment is critical. The coach must be able to communicate the level of commitment and passion to the athletes. You must model and bring the athletes along the road. When the athlete gets on the field or court to train, there is total commitment and devotion at that time. They have to know the process they are undertaking is valuable. (6BB)

We are all trying to provide the same thing, which is an environment for athletes to do well. Sometimes young coaches forget this and take a loss personally, or criticize the referees. We should remember that we are there to help the athletes. (5BB)

I'd hate to think that a player went to my university and did the same things in his freshmen, sophomore, junior, and senior years. As a coach, you have to continuously change. That might be the most important part of coaching: providing information that is going to be very supportive in terms of learning, and bringing as much new and up to date information as you can. Structuring the environment so the drills are progressive and interesting. (14IH)

Planning

A significant portion of meaning units in the organization category were situated in the property of planning. In order for coaches to effectively set out their mission of success, they had to anticipate the level of competition within their quadrennial, seasonal, weekly, and daily plans for practices. Each of these four areas will now be outlined, beginning with quadrennial planning.

The experts in this sample who have coached at the Olympic Games understood the importance of having a four year plan. Since international matches took place at a number of predetermined intervals, it was important for coaches to have their teams peak at the proper time:

Our focal point is the Olympics, it is number one. We like to look at 36 guys in order to have a 12 man team. During the first year, we like to have three full teams in order to

evaluate all the players. The second year is an evaluation year to set up the team for years three and four. During the second year, we begin to make decisions regarding how we intend to play in the final two years of the rotation. By the third year, we put the team together, and in most cases, few changes occur after that time. (1BB)

Normally, we have a four year plan. I will do the annual plan depending on where the competitions are and how many there are. We determine the major competitions and then the concentration of each training phase. There are usually three or four training phases in a year. (11FH)

From the moment the season ended, coaches began planning the next one to meet the priorities and skills deemed most important for success. However, team sport coaches also understood the importance of remaining flexible with their seasonal plan:

I sit down every year in the off season and I do a yearly training plan. It's very flexible, and I put it on a large piece of paper with all my scheduled games. So it includes my training and rest times, all my sport psych things that I want introduced and when I think they would be most effective. (15IH)

You need to identify priorities that you want accomplished from a training standpoint. I establish our most important skills and how much time I have to work with these areas. Given the time I have, what things can I get done? If I'm looking at the whole season, I know that I roughly need to spend about 30% of my time on individual skills. As I lay out practices, I follow and evaluate whether in fact we've spent that 30%. (16IH)

Some university coaches mentioned dividing their seasons into separate components which considered the academic year and needs and schedules of their athletes. For example, university athletes have exams in December, often followed by a Christmas visit with their families, and then a final set of exams in April:

I tend to break it down into three areas: pre-season, league season, and the runner or drive to the end, which is mid-January to March. When I first started coaching, we were really playing well in pre-season and early league season. Lately, I found that you have to peak in January, but still take care of business earlier. (5BB)

Our approach to the season is to break it down into three sessions: pre-Christmas, league season, and then the bonus championship season. We establish what we are going

to do - our goals - our fitness goals and performance goals. That is the training process. (2BB)

The seasonal plan was always kept as a backdrop in preparation for weekly planning. According to the coaches, their teams had to be evaluated at the beginning of the week to see if significant changes were required to be implemented into their larger, monthly or seasonal plans. For example, if the team was particularly weak on their penalty killing, an ice hockey coach might implement specific drills to correct this problem:

I do a detailed job in planning and in coaching. For example, I'll determine the things to cover next week. I will design all the practices so that I know where everything fits in. I'll do an evaluation of where the athletes are at, and then do the whole week again. Within those days there is flexibility. If something is not quite right, we try and get it so that it is a bit better. (11FH)

The planning property also involved more detailed preparation for daily practices. Although the quadrennial, seasonal, and weekly perspectives included elements of practice planning, a number of meaning units reflected, during these final hours, the coaches' careful attention to detail:

The practice plan is most important and it takes time. My best practices are when I have the most time and I am not distracted. I probably plan best at home because in my office I have people coming in all of the time. At 3:00 in the afternoon if I started planning for a 4:30 practice, I would probably be interrupted five or six times. The most important thing about practice is to have it really organized, where you have spent time on it. (5BB)

To me planning training is the key. The key is to sit down and have it ready. I could get it done in 20 minutes because I have done it so often and I have it in my mind. The continuity of where we are going, and where we were at yesterday, I could keep in my mind. I don't think that I was a slipshod. (4BB)

As was the case with other areas of planning, coaches felt it was important to remain flexible and provide specific themes for practices. Coaches believed it was important to write down the best and worst aspects of their practices, storing away this information for future adjustments in training:

I have the last eight years of practices, and every practice that I do is planned. (9VB)

A lot of the drills that I've done, I've written up in a nice drill format and put away so I can go back to remind myself of things in certain areas. (16IH)

I have 70 practice plans in a book. It is something that I have always done, because I think it gives me an edge over some other coaches. I have always written it down, so we don't shake the sleeve and see what falls out. (8VB)

Goal-setting

According to these experts, effective coaches were those who were able to help both their athletes and their team set and achieve goals, which were subcomponents of the master plan. Many of the coaches' personal attributes that helped them plan efficiently included their organizational, leadership, and communication skills during goal-setting sessions, both with individuals and the team

We get the players coming in and we have them lay out their goals for the season. At the start of the season, many don't really have a clear picture of what they're getting into.

They may put down 14 goals and 14 assists in the first 24 games. Well, half way through the season at 12 games, they've only got 4 goals and 4 assists. Obviously, to reach that goal is unrealistic, so we give them a chance to re-focus. (16IH)

When we begin the season, everybody sets their individual goals. I have meetings with everyone where I look at those as well as team goals. I carry their individual goals around with me, on little pieces of paper in my briefcase. I am constantly re-evaluating each individual. I will confront them and say this is what you wanted to do, but it doesn't look like that to me. This is your piece of paper, you wrote it, do you want to change it? (10FH)

One thing I find very interesting and a very important part of my job is to sometimes get the kids together and talk about painting the big picture. Here's where we were, here's where we are, and here's where we're going. If I don't do that every so often, one game becomes another game and the guys don't know exactly where they're going. (15IH)

They see the big picture and then we break it down. I have to keep reminding them of the big picture. We bring out the big picture once a month, and tell the guys what we need

and where we are. This week for instance it was rebounding. We won our week-end game but we got out rebounded. We drew out the suitcase in our meeting on Monday and talked about how we needed rebounding to be in the suitcase if we were going to win the national championship. All week they worked on rebounding. (3BB)

Some of the coaches commented on the benefit of having a trained sport psychology consultant working with them and their athletes to enhance the goal-setting process:

We spend a lot of time on goal-setting with athletes and the coaches. We bring in the team sport psychologist and it is constantly reinforced. With the sport psychologist, for example, we have an agenda of things we would like done: goal-setting, imagery, and concentration are some of them. (1BB)

Finally, coaches spoke about the relative advantages of using outcome and process goals. Outcome goals focus on the number of points and on winning and losing, whereas process goals are more concerned with the necessary effort and steps required to achieve a goal, such as consistently performing to one's capabilities. According to many coaches, process goals were most important. However, one coach summarized the link between process and outcome goals:

I think by their very nature, players set outcome goals, anyway. Our goal is to win the national championship, but everything in between is a process goal. In our meeting the other night before a big game, every goal we spoke about was a process goal. We didn't talk about winning the match. Rather, it was hitting the ball down the line, that kind of stuff. So there is an outcome goal at the end, but everything else we talk about isn't. (9VB)

Team Building

Part of the organizational skills of these coaches was their belief in molding individual players into a compatible unit. This process could be facilitated by creating a positive and productive environment, as well as by setting proper team goals. Coaches mentioned using activities designed specifically to bring their athletes closer together:

One of the things I always dealt with was team cohesion. I never felt I had a handle on it. I tried to set the stage and let it develop. (4BB)

In a pre-camp we took one day off in the summer and we did some team building experiences which we tied in with some fitness tests. We mixed up the groups we had on the ice and had a scrimmage. The two teams played each other every night in scrimmage for the first three days of camp, and then we mixed them up. (16IH)

Creating team rules and solving problems were two other ways the coaches believed enhanced team cohesion. Coaches understood that it was important to be consistent with their rules and sanctions and to clearly communicate them with players, so that no misunderstandings would occur:

In terms of discipline, the new athletes coming into our environment know not to step out of line. I think there may be two or three stories from my earlier years of coaching that are legendary; so they wouldn't dare try anything. (11FH)

I used to tell my players there was a door at the end of the gym with a little window in it. I said, "When you get sent out of practice, unless you want to quit the team, you stick your nose in that window and you watch practice so that you don't miss anything. You are not allowed to just annoy the rest of the team." I was so pleased that we had this open relationship. (1BB)

One of my attitudes about volleyball was that I didn't like my teams yacking through the net. I always taught my players to turn the other cheek, but now we have changed. In a playoff game a couple of years ago, one of the players on the other team came through the net and it looked like he sprained one of our players' ankles. Then he stood at the net until one of our bigger guys came from the far corner challenging this guy. I have changed my rule, whereas now the basic rule is that you don't back down. (9VB)

Administrative Tasks

An area which most coaches tolerated, yet felt was extremely important, was dealing with administrative tasks. This property comprised their attitudes pertaining to their interactions and activities with management, fund raising, recruiting, or other non-coaching elements. One coach summarized the views of many of his colleagues:

By far the downside of this job is that after 20 years of coaching I thought that I would finally be able to just coach. This isn't even close to coaching. I say facetiously that I do

reports, fund raising, budgets, finances, paper work, phone calls, and faxes. I go to clinics and then I sneak into the gym and do a little bit of coaching. It is unbelievable. (8VB)

For some of the coaches who worked in a university setting, the administrative tasks were even more laborious, especially if they were teaching classes or conducting research:

There are a lot of times that I look at things and ask myself if I could do this full-time. In women's sports right now, I am not sure there are very many full time secure jobs that allow you to be a full time coach. I have a full time job as a researcher here on campus, I coach the university field hockey team, and I coach the Junior National Team. (11FH)

Working with Support Staff

Another type important organizational task was the selection of, and work with, support staff. In team sports, there is a need for many qualified specialists to help train the athletes. For example, ice and field hockey teams may hire goaltender coaches, basketball teams might hire shooting specialists, and volleyball teams might hire coaches who specialize in defensive play. According to these coaches, it was important to choose a support staff that complemented their strengths and was committed to the team:

I've tried to get people who complement me. Players like my current assistant coach because he's a relaxed and nice guy. People talk to him because he's a good listener. He gives them somebody to talk to, without having to deal with me all the time. I make sure that I look for expertise in certain areas of my coaching staff. (15IH)

It is a must to have an assistant coach for goalkeepers and the defense. In the olden days, you would coach and the goalkeeper would sit back. If somebody was hurt, you would send them to go and chip some shots at the goalkeeper. It was a disaster. (12FH)
I remember a famous coach saying that one enemy can cause more problems than 1000 friends. I think he was referring to assistant coaches. If you pick the wrong guy, the guy who wants your job, those are the ones who you have to be very careful with. They have to be ambitious, but they have to be working within the team and not against the team or for their own benefits. (13IH)

It should also be noted that many coaches believed in the value of having qualified sport psychology consultants on their support staff. The coaches viewed these individuals in much the same way they did team physicians or strength and conditioning coaches. They were educated individuals who could assist the coach in specialized topics related to mental preparation:

We spent a lot of time talking about our sport psychologists. I told the players, "These are not sport psychologists that have been recommended to us, these are people that we decided are the best to help you. You know that our whole function is to help you play better, and these people along with the coaches, trainer, and doctor are here to help. It is not going to work if you don't want it to." (1BB)

We had a second dabbling in sport psychology with a woman who was a tennis player. We had a fascinating time with her. I thought being a psychologist that she would deal with the athletes. She said that she wanted to see who passed the ball to whom. I said, "What do you mean, who do they pass the ball to?" She then got me sensitive to the notion of a hierarchy, and we became impressed with that. (12FH)

Training

The meaning units classified in the training category were defined as the knowledge and skills used by coaches to help their athletes prepare for the future demands of competition. Training invariably took place in a separate practice environment, such as a gymnasium, field, or arena. Although support staff assisted the coaches with their job, ultimately it was the coach who oversaw all aspects of training. In particular, three equally important properties emerged from this analysis, and they were labelled as physical training, tactical training, and technical training (Table 9).

Physical Training

This property was defined as training required to prepare athletes' respiratory, energy, and muscular systems physiologically from aerobic, anaerobic, and strength perspectives. The sole purpose of this property was for the coach to train the players' physical strength, endurance, and conditioning so they would ultimately perform well in competition. Coaches were adamant in their feelings about the importance of hard, strenuous training, using practices that were up-tempo and fast moving. One method to assess progress or deficits in training was to test and

Table 9

Occurrence of Tags by Sport by Each Property of Training

PROPERTY AND TAG	N	Basketball	Volleyball	Field Hockey	Ice Hockey
Physical Training	40	12	11	6	11
1. Intense training	11	5	0	3	3
2. Evaluation / testing	10	4	3	3	0
3. Injuries	2	0	2	0	0
4. Off-season training	17	3	6	0	8
Tactical Training	59	30	10	7	12
1. Drills	10	5	1	0	4
2. Teaching style	10	9	0	0	1
3. Opponent preparation	12	3	2	3	4
4. Simulation	27	13	7	4	3
Technical Training	16	4	5	3	4
1. Continuous training	7	1	3	2	1
2. Skill development	9	3	2	1	3
TOTAL	115	46	26	16	27

evaluate athletes throughout the course of the season:

It is very important to make them aware of training intensity. We always spent time with the athletes running lines, which is a great anaerobic drill because it lasts about 30 seconds, hits the max., and is perfect for a gymnasium. So we talk about these shuttle runs of suicide line drills. I'd say, "Here is what is going to be attempted. We can change the intensity or frequency and then we have recovery. This is what goes on with your body and this is what you must ask your body to do " We would do these and every other day we would add one. We put it on a time line and said they must not get outside of this line. (4BB)

We do physical testing every year in September, early December, and at the end of the season. We do spike, jump, block jump, VO2, a sprint test and circuit because those are the most important physical primers. The other ones are kind of statistically based. (9VB)

Say we are doing 5 x 800's, I like to know their average time. They bring their average to me and I will look and see whether or not they are improving. I do it right through the season so I know exactly where they are. It also allows me to give them the reinforcement and support they need to take the next step. (10FH)

An important part of physical training took place during the off-season and at training camp. Three coaches discussed the carefully planned training programs that they had their athletes follow during the off-season. Those who did not adhere to their programs were quickly detected at the start of training camp:

I think the players have to be directed on training in the off season. Most of them don't know what to do and they may be lucky to be in a town where someone knows anything about training. (13IH)

I have an off-season training program for them. We have specific tests that we do on them. We do things like a 20m shuttle run, the mile and a half run, the maximum bench press, the vertical jump, and the anaerobic power stair climb. There is about 10 tests that we do. We do it at the start of the summer and again at the end. If they don't arrive in September with a fairly good aerobic base, we find we get diminishing returns. (3BB)

Tactical Training

The property of tactical training dealt with teaching the cognitive strategies used by coaches to outsmart their opponents. For example, in basketball they might teach a predetermined play to counter defenses on an inbound pass, for ice hockey it might be designing a power play to maximize shots on goal, while in field hockey it might be the understanding of a special defensive formation to use in late stages of a close game. The coaches carefully crafted the practice environment, where they tried to help their athletes achieve their short- or long-term goals. All drills were constructed with a purpose, where the teaching or intervention style of each coach was equally as important as the drills:

I think we instituted the drive drill. I remember working with a coach who I coached against for many years. I remember him saying to me, "You and that darn drive drill, you're always getting your players to drive to the net." (14IH)

The next thing is a scrimmaging practice because it looks like a game, followed by a five on five half court and then three man plays. There are also meetings, most of which don't relate to the game. What we have to do is sell these things to them, show them how they lead to success in a game. Drills are especially tough because they are repetitious and you have to explain it to them. (1BB)

An important aspect of tactical training was the way coaches prepared for upcoming opponents. Specifically, they used part of their training time to prepare for a specific opponent by simulating game situations:

It is very important to make the practice apply to the next opponent. We might be working on penalty killing, and I'll say, "Boy, this team we're playing against, they do a lot of this or that on their power play, and this part of our penalty killing really applies to that." If we're playing against a team that forechecks very aggressively, I'll talk about it in the two practices before we play them. (15IH)

We are real lucky in Western Canada that we have week-end matches. On Tuesday, we will spend an hour watching a video of our next opponent. I will say, "Remember this player, their habits; and here is something that we are going to work on this week." It has taken me three years to really feel comfortable with how much time we spend on this. (7VB)

We practiced a few times outside in the parking lot. We were going to Puerto Rico, and it was beyond hot. You know, trying to simulate the environment in the drills. Wet hands. Can you set and play when you are wet? Not as easy. So we do a lot of that stuff. (8VB)

Technical Training

A third element of training involved technical aspects, the skill-based dimensions which appears to be the most obvious pedagogical part of coaching. This property was defined as the instruction provided by coaches to their athletes that is best believed to enhance the learning of individual motor skills or interactive team maneuvers. According to many of these coaches, it was important that all players received individual attention to help them reach their athletic potential:

I do individual sessions with the girls when they need it. We have a great facility here because it's right upstairs. There is always an individual court available for pick up, and there is always a spot where you can hold an individual session. (10FH)

We had this guy that came to us in a trade. I watched him for three or four games and saw that he continually turned away from the puck. I talked to him about it, and he said that he didn't do it. I sensed that he did it because he wanted to avoid contact. I got about six or seven examples from one game and showed him. Then I set up a drill to help him. (14IH)

Once a week we stand on boxes and serve. We do overload in other words, harder than we do in a game. At the beginning of the week it is easier, then we go tougher, then we do overload, and then we make it easier before the week-end games. (8VB)

Some of the coaches believed in adapting the technical training of the team to fit weak areas that were detected from previous games:

In terms of the on ice thing, I have to react to how we played the last couple of games. They know that if our power play was anemic for two games, then we're going to work on the power play for some of the practice. I'll say, "Here's where it broke down and here's what we're going to do today to work on it." That's the way I tie them into it. (15IH)

Competition

Coaches believed that the success or failure in competition often resulted from the organization and training that took place before game day. The meaning units classified within the competition category were divided into five properties that occurred on the day of competition. They included the pre-competition knowledge and strategies of coaches off-site and on-site. There were also two properties within-competition, labelled as coaching events and personal characteristics of the coach. Post-competition was the final property. A detailed breakdown of the tags within each property can be seen in Table 10.

Pre-competition Off-site Events

The inductive analysis of the interview transcripts revealed that coaches felt there were a number of important tasks to carry out from the moment they woke up on the morning of game day until they arrived on site. These tasks were further divided into those related to the team and those related to the coaches themselves. In the former, coaches focused on the early morning routines of their athletes, including helping them mentally prepare for the game and organizing team meetings. Early morning routines referred to such activities as pre-game meals, transportation, and team rituals such as a morning skate or jog, all thought by coaches to increase the closeness of the team unit:

Sometimes I say that I want the guards and forwards to eat together today. We change it a little bit, so they always say, "Who is eating with whom today?" Sometimes I don't care, sometimes they don't care, and then it is interesting to see who they go with. (2BB)
A great time is when the captains come to the fore and start corralling the group, where they eat and go for a run together. There is very little input, and I don't even have to write things out. It is easy and has built in success. (12FH)

Coaches were also concerned about their athletes' mental rehearsal on game day. Coaches did not think they had as much expertise in this area as with the technical, tactical, or physical preparation of their athletes. Therefore, many coaches used a sport psychology consultant to assist their athletes in this area of their game. Ultimately, coaches hoped their athletes would implement appropriate techniques into their preparation:

Table 10

Occurrence of Tags by Sport by Each Property of Competition

PROPERTY AND TAG	N	Basketball	Volleyball	Field Hockey	Ice Hockey
Pre-competition Off-site Events	86	32	12	13	29
1. Early morning routines	23	9	4	1	9
2. Mental rehearsal of athletes	12	4	2	3	3
3. Meetings	12	3	1	4	4
4. Physical preparation of coach	6	0	1	1	4
5. Mental preparation of coach	15	8	1	1	5
6. Individual rituals of coach	18	8	3	3	4
Pre-competition On-site Events	45	16	7	15	7
1. Game plan	11	2	3	6	0
2. Pre-game warm-up for coaches	4	3	1	0	0
3. Pre-game warm-up for athletes	11	4	2	4	1
4. Pre-game talk	19	7	1	5	6
Within-competition Adjustments	88	40	11	9	28
1. Substitutions	8	6	1	1	0
2. Time-outs	13	8	4	1	0
3. Officials	8	6	2	0	0
4. Intermissions	33	15	0	4	14
5. General strategies	20	3	4	3	10
6. Playing time	6	2	0	0	4
Within-competition Personal Characteristics	47	17	10	8	12
1. Emotions	25	8	7	4	6
2. Communication	13	5	1	4	3
3. Support staff(c)	9	4	2	0	3
Post-competition Events	79	25	16	13	25
1. Emotions & behaviours	17	7	5	0	5
2. Team meeting, no outcome	20	8	4	2	6
3. Team meeting, from outcome	18	4	3	2	9
4. Post-game evaluation	24	6	4	9	5
TOTAL	345	130	56	58	101

They all do a little bit of mental preparation, like visualization. We encourage them to do those things, without always monitoring it that closely. I guess you never monitor those things that closely. If a player says, "Yeah, coach, I did some visualization," you have got to take his word for it. Most of the players are very good. After it was introduced, they became pretty accepted and enthusiastic about that sort of thing. (14IH)

Now we have added the sport psychologist as my assistant coach. I really feel the players trust her. I don't know what she says to them because she doesn't tell me. I do know that she talks about focus, confidence and gives them key words. (7VB)

A final area to emerge in the pre-competition off site routines of the team were team meetings, an activity considered to be important:

The team meeting is detailed and lasts for a half hour. It's really important they write things down and take their own notes. Then they have time to come in and talk to me if they have any questions. I used to have longer team meetings, but I found the shorter ones are better. Sometimes they aren't as short if the players have a number of questions. But that usually allows them to relax a little bit. All in all, you are looking anywhere from half an hour to forty-five minutes. (10FH)

The other dimension within the pre-competition off-site property was the preparation that coaches thought to be important for themselves. Specifically, three areas emerged from this analysis: physical and mental preparation of the coach, and their individual rituals, which combined both elements. Coaches felt it was just as important for them to be ready for contests, as it was for their athletes. The analysis of the data revealed some elements that coaches believed essential to totally prepare themselves on game days:

I do a lot of things on game day, like a daily run. That run is very important to me because it is my quiet time to think with no phones. It is just me and my dog, because he doesn't talk, he just runs. (15IH)

I have a specific plan for myself during the game. During my preparation, I go through the sort of things that I am going to do. It is like practicing my game plan. I try to run some scenarios - if this doesn't work, then we will do this. I don't get too locked in because too many things can happen. Then I decide exactly what part of the game I am going to focus on. (2BB)

Along the same line, coaches also had individual rituals which they felt were an important part of their game day preparations.

