VICTORIA UNIVERSITY OF TECHNOLOGY

DEVELOPMENT AND APPLICATION OF EXPERTISE IN ELITE-LEVEL

COACHES

By

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Abstract

Research providing insight into how coaches behave has mainly been sourced from an athlete perspective or from observing and recording coach behaviour in context. Only a few studies have recognized the views of the expert coach as a potentially valuable source of information. Yet only coaches can provide insight into their histories, learning, goals, beliefs, knowledge, and decision making, and decode the complex interactions that occur in the dynamic context of coaching. The purpose of this thesis was to investigate how elite-level coaches developed and used expertise. Twenty successful coaches working with Australian junior, elite sport participants were purposefully sampled to cover a diversity of sports (team and individual) and to provide a gender balance. Through in-depth interviews based on grounded theory, the study examined three aspects of coaching. These aspects provided the basis of the interview guide. Three aspects were coaching history and influences, effective coaching behaviors, and coach training and accreditation. The major themes arising from the coaches' histories were: (a) all had previous sport participation experience, (b) a number were influenced by family involvement in the sport, (c) the majority felt they would like to contribute back to the sport, (d) academic background assisted them in achieving success early in their careers, and (e) all coaches received mentoring during the formative stages of their coaching careers. In examining the second aspect, effective coaching behaviours, the coaches felt that understanding what influenced their behaviour was more important to them than the behaviour. The themes evolving from this issue were: (a) the coach role definition, (b) the four knowledge bases that underpinned the coaching process and the different maturity rates of the knowledge bases, (c) as coaching expertise developed, knowledge became more integrated and was driven by the context, (d) the ability to

organise and access appropriate knowledge was assisted by mentoring, networking, and discipline related academic qualifications, (f) mental models represented the cognitive component of the coaching process; when expert coaches developed mental models they accessed knowledge to assist in solving the problem and delivering the solution, and (g) the coaches capacity to develop metal models was affected by the coaches' ability to articulate their roles. Themes surfacing from the third aspect of coaching, the role of coach accreditation and education in coach development, were: (a) the value of coach education depended on pathway outcomes, (b) the networking associated with accreditation and education was more important to the coaches than the educational outcomes, and (c) recommendations to enhance the coach education process. The use of in-depth interviews enabled a rich understanding of how coaches working with elite junior athletes developed and used their expertise. Of significance, the coaches were able to articulate the cognitive strategies they needed to function as a coach. These strategies enabled the coaches to apply their expertise efficiently and effectively. The information gleaned from this thesis identified the practices and knowledge required to support desired types of coaching and provided recommendations for future research and for coach education programs.

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CHAPTER 1: INTRODUCTION

The coach plays a crucial role in sport and is responsible for enhancing athlete satisfaction, performance, and psychological and emotional well-being (Horn, 1992). Understanding how coaches achieve effective outcomes, however, has continually challenged researchers (Abrahams & Collins, 1998; Hastie, 1992; Woodman, 1993). Research investigating coaching, and the coaching process, has been sporadic. The majority of research has attempted to isolate and identify particular behaviours or patterns of coaching behaviour (e.g., Chelladurai, 1978, 1990, 1993; Smith, Smoll, & Curtis, 1978; Smoll & Smith, 1989) but coaching is a complex task that ideally involves an integrated theoretical perspective that moves beyond a checklist of behaviours and procedures. Methods used to measure coach behaviour have sometimes demonstrated questionable validity (e.g., Chelladurai & Saleh, 1980).

Coaching research has not provided a clear understanding of how expert coaches develop and how they apply their expertise. Research to date has provided insights into specific coaching behaviours and various components of the coaching process, but there is still much to be revealed about what knowledge, skills, and experience underpins coaching expertise, and how that expertise is transformed and communicated to athletes.

Leadership research, originating in organisational psychology, provided the initial template for investigating effective coaching traits and behaviour. It was assumed that coaches and leaders were one and the same. There is still confusion about terminology and whether being a coach automatically means the person is a leader, that is, the extent to which the skills required to be a leader underpin coaching effectiveness. Research investigating the coaching process has predominantly used quantitative research methods (e.g., Chelladurai, 1978, 1981; Chelladurai & Saleh, 1980; Curtis, Smith, & Smoll, 1979; Smith & Smoll, 1990). Such research has

identified and quantified a number of coaching behaviours. The majority of this research is grounded in two sport-specific leadership models. The two major theoretical models, the Multidimensional Model of Leadership (MML; Chelladurai, 1990) and the Mediational Model of Coach-Player Relationships (MM; Smith & Smoll, 1989) do not fully measure all of the various components and interactions of coaching. Additionally there is still confusion as to whether a leadership framework is reflective of the coaching process.