I like to read a lot. I hate waiting, so I spend a whole lot of time reading before a match. Yesterday when I was preparing for the game, I watched videotapes for two hours. That is something else that I like to do. (9VB)

Pre-competition On-site Events

A related property to that which occurred off-site was the on-site pre-competition routines of coaches. In particular, four areas emerged from this analysis, and they included relaying the game plan to the team, the pre-game warm-up of the coaches, the pre-game warm-up of the athletes, and finally, the pre-game talk. The pre-competition on-site procedures began with a meeting between the coach and his or her team, at which point the game plan was presented. The game plan complemented the teams' preparations during the previous week of training. As game time drew closer, the coaches' attitude was to carefully stress a limited number of important points of strategy or execution, always highlighting the strengths of their team:

About an hour and a half before the game, I start jotting down technical things that I have to go over, putting together a game plan. I have already worked on it all week, putting it together, but now I start putting it on paper a little bit. Then when I meet with the team, I will take some specifics out of it. I will have it in my mind, but I also write it down in case my mind freezes up. I usually don't need to, but I know its there so it gives me a little security. (5BB)

A pre-game warm-up is a standardized procedure for all athletes. The analysis of data revealed that most coaches discussed specific goals for their team's warm-up, while three coaches also mentioned routines for themselves. It was important for coaches to see their team preparing in an organized and cohesive manner:

I think the warm-up is very much a part of the preparation. The players have to understand that it is two things. It's a physical warm-up with stretching to loosen up the body and get the blood pumping to the large muscle groups. More importantly, it's a mental gear up to get you back to the level you were at the last time you played. I hope

the athletes are going through in their mind while they're warming up, a little bit of rehearsal of what they're going to do in the game. (16IH)

I usually don't like to go out and watch the warm-up because I am never satisfied with the way they go. I would rather not watch and get upset. I usually stay inside the dressing room, and sometimes I even take a ten minute nap. (1BB)

The final segment of pre-competition activities was the pre-game talk. Coaches stressed the importance of not overloading their athletes with too much information. They also believed in an even-tempered approach to the game:

In coaching we think we better get them all frenzied. There is no way you can get them all frenzied because by the time we get to the finals, we have been on the road for ten weeks. We cannot whip people into a lather over that period of time and get all the juices flowing day in and day out. Conversely, you can't whip them into shape and then calm them down. There has to be some order to everything. (12FH)

I don't try to do too much, maybe a quick couple of points. I usually try to outline three things, and then if I felt that it was necessary to say something motivational, I would. (16IH)

Within-competition Coaching Adjustments

Once the pre-competition activities were over, the game began. The analysis of data showed information belonging to two areas of competition. The first related to coaching events, which involved activities of adjustment determined by situations and rules which took place during the game, such as substitutions, time-outs, and coaching strategies. The second dealt with how the coaches' personal knowledge of their own characteristics were adjusted, and included their control of emotions, ability to communicate, and interaction with support staff.

A number of meaning units emerged in the property called within-competition coaching adjustments. In these instances, coaches spoke about their actions or strategies relating to substitutions, time-outs, officials, intermissions, general strategies, and the playing time of athletes. The views of these coaches demonstrated a strong understanding for these aspects of their profession, beginning with an ability to read the flow of the game or strategies of their opponents:

My first reaction of the game is to check out the opposition. We invariably drop into a defensive mode to ensure that what is happening is correct. This is probably how we keep teams like Japan or Korea under wraps for longer periods of time. We hold them for a while and then start chewing away at them because they are so brilliant at the running game. (12FH)

Aside from the use of players, interactions with referees and other sport officials was also an important dimension of coaching strategy. It was therefore no surprise that these coaches devoted a great deal of thought to their interactions with referees:

There are certain referees that you can't say anything to, and you know that. It is a matter of learning what helps and what doesn't. Some say, "Coach sit down, I'll watch it for you, no problem." Others, you get up and ride them the whole time. It is a part of coaching. (SBB)

Both time-outs and substitutions were mentioned as important strategies by the coaches. They realized that both of these coaching dimensions could give their team momentum and an edge if used correctly:

Usually when I call a time-out, it is to stop the another team's momentum. Most of the time I call a time-out if the other team is pulling away from us and I want to stop it. Maybe we need a different offense or defense, maybe we need a reminder that we need to work harder. (4BB)

If we are getting ready to call a time-out, we have a pretty good idea of what we are doing. The minute is a long time. If you tell somebody something, they should remember it. If you tell them three things they are not going to remember anything in a stressful situation. Therefore, we tell them the most important point. (1BB)

The importance of the intermission for both the coach and the team was expressed by many of these coaches. Lasting approximately 20 minutes, it is the only sustained period that coaches have to speak with assistants, to analyze the effectiveness of the game plan, as well as that of the opposition, before making modifications. Intermissions often began with a short meeting with their assistant coaches, as they wanted to give their players five minutes to cool off. During this meeting with their assistants, they tried to detect any errors or flaws to the game plan:

Between periods is a key time. When we leave the bench I will go into the dressing room for one quick second and say, "Guys, have a good rest, lots of good things happening out there," then I leave them. I go back and meet with the three coaches, where I say, "What are some key things you want to talk about?" (15IH)

We asked the players to go to the bathroom, keep the talking to a minimum, and get something to drink. The doctors and trainers were there - everybody has their little laws in there. Right outside the locker room, I had two coaches with clipboards. They were trying to figure out what was going on and how the game was going. We wanted to make one or two points clear in our minds on exactly what we wanted to do in the second half. (1BB)

After this, they met with their athletes for five to seven minutes in order to relay two or three important points. Players then had a few minutes to themselves before heading back to the game.

Major tournaments are often played in unbearable climatic conditions. We may spend a whole half-time getting them to replenish and cool their bodies down. If we do have extra time, it is minimal. One, two, or three things is all I say. (12FH)

Within-competition Personal Characteristics

Another separate property emerged from this analysis that occurred during competition. Whereas the previous category focused on coaches' adjustments, the following property related to the coaches' own personal characteristics during competition. More specifically, this included the emotions of the coach during the contest, how they communicated, and how they interacted with their support staff. With respect to their own emotions during a contest, many coaches explained how it took them a number of years before they were comfortable with their coaching demeanour. They spoke about the importance of remaining calm, especially because they were asking their athletes to behave in a similar manner:

I have learned to be less intense but still be intense. Not getting too high is really important because you have got to be right there. They might try something totally different than what you were expecting, so you have got to change. If you are too high, you are not going to be able to make it. You have got to be able to make the adjustments, that is what the whole role of coaching is all about. (10FH)

Also included in this section were the coach's attitudes of communicating with athletes and their beliefs on the importance of using support staff during all facets of the competition process:

Not much information that you give during the game sinks in. The best coaches are taught not to yell at someone in the middle of what they are doing. You learn to pick your spots. There are a lot of dead times when you can relay information. There are foul shots, whistles that stop the play, talking, and jump balls. (5BB)

I think that support staff is very important. During games they have their roles and they certainly can help prepare for games. They have got lots to do if you do it properly. The head coach has to be very astute in picking them, and also be very smart in how he uses them. (13IH)

Post-competition Events

The post-competition property was divided into the coaches' emotions and behaviours, their belief in the value of a team meeting, and finally, their views on a post-game evaluation. With respect to their emotions and behaviours following a match, many coaches believed it was important to have some time for themselves before meeting the players. Often, people forget that in team sports, coaches also take an active role in the game:

If the game doesn't go well, I have learned to go for a walk or count to one thousand before I talk to them. That has helped. Also, I try not to make my talk to the team too emotional. (8VB)

The ideal situation is that when a game is over nobody could tell by your expression if you won or lost. You're at your most vulnerable after a big emotional meet. (6BB)

When I first started coaching, the highs were real high and the lows were real low. With more experience, I have found a medium. (15IH)

According to these coaches, it appeared to be important to have some type of post-game meeting with their team. The content or message of the meeting generally depended on the outcome of the game, and even more so on the perceived effort from the team. Most coaches gave their team a few technical pointers, saving the in-depth analysis for the next practice or team meeting:

After the game, we usually have a short meeting. I used to have longer meetings until I took a Level 3 course. A coach thinks everything is important, but to get half the players attention after the game takes an hour, sometimes two hours before they cool down. (8VB)

The euphoria of winning always takes care of itself. Occasionally, after that euphoria dies down, we might say to the players that we would like to talk to them in 20 minutes. It may be for a reminder of something that we didn't do well in the third period, but generally it's not. You usually talk about the next game. (14IH)

When we lose, it depends how we lost. If we lost with good honest effort and the other team beat us, then I'm very supportive of the players. When we lose and our effort is not there, that's when I deal with it, and I'm very demanding. If we beat ourselves, then I'm very demanding. I'm very good when we lose in terms of reading it correctly. Should I give them some heat or should I be very supportive. (15IH)

Athlete-Centered Processes

Athlete-centered processes has been designated as a peripheral component affecting the knowledge and strategies of team sport coaches. More specifically, this category will explain how the coaches' attitudes towards their athletes in such areas as empowerment and athlete development were explored along with their beliefs about what characteristics were necessary when selecting athletes for a competitive team (Table 11). In sum, this category focused on the impact of athletes, but it was conceptualized within the context of a team, whereby the coaches always considered the well-being of the team.

Athlete Empowerment

With respect to athlete empowerment, these coaches encouraged input from their athletes, and, if it was good, implemented these suggestions into team practice sessions. However, coaches were careful not to favour younger players, as those with seniority received special privileges from the coach, whereby the coaches were more apt to solicit their ideas:

In discussions with my athletes, I will often say, "Here is what I think, how do you feel about it?" They may agree or offer a different solution. We work together to make the team better. (11FH)

Table 11

Occurrence of Tags by Sport by Each Property of Athlete-Centered Processes

PROPERTY AND TAG	N	Basketball	Volleyball	Field Hockey	Ice Hockey
Athlete Empowerment	14	3	3	4	4
1. Athlete input	9	2	1	3	3
2. Respect	5	1	2	1	1
Concern for Athletes	59	34	7	10	8
1. Athlete needs	28	19	2	4	3
2. Athlete interactions	31	15	5	6	5
Personal Characteristics of Athletes	21	13	3	2	3
1. Character	6	4	0	1	1
2. Talent	5	3	0	1	1
3. Mental make-up	10	6	3	0	1
TOTAL	94	50	13	16	15

I used to say this is a cooperative effort and we have to make decisions together. In your first year, however, you do not have as big a stake in this team, and thus you are not going to have as big a say on the team as [name of veteran player]. If that irritates you, then we have got to get it straightened out early. (1BB)

Although coaches tried to encourage input from their athletes, they realized that ultimately it was their job on the line, and thus, they had the final say:

I think that you have to be prepared to hear input from the people involved. We always try to give the athletes as much say as possible, and try to make sure they understand they can speak openly to the coaching staff. However, we also make them understand that we may not always agree with them, and they may have to accept that we don't agree. (16IH)

People tell me I am fair. I listen to people's concern if someone has a problem. I encourage my captains to talk to me if they don't like something. I might not do what they say, but I'll listen. If it makes sense, most of the time I'll incorporate what they say. (7VB)

In essence, a lot of coaches referred to respect, and extended this to their athletes, and hoped in turn, their athletes would respect them:

I think they respect me, because they know that I will always tell them what I am thinking. I guess that is one thing about me the athletes appreciate, I always let them know exactly where I am standing. I don't play any mind games. I know that some other coaches do, but I don't operate that way. (11FH)

Respecting the athletes as people. That is one of the best things I have from my athletes. I respect them and they respect me. Not just as a volleyball coach or player, but as a person. I felt that was missing in a lot of the coaches I had. (7VB)

Concern for Athletes

Coaches at this level focused on the overall well-being of their athletes. Since most athletes received little or no income for their sport participation, one can assume they often played for the love of the sport. Many of the coaches realized this, and were conscious to make sure

they helped their athletes excel in all facets of their lives. It began by letting the athletes know they were interested in them as people:

I always remember two coaches saying to me that you should somehow acknowledge each player. It might just be, "Hi, how are you doing?" or you might go over and talk to them specifically about something. I remember [name of coach] saying that he met with every player on a rotating basis. You are talking about being a hard arse, but I think it is important that the players learn where you are coming from. (13IH)

Concern for the well-being of their athletes meant helping them excel in school or finding a job after their athletic career ended. However, if the athlete wanted to concentrate on his/her sport skills, the coach also focused on this aspect:

You cannot eliminate the athlete's private life. There are many components of the athletes life that a coach should be aware of. We talk a lot about nutrition, your home life, school life, and business life, because they all affect your performance. I don't want you worried about school when you are in the gym. Similarly, I don't want you dribbling basketballs in the back of chemistry class. (1BB)

We have a confusion of objectives. We confuse recreation objectives with athletic objectives. We confuse participation with the pursuit of excellence. We cower behind the academic gown. It's easy to say, "We can't be good at sports because if we do, we'll automatically forfeit the academic process by putting undue pressure that will impede their studies." I have a strong belief that you can do both. (6BB)

The tradition of this program indicates that we are here for one reason and that is excellence. My philosophy is that every player comes here with a predetermined potential and my job is to get them as close to their potential as possible. If they want to be national team players or if they just want to be good college players, I have taken the attitude that each individual athlete has to work towards her potential. (3BB)

Personal Characteristics of Athletes

Another smaller section of interview text dealt with characteristics that coaches looked for in their athletes. Again, this was done by keeping the needs or goals of the team in mind. For example, a hockey team with a productive offense probably looked for strong defensive players.

Three areas to emerge from the inductive analysis were the coaches' attitudes on three characteristics of athletes: talent, character, and mental make-up:

I can spot the people with innate talent, because it is relatively easy to spot. You have the right body type, level of fitness, instinct, and feel. Obviously, what's necessary is the right combination of innate talent and technical fundamentals combined with the right psychological make-up. You take the best talent that's there and your goal as a coach is to help them develop the total package. (6BB)

I would put character with skill as 50-50. If you have a choice, you have got to have skill. However, many coaches make the mistake of trying to change the character of a skillful person who is lazy or a drinker. My opinion is that you are wasting your time with those people. (13IH)

During the 1970's, I figured that sports wasn't talent - mind and heart was the bottom line. Talent was important, but the bottom line was mental. I got some criticism for the team that I selected for the Canada Games team. I stuck with my choices and someone said it might be good for high school, but it wouldn't work at that level. They jumped on the bandwagon when we won. (8VB)

Contextual Factors

The meaning units classified in the contextual factors category were situationally specific and altered the organizational, training, and competition components of coaching. Two properties emerged from this analysis, the level of competition and job conditions (Table 12).

Level of Competition

It was clear from the analysis of the interview transcripts that certain settings or levels of competition affected the way coaches carried out their tasks. Moreover, coaches working in a university, international, Olympic, or professional context all attempted to adapt to various constraints or problems. It should not be implied that coaches disliked working at these levels, rather certain provisions and adjustments had to be made.

As an example, consider the views of two coaches who discussed the university setting:
It's a little bit different here where you have some players who start at 18 years old and finish when they are 22 or 23. There are tremendous differences between the 18 and 22

Table 12

Occurrence of Tags by Sport by Each Property of Contextual Factors

PROPERTY AND TAG	N	Basketball	Volleyball	Field Hockey	Ice Hockey
Level of Competition	70	18	3	17	32
1. University context	8	1	1	3	3
2. International context	26	9	2	11	4
3. Professional sport context	26	1	0	0	25
4. Olympic context	10	7	0	3	0
Job Conditions	35	17	10	4	4
1. Sport in Canada	22	11	8	2	1
2. Struggles	13	6	2	2	3
TOTAL	105	35	13	21	36

year old in their ability, maturity, and whole outlook. Usually my university teams are a cross section that are never really old or young. (5BB)

I desperately wanted to get into a university coaching environment. At that point, I thought that university was about excellence. They are about academic excellence, but little else. (6BB)

Coaching at the international level posed many problems for coaches, especially when they were competing in countries with different customs and routines compared to Canada:

When you are in Caracas, Venezuela, you have to understand that you are there for 21 days with sixteen girls that are 20 years old. You cannot go out after dark because it is too dangerous. You have to deal with that and other things like living in a place with five in a room in a country where you are having trouble with the food. (10FH)

Similar sentiments were expressed by coaches who were fortunate enough to work at the Olympics. Coaches' believed that the main difference in an Olympic context was that the attention and stress were much greater than other contexts:

Competitive experiences [at the Olympics] are very different because there's more pressure over an extended period of time. There is a two week term. Every game is another challenge and there's tremendous toughness that's necessary to withstand the physical and mental stress of the tournament itself. You're playing seven to nine games in 12 days, and that's a long arduous adventure. The athletes have to stay focused for a long period of time. In basketball, it starts at the beginning of the Olympics, and goes just about to the end. (6BB)

All of the hockey coaches in this sample coached professionally at times in their careers. Their recollections demonstrated that like the university, international, and Olympic context, many new variables came into play which affected the way they coached:

In university, we used four lines a lot. When I first went to pro hockey, I thought we could do it there as well. In pro hockey, however, you have the agendas. Take the Edmonton Oilers when they had Wayne Gretzky. They had a third line center who wasn't bad, but he would very seldom get on the ice because Gretzky was on the ice for his shift and he took a long time coming off. I don't know if the coach designed it that way or not. (14IH)

I believe the pro coach becomes more impersonal because you see players traded left and right. That's the way it is, and it was a wake up call to the pro game. The coach does the coaching and the management does the managing. (13IH)

I've found that a pro athlete is actually more fragile than a young athlete. A young athlete is thirsting for knowledge. You give him some things, and he'll accept it. With the pro athlete there is sometimes a point before acceptance, where you feel like you've insulted them. (15IH)

Job Conditions

This property, like the previous one, dealt with some of the obstacles that affected the way coaches conducted their jobs. In particular, the areas encompassing this property included sport in Canada and some of the frustrations inherent with the job of coaching within this context.

With respect to coaching in Canada, coaches realized they would never be as powerful or wealthy as many of their American counterparts. Obviously, if this bothered them, they would not be coaching. However, it did cause some problems, especially those relating to finances and a lack of recognition:

The financial strain of coaching a national team in Canada is beyond words. I shouldn't be doing what I'm doing. In the center in [city], we have to raise \$150,000. We get some money from the province, the city and everybody's fees, but to make a long story short we have to raise \$75,000. There is a lot of money to raise if we want to have a team. (8VB)

I think that amateur athletes play more for recognition than money. A quick example took place in 1975 when we beat the Soviet Union. They hadn't lost a game in 8 or 9 years and we beat them in Maple Leaf Gardens in front of 16,000 people, 15,000 of whom were disguised as empty seats. Due to the poor publicity, we nearly lost two players. (1BB)

Still other problems existed relating to job conditions in Canada. One coach noted the lack of prestige afforded the top amateur coaches in this country:

Across the board, the art of coaching is not a highly valued and respected profession within the academic context in Canada. So the coach has a tremendous struggle. Often

times, the coach lacks the wherewithal to even control the physical environment in which they train, let alone the attitudes of others in position of authority. So, coaches often get very frustrated and down by the system because of that. (6BB)

Despite the many different job conditions that affected their coaching abilities, many of these coaches kept a positive attitude, viewing this as another obstacle to overcome. This made the job of coaching even more rewarding:

I thought I had a clear concept of coaching because I coached competitively for 28 years. There aren't a lot of people who have coached that long in Canada because it is a part-time hobby for many people. (4BB)

It's day in and day out living and coaching. You have got to stay with it, even though it's tiring and can sap your energy. You have got to be able to keep going and keep your energy level up - you cannot be drained. (10FH)

The second year people wanted more so I was gone. Maybe they did me a favour because it would have been a long year as they ended up low in the standings again. You learn to be tougher mentally. (13IH)

Coaching in Canada is real fun and challenging, especially at the international level. We don't have the athletes and technical ability that others around the world do. It is getting better, but when you have 2,000 kids playing and you are playing against a country that has 55,000 people playing, you know there is going to be a disparity somewhere along the way. (11FH)

Conceptualization of Coaches' Characteristics, Knowledge, and Strategies

The purpose of this study was to develop categories which helped to explain the characteristics, knowledge, and strategies of expert team sport coaches regarding the components and tasks that operated within the conduct of their profession. Therefore, the tags, properties, and categories derived from the inductive analysis were further examined to determine their relationship and impact on one another with the final goal of explaining the process of coaching team sports. The categories found to be most central for the characteristics, knowledge, and strategies of team sport coaches were organization, training, and competition. These three categories best explained the job of team sport coaches, so they were designated as "primary coaching categories." They can be seen in Figure 1.

Three remaining categories, coach-centered processes, athlete-centered processes, and contextual factors were labelled as “peripheral coaching categories.” They were designated as such since their roles were less integral to the complete coaching process. Combining these three peripheral categories with the primary categories accurately explains the characteristics, knowledge, and strategies for coaching team sports. A narrative was written to describe how the categories in Figure 1 relate to one another, and thus explains more clearly the process of coaching team sports.

Narrative Describing the Relationship Between Tags, Properties, and Categories of Expert Team Sport Coaches

For a coach, the task of working with an elite team involves a complex set of interactions among a number of people. The main categories representing the characteristics, knowledge, and strategies of team sport coaches falls under the organization, training, and competition categories. The peripheral components are called coach-centered processes, athlete-centered processes, and contextual factors.

In order to accurately conceptualize team sport coaching, the category called coach-centered processes must first be explained. This peripheral coaching category explains the coaches' attitudes and beliefs in such important areas as how they acquired coaching knowledge and how it has shaped their interactions with athletes and other individuals involved with sport. In particular, if coaches are rigid and unwilling to learn, they are likely to encounter problems in the central areas of organization, training, and competition. On the other hand, coaches who choose to attend clinics, seminars, and symposia in order to update their knowledge will probably have more interesting practices, more detailed seasonal plans, and thus, more success at competitions. Along the same line, coaches with more intricate personal approaches to coaching, such as working harder and communicating more effectively, will have happier players who will produce better results during competition.

The organization category is one of the central categories for coaching team sports. Organization is a prerequisite step to help coaches prepare for training and competition. It is the organizational skills of coaches that allow a season to be seen from the broadest perspective and to sequence events through a planned process. Organization ideally begins with the creation of a

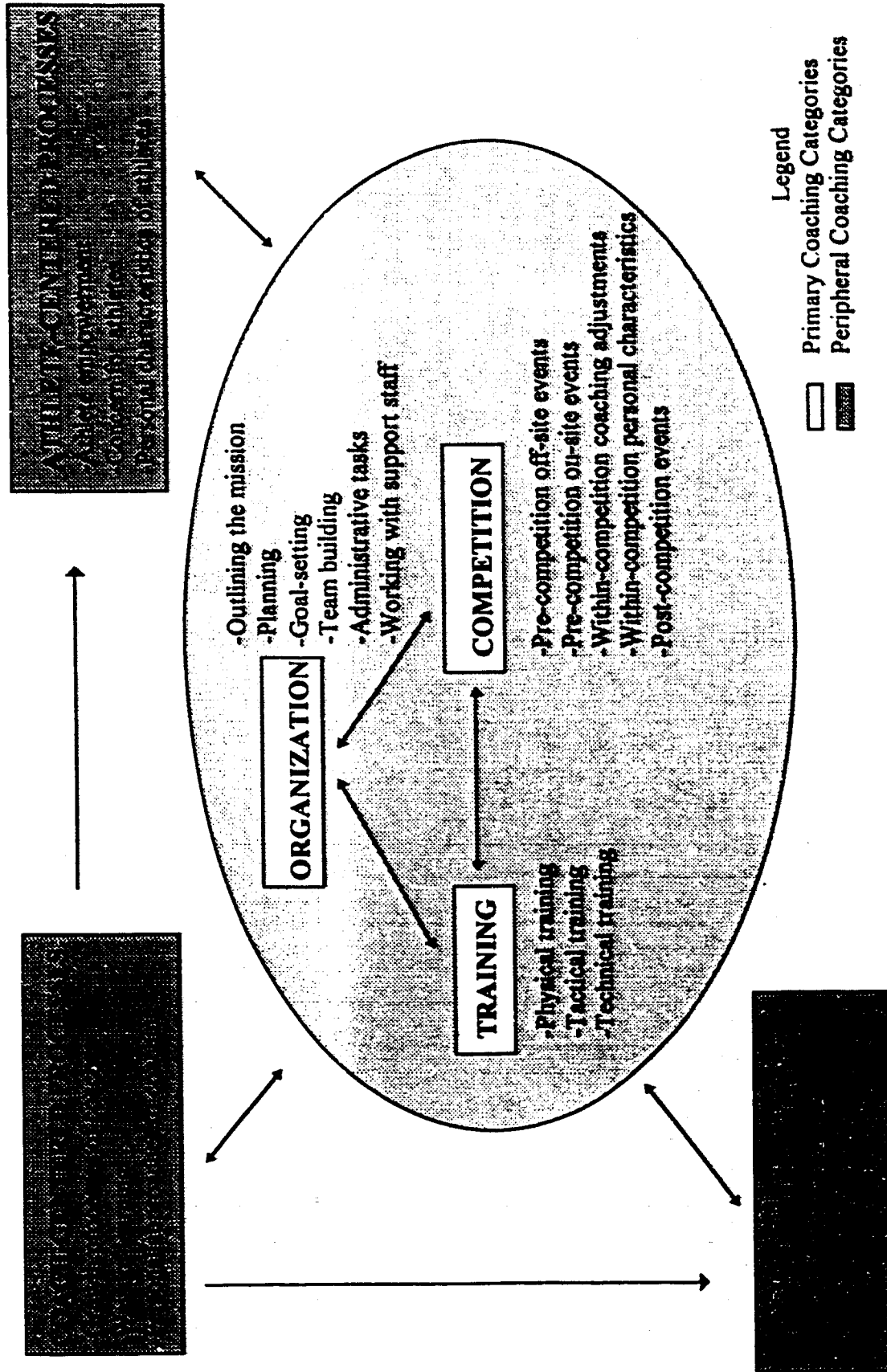


Figure 1. Conceptual Model of the Characteristics, Knowledge, and Strategies of Expert Team Sport Coaches

positive and productive environment which ensures a better chance that athletes will comply, or buy into, the overall mission of the coach. An important related task is the coach's planning, which can be either quadrennial, seasonal, monthly, weekly, or daily. Moreover, the coach must also help each athlete set proper individual and team goals. All of these tasks also affect team building techniques, which are crucial in team sports. Finally, the coach must also adhere to administrative tasks and carefully choose his or her assistant coaches. All of the properties contained within the organization category are designed to set the optimal learning conditions so the athletes train properly and have the best chance of succeeding at competitions.

The training category involves the coach's attitudes and knowledge in the three different areas of physical, tactical, and technical training. All three of these aspects are equally important and affect one another. Physical training deals with physiological components that are necessary to compete at a high level. Tactical training is the knowledge or strategies taught by coaches to their athletes. Finally, technical training focuses on the continuous refinement of individual motor skills or interactive team maneuvers. Important pre-cursors to effective training are setting a learning environment that encourages athletes to train hard and effective planning by coaches. Along the same line, daily or weekly practice plans must be adjusted by the coach depending on previous post-game evaluations. In team sports, in particular, coaches have to read and adapt to both the strengths and weaknesses of their own team as well as to their opponents.

The competition category is extensive, primarily because coaches of team sports play an active and integral role during each game. Game day begins with pre-competition events set out by the coach for both themselves and their athletes. Before arriving at the competition site, coaches require their athletes to spend some time together, either exercising, eating, or at a team meeting. Because coaches also like to physically and mentally prepare themselves for competition, many choose to have a morning jog, followed by some mental preparation. Coaches are also concerned that some pre-competition events take place once the team arrives at the competition site. This includes relaying the game plan to the team, although it is a condensed version of work carried out during previous training sessions. There is also a pre-game warm-up for the athletes, one which the coach has carefully constructed to ensure optimal performance. During that time, coaches also have their own routines, such as scouting the opposition or

sometimes participating in their teams' on-field activities, as occurs in field hockey. The final pre-competition activity is an even-tempered pre-game talk by the coach to the team.

The within-competition properties can be divided into coaching adjustments and personal characteristics of the coach. In the former, a team sport coach has to adapt to the pace and strategies of the game. Such factors as substitutions, time-outs, officials, and intermissions are all important variables that, if used properly, can provide an advantage for the team. During the games, coaches also take great care to control their emotions, something which takes many years to hone and refine. Their behaviour also affects their ability to communicate with athletes and their interactions with support staff.

The final part of game day is post-competition. Immediately following the game, coaches take some time for themselves. Besides giving their players time to cool off, team sport coaches also need time alone to either vent their frustrations or regain their composure. After this, coaches prefer to have a short team meeting. The content of the meeting depends to a large extent on whether the team won or lost, and more importantly, the effort perceived by the coach. The final segment of post-competition involves an analysis of the game which usually takes place within 12 hours of the completion of the match.

The tasks performed in the organization, training, and competition components are central for team sport coaches. Organization is the key to these three categories, as it is the starting point for the season. Without successful organizational skills, it is difficult for a coach to run a good practice or expect his or her team to perform well at competition. In a slightly different manner, coaches use the training and competition aspects of their profession to improve and assess their organizational skills. For example, consider that a team plays poorly on two week-end games and the coach's post-game evaluation uncovers defensive play as the main problem of the team. This in turn, will affect their weekly and daily planning, which in turn will affect the tactical aspects of the following practices.

The characteristics, knowledge, and strategies of team sport coaches are also affected by three peripheral coaching components. Coach-centered processes has already been discussed, but two other peripheral categories received attention, and they were called athlete-centered processes and contextual factors. The characteristics, knowledge, and strategies of coaches in these categories influences and complements the three main categories.

Athlete-centered processes considers the impact of the athlete on the running of the team. If a coach respects, listens to, and encourages input from his or her athletes, it will generally affect the overall well-being of the team in a positive manner. If this happens, the coach may not have to spend as much time on their organizational skills, such as team building or selling their mission to the athletes. This in turn, will make for more productive and enjoyable practices, which often leads to better competition results. A similar relationship exists with respect to the personal concerns for athletes. Coaches who are concerned with the well-being and development of their athletes, will generally create a more positive working and learning environment for their athletes to grow as people. This is an important area for modern day coaches that should not be underestimated. Finally, if the athlete has made it clear to the coach that he or she would like to continue professionally in their sport, then the coach will alter his or her organizational, training, and competition expectations to meet the athletic demands of the athlete.

A final peripheral category is called contextual factors. This involves situation variables that affect team sport coaches. One of these is the level of competition. In this study, coaches discussed four different levels of competition, which included the university, international, professional, and Olympic levels. Each of these levels has unique features that affect the organization, training, and competition categories of coaching. Take for example the Olympic context, where the organization of the coach is conceived within a four year plan. The team building expectations may be given more time to develop than those coaching professionally. Similarly, the training plans of Olympic coaches are very detailed and structured over a longer (i.e., four year) period. Thus, the physical capacities of their athletes are tested at required intervals over a four-year period to ensure they are progressing properly. The competition components are also affected for an Olympic context. In many cases, there are plenty of exhibition games where the coach evaluates the process of the teams performance rather than the outcome. Thus, the coach is apt to give equal playing time to all players in order to evaluate their performance in a game situation. Suffice it to say, many of these conditions would change if it was a university or professional context that operates on a yearly, and sometimes weekly or monthly basis. Finally, the job conditions of a coach will affect his/her strategies. In the case of the coaches in this study, coaching in Canada involves some constraints, most of which relate to money. With a lack of funding, the coach has to spend more time on his/her administrative tasks

than he/she would like. This in turn, affects the training and competition of the team because the coach does not have as much time to spend planning strategies.

In sum, this narrative illustrates how the characteristics, knowledge, and strategies of expert team sport coaches are grouped into three primary coaching categories and three peripheral coaching categories. Central to all of the categories, including training and competition, is the organization component. The next chapter will discuss the implications of these results with respect to other related literature in this field.

CHAPTER 5

DISCUSSION

The primary objective guiding the present study was to better understand the characteristics, knowledge, and strategies of expert team sport coaches regarding the components and tasks that operate within the conduct of their profession, and to conceptualize the relationships between these various elements. The present chapter will examine this objective in relation to the current literature on coaching, expertise, and pedagogy. In the previous results section, six categories emerged which encompassed the characteristics, knowledge, and strategies of expert team sport coaches, and specifically, how they impacted upon the process of coaching. In this chapter, the objective was to conceptualize and better understand the significance of these results in relation to other literature in sport and psychopedagogy.

The conceptual map in Figure 1 graphically highlighted the relationships among the categories of coach-centered processes, organization, training, competition, athlete-centered processes, and contextual factors. This section provides an overall heuristic of the dynamics between these categories, resulting in two important findings. First of all, what were the characteristics, knowledge, and strategies that collectively distinguished these coaches as a unique group of experts? Second, what was the nature of the knowledge base and operational strategies which allowed them to effectively carry out their objectives? The chapter concludes with recommendations for future research.

Comparing Existing Literature with Results of the Current Study

Coach-Centered Processes

The relative weight of this portion of the interviews, that is 26.5% of the total meaning units, is an indicator of the importance of the fundamental nature of these coaches. This category requires particular consideration since this process infused energy and directed the other categories and properties of the coaching process. The coaches' persistent quest for personal growth, learning, and development, and the ways of nurturing this process through continuous learning were developed in this category. These data also demonstrated the drive and

determination of these coaches, and how these characteristics led to achievement in their profession.

Growth Processes of Coaches and Ways of Learning

Some of the growth processes elicited from the coaches in the present study can be compared to research on expert teachers and coaches (Bloom, 1985; Csikszentmihalyi et al., 1993; Ericsson et al., 1993, 1994; Partington, 1995). The above studies found that the influences of teachers and coaches were central determinants for the rise to prominence of expert performers. While these authors highlighted the importance of their years of practice and dedication, they did not explicitly examine the nature of the assistance provided by these coaches or teachers. Many failed to realize that teachers and coaches dedicated the same amount of practice time as their athletes, and probably spent more preparation time prior to training. The present analysis demonstrated that expert coaches were fervently devoted to their involvement in sport as exemplified by their commitment to hard work and their search for improvement in their coaching knowledge. They accomplished these tasks in a number of ways, including attending clinics, seminars, and symposia, seeking mentors, reading coaching books and manuals, and watching and studying other successful coaches. These ways of learning were analogous to those of the music teachers in the research of both Ericsson et al. and Partington, as well as the individual sport coaches in Bloom's research. Consider the following quote from an expert musician in Partington's research:

Jake, as we call him, just returned from the Chicago symphony at the age of seventy-five. Retiring at this age is a fact in itself for an orchestral musician, particularly if he plays a brass instrument like the tuba, because the physical requirements are considerable...A colleague of mine went down to see him last week and he was absolutely elated at the energy this man has, how much he loves music, how much he loves playing, and how much he's interested in people. He is like a young man. And I look around at people I know who are like that. They are people who are vital, who have been constantly giving themselves a little shove, stimulated all along. (p. 25)

Although these previous studies on expert teachers and coaches did not specifically consider this topic from their perspective, they suggested that expert coaches and teachers across many

domains might possess similar characteristics and initiatives similar to the elite athletes or students with whom they worked.

According to the coaches in the present study, an important way for both coaches and athletes to learn and improve was through the mentoring process. A consensus definition of mentoring might be that it occurred when there was a trusting relationship between the teacher/coach and the student/athlete, when there was an interest in the personal development of the apprentice, when time was allocated to fulfill personal needs of the apprentice, and when an imitation of behaviour took place. As mentors, the coaches in the study developed trusting relationships with both athletes and aspiring coaches, helping them with their personal development, knowledge, and sport skills. Apprentice coaches acquired hands-on experience and provided insights about life and sport, information which helped them develop their personal coaching style. Athletes were taught similar skills, which were used both inside and outside of the sport context. Consider the following two quotes:

I think I may have lost a couple of national championships because of the coaching style I have. I don't care because I think the kids are becoming better players and better people. I am not interested in robots. I am interested in every kid becoming a good basketball player and a good student. (5BB)

The best way of developing young coaches is working with a mentor. The problem is there are not a lot to go around. Here we have a really good situation, they work with us and they go to the coaching institute. (5BB)

These expert team sport coaches' perceptions were supported by several researchers who believed in the benefits of structured mentoring programs for coaches and athletes (Bloom, 1985; Gould, Giannini, Krane, & Hodge, 1990; Hofmann & Feldiauer, 1992; Perna, Zaichowsky, & Bockneck, 1996; Stroble & Cooper, 1988; Walton, 1992). Among these studies, Bloom and Walton both reported that purposefully allocating time to work with athletes and being committed to their personal growth and athletic development were important characteristics of several expert individual and team sport coaches. The coaches in the present study displayed a similar passion for this process, a characteristic which led many of them to recommend ways of improving and refining the mentoring process. Similarly, the teachers in the research of Stroble and Cooper also forwarded a number of suggestions for improving the mentoring process, most of which related to

funding problems. They found that a lack of support from the school boards inhibited the potential benefits that a successful mentoring program was able to provide.

The coaches in the current study also discussed the significance of being perceived as a potential mentor. Some were honoured and willing to serve as mentors for aspiring coaches due to the positive experiences they went through during earlier stages of their careers. Although these experts were often demanding as mentors, they still provided young assistant coaches with opportunities to access valuable sources of information and make other important personal contacts. The mentors in the present research were similar to those studied by Bowers and Eberhart (1988), who found that apprentice teachers also obtained positive benefits because this experience forced them to reflect upon and refine many aspects of their own teaching. Thus, mentoring is a process that has important implications for both coaches/teachers and athletes/students, and the quality of sport performance.

Personal Approaches to Coaching

The category of coach-centered processes extended beyond their desire to learn and ways of learning. Also included were their own personal or individual aspects towards coaching, that is, characteristics that set these expert coaches apart from less experienced colleagues. According to these coaches, there was no clear way to develop a unique coaching style; they had to transform their own personal characteristics into a style with which they were most comfortable. Nevertheless, these experts espoused the importance of several areas, including working harder than others, communicating effectively, empathizing with their players, and understanding the importance of using discipline or distraction during training.

Much of the literature on expertise offers insights for the present research, particularly the work of Csikszentmihalyi, Rathunde and Whalen (1993). In their examination of talented high school students, Csikszentmihalyi et al. identified three common characteristics of teachers who helped cultivate the talent of their students. First, the teachers enjoyed the teaching process. Second, they encouraged their students to excel beyond their current level of talent by creating optimal learning conditions. Third, these teachers were commended for their ability to understand the needs of their students and for their reassuring kindness. All three of these characteristics emerged in the present study. The expert coaches expressed their joy of coaching, how they were

enamoured by their profession and how there was nothing else they would rather be doing. This partly explains why these coaches worked so hard; to them, this intensity was pleasurable, even if it meant watching game films late at night or giving up long week-ends with their families to scout or recruit.

My favourite month of all of my coaching was in October with college athletes. I used to love selecting those kids from high school who didn't know piss from paint, get them into a hot house and be able to help them and surround them in a good environment. I like helping good kids through stuff, and seeing them make quantum leaps. Nobody knows whether they are playing or going to be the starter. They are all full of piss and vinegar and I am in my glory because I like to teach. (-BB)

Even the coaches with the most experience in this study still actively sought to acquire new insights to add to their repertoire, and to improve the quality of their practices, athlete interactions, and results in competition. They also attempted to create optimal learning environments by motivating and encouraging their athletes to push themselves beyond their perceived limits. For example, successful coaches in the present study knew how to demand of their athletes extreme physical effort, but also sensed when to have fun at practice if they were mentally or emotionally drained, and needed to unwind. Finally, these coaches were able to empathize or understand the needs of their athletes, especially when they were going through tough times, or they had to focus more energy on school work.

I sensed that one of my players was not doing well, but we didn't know why. Our sports psychologist came to me and said I should talk to the player. The player came in and said, "I don't know if I should be bothering you, but my daughter is in the hospital at the other end of the country. My wife called and we are having a lot of problems, and we are both very concerned." He said he wanted to make this team and he was very serious. I said, "We will evaluate you on what you have done up to now. I can't tell you what to do because you are a big boy, but if this were me, I would be on a plane right now." I also said, "I am telling you I would go home, and if you say you don't want to go home, I might send you anyway." That was how strongly I felt about it. (1BB)

Partington's (1995) research on expert musicians, and indirectly, on their teachers who helped them excel, revealed similar results to the present study and to those of Csikszentmihalyi et al. (1993). Partington found that expert performers were influenced by gifted teachers who mentored them and tried to create ideal learning environments throughout their careers. These teachers, when required, played a number of vital and, sometimes conflicting roles, including acting as friends, confidants, and disciplinarians.

You can't imagine how lucky I feel to have studied with him, because he's one of the rare individuals who really loves the instrument. He is one of the most respected timpanists anywhere in North America or Europe. He and I developed a father-son relationship and got along like a house on fire...I tell my students, when you look over your shoulder, I'm standing there; when I look over my shoulder, he is standing there; and when he looks over his shoulder Saul Goodman is standing there, who was considered one of the grandfathers of the timpani. (p. 26)

Similar findings also emerged in Bloom's (1985) research. Expert teachers or coaches knew how and when best to communicate with their athletes so they would perform at the highest levels. This included knowing when to use sympathy or discipline, and when to solicit their feedback.

For most of the swimmers, the move into the later years meant a different kind of relationship with their coaches...They therefore sought a more collaborative relationship with their final coaches - not directly of course, and not all at once. But slowly they began asking for more of a say in what they were supposed to do in practices and in meets. In most cases they got it. As might be expected, the more authority the swimmers had over themselves, the more they saw that their coaches respected their feedback, the more devoted they became to the sport - their sport. (pp. 184-185)

An argument can be made that the main principle encompassed within this category was communication, since all facets of the teacher/coach and student/athlete interactions revolved around this process. Coaches reported that communication was indeed an important skill that involved knowing when and how to interact with athletes. They attempted to communicate in a manner that complemented their own personality and approach to coaching, as illustrated by one coach:

I think communication can be taught, but part of it is the conviction by the coach.

The guys have to sense that you know what you're talking about and that you believe it is going to be effective. (15IH).

Empirical and non-empirical research on communication has looked at the differences in communication skills of expert coaches and those who are less experienced (Bloom, 1985; Gould, Hodge, Peterson, & Giannini, 1989; Lacy & Darst, 1985; Lacy & Goldston, 1990; Martens, 1990; Smith, Smoll, & Hunt, 1977; Schinke, Bloom, & Salmela, 1995). For example, Bloom, Gould and Martens all studied entry level, or novice coaches. These coaches behaved in a manner which included showing patience and providing effective, positive feedback to their athletes. Schinke, Bloom and Salmela conducted research on expert coaches, who reflected upon their years at the novice level. They revealed that when they had not yet developed a formal, effective coaching style, many intimidated their athletes and created learning environments that were emotionally upsetting and unnerving. Finally, in their research on competitive youth sport coaches, Lacy and colleagues found that the central component of effective coaching for team sports was instructional feedback, where praise was used at least three times more often than scolding.

Bloom's (1985) descriptions of the communication styles of elite level coaches paralleled those of the coaches in the current study. In both cases, the coaches eventually became partners with their athletes and provided feedback on skill refinement, as the athletes strove for performance excellence. The current study furthered Bloom's research by identifying the importance, especially at the highest levels, of having athletes comply with their mission of achievement. They understood how this facilitated athlete empowerment, improved their performance motivation, and increased their enjoyment in sport.

Recently, Côté and colleagues (Côté, Salmela, & Russell, 1995a; Côté, Salmela, Trudel, Baria, & Russell, 1995) proposed a coaching model (CM) which described and conceptualized the various components in the knowledge structure of expert gymnastics coaches. Although communication was never explicitly examined, Côté and associates found that elite gymnastics coaches were supportive of their athletes in order to inspire them both physically and psychologically. The support role of the coaches included being empathetic listeners and assuming a partnership with their athletes on issues such as diet, rest, family, and personal conflict. However, it must be pointed out that Côté, Salmela, Trudel et al. only looked at

gymnastics coaches, some of whom worked with younger competitors who may have required more individual attention.

In the CM, Côté, Salmela, Trudel, Baria and Russell (1995) considered the characteristics of the coach, within which the knowledge or philosophy of coaches was described. Their category of the coach's personal characteristics differed from the present coach-centered processes because it did not focus on the interactions of the coach's characteristics which affected other dimensions of their professional lives. Moreover, the present study elaborated upon the pursuit of knowledge that motivated these coaches, and how this knowledge acquisition influenced other dimensions of coaching. It was a combination of the three properties within the coach-centered processes that defined the special nature of these expert leaders in sport. The totality of these three properties ultimately affected the way in which they organized their season, trained their team, competed, and interacted with their athletes within diverse coaching contexts. For example, coaches with such passion would never concede a victory nor would they select athletes or assistant coaches who did not share a like attitude.

You have to be extremely industrious, self-motivated, and have an inner drive to excel. You must have an ability to push yourself and a tremendous will or determination. You need these characteristics if you are going to create an environment where those are the requisites for success. (6BB)

The difference in the two coach-oriented categories of Côté, Salmela, Trudel et al. and the present study can be attributed to their different objectives. While the present study examined how the coaches' characteristics, knowledge, and strategies drove the process of coaching, Côté, Salmela, Trudel et al. were primarily interested in laying out the structure of the knowledge categories that led to the development of elite gymnasts, rather than on the dynamic between these dimensions.

Many aspects of coach-centered processes were presented in this section. Although certain research has targeted expert coaches (Côté, Salmela, Trudel et al., 1995), up to this point, the personal characteristics and interactions of these processes that made expert teachers or coaches especially effective have not been central nor comprehensive to their research. Perhaps, this omission occurred because much of the literature on expertise focused mainly on the needs of the performer, rather than the development or knowledge of coaches or teachers. Whatever the case, the coach-centered processes category has demonstrated the importance of knowing the

personal make-up of coaches and has gone beyond the simple understanding of their technical or tactical skills. One coach best summarized this view in the following manner:

I've done many coaching clinics where coaches ask me, "Gee, why would you give information away; now I know what you are going to do next?" I always say it doesn't matter because they don't know how I do it. He's got [the information], but he doesn't know how I teach it. To me that's the secret. It's how you teach and explain it, what drills and teaching cues you use with the athletes. I could even give the teaching cues away. It's how you sell them, how you're emphatic, and how you look the guy in the eye. (15IH)

Organization

The organization category of expert team sport coaches represented the point of departure of the two other primary categories since it was the foundation for training and competition. These coaches were more than just efficient organizers, they were also highly motivated individuals who understood the magnitude of effectively outlining a global perspective to their team and then having the players comply with this mission. Bearing this in mind, the coaches also outlined detailed seasonal plans for the teams' training and competition regimes. In all cases, their long-term plans were broken into smaller monthly and weekly segments. This plan was put into action through the organization of team building and goal-setting activities which encouraged the athletes to train with unrelenting intensity to accomplish the established mission. Without sound organizational skills, it can be concluded that the training or competition of coaching would be less effective.

Outlining the Mission

The analysis revealed that central to the organization of a team, was the creation of the team mission and the communication of the steps necessary to bring this to fruition. This mission meant these coaches had a master plan for their team at the beginning of the season. This mission reflected their personal approach to expert coaching and became the personal stamp for their team. For example, this mission directed the planning of the coach, whether it was in the form of quadrennial, seasonal, weekly, or daily practice plans, and everything was a means of achieving the long-range goal of the team. It also influenced goal-setting and team building sessions, during

which the coach carefully made sure these activities addressed this mission. Finally, the administrative tasks of the coach and the selection of support staff also corresponded to the team mission. One example of the nature of this mission was revealed by one of the hockey coaches:

Here's the direction I want you to follow. There's going to be some pluses and minuses for all of us and it's not always going to be a straight line, but I will tell you the things that I think you must do to get there. This is how we are going to do them, and here's what you have to contribute as an individual. Over the course of the hockey season, because it's a long year, you clarify for each athlete what his contribution has to be to fit into what the group is trying to accomplish. (15IH)

Not only did the coaches set out a mission for their team, but they also successfully relayed this to them at the beginning of the season and then created an environment which facilitated their compliance to the system. Research on the pedagogical knowledge of teachers has shed light upon this crucial component of coaching. Shulman (1986) defined pedagogical content knowledge as "the ways of representing and formulating the subject that make it comprehensible to others" (p.9). Graber's (1995) study of expert teachers was significant because it extended previous research on the nature of the teachers' knowledge, as seen from the perspective of an expert-novice paradigm. More precisely, Graber examined the type of knowledge of expert teachers, and more importantly, how they used it. The results of the current analysis extended research in a similar manner as Graber. Not only did this study outline the importance of creating a mission, but it showed the coaches' methods of selling their ideas to their athletes. It can be implied from the current study that knowing how to clearly and emphatically present or sell their ideas, was just as important for team sport coaches as their knowledge relating to strategic or tactical elements of their sport.

The main difference between Côté, Salmela, Trudel, Baria and Russell's (1995) conceptualization of the organization category can be seen in the complexity of the property related to outlining the mission. To begin with, organization was the crucial starting point for team sport coaches, something which did not emerge in the research of Côté, Salmela, Trudel et al. Perhaps the latter research was not centered on the importance of the three primary coaching categories because in individual sports, a coach has more direct control over athletes, and there is less of a necessity of outlining a vision or having the athletes buy into it. For example, individual

sport athletes do not have to rely on their peers for their own performance. Team building techniques are not central for individual sports, but are crucial for team sports. In sum, a great deal of time was spent by the present coaches guiding all players to move in the same direction, so organizational skills played a more central role than the other primary categories of training and competition in the team sport context. Furthermore, if team sport coaches were unable to direct their athletes towards a common goal, this would hinder their work in training and competition, since the athletes would be more concerned with their own goals rather than those of the team.

Planning

In order for coaches to effectively set a mission for their team, they had to anticipate all factors which took place in training and competition within their quadrennial, seasonal, weekly, and daily plans. They also had to take into account the physical, tactical, and technical elements of training, as well as recovery periods and competitive schedules. The large number of meaning units (27.2%), along with its distributions, comprising the planning property demonstrated its importance in organization for coaches.

Csikszentmihalyi, Rathunde and Whalen (1993) and Ericsson, Krampe and Tesch-Römer (1993) identified motivation as an important constraint affecting an individuals' rise to higher levels of achievement. Nowhere would the athlete's motivation be more likely to decrease than during difficult practice sessions. These coaches planned practices that were interesting and stimulating, especially during periods with little or no competition when athlete motivation was liable to be at its lowest point. This factor was mentioned by many of the Olympic coaches in the current study, who planned a four-year program for their team. They set specific goals for their team for different periods within each year, so that the intensity of training and competition were balanced and well measured.

We made a rule: If the Olympics were on the 25th of this month, then you were in your home town and having nothing to do with me, you were relaxing on the first of the month. This meant we had a fight with our sport governing body, because we had a lot of short road trips. (1BB)

Empirical research on individual sport coaches reinforced the significance of daily practice planning and how every detail of training was mapped out (Côté, Salmela, Trudel, et al., 1995).

In the current study, the coaches also carefully planned each minute of every practice. However, they were also able to alter their practice plans to meet the current needs of their athletes. For example, if the players said they were uncomfortable with a new offensive scheme, the expert team sport coaches changed the practice so the athletes spent more time refining their skills in these areas of concern. Barrett, Sebren and Sheehan (1991) found similar results in their examination of physical education teachers. They noticed that more experienced teachers were less likely to rigidly adhere to practice plans and were more likely to adapt their lessons to fit the immediate needs of the subjects.

Goal-setting

According to the present coaches, one subcomponent of their master plan involved helping their athletes set and achieve both individual and team goals. These coaches understood that their athletes had to comply to the team's goal in the same manner as they did for the mission of the coach. The goal-setting process has many positive outcomes, one of which included maintaining athlete motivation, which then allowed each player to improve on his or her mental, physical, tactical, and technical skills (Burton, 1993; Martens, 1990). Furthermore, the appropriate setting of team goals was a powerful way for the coaches to communicate their mission to the team. Their belief in goal-setting concurred with findings in the literature which demonstrated that effective goal-setting techniques were valuable performance enhancement tools for both coaches and their athletes (Burton, 1993; Dorfman & Kuehl, 1995; Duda, 1993; Locke & Latham, 1990; Orlick, 1986a, 1986b, 1990; Ravizza & Hanson, 1995). For example, Dorfman and Kuehl stated that "when selected properly, goals became a player's most important tool...The performance goal a player sets - what he thinks he can do, based on his ability and degree of confidence - usually becomes his personal standard of acceptance. For this reason, it's very important for the player to set realistic, reachable goals" (p.5). Moreover, Orlick's (1986b) summation of this process was similar to that expressed by these coaches: "Goal-setting is important in sport not only because it stimulates us to think about where we can go; it also gives us a step-by-step way to get there and inspires us to take the first step" (p. 5).

Process and outcome goals are two types of goals that athletes can set for themselves. Although these coaches understood the value of each, they believed that process goals were

ultimately the most important. These coaches were in agreement with Dorfman and Kuehl (1995) who suggested that athletes should set goals that focus on short-term process goals of performing to one's capability. Similarly, Ravizza and Hanson (1995) stated that many team sport athletes became so focused on their outcome goals, such as personal statistics, that they lost their focus on the process of playing the game. The following citation summarizes how the present coaches felt about process goals and their application to a team concept:

I use a common purpose to bring the team together, which is focusing on a target that they want to beat. I don't believe in setting goals like, "We're going to finish third in the tournament." We never talk about winning national championships, or about winning at any time. We talk about competing and being our best. (6BB)

Team Building

An important dimension of the expert coaches' organizational skills was their attitude towards team building. This should not come as a surprise. A great deal of sport psychology literature has addressed the importance of this process (Carron & Ball, 1976; Martens & Peterson, 1971; Slater & Sewell, 1994; Widmeyer, Brawley, & Carron, 1985; Widmeyer & Martens, 1978; Williams & Widmeyer, 1991). For example, Widmeyer, Brawley and Carron noted that individuals in sport, the military, and politics have all devised elaborate means to develop what they referred to as morale or team spirit. The results of the present study were in agreement with literature that stated that the impact of the coach affected the cohesiveness of a team by involving athletes in decision-making, reinforcing performance with positive feedback, and demonstrating care and concern for team members (Westre & Weiss, 1991; Widmeyer & Williams, 1991). Furthermore, the coaches in the current study concurred with Westre and Weiss, who noted that teams with talented individuals who failed to perform, often did so because of a lack of team cohesion.

One important factor that affected team cohesiveness was the expert coaches' ability to create rules for team problem solving. The coaches stressed the importance of being consistent with rules and of clearly communicating them to athletes prior to each season. They believed that teams with clearer rules of conduct had fewer problems because discipline or punishment was

consistently applied for all team members. One coach spoke about treating all athletes equally and avoiding double standards:

I think I've always been conscious of trying to avoid double standards on my team. That's the first, and quickest way to lose everybody. An athlete may make a mistake. He can show a lack of effort, and it would be easy for me not to deal with it because he is the best player on the team, the most experienced guy. It would also be easy to treat rookies by a different set of rules. I've avoided that. (15IH)

Administrative Tasks and Working with Support Staff

Two final areas of organization mentioned by the coaches were dealing with the many administrative tasks and effectively using their support staff. With respect to the administrative tasks, most coaches learned to cope with this part of their job since this paper work and dealing with administrative structures was a necessary evil for accomplishing the team mission. However, given the amount of time required for training and competition by the coaches in this study, it was surprising that their administrative tasks took up so much of their time. Because of funding short falls, many of the coaches had to spend time planning fund raising activities, finding inexpensive lodging for their players, and dealing with university or sport governing bodies.

I finished last night about 10:00 because I had interviews with the players. Today there is no volleyball, yet I have seven or eight things to do. The press conference is one, the hotel is another, we have to get players into apartments, and we have to get the schedule for the rest of the week. Sometimes I think tomorrow or next week will be better, yet it is the same. (8VB)

Another component of the coaches' organizational tasks was working with their support staff. They placed a great deal of importance on hiring competent and loyal support staff, since with team sports, the coaches could not attend to all dimensions of training and competition. Many of these coaches believed it was crucial to hire assistant coaches with expertise in specific areas, such as offense, defense, or goaltending. They also discussed the importance of hiring a qualified strength and conditioning coach, a team physician, and a sport psychologist for the various demands of training and competition.

I found that as I matured as a coach, I relied more on the people that I worked with. I

remind young coaches now, especially those with good assistants, to use them. If he is not good, then get rid of him. You must have outstanding people, especially on a national squad. You should have as high standards for your staff, as you do for your athletes. Are you going to take a player that you are not comfortable with that you are not sure has everybody's goal in mind? (IBB)

Mental skills training

Research by Partington (1995) and Côté, Salmela, Trudel, Baria and Russell (1995) specifically alluded to the coaches' attitudes towards mental training. Both Partington and Côté, Salmela, Trudel et al. found that the head coach or teacher often took an active role administering and monitoring the mental skills of their athletes. Partington, for example, found that in addition to nurturing physical and emotional development of students, expert music teachers also played a critical role in their mental development. Mental training for musicians was defined as helping them to act independently through the resolution of their own problems, and the adherence to specific practices geared to their instrument.

A lot of students screw up because of the "9:00 to 5:00" idea they have about practicing... The important thing they ask is, "What good fun has it been to listen to it, and have I accomplished what I wanted to?" I tell my students to determine how long they will practice on a particular day, and then to quit ten minutes earlier than that, and spend the extra time figuring out just what's better now than it was when you started. If you can't find anything, then write off that page of print. You've got to learn to be goal-oriented rather than time-oriented. (p. 109)

Likewise, Côté, Salmela, Trudel et al. found that expert gymnastics coaches played a crucial role in helping their athletes with their mental training, in a similar fashion to Partington.

In the present study, some coaches chose a sport psychology consultant to help their athletes with mental training, including goal-setting and establishing pre-competition and competition plans. Also mental skills training did not take place during team training sessions, rather it was worked into the schedule of both the consultant and the athlete. The sport psychologist also helped with such issues as coach-athlete interactions and team building techniques. All of these areas have been mentioned as important in much of the sport psychology

literature (Nideffer, 1985; Orlick, 1990; Ravizza & Hanson, 1995; Rushall, 1992; Weinberg, 1988). As Orlick noted, "The difference between best and worst performances lies within your thoughts and focus. In worst performances you allow negative, anxiety-producing, or distracting thoughts (about other performers, your inadequacies, others' expectations, the amount of rest, a bad warm-up, the weather, or final placing) to interfere with an effective task focus. In best performances you are able to stay in the moment, which is the only one that you can influence anyway" (pp. 20-21).

Although most coaches seemed to place great importance on mental training issues, there were some discrepancies when the findings of the present research are compared with other studies of expert teachers and coaches. For example, both Côté, Salmela, Trudel et al. (1995) and Partington (1995) considered coaches and teachers from individual sports or orchestras. These coaches had more time to attend to their athletes' needs, including their mental skills training. The complex nature of team sports does not allow coaches sufficient time for this specialized task. In fact, many of the coaches stated that besides encouraging the sport psychologist to work with athletes individually on mental training issues, they also wanted them to play an active role in team goal-setting and team building activities, two areas which are not central for individual sports or activities.

About 11 or 12 years ago we started doing some pretty solid things on goal-setting, and a lot of things came from our sports psychologist. We took his concept on commitment motivation, which I think is a fabulous concept, worked it, and set it up in a way that was most appropriate for our team. I think it's a great thing, and I know a lot of professional teams are now doing it. (1-IH)

Thus, it could be concluded that mental training was an essential task for team sport coaches, however, it was taught in a manner that reflected the demands of the sport.

Training

Coaches who possess high levels of commitment and who have exceptional organizational skills have an increased probability of running effective practices. The coaches' understanding of training were regrouped into physical, tactical, and technical training. The skills and strategies of these coaches in training reflected that they often operated at a higher metacognitive level, either in the creation of a special drill for a given player or in the simulation of the next opponent for the

entire team. Many of Côté, Salmela and Russell's (1995a) findings on the training procedures of expert gymnastics coaches were similar to those in the current study. Perhaps this explains why this primary category had only 115 meaning units in the present study, compared to 345 for competition and 279 for organization, the other two primary categories. It appears the tasks of the coach in training are straightforward and perhaps more automated for team sports, and therefore were expressed in less detail by verbal report.

Physical Training

Physical training was defined as the physiological preparation of the athletes' respiratory, energy, and muscular systems from aerobic, anaerobic, and strength perspectives for optimal performance in competition. The present analysis found that coaches believed it was important to regularly assess the physical capacities of their athletes and to vary the type of physical training depending on the period of the season. It was also necessary to have demanding, strenuous training practices that were also up-tempo and challenging.

It is very important to make the players aware of training intensity. We always spent time with the athletes running lines. A great anaerobic drill because it lasts about 30 seconds and hits the max. and the direction changes, and it is in a little environment that is perfect for a gymnasium. So we talk about these shuttle or suicide runs or line drills. I'd say here is what is going to be attempted. We can change the intensity and frequency, then we have recovery. We say here is what goes on with your body and so on, and this is what you must ask your body to do to get to failure. We would be doing these and every other day we would add one. (4BB)

Research on expert performers, such as that of Csikszentmihalyi, Rathunde and Whalen (1993), revealed that if coaches or teachers did not make the practice environment stimulating and challenging, the athletes or students became bored and lost interest. Ericsson et al.'s (1993, 1994, 1996) research on the development of expert performers also has implications for physical training, in that teachers or coaches were required to facilitate the process of deliberate practice. Due to the constraints which attenuated deliberate practice, it was suggested that if teachers or coaches were not present at practices, athletes would tend to play rather than practice. Ericsson and associates also found that coaches and teachers played an important role in creating

challenging and stimulating tasks for performers, in an environment for athletes to accumulate the necessary 10,000 hours of deliberate practice for the development of expertise. The following citations demonstrated how the current coaches created unique and interesting off-season physical training programs for their athletes:

I have an off-season training program for them. We have specific testing based over a number of years in our programme. We do things like a 20m shuttle run, the mile and a half run, the vertical jump, the anaerobic power stair climb. We do these tests at the start and end of the summer because we think it is the critical time for physical conditioning. If they don't arrive in September with a fairly good aerobic base, we find we get diminishing returns, so we have an off-season program. (3BB)

You keep contact with your players and make sure they have a program. Not only do they have a program, but you show them how to do it. Sending out the 20 page fitness program doesn't work. You have got to bring the players in, show them the fitness program, follow up with how they are doing, and then test them when they come in. (13IH)

Although physical training was a standard practice for all coaches, it was the foundation upon which athletes could master technical and tactical drills, without experiencing fatigue or injury. Moreover, if athletes were not physically prepared, performance in competition would suffer, and would then have to be corrected in the planning of future training.

Tactical Training

Tactical training dealt with teaching cognitive strategies to athletes to best prepare them for competition. In particular, their knowledge and understanding of their sport, and the innovative ways they prepared for opponents, made these coaches special. They created a game plan and then designed ingenious drills to help their team simulate competitive environments to maximize readiness. These findings relate in many ways to some of the classical studies of expertise that demonstrated how expert performers possessed more knowledge and skill than novices within a variety of domains, including physics, medicine, and music (Allard & Starkes, 1991; Chase & Simon, 1973; Chi, Glaser, & Rees, 1982; DeGroot, 1966). Allard and Starkes extended this framework to the sport context where they found the knowledge of skilled

performers was organized and structured at a higher level than novices. Although this study did not examine how the tactical training skills of expert coaches differed from novices, inspection of their reflections highlights the complexity and nature of this type of training:

Competition is the end result of what we have done in practice. I want to make the players confident enough to win every game. We practice like crazy to learn how to win the game with one second left - where we go down the length of the court in one second. We practice that every second day. We practice a lot of little things because I never want to be in the last second of a game and realize we can't win it. I want the players to feel prepared and to feel that we are in the game with them. (1BB)

Let's take the example of when you know who your opposition is and that you will play them on Saturday. Obviously, you can practice during the week, and prepare for the game. I use video tape a lot because I think it is important. You can use video tape at practice, where you see something and then you go and do it. You can also simulate the opposition's defense, where you create what you are going to do against them, and then there is a tremendous understanding for what is going to happen. (10FH)

Along the same line, Berliner (1988) listed five phases for the identification of the various levels of teaching expertise. In the two highest stages, teachers progressed from a cognitive to an automated state, and then finally to a higher conceptual way of thinking and interpreting. Berliner found that many teachers reached the fourth stage of expertise, but few, if any, became "proficient," and reached the highest level of expertise. The coaches in the present study demonstrated a systematic way of thinking which suggested a profound and complex understanding of their sport, as evidenced by their elaborate practice plans and well conceived drills. For example, many of the coaches stressed the importance of a detailed study of their opposition; through scouting they tried to anticipate what the other team would do so they could relay this information to their players.

Salmela, Draper and Desjardins' (1994) research on the structure and evolution of expert coaches' careers also provided insights for the identification of expert coaches. Their model traced six transition phases for the development of expert ice hockey and field hockey coaches. The highest level was called eminent coaching awareness, and part of being labelled as eminent meant the coaches made innovative advances in training or teaching. While the coaches in the

present study were identified as experts, many might have been eminent, especially in the area of tactically preparing their athletes for competition. For example, the coaches understood the needs and demands of each of their athletes. If an athlete had a specific concern, these coaches were able to create a new drill or add an element to an old drill to help the athlete refine his or her own style of play.

I think about the game a lot. I don't have any drills - I create drills. If I see a problem on the floor, I will create something right there, or I will watch a game film. What we do is scout ourselves. I scout my team, I will watch game film and scout as if I am the opposition and these are the strengths and this is how they might stop us. Then I base the things I do on what I saw on the game film. For example, if we are not getting the ball inside to our post, I come up with game situations on the floor to practice that. I put conditions on so that when they see a situation in a game, they know how to respond to it. (3BB)

Technical Training

The third and final element of training was technical training. This property was defined by the nature of instruction and the pedagogical knowledge and skills of coaches designed to enhance the learning of individual motor skills and interactive team maneuvers. Shulman (1987) defined pedagogical knowledge as the one of the principal strategies required to discipline a classroom, which transcended a teacher's understanding and actions, as well as the necessary activities to meet those obligations. A number of relevant findings emerged regarding the coaches' pedagogical teaching strategies.

The teaching characteristics of expert sport pedagogues (Smith & Smoll, 1990; Smith, Smoll, & Curtis, 1978, 1979; Smith, Smoll, & Hunt, 1977; Smith, Zane, Smoll, & Coppel, 1983; Tharp & Gallimore, 1976; Wooden, 1980) were consistent with those of the present expert team sport coaches. Tharp and Gallimore used a behavioural observation technique to assess the technical and pedagogical skills of basketball coach John Wooden over the course of a season. Central to their findings was Wooden's "four laws of learning": explanation, demonstration, correction, and repetition. Although these four areas were not explicitly examined in the present research, they all emerged. In particular, giving constant and clear feedback, especially to correct

a technical aspect of the athletes' game, appeared to be very important to these coaches, as well as to coaches in other studies (Rothstein, 1979; Wooden, 1980). Along the same line, Smith, Smoll and their colleagues used a behavioral assessment tool to identify which variables were crucial for effective teaching and coaching. Of importance, was their finding that trained coaches were more likely to stress encouragement and mistake-contingent technical instruction than untrained coaches. Although they centered their attention on youth sport coaches, the importance of sound technical instruction appears to be important for coaches of all levels.

It appears that a central reason the coaches in the current study excelled was their ability to teach skills to their athletes in a manner that was both helpful and invigorating. The following quotations illustrate this point.

Most athletes agree there are a lot of basic things they need to work on before they become a proficient international player. If you talk to the team there would be some agreement that we need to get better technically with our basic skills. A lot of the players we watch are not in the same league as the others. We can't do that over night, but we make it a priority within our quadrennial planning. We have learned that we can't do that all summer because we play a lot, so we have to find other times in the year for it. (8VB)

As far as the technical aspects that we used in practice, we didn't tell everybody what we were going to do. I know that a lot of things I've read have said it's good for athletes, however, I think our athletes are familiar to the tone of practice. As to what we are specifically going to do, I think a little bit of mystery is nice. They know they are going to get something new once in a while, a little wrinkle, just to keep them motivated. (1BB)

According to the present coaches, one important aspect of technical training was providing individual attention to all their players. That meant helping them detect flaws in their game, designing proper drills, and communicating in a way that motivated them to practice effectively to enhance the learning process. According to Leinhardt and Greeno (1986) and Berliner (1986), it is difficult to assess this abstract component of teaching or coaching. For example, Berliner noted that unlike other well-structured fields like mathematics or radiology, in sport there was no common solution to any task. Coaches must separately assess the needs and

characteristics of each player, while always considering the good of the team and its mission, something that was demonstrated in the present study. The present coaches also understood that although most athletes listened to their coaches' suggestions, not all implemented this information in their training programs. These coaches noted how they tried to communicate with their athletes in ways that encouraged them to listen to and respect their council. These coaches also involved their players in game situations in which they would successfully implement this new information. The overriding factor, however, was that the coaches individually assessed each player and situation, and then attempted to devise ways to help them, and the team, achieve their collaborative goals.

Competition

The effectiveness of the integration of a coaches' organization and training skills were manifested during competitions. It was found that although each coach may have felt they had unique characteristics, knowledge, and strategies, from a broader perspective, many coaches followed common procedures prior to, during, and after competitions. In their study of expert gymnastics coaches, Côté, Salmela, Trudel, Baria and Russell (1995) found that because of the individual nature of the sport, competition received the fewest number of meaning units (6.1%) of the primary coaching categories. In the present study, however, this category received the most meaning units of the primary categories and accounted for 27% of the interviews, thus highlighting the complexity and importance of these coaches' activities before, during, and after competition. Furthermore, five properties comprised the competition category in the present study compared to but three with the gymnastics coaches. The difference between these two studies can be attributed to the nature of the demands of each sport. In team sports, coaches play an active role during competition, whereas in an individual sport like gymnastics, coaches act more as passive observers, since there are no athlete substitutions, time-outs, and few interactions with officials.

Pre-competition Off-site and On-site events

The pre-competition procedures used by the expert coaches corresponded to those suggested by other researchers (Cox, 1994; Martens, 1987; Orlick, 1986a). For example, Martens stated that coaches should help their athletes develop and adhere to a sound pre-event

routine. Coaches in the present study designed routines for their athletes on the day of the game, beginning with off-site procedures such as team meals, and on-site activities such as arriving together at the competition site, adhering to standardized locker room routines, and taking part in a sound, well orchestrated warm-up before the match. All of these activities were designed to ready players for competition and to enhance team unity and morale. The mental preparation of the players was also emphasized throughout the day of the competition.

Expert coaches also put a great deal of emphasis on their own preparation. The quality of their coaching performance was often affected by the amount of preparation accomplished earlier in the day. Up to this point, no research has discussed this important aspect of coach preparation, although Orlick (1986a) mentioned ways for coaches to help their athletes, and indirectly themselves, prepare for competition. This included clearly communicating with one another and effectively using mental imagery skills. It was found that the current coaches had their own routines on game-day, which included preparing their mind and body early in the day, mentally rehearsing for the upcoming game, arriving early at the competition site, and adhering to specific procedures during the pre-game warm-up of their players.

I'll go through certain things in my mind ahead of time. For example, if we've been going with four lines, but we're behind, how can we create more offense by adjusting to three lines? I may not be prepared to do this immediately, but I'll rehearse ahead of time the adjustment that I need to make. (16IH)

I try to be rested, so I have a short nap on game day. You go home and have a bite to eat, and then have a nap. The players do that, and I found as a coach that it was helpful to me. You have a bit of a snooze, but you get up early enough that you're showered and refreshed and ready to go. (14IH)

All of their activities helped the coaches prepare themselves for the upcoming contest. They were meticulous in carrying out their tasks, ensuring they were physically and mentally ready for every minute of the game.

I have a specific plan for myself during the game. During my preparation, I go through things that I think I am going to do. It is like practicing my game plan. I try to run some scenarios; if this doesn't work, we will do this. I don't get too locked in, because too many things can happen. (2BB)

Coaches reviewed what mental stance they would take with their players, officials, and the opposing team. They also concentrated on many elements of the game, including the strategies of the opposing coach, and the tactics they might use during the game.

Normally we have a team meeting on the game day which is relatively short, but with key points. I normally tell the athletes what I know about the opposition. They will say particular things and I pick out key team strengths and weaknesses. Then we focus on a couple of key individuals they have, and talk specifically to the people who might be marking them. We say to them, "This is what this individual likes to do, and this is how you're going to play against them." (11FH)

While there is little research on pre-game activities of coaches, one area did emerge. More precisely, both Martens (1987) and Cox (1994) discouraged the use of the traditional pep talk. Their reasons were similar to those given by the expert coaches in this study, who revealed this method was often inappropriate because their athletes had individual needs and arousal levels which would be differentially affected by such techniques. In a final attempt to get their players ready for the game, expert coaches tried to address their team using an even-tempered approach. Their final words were process-centered and recapitulated three or four of the most important points stressed in the previous week's preparation.

I wouldn't call it a pep talk as you think of Knute Rockne. Have you ever heard that recording? I have it on tape, and when you listen it sounds good, but it is kind of hokey. I don't have that kind of a pep talk. I say a couple of words before they go out for the game - mostly reminders and a word of encouragement. (14IH)

Within-competition Coaching Events and Personal Characteristics

Many interesting findings emerged from the analysis of events in coaching during competition. In particular, it was found that team sport coaches still had significant responsibilities once the competition began, since the smallest edge might be the difference between victory or defeat. This included the strategic use of time-outs and substitutions, judicious interactions with game officials, providing athletes with appropriate playing time, and the effective use of intermission breaks. Their understanding of sport went beyond the basic

textbook strategies. They reported what might be considered an uncanny ability, while reading the game, to notice what few others did.

I think you have to be - energized is not the right word - but you really have to be very much with it, very attentive to what's going on, and not just watching and enjoying the game. You have to be watching it from a bit of an analytical standpoint because you have to try to make decisions at the end of the period about things that you are going to try and adjust. (14IH)

As the game goes on and you're coaching against a good team, you have to make adjustments. Maybe you have to change a little bit of your forecheck. Clearly, you have got to think your way through. How can I do that and get my message across in two or three sentences? (16IH)

Most of these factors do not apply to coaches of individual sports (Côté, Salmela, Trudel, Baria & Russell, 1995). Although there is no empirical literature explaining the strategies of team sport coaches during games, research on expertise has found that one area that separated experts from others was experience, as well as the ability to understand their domain at a higher metacognitive level (Allard & Starkes, 1991; Berliner, 1988; Bloom, 1985; Carter, Cushing, Sabers, Stein, & Berliner, 1988; Chase & Simon, 1973; DeGroot, 1966; Ericsson & Smith, 1991; Leinhardt & Greeno, 1986; Partington, 1995). For example, Chase and Simon and DeGroot each found that expert chess masters had more developed knowledge bases than novices and were able to extract higher-order cues and information from the environment. Similarly, the organization and accessibility of knowledge has also been shown to distinguish expert musicians (Partington, 1995), athletes (Bloom, 1985), and teachers (Berliner, 1988; Carter et al., 1988).

In the same vein, Leinhardt and Greeno (1986) identified differences between expert and novice teachers. They reported that expert teachers corrected homework at a quicker pace, seldom lost control of the class, were able to discern which students were having problems with the current lesson, and provided clearer signals to begin and finish lesson segments. This ability to understand their domain at a higher metacognitive level characterized the way the present coaches operated during competition. Specifically, it was demonstrated by their knowledge of which players to put on the field at certain times, their understanding of when to call a time-out to stop

the opposing team's momentum, or their knowing when to challenge a referee as a ploy to inspire their team.

Basketball is the one sport where the coach is an active part of the game. They are probably not supposed to be, but the rules allow it, and you are making a ton of decisions. There are very few sports where the coach is allowed constant input to the players. In some ways it is good, but in other ways it is bad. You are constantly reminding and teaching, you are in their heads, you are on the refs, and they allow a lot of that. It is part of the game. (5BB)

These coaches used their intermission breaks to the best of their advantage. At the beginning of the intermission, they preferred to leave the players for a few minutes, so they both could collect their thoughts and emotions. During this period, the coaches met with support staff to analyze the effectiveness of the game plan and to map out new strategies to relay to the team.

Between periods, you give the players some time to themselves when they first come in. You tell the players that you're going to talk to them after they've had five minutes to themselves. I'll come in with my assistants and we'll make two or three points, and then we'll give them one or two reminders. This may be a couple of tactical points that you want to talk about. You have to be careful because even though you see five different things that the team isn't doing well, I don't think you should mention all five. You should prioritize it and pick the two most damaging things. (14IH)

These coaches also developed an ability to understand the flow of the game. They knew when to get angry with their athletes or when to be encouraging during intermission breaks:

I try to distinguish whether the problem has to do with attitude, focus, or skill. I try and do that before we go in, so I know how to behave. I find it useful to sometimes be emotional. It is not that I think I have to be passive all the time, but I seem to have a feel for when to be vocal and passionate, and for the most part, it works. They react and respond favourably because they know it is not going to happen all the time. (3BB)

Post-competition Events

Many of the expert coaches' post-competition roles and routines were comparable to those suggested by Martens (1987). Coaches in this study raised the importance of controlling

their emotions and taking time to unwind before having a post-game team meeting with their athletes. The content and focus of the post-game meeting, in particular, depended on both the outcome and the coaches' perceptions of whether the team played well or poorly. For example, when the team won and played well, coaches emphasized effort and performance, and not just outcome. Second, when they won, but played poorly, coaches stressed areas needing improvement and acknowledged those individuals who gave a solid effort. In this case, the expert coaches' beliefs differed considerably from those of Martens. These coaches believed that winning was the priority, and whenever the team won, they let the athletes enjoy it, no matter how poorly the coaches thought their team had played.

Martens' (1987) recommendations for post-competition debriefings also considered losses. For example, when the team lost, but played well, he noted that coaches should be very encouraging, focusing on the positive aspects of their performance. However, when the team lost, and played poorly, there was again some difference between the beliefs of Martens and the current coaches. While Martens suggested focusing on the improvement of the players' physical and psychological skills, most of these coaches said that it was best to say very little to their players, because the players usually weren't in a receptive mode and they themselves worried about saying something they would later regret. These coaches at this time had to hold back their natural tendency to correct any flaws or errors which they detected during the game. The best time for this was during the next training session, not immediately after a game.

We usually have a post-game chat, win or lose, just to evaluate what happened from a goal perspective. Sometimes you lose and you play well, and that needs to be stressed. If you lose, I am really conscious. If I am personally very angry, I work hard not to deliver that. I will be very careful if I am angry because I don't think you are very rational when you are angry. I am careful not to spend a lot of time if I am really angry. It is enough for them to know I am not happy. I want to see things in perspective. (10FH)

I am not sure whether to come in and talk to the team after we lose. If I do, then they will expect it. But I am sure as an athlete that you do not want to have it right after the game. (13IH)

The most effective means of learning from competition results was through the analysis of the details of the game and relaying the most pertinent information to the athletes at the following practice. Once again, procedures similar to those suggested by Martens (1987) have been reported by these expert coaches. For example, all of the post-game evaluations were completed within a day of the game completion, using a variety of resources, including videos, statistical information, and feedback from assistant coaches. This post-game evaluation affected many areas of the coaches' tasks, such as planning future practices, and inevitably what they taught and how they trained their team. In sum, several links were made between Martens' work and this study, relating to the knowledge, beliefs, and behaviours of coaches. The primary reason being that Martens was the only source that presented information that was directly related to this area of coaching.

Some interesting findings can also be found from other non-empirical sources pertaining to expert coaches. Some of this work included interviews (Kimiecik & Gould, 1987; Wrisberg, 1990), retrospective profiles (Mechikoff & Kozar, 1993; Walton, 1992; Wooden, 1988), and autobiographical accounts (Mellen, 1988; Riley, 1993). These sources presented original information on expert coaches, some of which alluded to their roles and routines before, during, and after competition. For example, Pat Riley (Riley, 1993) and Bobby Knight (Mellen, 1988), two very successful basketball coaches, discussed their methods of self-preparation, their ways of assessing team readiness, and their philosophies guiding their pre- and post-game talks. Knight, for example, ritualistically went for a walk the night before every game as a way of mentally preparing himself for the upcoming game. Mechikoff and Kozar noted that almost all of the expert coaches which they studied had their own ways of preparing their teams for competition. For example, they noted how one coach used the media as a ploy to motivate athletes for competition:

One coach who realized that the media and fans could affect a young emotionally involved player's self-concept and, consequently, his performance, used a rather ingenious method whereby he would at times publicly chastise his player's performance. However, in his private communication with such players, he made it very clear and they fully understood how supportive of their efforts he was. (p. 117)

While there are many autobiographical books and articles on expert coaching, many of which presented similar information to the coaches in the current study, there is a need for more scientific research on this topic to complement the anecdotal sources.

Athlete-Centered Processes

Whether in team or individual sports, the importance of the make-up of athletes cannot be overlooked. Athlete-centered processes relates to how the coaches' perceived and dealt with athletes in such areas as empowerment and personal development, and how they chose athletes' whose characteristics were believed to comply with the team's mission. A great deal of literature has focused on these areas, however much of it was from the athlete's perspective.

The research of Côté, Salmela, Trudel, Baria and Russell (1995) also reported a category pertaining to the characteristics of athletes. Not surprisingly, the difference in the athlete-centered category in the two studies was directly attributable to the different demands of individual and team sports. The present study focused on how the knowledge and strategies of coaches were considered in relation to the overall organization and effectiveness of the team. These coaches went beyond technically and tactically teaching their sport to the athletes. They respected them as people, and found this was reciprocated. These coaches were concerned with developing both quality athletes and people who would succeed once their athletic careers were over. Sometimes, these coaches changed or altered the training schedules of their team if it hindered the academic commitments of the athletes.

The major areas of difficulty that you encounter in training is school. I guess you can't take away school in this situation because we have to keep in mind that they are students. It's a situation you have to realize; they have to go home and study so you can't waste them. They still have to be able to put in a couple hours on the books. (SBB)

In individual sport, these types of behaviours might not be as crucial, since the coach-athlete relationship is more personal as all decisions revolve around a single athlete. The process described within this category included: athlete empowerment, concern for athletes, and personal characteristics of athletes.

Athlete Empowerment

Athlete empowerment is a currently used term which reflects the belief that coaches should solicit the views of their athletes and make them an integral part of decision-making. Chelladurai and Haggerty's (1978) developmental model on the decision-styles of coaches related to athlete empowerment. More precisely, their model contained three types of decision styles for coaches: autocratic, participative, and delegative. One common finding from research using this model was that male team sport athletes more preferred an autocratic style of coaching than a delegative style (Chelladurai & Amott, 1985; Chelladurai & Quek, 1992; Gordon, 1988). Not only did the present study support this view, it solicited data from more experienced coaches and used a qualitative methodology. The present research extended these findings by noting that although the expert coaches gave their athletes a say in team matters, the final decision still rested in their own hands:

I think it's important to listen to your players, and I hope they always feel that they can speak and talk to you. I tell guys that I want their ideas, and I'll listen to them, but if the same guy keeps coming up with idea after idea, I'll say to hold on a bit, we have enough ideas here. (15IH)

It has been a criterion of mine ever since I started that I'll take input, but the final decision is mine because I am the one that spends the most time with the team. There is some license provided to me and that will definitely be forever. (12FH)

It can be concluded that coaches at the top level provided opportunities for their athletes to express their thoughts, without either feeling intimidated. However, both coaches and athletes agreed that ultimately the final decision was that of the coach.

Concern for Athletes

While the previous research on the decision styles of coaches found that players preferred coaches who were autocratic, the coach-athlete relationship was not examined in such areas as the athletes' personal needs, coach-athlete respect, and the overall well-being of the athlete both inside and outside of sport. A number of related findings emerged from work that utilized the Leadership Scale for Sport (LSS), a reliable, sport-specific instrument that assessed, among other things, coaching behaviours (Chelladurai & Saleh, 1978, 1980). For example, Dwyer and Fischer

(1990) used the LSS to look at the different leadership styles of wrestling coaches as a predictor of athlete satisfaction. They found that athletes preferred that their coaches provided more positive feedback and instruction. Weiss and Freidrichs (1986) extended this research by considering whether the team was performing well or poorly. The results of their research found that higher levels of social support were associated with poorer performances or lower winning percentages. The results of this study demonstrated the need for continued research in this area, particularly performance outcome and social support. Until the development of more comprehensive viewpoints, research in this area will continue to be labelled as “piecemeal” (Chelladurai, 1993).

The present research extended these findings, since the qualitative framework allowed the coaches to explain how they gained respect from their athletes and how they considered their long-term life goals, rather than just their short-term athletic goals. In fact, some of the coaches noted that a first step in getting the athletes to accept their mission, was earning their respect. This view differed from the common perception that some university coaches are primarily concerned with the athletic accomplishments of their athletes (Coakley, 1990). In the present study, while winning was always important, especially in international competitions, these coaches maintained that the personal development of the athlete was also a major consideration. This was especially true for coaches working with amateur athletes, who strive to make sure their athletes extracted lessons from the sporting realm and implemented them into their own lives. The following citations demonstrated this concern:

We had a couple of kids from very poor families, but I talk and relate very well to them. I tell them that I understand their problems because I come from the same environment. I was from a very poor family that had no money. I understand, but also tell them not to use it as an excuse for not being successful. I think by self-disclosing this, they know that I can identify with their problems. I believe the key is letting the athletes know you care. Jack Donohue always says that they don't care what you know, until they know you care. (3BB)

My strength is that I think I can motivate kids to excellence. They want to do well and I try to get them to do well. They understand if they go the extra step they will be that much better. It's not only basketball, but other parts of their competitive life. They will

be that much more disciplined. I really harp on that a lot, sometimes too much. We are playing basketball but we are learning a hell of a lot of things that are going to make you tremendously successful here on the court and elsewhere. (2BB)

Personal Characteristics of Athletes

A more limited section of the interview transcripts dealt with characteristics that coaches looked for in their athletes. Once again, this process was facilitated by keeping the mission of the team in mind, which in turn affected morale and the level of team cohesion. For example, these coaches reported that they did not only select players with superior physical talent. Often they looked for athletes with the appropriate mental make-up and leadership skills, who complemented the characteristics of the coach and the talents of other team members.

I would characterize the teams that I have coached up to now as driven. I would drive them and we were better because we worked harder, longer, and were more disciplined than anybody else. (9VB)

Early on in his playing career with us, [name of player] was unaware that he was a question with the coaching staff. He was the 12th man on a 12 man team. While we were competing in Puerto Rico, two players got injured, we put him in and he played with us for the next ten years. To me, that is what coaching is all about. (1BB)

This concurs with Widmeyer and Williams (1991) who noted that a coach can influence the cohesion or unity of a team by choosing those who were most attracted to group tasks. An argument could thus be made that these coaches felt that a less talented group of individuals who all had the same mission in mind, would be more likely to succeed compared to a group of more talented players who had less interest in the goal of the team. In fact, one might speculate that professional sport teams with individual talent and the highest payrolls, but little cohesion, rarely win championships.

Contextual Factors

Contextual factors were defined as situationally, specific variables that altered the organizational, training, and competition categories of coaching. A similar category emerged from the work of Côté, Salmela, Trudel, Baria and Russell (1995). In both studies, this category

dealt with factors, aside from the athlete and coach, that affected the overall coaching process. Two properties emerged from this analysis: the level of competition and job conditions.

Level of Competition

The results of the present analysis revealed that expert coaches were required to adapt to different levels of competition that provided unique stresses and challenges. In particular, the experiences of these coaches ranged from contexts that included professional, university, Olympic, and international settings. Each of these contexts required coaches to alter certain aspects of their organization, training, and competition procedures. In the professional context, frustration often occurred when the coaches tried to convey their mission to the team. Sometimes this meant telling players they would have reduced, yet important, team roles. Some of the players rebelled when they realized this role reduction might lead to less individual attention and fewer personal rewards, and consequently, a lower salary. Since team management often selected the players for the coaches, they did not have the power to release a player who was opposed to the mission.

We had an instance where our head coach got fired the year after being selected coach of the year in the NHL. The year before that the three of us made up the best coaching staff in the NHL, and he got fired the next year. You get this situation where you have a high skill, first line center that the team just traded for and he won't put himself out. He won't get into any confrontations to get the puck. You then pull him off the ice, but he's a goal scorer, so after the game the press asks why he wasn't on the ice when you were down by two goals. You can't be completely honest and say that the son of a bitch wouldn't do anything to get the puck. (I4IH)

Another context which impinged upon the coaching process was the international setting. In these foreign settings, the athletes were often unprepared to face the different nature of the cultural environments of overseas competition sites. One coach discussed how the international context affected their training schedules and regimens:

It is interesting playing in Bulgaria, or anywhere in the world. The tactics is the easy stuff, there is this whole other component - waiting for buses! The bus is an hour late, it is hot, it is not on time. People are not on time in certain places in the world. Hey,

you have to go with the flow, relax, and then when you get to the field, bite into your practice time and do it. (10FH)

One final example was the Canadian university context. According to these coaches, it was a healthy environment for personal development, and in some cases, provided highly competitive teams. One ice hockey coach who has worked at both university and professional levels, commented on the university context:

To me, university is the best environment in which to coach. You have players who go through the selection process and then you end up with 24 players who are pretty hungry to absorb information, to learn, and to get better. You've got the ideal teaching and coaching situation. (14IH)

A look at some of the literature related to developmental perspectives of teachers and coaches revealed similar adaptations by those individuals who worked with athletes and students from different levels. For example, Schinke, Bloom and Salmela (1995) examined the evolution of expert basketball coaches from their first athletic positions to their present coaching positions. Of particular interest was their finding that coaches changed many facets of their organizational, training, and competition procedures during each stage of their evolution. For example, Schinke et al.'s first stage of novice coaching found that coaches were most concerned with providing athletes with a pleasant and supportive environment. There were fewer competitive situations for the athletes until the second stage of coaching evolution, which Schinke et al. labelled as developmental coaching. Training now became more intense and the athletes received criticism from coaches if they did not fully extend themselves. However, it was at the two expert coaching stages where the level of competition produced the most noticeable differences. The primary difference between the national elite and the international elite coaching stages did not relate to the amount of knowledge possessed by the coaches, but rather to a different set of attitudes and beliefs relating to their coaching philosophy. Coaches at the university level emphasized the personal development of the athlete, both inside and outside of sport. At the international setting, however, winning became a priority, and the coaches had to deal with more external factors, such as team management, the media, and sport governing bodies.

Similar findings can be seen in Bloom's (1985) research on the development of expert performers. In this study, the experts passed through three phases of development, and at each

stage the subjects sought more experienced or expert teachers, who then changed their training and competition routines to allow the athletes to reach higher levels of excellence.

For most of our players, more time was spent with the college coach than with any previous coach simply because tennis practice was several hours per day during the fall, winter, and spring. (Summer months were typically spent on tour). Despite this amount of time, most of the players reported that this coach helped them very little on strokework. It was assumed that if they were on the top college tennis teams, they already had developed good strokes. In the later years we find the coaches working primarily on strategy with the tennis players. Our players reported that for an individual to reach the highest levels, he or she must know not only how to hit the ball but when and where to hit the ball. Strategy is also needed to analyze an opponent's game and play to his or her weaknesses. (p. 260)

The results of the present study suggested that perhaps research is needed relating to the different contexts of expert coaching rather than the coaches at different levels. It was clear from the coaches in this study that their coaching tasks were affected by the level of competition in which they worked.

Job Conditions

The second contextual factor which affected their performance was the ancillary job conditions. This property included the context in which the coaches conducted their jobs, including dealing with sport governing bodies in Canada, raising necessary funding, and accepting little or no public adoration. In the broadest sense, these findings seemed to support the general notion that coaches are overworked and underpaid (Taylor, 1992). The many frustrating job conditions were not accounted for by a high salary or light work load, but by a love for competition and for teaching their sport to elite athletes.

In 1975, we beat the Soviet Union. They hadn't lost a game in 8 or 9 years and we beat them in Maple Leaf Gardens. Nobody was there - we nearly lost two players because of the poor publicity. Four days after the game our two best players called me - I thought they should have been in heaven. Not that they expected a parade or something when they got home, but they said that the first question out of everybody's mouth was,

"What happened, didn't they have all their players?" Nobody said, "Congratulations, you must have played well." (1BB)

Ericsson, Krampe and Tesch-Römer (1993) identified factors necessary for athletes to develop their expertise in various areas, including sport. The main thrust of their argument was that reaching a level of expertise involved more than innate abilities, and was the result of effortful, sustained activities designed to optimize improvement. Resources, including time, energy, competent teachers and training facilities, as well as the effort and motivation of the performer, were identified as constraints inhibiting the process of practice. According to the coaches in this study, a major constraint affecting their job was a lack of funding:

The financial strain of coaching a national team in Canada is beyond words. I shouldn't be doing what I'm doing to make this work. I give this program absolutely everything, and Sport Canada helps us with funding for travel. We still have to raise \$150,000. We get some from the province, some from the city, some from everybody's fees, and we have to raise about \$75,000 on our own. That is a lot of money to raise if we want to have a team, if we want to pay players a little bit of money for living expenses. (7VB)

It can be concluded that some of the poor job conditions affected the organizational and training schedules of these coaches. For example, their sport governing bodies provided their athletes with little or no money to cover expenses, thus forcing some of the athletes to quit or alter aspects of their training regimens so they could sustain part-time jobs. This lack of funding also affected the training schedules of the team, as the coaches did not have enough money to train in the best locations, either nationally or abroad. This in turn affected the amount of free time for the coaches, time which they could have spent scouting the opposition or planning practices or game strategies.

Concluding Remarks

This study was unique because it interviewed some of the top team sport coaches in Canada, and revealed the characteristics, knowledge, and strategies that made them successful. Briefly, these coaches loved what they were doing and devoted their life to improving themselves in their profession. Why else would they remain in a job that did not always pay well, had little prestige compared to expert coaches of other countries, and took up so much of their time? The

answer again can be seen in the make-up of these unique individuals: they were totally immersed in their endeavours and viewed coaching as another of life's many challenges. These characteristics then affected the entire process of coaching, including the tasks of organization, training, and competition, as well as their athlete interactions and adaptations to different coaching contexts. In comparison to the work of Côté, Salmela, Trudel, et al. (1995), the categories of coaching were analogous, but differed greatly in their relative complexity.

This study has also opened the door for suggestions for future research. To begin, it is recommended that researchers conduct work with coaches from other individual and team sports who have previously been ignored. As well, it might be interesting to examine coaches from combat sports, such as tae kwon do or judo. Although it is hypothesized that the same six primary categories might still emerge, the internal make-up of each will assuredly differ, as was the case with the current study and the one on expert gymnastics coaches (Côté, Salmela, Trudel, et al., 1995). Along the same line, the contextual factors category of the present study found that coaches altered their means of operation depending on the context in which they were working. Thus, it might prove fruitful to examine coaches working in different settings, such as professional versus Olympic contexts.

In the present research, data was gathered from the self-reports of the coaches themselves on how they believed that they operated in various situations. It would be of interest to examine the perceptions of athletes and team managers in relation to the perceived views of coaches. Furthermore, videotaping coaches throughout training and competition would add to the richness of the interview data and would serve as a way of authenticating the perceptions gained through interview data.

While these recommendations are meritorious, the various contributions of this study should not be overlooked. It has extended research relating to coaching, expertise, and pedagogy. It is safe to surmise that teaching and coaching share similar principles and knowledge bases. For example, the individual characteristics of the teacher impact upon their organizational skills, ability to effectively teach their subject and enhance the chances of their students' performance on tests or in competitions. As Csikszentmihalyi, Rathunde and Whalen (1993) demonstrated in the school context, the characteristics of the student and the context in which they are working, also interact to affect the students' academic, artistic, and sport performance.

Continued research on the expert teachers and coaches who facilitate this learning process will allow the educational system to continue to grow and provide positive learning experiences for its participants.

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APPENDIX A

The Coaching Model

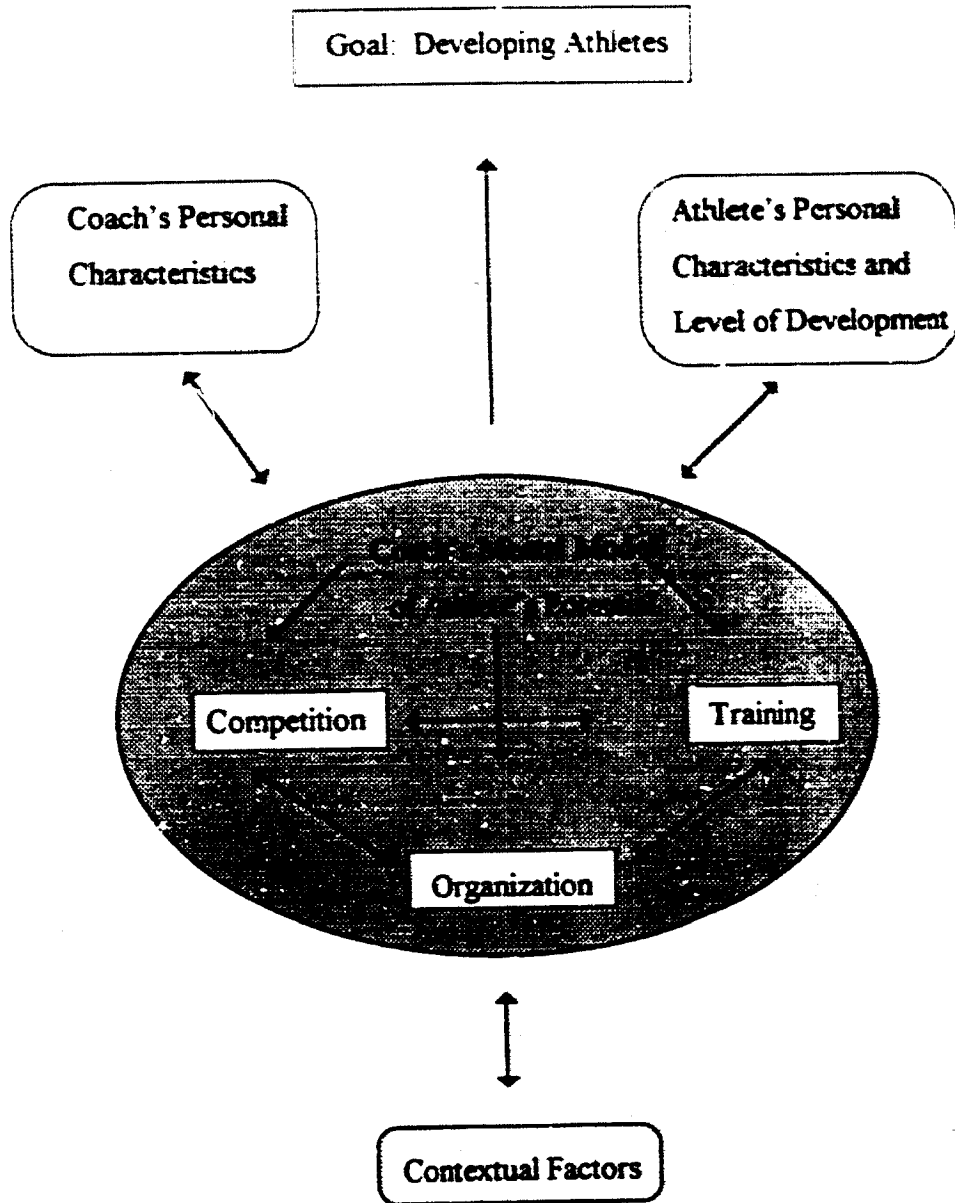


Figure 1. The Coaching Model

APPENDIX B**Information and Consent Form**

When a research project is designed to understand human beings by a member of the University of Ottawa, the Ethics Committee of the university requires the written consent of the participants. This does not imply that the project involves risks; the intention is simply to assure the respect and confidentiality of the individuals concerned.

The project is directed by Professor John H. Salmela of the University of Ottawa. The intent of the project is to examine the development of excellence in coaching, as well as to look at some of the methodological considerations of the process of interpretative qualitative analysis. The interview process will trace your involvement in sport from when you first began to participate through to your evolution as expert coaches.

Each participating coach will be involved in an audiotaped interview carried out by Professor Salmela which will last approximately 1-3 hours. The participants are free to withdraw from the study at any time without negative consequences to them. All interviews will be transcribed verbatim and the complete transcript will then be returned to the coaches for authentication. At this time, the coaches can remove anything that they would rather not have said, transform, correct or adjust any part of the interview transcript. Payment will not be made for participating in the interview, however, meals and accommodation can be covered if the participant is required to remain longer due to participation in the interview process.

I consent to participate in this research project.

I understand that there is no direct benefit to me from participating in this study. I will be advised on how my interview is related to that of the other expert coaches when all the analyses have been completed by means of a summary report including anonymous citations from myself and other coaches. There will also be a debriefing of the interview process immediately after the interview. Also, I understand that the results will be kept strictly confidential and that my name will not appear in any publications and that the audiotapes will be erased when the analyses are completed. If transcripts are appropriate to illustrate the data analysis procedures, I give my consent to have it used under conditions that confidentiality and anonymity be safeguarded by the researchers.

Signature _____ Date _____

Please feel free to contact us at any time.

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APPENDIX C

Summary of Each Coach's History and Views of Coaching

IBB

Growing up in the sports hot bed of New York City, there was never a shortage of athletic opportunities during IBB's childhood, especially in baseball, basketball, and football. He excelled athletically and academically, and was actually enrolled in pre-medical classes when he started coaching basketball. He had no passion for medicine but loved coaching basketball, causing his parents concern. He started coaching in local church leagues and enjoyed it a great deal. Despite pressure from his parents to continue his academic career which he did in physical education, he chose the profession of coaching, a choice he never regretted.

His early coaching knowledge came from athletic experiences and from reading a book by noted basketball coach Adolph Rupp. Although he had little technical and tactical knowledge early in his career, he coached the same players for years, many of whom went on to receive university basketball scholarships. He credits a love of the game and strong organizational skills as keys to his early coaching success.

A big break came while coaching a powerful high school basketball team in New York City. He recruited an excellent player who went on to become a superstar in the NBA. Success with that team provided the opportunity to meet many high powered people in basketball. This in part, led to his appointment as the coach of the Canadian National Men's Basketball team.

One of his philosophies has always been to put the overall well-being of his athletes first. He has done many things for his players to demonstrate this commitment, such as driving them to practice and sending them home to be with sick family members. He has also been a successful disciplinarian whenever his players acted inappropriately. No matter how poorly one of his players misbehaved, IBB always had an open door to talk to them. The word team was synonymous with family, and he wanted everybody, including the trainers, doctors, and players to feel they were a part of one large family.

"The Coach" as he is affectionately known has been influenced by many people. Most of these people were from the New York area, and were considered basketball geniuses. From a tactical and technical perspective, the Coach received the best available training. He realized that these influential people helped him get his foot in the door, but ultimately it was his up-beat personality, willingness to work hard, and knowledge of the sport that helped him achieve success.

The close relationships with his players gives him much personal satisfaction. He still remembers the names of the first players he ever coached, a New York elementary school team over 40 years ago. He also has a strong commitment to his own family. He credits his wife with keeping the family together when he was travelling 200 days of the year. IBB is best characterized as an honest, sincere, and hard-working individual who cares a great deal about his sport and its participants.

2BB

2BB excelled in a number of sports, especially football. Although, he never played basketball beyond intramurals, his athletic background introduced him to coaching concepts, such as the importance of learning fundamentals and pushing oneself beyond ones limits. His coaching philosophy is best explained through his idol, Vince Lombardi. He admired the way Lombardi's players did anything for him, even though he was not the most personable type. He especially liked the way Lombardi would always challenge his players to reach areas they would never have thought possible.

He got involved in coaching through his appointment as a high school coach. Actually, he does not think the high school would have hired him unless he agreed to coach both their male and female athletic teams. He substituted for the female coach on maternity leave, and has coached women ever since. Despite these early professional coaching experiences, he acquired important "coaching" experience while he was playing university football. He was appointed as leader of the defensive unit, and because of that he had to break down game films, create scouting reports, and call the plays and formations on the field.

He does not feel he was a good basketball coach in his early years, yelling a lot and teaching very little. After enduring hardships early in his coaching career, he changed his style and acquired much knowledge about basketball. He read a lot and attended many coaching clinics. Practical experience was acquired by sitting behind the benches of other coaches, judging what information he liked. He really admired Norm Vickery, learning a lot from him, including how to push kids to the limit.

He is a very meticulous person. He puts a great deal of time and effort into planning practices. He challenges his assistants to critique his practices, providing them with responsibility. He breaks down the season into separate parts: pre-Christmas, league season, and championship season. He believes it is important to clearly lay out the goals for his team during each of these phases. His goals are very specific and include process and performance goals, for the team and individual athletes. In log books, the athletes offer feedback regarding the team, and their personal feelings.

2BB puts a great deal of effort into preparing himself for games. He ensures that he is alone to gather his thoughts when he arrives at the competition site. He prefers to unwind before games by watching wrestling tapes or listening to music. He does a lot of mental preparation before games so that he reacts better to game situations.

Looking back on his coaching career, his major regret is that he didn't start earlier. He helps young coaches develop, always willing to share plans. He believes he teaches better than everyone else.

3BB

Growing up in England, 3BB never played the sport of basketball, but competed at a high level in track and field and soccer. He did not aspire to coach, instead setting his sights on a physical education teaching career. After graduating from teacher's college, he received his first teaching position in a small Saskatchewan community. Because the team had just won a provincial title, he was asked if he could coach basketball. He stretched the truth by saying he could coach basketball. He had two months to learn. He read a great deal, talked to many people, and attended a number of coaching clinics.

His early coaching philosophy was influenced by his European background where being in top physical shape was a priority. Acquiring a master's degree in physical education improved his coaching knowledge. His big break came when one of his teachers became so impressed with 3BB's work during his graduate class, that he asked him if he would like to be the assistant coach on his basketball team. 3BB was very excited about this opportunity, and found that it opened new possibilities in coaching.

At the university level, he had to adapt to coaching women. His belief has always been to treat all athletes in the same manner. He quickly learned that the drive and determination of female athletes differed from male athletes, but not in a negative way. At first, the times were tough and he recalls that six players quit during his first year, primarily because they could not handle the discipline. He soon realized that it was important to recruit athletes with positive attitudes. Personally, he had to learn to control his own emotions, as he was often out of control. He said that he frequently made girls cry, yelled at referees and anybody else who tried to get in his way. He began reading sport psychology material and evolved into a person who began to enjoy his profession, rather than someone who was always stressed out and uptight.

His philosophy is every player comes with potential; his job is to improve them as much as possible. He recruits players who share his mental attitude and determination, the key to the success of his university program. Although most kids come to his program with commitment, few understand what it takes to be successful. His job is to teach. In their first year, many kids complain and look for excuses to miss practice; he has to be patient and teach these kids what commitment is all about.

He is not concerned with winning and losing, but performance. He can control the physical and tactical preparation of his team, but worries how his players prepare mentally for games. He used to get nervous before games, but has learned to control his arousal level which he attributes to mental rehearsal. After a game, his routine is to say a few short words to the team, and then re-convene the next day at practice.

He is always trying to learn and improve as a coach. In retrospect, he would not have done anything differently. He attributes part of his success to his struggle to acquire information. He does not believe there is a down side to coaching; there may be down days or times, but coaching is too great a profession.

4BB

Growing up in the 40's and 50's, 4BB played and excelled in all sports. His two best were ice hockey and basketball, going to the Olympics as a basketball player. He played a lot of competitive sport, but still had some terrible coaches throughout his playing career who had no idea what they were doing. Then a former football coach was hired to work with his basketball team. As the oldest, and only married player, 4BB roomed with the coach together on the road. Sport was the only thing they had in common, so that was all they talked about, especially from a tactical perspective. After many talks, 4BB became convinced coaching was the profession for him. This is not surprising since 4BB has always been at ease in a sport environment. In fact, he decided early in his life that he was going to be a physical education teacher.

He realizes he was quite idealistic, and dreadful, when he first started coaching. He wanted his players to be as enthusiastic about basketball as he was, but this didn't happen because his players were not all playing for the love of the sport. His philosophy at that time, was to work the kids so hard, they felt like quitting.

After coaching successfully for eight years at high school and six years at university, he was given the opportunity to coach the women's national team. He really enjoyed the challenge of molding kids as athletes and people. This encouraged him to really understand himself as a person and as a coach. He hired a lot of support staff to improve his own weaknesses.

There are a number of crucial areas to running a successful team. Communication is the key, especially helping players understand and accept their roles. Despite this awareness, 4BB still feels that his weakness was his ability to communicate at a standard which he set for himself. He believes in athlete empowerment, but also contends that the coach has to have the final say. 4BB enjoyed being thought of as a teacher, and was committed to creating an environment in which the players could learn and excel. He let the players handle conflicts related to the team, such as dress code and type of music played in the dressing room.

As he gained more competitive experience, he became more successful. He learned to control his arousal and emotions before games. In his early years he was nervous, but has learned to formalize his routines and mentally prepare himself. During games, his weakness was handling referees. His post-game routine is to give the players 24 hours to cool off, allowing him to analyze the game first.

His main recommendation is to improve the mentoring process. Ideally, he would have followed the top US college coach for the first two months of the season, seeing how he interacted with people and quizzing him on why he did certain things. His primary philosophy is to take a stand for what you believe and trust your instincts.

SBB

SBB began playing basketball seriously when she was in high school, and went on to play at the university level for six years. As a national team member, she was strongly influenced by two former coaches of the men's national team. She was fascinated by their hard work, commitment, and drive. Besides using them as role models, she was constantly picking their brains. Having suffered a career ending injury, she suddenly found herself interested in coaching. This decision did not surprise her because she was a self-described gym-rat always fascinated with basketball.

When she first began coaching, her personality and coaching style were very weak. Currently, she is more laid back and positive than she used to be. She finds it frustrating when she does not see the same love and devotion for the game in her players that she had. She is fortunate that her husband, also a successful basketball coach, is as committed as she is.

For SBB it is important to be a good role model for her athletes. Her values and ethics help with team leadership. She prides herself on the way she treats her athletes. She explicitly communicates to all her players that nothing she says or does is personal. Everything that happens during a game or training stays there.

When choosing her university team, she tries to mix the experience level of her players, so there are an equal number of rookies and veteran players. The players have to earn their playing time, and problems only occur when a senior player is unable to make the starting line-up. She handles this problem by talking to the player and telling her the areas that she has to improve, and how this can be accomplished.

Seasonal planning is broken down into three phases: the pre-season, the first-term league season and the drive to the National Championship. Over the years, she has learned to ensure her team does not peak too early. She never gets too emotional during the pre- or early regular season. She gets excited after Christmas, when she starts to concentrate on how many games are left and what they are going to have to do to be successful. A big problem, especially in the second half of the season, is the health of her players. Many of her athletes are young and away from home for the first time, and must be taught to look after themselves.

She strongly believes in putting together innovative and organized practice plans. A lot of her time is spent preparing for practices. She doesn't save her practice plans, because everything depends on the time, place, and people involved. She makes her practices similar to competition conditions by introducing the athletes to such variables as stress and fatigue.

A lot of time is spent preparing both herself and her team for competition. Basketball allows the coaches to take a very active role, so she has to be well-rested and ready to perform before every match. Through the years, she has learned when and how to talk to her players to get the best results, and also to officials. It is important for her to be a good role model to her players and also to women athletes everywhere. One way of achieving this is to shake hands with the opponents after every game.

6BB

No matter what part of the country 6BB grew up in, sport was an integral part of his childhood, especially his true love of basketball. Not blessed with basketball talent, he made his high school team on guts and determination. As he said, "I would have done anything to make the team." This personality would later be transferred to his coaching career.

His knowledge of coaching basketball was acquired in many ways. During his second year of playing at university, he met a very important individual, his coach. After his team won the championship, he realized there was more to winning than just talent, a strong and committed work ethic and buying into the coach's plan may be just as important. He also had a good coach at university, where he took an undergraduate degree in physical education. This knowledge was supplemented with information obtained during a master's degree in motor learning. During his master's degree, the women's basketball coach retired, and he was offered the job. An important phase of his development came when he regularly attended the practices of the national basketball team. Although forced to live in a camper, this experience would provide coaching knowledge he was missing.

He always felt that Canadians needed a place to study applied coaching. He put together a proposal to train coaches, which led to the creation of a national coaching institute. Qualities such as creativity, industriousness, and self-motivation are keys to successful coaching. These qualities should also be combined with an encouraging and supportive environment.

He believes in the importance of establishing an unselfish, physically prepared team. He sets process goals, where the player aims to do the best he or she can. He expects nothing but the highest amount of discipline, especially during practices. He likes to simulate game situations and make the players constantly practice their skills. The goal is for players to have an incredible belief in themselves. Undisciplined individuals will eventually drop out. It is important to choose athletes with innate talent and character, and then mold them into great players. Moreover, his ultimate goal is to create an independent, creative, and responsible individual who will continue to excel when their athletic career is over.

He ensures he is well rested going into all the games. He keeps himself emotionally stable all of the time. Nobody can tell by his facial expression if his team has won or lost. He tries to get over the emotional highs and lows quickly, so that he can start working on the next day's game as soon as possible.

His organizational skills are very important to him. Included here are his interactions with Sport Canada and the Canadian university system. With respect to the latter, he believes that university director's should put more emphasis on the needs of the coaches and athletes, rather than the university itself. They should provide an ideal learning environment. Unfortunately, most university administrators see coaches as problematic because they always want more than is being offered. This distresses him because he believes that top sport teams all have a strong management team. This is what he wishes for all coaches.

TVB

Growing up in a pleasant and cooperative home environment, TVB played sports for fun rather than competition. Partly because of her height and physical strength, she excelled in both volleyball and basketball. She chose volleyball and competed at the international level. During this time, she also received a physical education degree, with the hope of teaching after her playing career ended. She recalls that she unexpectedly became involved with coaching. A former coach recommended her for a coaching position based on her volleyball knowledge and leadership skills. At the outset, TVB never thought she would make a career of coaching, but has never looked back.

A big believer in the benefits of mental training, TVB used these techniques as a player and then later as a coach. She never understood how some of her teammates made fun of the team sports psychologist. From this individual, she learned that she could control her emotions before a game. She felt that mental training helped her become more calm before playing, and she has used the same techniques in her coaching career.

Two areas are particularly important to her as a coach. One is communication - through her playing career she learned to never assume your players know what you are thinking. For example, if you are going to rest a player, make sure you tell them so, otherwise they might think they are being punished. Secondly, she feels it is important to respect her athletes as people. She hopes that her athletes will reciprocate the same respect to her.

She has a seasonal plan, which begins with the aerobic training of her players. All of the athletes trying out for her team must do a mile and a half run. Those who can not complete this exercise in a predetermined time are cut from the squad. The second training phase is anaerobic, and is related to game intervals. As far as strength training, she asks her players to do it in the off season but not during the season, since they are full time students who also have to study.

To complement the physical training, TVB emphasizes goal-setting, both individually and for the team. She wants her players to set and monitor goals for themselves. A sport psychologist was added to her coaching staff to help facilitate this process. TVB also emphasizes team building. One method of building the team centers on player discipline. For example, if a player breaks a team rule, such as showing up late, TVB lets the team decide the punishment.

She believes in the importance of properly preparing for a game. TVB likes to analyze lots of game film, both to prepare her team and also to feel like she has prepared herself. She writes down a game plan and then relays it to her team during her game day meeting with the players. This activity and others, follows a game-day schedule that she has set up for both herself and her team.

Her primary recommendation is to strengthen the coaching mentoring program, especially for female coaches. She feels there should be more hands-on instruction and critical feedback for younger coaches.

8VB

Compared to the other expert coaches, 8VB had a unique childhood in that he grew up on a farm in Western Canada and attended a one-room schoolhouse. His youth included an active sports life, but little organized sport, primarily because he lived 10 miles from the nearest town. He never stepped in a gymnasium until first year of university.

He attended university with the goal of becoming a physical education teacher. When he began teaching, he was asked to coach a number of the school's teams, mainly because he was willing to accept the challenge. With respect to volleyball, he had little or no experience when he began coaching. He enjoyed the activity and subsequently signed up for a volleyball clinic given by an Olympic coach which he found very enlightening. With a desire to acquire more coaching knowledge, he attended coaching clinics and practices of two local university teams. Early in his career, it wasn't unusual for 8VB to coach two teams at the same time.

8VB believes that sport is about more than talent. It is a combination of heart and mental strength. Many of his athletes have told him that his practices are physically and mentally demanding. 8VB expects his players to practice at a high intensity and make few mental errors. This philosophy extends to his coaching career, where he lives by the motto, "You never know too much." He is always pushing himself to acquire more knowledge.

He does not believe you can force athletes to act in a certain way. The most successful teams he has coached had athletes and assistant coaches willing to work towards the same goal. It is important for him to think in the same way as his athletes and for the athletes to know how much he wants to win. He will do anything that helps to set the right example for his players.

He is a strong believer in the importance of organizational skills. He is emphatic that his players receive the proper technical, tactical and mental training. He always has a practice plan because he writes everything down. Whenever he needs a new idea or drill, he looks to his old plans for inspiration. During the week of a game, his and the teams' routines are the same, with an emphasis on simulating the opposition. He is not at his office on game day, as he must be well rested for the match.

He supports mentoring, where successful coaches work with aspiring coaches, but is aware of the financial restraints hindering such a project. Similar financial roadblocks exist for university coaches. Because the budgets are so tight, he has to do a lot of fund raising with his team for them to make it through the year. Nevertheless, his main goal is to improve the quality of volleyball coaches in Canada. To accomplish this task, 8VB devotes hours of his spare time, all for the betterment of volleyball.

9VB

His interest and involvement in sport stemmed from his father, a semi-pro baseball player. Cut from most teams, except those coached by his father, 9VB's athletic career began slowly. His father was in the armed forces and was transferred overseas, suddenly 9VB was the only athlete with experience in sports like basketball, softball and volleyball. At that time, he was heavily influenced by a coach and a former Baptist Minister. When he returned to Canada, he played varsity volleyball, where he was influenced by another coach who preached a strong work ethic, and ate, drank, and breathed volleyball.

9VB wanted to teach, and because he was too short to make the national volleyball team, went into coaching after his university career. He acquired valuable coaching knowledge from a master's degree in physical education where he studied the physiological and biomechanical components of volleyball, and from mentors Bob Bratten and Brad Kilroy. He also mentioned the importance of attending coaching clinics throughout his developmental years.

Having reached an elite level of coaching, his philosophy is to be innovative and open to change. He warns against falling into the common volleyball trap of making the system fit the players. He recommends looking at players' strengths and weaknesses, building a system to fit their needs. It is important to practice what you preach. He remains somewhat distant from his players, believing he can't yell at someone he considers a friend.

Developing team cohesion is important, a task accomplished by carefully defining each players' role. He is also a believer in the importance of goal-setting. He has each player write down short and long-term goals in a log book, which he reads, facilitating his communication with the players over the long season. His organizational skills are also given consideration. For example, he writes down each players' training session on a piece of paper, where he provides expectations for both them and the team. He always has his practices planned and written out ahead of time. Every day he adapts his practices to the team's needs at that particular moment. He has saved all of his practice plans from the last seven years.

He has matured as a coach, particularly from an emotional standpoint. He used to classify himself as an uncontrollable basketball coach coaching volleyball. He is a poor loser, and he must work on this flaw to increase his longevity as a coach.

There have been some regrets over his career. For example, women coaches are preferred for women's teams; thus, he wishes that he coached men earlier. Another regret is that he didn't go back to university earlier, because it was such a positive experience for him. 9VB has recommendations to strengthen volleyball in Canada, including regionalizing the sport to western universities, where support is strongest. The NCCP needs more mentoring programs for young coaches. His final statement is very revealing: "If you want information, you have to go out and get it, that is what I did. I went and found people and asked questions."

IOFH

Although she had a very active athletic life, most of this time was spent with individual sports such as dance, golf, and swimming, where she often competed internationally. Two important lessons from her competitive sporting experiences would eventually shape her coaching philosophy. These include the importance of continuous practice and having a good teacher. IOFH also learned the value of proper technical training, especially when learning a new skill. She supported that idea as well as the benefits of intrinsic motivation. Although IOFH did not play much competitive team sports, she extracted a number of valuable lessons which later helped in her coaching career. Most important, she says, is to have fun when competing.

She got into coaching because she viewed it as a tremendously challenging and rewarding career, and also because of an interest in teaching. Her interest in this profession was heightened after meeting with the head coach of the Canadian National team. For the first time she met somebody with great knowledge and vision of field hockey, who in turn, encouraged her to learn more.

She is big supporter of goal-setting for her athletes. All of her players fill out individual goals on a piece of paper, which she keeps in her briefcase, so she can re-evaluate the players' goals. IOFH also does team goal-setting sessions, where she encourages her team to set realistic, attainable goals. Along the same line, IOFH believes it is important to have the team buy into the goals or the coach's mission.

Her training schedule for her players includes technical, physical, and tactical training, along with strength and mental training which is aided by support staff specializing in these areas. Her philosophy surrounding training is to try and simulate the sport of field hockey. She encourages her players to take risks in practice, to try and extend themselves beyond their limits.

It is important to make her season challenging, yet fun for athletes. She feels the ideal learning environment should have everybody loose and working hard. IOFH believes that players can work hard and have fun at the same time.

Her routines are set regarding competition. It begins the moment the team arrives in a new city. She likes her players to arrive at the site as early as possible, and always has a team dinner the night before a game. She is a big believer in having a team meeting on the day of games, which helps both herself and her players prepare. At this time, she reviews information such as strategies and weather conditions. She then takes some time for herself to try and unwind. She has worked on becoming less intense, as it was affecting her players in a negative way. It also helps her perform better during games, where she must give the proper feedback to her players throughout the contest. After a game, she has a number of strategies that she follows in order to address the team.

IOFH believes it is important to have contacts in her sport, as she is always learning from her colleagues. Without coaching clinics and meetings, the profession would become mentally draining and tiresome. These gatherings, combined with learning how to relax, is the key to remaining refreshed and exciting about coaching.

1171

11FH excelled athletically during her competitive career in a number of sports. After being selected to a national camp in field hockey, she decided to focus on that sport, mainly because she inspired by the two coaches of the team. They taught her a lot about coaching and teaching, and encouraged her to consider a career in this profession. These two individuals also told her that she was not fast enough to be a first string player. This, in part, encouraged her to begin taking physiology courses in university. Eventually, she began creating training programs for elite athletes.

She says that over the years she has matured and learned to be more empowering as a coach. Earlier in her career, she was hesitant to admit that she didn't know something. Over the years, she understood that it is virtually impossible to know everything. When she first started coaching she was afraid to move onto something new until all of the players could perform the skill. Now, she realizes that you have to continue moving forward.

Because of her background in physiology, she has always had physically well trained teams. She says there isn't a team that she has coached that can't out run their opposition. She also helps her athletes with their weight training, creating individual programs for each player. When working with the national team on their fitness, she gears the programs on a four year plan.

On game day, she feels it is important to have a meeting with the team where she tells the players who is starting and what the game plan will be. Scouting is a big part of her preparation. She likes to talk about her team and the opposition in the meeting, making sure that her team has more strengths and fewer weaknesses. If she has done a good job preparing for the game, then she feels more confident going into the contest. Physical preparation for herself is also important, thus, she always tries to have a run on the morning of game day.

She enjoys the strategies involved with coaching, and is always pushing the rules to the limit. Although field hockey is a prim and proper sport, she likes to communicate with her athletes during games, usually more than the rules permit. She also likes the new rule on substitutions in her sport, because it allows her to use more strategies. As far as her own emotions during competition goes, she admits that she has improved a great deal. Earlier on in her career, she used to lose control. Through experience and learning from her mistakes, she has learned to channel that energy more positively and productively.

Looking back on her career, she does not feel that she would do anything differently. She realizes how fortunate she has been, because she always wanted to coach. She also understands that she is lucky to have obtained a good position early in her career. As she says, a lot of the right things fell into place for her. The only regret is that coaching field hockey does not offer much financial security. Thus, she has continued to work full-time at a university, which takes a lot of time. Nevertheless, she appreciates the many advantages that she has acquired from coaching, and would like to give something back to her sport, possibly by mentoring other, up and coming female coaches.

12FH

12FH was educated in South Africa and Europe in movement education and competed in the sports of dance, gymnastics, and swimming. 12FH originally came to U of T on a one year teaching exchange, but has never gone back. She taught many sports, including field hockey, which came about by chance. The university governor's wanted females to play a feminine sport, so they asked 12FH to teach field hockey. Although her knowledge of this sport was limited, she learned about the sport, eventually becoming coach of the Canadian National team.

12FH is credited with starting and revolutionizing the national field hockey program in our country. In fact, some people have questioned her monopoly on the sport in Canada, but she says that she accrues power by working harder than others. Although she has also run into controversy with athletes along the way, she is a survivor. In fact, in the late 1970's, she took a cut in pay and centralized the team in BC, something which had never been done up to that point. Both herself and her athletes overcame a lot of hardships in those early years, such as living 6 to 7 people in an apartment, and not having a regular training facility.

She proudly recalls how the Canadian field hockey team shocked the world in the late 1970's. The other countries were expecting the usual docile Canadian team to come out and get beaten. However, because 12FH had kept the girls under strict training regimens for the preceding eight months, the girls came out like "wild animals" and had a fantastic showing.

A very important part of her success is attributed to her planning skills. She says you must plan on making the top tournaments. Her training schedules are based on the intention that they will qualify for the top tournaments. Dealing with athletes, she helps them plan their schedules, right up to and including their retirement.

Based on good planning and training, when she gets her team to a tournament, she feels the work has already been done. She has her own relaxation time at tournaments and also does her own scouting. This allows her to devise the ultimate game plan that will lead her team to success. As for her athletes, she does not tell them how to prepare for competition. She hopes they are mature and responsible enough to handle this properly. She likes when her captains take charge on game day and help get the players ready for the match. 12FH does not believe that a frenzied, pre-game talk will be useful, except on a few select times. As for the post-game, she does not believe in saying too much. She understands the players are drained, both physically and mentally. It is only during her post-game evaluation with the coaches, that 12FH begins to dissect what went right and wrong with the game plan.

She supports the coaching development program in Canada. However, she recognizes the financial drawbacks that are involved with this process, problems that must be corrected. If a coach wants to learn from her, then she or he will have to come onto the field with her and see how she teaches and interacts with players. In sum, she believes that coaching is the most rewarding and exciting career around, and she enjoys the constant challenge of improving her skills and knowledge.

13IH

As a youth, 13IH competed at a high level in a number of individual and team sports. Although drafted professionally in football, he chose ice hockey, where he competed for our national team. Playing so many sports, he had a number of coaches, and some were better than others. He acquired knowledge about what should and should not be done from a coaching perspective. His most positive coaching influence was the legendary coach of the Canadian national hockey team. This man taught 13IH everything about the sport, from knowledge, to communication skills, to handling players, to the psychological nuances that often go unnoticed. Because of this experience, 13IH is a firm believer in a coaching mentoring program.

He has had a very interesting career, including coaching hockey and obtaining both a master's and Ph.D. degree. The latter came at Ohio State University, where he led his team to a championship. Since then he has worked mainly in the Canadian university system, where he was the head coach of a Canadian university championship team. He has also coached professionally and overseas for small stints, including head coach of the Italian national team.

According to 13IH, an important attribute of a successful coach is hard work. He believes the work ethic in a coach is just as important as it is for the players. It is also important to have five or six good leaders on your hockey team. Picking the proper team involves more than just selecting the most skilled players. It also involves a good mix of skill and character - two characteristics that his best teams have always had.

He feels it is important to communicate with players on a regular basis. If his team has an 80 game schedule, he will break it up into eight segments of ten, always meeting with the players to re-evaluate the team and individual goals. His goal-setting sessions for his athletes include the players' seasonal and off-season conditioning programs.

He feels it is important for both himself and his athletes to properly prepare for competition. For example, he's not sure why hockey teams have a morning skate, other than pure habit. However, as a coach he would never oppose any activity the players enjoyed. For his own preparation, he likes to visualize different scenarios that might occur during a game and then decide how to react to them. After mentally preparing himself during the day, he arrives at the rink with a pre-set routine to follow. This includes when to address the players, what he should say, and how long he should be saying it. Everything is usually short and to the point on game day.

During competitions, he enjoys the challenge and strategies that are involved with changing lines during a game. He also encourages the input of his assistants. He believes it is important to give them specific responsibilities so they feel like they are contributing. However, he also states the most damaging thing for a coach is to have an assistant coach who is selfish or after the job of the head coach. After a game, he says very little, and what he says depends on the effort that he perceives his team has given that night.

An important part of coaching is sharing information with colleagues. He will always remember Bob Johnson as an influence in his coaching career. As a coach, it is important to always continue to strive to improve.

14IH

Growing up in a small Western Canadian community in the 1930's, sport was an integral part of his childhood. He excelled in hockey and baseball, competing at the semi-professional level in both sports. He went to university to obtain his teaching certificate and played on the hockey team. At that time, the head of his department asked if he would be interested in coaching a hockey team in Germany. Although he was yet to coach above the high school level, he jumped at this opportunity. After this experience, he began coaching at the University of Alberta, where he became a fixture for many years.

He has evolved in many ways since he began coaching. He was autocratic when he started. One reason was that his players were only a few years younger than he was. To him, coaching at a university is ideal because he enjoys both teaching and coaching. Although he sees himself as an educator, he learned that in professional sports you have to be much tougher with the players; this is the main reason that he prefers working in a university setting.

An important area for 14IH is team building. It is crucial that all of his players receive attention, not just the skilled players. He treats everybody equally "to blur" the differences in talent between the players. He plays all four lines equally. He stresses to the players the importance of setting up a game-day plan, which involves eating properly, mental preparation, and physical preparation. It was also important for him to be well rested on game days.

He has a set schedule of what should be done before, during, and after competitions. Between periods, for example, he gives players time for themselves, and then talks to them. The key is to establish a routine with which everybody is comfortable. He doesn't give the players more than two or three points to digest, for fear of overload. Emotionally, a coach should only "lose it" by design, leading to positive outcomes. He shows emotion, but in a controlled manner. His post-game routine depends on whether his team won or lost, and whether or not they played to their potential.

Coaches should observe other coaches much more frequently, especially during practices. He was amazed how few city coaches came out to watch his university practices. Coaches should identify a coach with some success and assist or volunteer with that person, a process labelled as mentoring. Clinics have also been a fantastic vehicle for acquiring coaching knowledge. He has never come from a clinic without learning something.

He believes there are no real downsides to coaching. The financial rewards in amateur hockey are not lucrative, and the strain on the family life is also difficult. Marrying a woman who was also involved with sports has helped make his marriage work. In the university environment, you get to spend more time with your family than in professional coaching, another reason he prefers coaching at the collegiate level.

15IH

15IH was raised in western Canada and loved playing sports, especially hockey in which he was good enough to play at the junior and university levels. Education was important and he achieved a bachelor of education degree, allowing him to be a teacher. Along with teaching high school, he coached many of the school's sport teams, as well as some competitive city hockey teams. After five years of teaching, he was given the opportunity to coach hockey full-time. He gave up a teaching salary that was certain to have led to a vice-principal appointment to try coaching hockey for one year. He has never gone back.

There were some individuals who influenced his career. First, was his high school coaches, who stressed the importance of physical conditioning and of being a good teacher and motivator. He was later influenced by university professors and university hockey coaches. He began to notice technical, tactical, and physiological components of the sport, and learned the importance of team play and how to get a group of men to buy into the philosophy of a head coach. He was also impressed by his coaches organizational skills because they wasted little time.

He has taken these techniques and applied them to his own coaching career. He believes being well organized, having a theme to every practice, and making sure the athletes see the progression of every drill are important. 15IH emphatically believes that a coach can share all of his/her drills, the key point is how to teach and relate to people. The players must sense that the coach knows and believes what he/she is talking about.

Knowledge acquisition and continuous learning are very important. He reads every new book about coaching and believes the best way to learn about a coach is to follow him or her around with a video camera. He is a firm believer in coach preparation and uses a lot of mental rehearsal before games.

He uses video to teach his players and always encourages their input on team matters. You have to be fair with your players; you can't treat the superstars any different than the third and fourth stringers. He hires a support staff that complements his strengths and weaknesses. For instance, he always looks for an assistant coach who is friendly and communicates well with players; someone with a more outgoing demeanour than his. With respect to his organizational skills, he always does a yearly training plan, although he makes sure to keep it very flexible. He has a map of where he wants to go before the season starts, and he thinks it is important that the players understand his goals and expectations for the different phases of the season.

He has matured in many ways, including his ability to handle losing. When he first started coaching, the season was an emotional roller coaster. Now, he keeps everything in perspective, and understands the reasons for winning and losing. He wishes he had more time to speak with other coaches, in all sports. He realizes that he has always taken the long way to become a coach, and has overcome many obstacles. This may be the primary reason for his success.

16IH

Growing up in a small Alberta town, he was influenced by the strong recreational program in his community. He participated in many sports, including his favourite hockey. 16IH was influenced by his coaches, in particular a Level 5 hockey coach, and high school teachers who taught him important skills, including leadership. Some of these skills were also used in his job as leader of the community recreation program. These experiences encouraged 16IH to seek a phys-ed. degree in university so that he could become a teacher.

Cut from his university hockey team, he decided to play Tier Two competitive hockey, where he became friendly with the future goalie coach of our Olympic hockey team. They played senior hockey together a few years later, and his friend asked him to be his assistant coach with a major college hockey team. When his friend left, 16IH became the head coach. He began coaching when the program was fairly young and has grown with it. The most important advice ever given to him was to get involved in the coaching certification program. He did, earning his level 5 in 1982.

He's starting to understand the importance a coaches' emotions have on players. Every time he looks at a player, he understands that it has meaning for that player. He has learned to control his competitive drives, to the point where people now tell him he looks very unemotional when he coaches, a strong contrast to his early days of "flipping out" on the bench.

He feels it is important to have players buy into the mission. He tells players that to win a championship, they must all follow the direction set out by the coach. Throughout each season, he clarifies to each player on the team what their role is and how they fit into the team's system. Achieving team chemistry is very important. It is crucial to get players to know one another early in the season, to get them to open up to one another.

He keeps all of his practice plans. Going over old plans has reminded him of important coaching points. He also has an overall plan that he tries to follow every year with his teams' physical and mental skills. He likes the college season, where he has four or five days of practice leading up to week-end games.

On game-day, he has a routine for himself and his players. He puts a lot of importance on the team warm-up, which he believes is both a physical and mental gear-up for the players. Afterwards, he sums up the game for the players. He believes elite teams can handle feedback, which focused on the next days practice.

From another coach, he learned to remain the same and improve yourself as a coach. Never feel you have reached a saturation of knowledge. He views the coaching development program as exceptional, especially the social part of it. He stresses that even lower level coaches should get to meet the top coaches. He believes in destiny, and therefore never looks back on anything.

APPENDIX D

Letter and Analytical Story Sent to all Coaches for Reliability Check

Date

Dear (name of coach):

We are proud to announce that the analysis of your interview and the interviews of your colleagues is finished. The content analyses of the interviews consisted of looking at similarities and differences between meaningful pieces of information emerging from each interview in order to define a knowledge domain representative of expert team sport coaches. Although we did separate analyses for coaches of basketball, volleyball, field hockey, and ice hockey, we found that expert team sport coaches all shared fundamental similarities in the way their knowledge is both organized and utilized. It was our goal in the analysis process to provide a general picture of the characteristics, knowledge, and strategies of expert team sport coaches. Our hope is that our interpretation and conceptualization of the interview transcripts represents as closely as possible what you told us and that it will ultimately help in the development of future coaches and athletes.

From the research on expertise, it is apparent that as individuals become proficient at any given activity they organize and structure their knowledge hierarchically into categories which contain similar kinds of knowledge. Accordingly, the goal of the interview analyses was to inductively build specific and general categories of the characteristics, knowledge, and strategies of expert team sport coaches. Enclosed with this letter you will find a figure and a story which describe and conceptualize the categories of knowledge which explain the characteristics, knowledge, and strategies of expert team sport coaches. The figure presents a concept map which accounts for the main properties and categories involved with team sport coaches. The story conceptualizes and explains the different components of the model, with the goal of explaining the characteristics, knowledge, and strategies of expert team sport coaches. It is a general analytical account which does not take into consideration individual differences.

To validate our inferential process we would appreciate your suggestions and comments concerning the story and the model. Please write any comments on the documents concerning any areas that you agree or disagree with or areas that you find are unclear or missing any information. If you can suggest terms that you think might better describe a specific phenomenon, please note these as well. After examining the document, could you please answer the following questions on a separate sheet. Once again, the goal of the figure and story is to provide a general picture of the characteristics, knowledge, and strategies of expert team sport coaches. Thank you again for your collaboration

Questions

- 1) Does the figure and the story "fit" what you are doing? If not, explain why.
- 2) Is there any other information that is not there that you think is appropriate?

Gordon A. Bloom

John H. Salmela

ANALYTICAL STORY EXPLAINING THE CHARACTERISTICS, KNOWLEDGE, AND STRATEGIES OF EXPERT TEAM SPORT COACHES

For a coach, the task of working with an elite team involves a complex set of interactions among a number of people. The main categories representing the characteristics, knowledge, and strategies of team sport coaches falls under the organization, training, and competition categories. The peripheral components are called coach-centered processes, athlete-centered processes, and contextual factors.

In order to accurately conceptualize team sport coaching, the category called coach-centered processes must first be explained. This peripheral coaching category explains the coaches' attitudes and beliefs in such important areas as how they acquired coaching knowledge and how it has shaped their interactions with athletes and other individuals involved with sport. In particular, if coaches are rigid and unwilling to learn, they are likely to encounter problems in the central areas of organization, training, and competition. On the other hand, coaches who choose to attend clinics, seminars, and symposia in order to update their knowledge will probably have more interesting practices, more detailed seasonal plans, and thus, more success at competitions. Along the same line, coach's with more intricate personal approaches to coaching, such as working harder and communicating more effectively, will have happier players who will produce better results during competition.

The organization category is one of the central categories for coaching team sports. Organization is a prerequisite step to help coaches prepare for training and competition. It is the organizational skills of coaches that allow a season to be seen from the broadest perspective and to sequence events through a planned process. Organization ideally begins with the creation of a positive and productive environment which ensures a better chance that athletes will comply, or buy into, the overall mission of the coach. An important related task is the coach's planning, which can be either quadrennial, seasonal, monthly, weekly or daily. Moreover, the coach must also help each athlete set proper individual and team goals. All of these tasks also affect team building techniques, which are crucial in team sports. Finally, the coach must also adhere to administrative tasks and carefully choose his or her assistant coaches. All of the properties contained within the organization category are designed to set the optimal learning conditions so the athletes train properly and have the best chance of succeeding at competitions.

The training category involves the coach's attitudes and beliefs in the three different areas of physical, tactical, and technical training. All three of these aspects are equally important and affect one another. Physical training deals with physiological components that are necessary to compete at a high level. Tactical training is the knowledge or strategies taught by coaches to their athletes. Finally, technical training focuses on the continuous refinement of individual motor skills or interactive team maneuvers. Important pre-cursors to effective training are setting a learning environment that encourages athletes to train hard and effective planning by coaches. Along the same line, daily or weekly practice plans must be adjusted by the coach depending on previous post-game evaluations. In team sports, in particular, coaches have to read and adapt to both the strengths and weaknesses of their own team as well as their opponents.

The competition category is extensive, primarily because coaches of team sports play an active and integral role during each game. Game day begins with pre-competition events set out by the coach for both themselves and their athletes. Before arriving at the competition site, coaches require their athletes to spend some time together, either exercising, eating, or at a team meeting. Because coaches also like to physically and mentally prepare themselves for competition, many choose to have a morning jog, followed by some mental preparation. Coaches are also concerned that some pre-competition events take place once the team arrives at the competition site. This includes relaying the game plan to the team; although it is a condensed version of work carried out during previous training sessions. There is also a pre-game warm-up for the athletes, one which the coach has carefully constructed to ensure optimal performance. During that time, coaches also have their own routines, such as scouting the opposition or sometimes participating in their teams' on-field activities, as occurs in field hockey. The final pre-competition activity is an even-tempered pre-game talk by the coach to the team.

The within-competition properties can be divided into coaching adjustments and personal characteristics of the coach. In the former, a team sport coach has to adapt to the pace and strategies of the game. Such factors as substitutions, time-outs, officials, and intermissions are all important variables that, if used properly, can provide an advantage for the team. During the games, coaches also take great care to control their emotions, something which takes many years to hone and refine. Their behaviour also affects their ability to communicate with athletes and their interactions with support staff.

The final part of game day is post-competition. Immediately following the game, coaches take some time for themselves. Besides giving their players time to cool off, team sport coaches also need time alone to either vent their frustrations or regain their composure. After this, coaches prefer to have a short team meeting. The content of the meeting depends to a large extent on whether the team won or lost, and more importantly, the effort perceived by the coach. The final segment of post-competition involves an analysis of the game which usually takes place within 12 hours of the completion of the match.

The tasks performed in the organization, training, and competition components are central for team sport coaches. Organization is the key to these three categories, as it is the starting point for the season. Without successful organizational skills, it is difficult for a coach to run a good practice or expect his or her team to perform well at competition. In a slightly different manner, coaches use the training and competition aspects of their profession to improve and assess their organizational skills. For example, consider that a team plays poorly on two week-end games and the coach's post-game evaluation uncovers defensive play as the main problem of the team. This in turn, will affect their weekly and daily planning, which in turn will affect the tactical aspects of the following practices.

The characteristics, knowledge, and strategies of team sport coaches are also affected by three peripheral coaching components. Coach-centered processes has already been discussed, but two other peripheral categories received attention, and they were called athlete-centered processes and contextual factors. The beliefs and attitudes of coaches in these categories influences and complements the three main categories.

Athlete-centered processes considers the impact of the athlete on the running of the team. If a coach respects, listens to, and encourages input from his or her athletes, it will generally affect the overall well-being of the team in a positive manner. If this happens, the coach may not have to spend as much time on their organizational skills, such as team building or selling their mission to the athletes. This in turn, will make for more productive and enjoyable practices, which often leads to better competition results. A similar relationship exists with respect to the personal concerns for athletes. Coaches who are concerned with the well-being and development of their athletes, will generally create a more positive working and learning environment for their athletes to grow as people. This is an important area for modern day coaches that should not be

underestimated. Finally, if the athlete has made it clear to the coach that he or she would like to continue professionally in their sport, then the coach will alter his or her organizational, training, and competition expectations to meet the athletic demands of the athlete.

A final peripheral category is called contextual factors. This involves situation variables that affect team sport coaches. One of these is the level of competition. In this study, coaches discussed four different levels of competition, which included the university, international, professional, and Olympic levels. Each of these levels has unique features that affect the organization, training, and competition categories of coaching. Take for example the Olympic context, where the organization of the coach is conceived within a four year plan. The team building expectations may be given more time to develop than those coaching professionally. Similarly, the training plans of Olympic coaches are very detailed and structured over a longer (i.e., four year) period. Thus, the physical capacities of their athletes are tested at required intervals over a four-year period to ensure they are progressing properly. The competition components are also affected for an Olympic context. In many cases, there are plenty of exhibition games where the coach evaluates the process of the teams performance rather than the outcome. Thus, the coach is apt to give equal playing time to all players in order to evaluate their performance in a game situation. Suffice it to say, many of these conditions would change if it was a university or professional context that operates on a yearly, and sometimes weekly or monthly basis. Finally, the job conditions of a coach will affect his/her attitudes and strategies. In the case of the coaches in this study, coaching in Canada involves some constraints, most of which relate to money. With a lack of funding, the coach has to spend more time on his/her administrative tasks than y would like. This in turn, affects the training and competition of the team because the coach does not have as much time to spend planning strategies.

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