Research using the MML and MM has mainly examined coaching effectiveness and leadership from an athlete perspective. The research also represents snapshots of the coaching process, which are temporally and contextually bound, and do not reflect the complex nature of coaching. For example, the complexity of the coaching situation can change according to the nature of the sport, the athlete and coach's knowledge and skill level, whether it is a game or practice situation, as well as external factors that influence the coach and athlete. The coach, as a figure central to the coaching process, has rarely been acknowledged as a reliable source of information. Results from coach self-report data suggest that coaches have poor recall of their own coaching behaviour (e.g., Horne & Carron, 1985; Salminen, Luikkonen, & Telama, 1990). It may be that the tools and methodologies used to examine the coaching process to date, largely fail to provide an opportunity for coaches to unpack and articulate their practice. Questions also remain concerning whether the full range of relevant behaviours, identified by research methods typically used in the MML- and -MM based research, adequately explain coaching behaviour. Further, researchers have agreed that these methods have limitations in the measuring of intentions and appropriateness of behaviours (Ahlgren, Housner, & Jones, 1998; Chelladurai, 1992). Horn (1992, 2002) strongly suggested that future research should embrace a variety of research methodologies for investigating coaching behaviour.

To understand how coaches develop expertise and apply it in the sport context, it is necessary to ask them what, how, and why they behave in specific ways. In-depth qualitative studies have provided insight into coach development, and sport specific theories of coaching (e.g., Côté, Salmela, & Russell, 1995a; Salmela, 1995). The coach has been a valued informant and provided a rich understanding about specific components of the coaching process. There is a need for in-depth studies that explore coaching issues in the coaches' own words, where they are not constrained by questionnaires or categories of outcome behaviours, which provide no understanding of reasons for the behaviour.

Some recent qualitative in-depth studies have provided insight into coach development, athlete development, communication, and sport specific theories of coaching. Although some research addresses what knowledge bases are required in a specific sport (Côté, Salmela, Trudel, Baria, & Russell, 1995), none address the general knowledge bases that underpin coaching, knowledge development, and the influence of coach education on that process.

Present Thesis

The purpose of the present thesis is to examine how expert coaches develop skills and knowledge, and how they apply it in practice. Under investigation are factors that contribute to this process. These are:

a) coaching history and factors influencing the decision to coach;

b) coaches' perceptions of effective coaching behaviour; and

c) coach education and accreditation.

Structure of Thesis

This chapter has introduced the origins and purpose of the thesis and summarised its focus. Chapter 2 reviews related literature on theoretical perspectives and provides a foundation and direction for the current study. The chapter provides an

overview of leadership theories situated in organisational psychology that provided the leadership framework for sport leadership and coaching research. Research on the two main theoretical models used in the past to investigate leadership and coaching behaviour, the MML and MM, is reviewed in detail. Research investigating coach expertise using qualitative methods is also examined. In Chapter 3 the research method is discussed, and the methods used in the current study are described in detail. Chapter 4 provides an analysis of the theory derived from the data as it was analysed and defined by this study. Chapter 5 presents a discussion of the results along with implications for research and practice.

CHAPTER 2: LITERATURE REVIEW

Introduction

The purpose of this chapter is to discuss the literature related to the roles of coaches and coach expertise that have helped frame the current study. This chapter investigates the literature from several perspectives. These include: (a) leadership theory situated in organisational psychology, (b) leadership theory adapted to the sport context, (c) leadership theory developed within the sport context, and (d) coach expertise research. The literature review highlights the shift from a leadership perspective to a focus on understanding the role and development of coaching expertise in the sport environment. Also explored within this literature review are changes in research methods, which have enabled researchers to take different approaches and ask different questions about the coaching process.

Early Models of Leadership

The majority of the research undertaken to explore and understand effective coaching in the sporting domain has its roots in leadership theory originating in organisational psychology (Chelladurai,1980; Chelladurai & Carron, 1983; Chelladurai & Haggerty, 1978; Danielson, Zelhart, & Drake, 1975; Lenk, 1977). The corporate world has always sought to identify, develop, and enhance leadership within an organisation, and the sporting world has followed this model. Theories and models of business leadership have been adapted to sport based on the premise that sport and business have much in common (Ball, 1975).

Although sport teams and business organisations have similar elements such as identity, an exact roster of members, a program of activity, and procedures for replacing members, in other ways they are quite distinct (Caplow, 1966). Ball (1975) examined these differences in terms of specific structural characteristics, such as size, normative codification, positional interrelationships, and maintenance of public and

precise records. The day-to-day working of sports teams also differs from that of business in that the majority of time in sport is spent in preparation for competition, where performance is assessed. In business, the preparation period is shorter and assessment is continual. Researchers have raised questions regarding differences in motivation between participating in work and sport. Understanding the similarities and differences between business and sport has led to researchers adapting theories and models to better represent leadership in sport (Chelladurai, 1980; Chelladurai & Carron, 1978).

Leadership theories adapted from organisational psychology for the sport setting have been divided into four categories. These categories are: (a) personality theories (e.g., Carlyle, 1910), (b) situational theories (e.g., Hersey & Blanchard, 1969, 1977), (c) interactionist theories (e.g., Evans, 1970; Fiedler, 1967; House, 1971; House & Dessler, 1974; Osborne & Hunt, 1975), and (d) normative leadership approaches (e.g., Vroom & Jago, 1974; Vroom & Yetton, 1973; Yukl, 1971). Personality theory describes traits and behaviours as predictors of leadership. In contrast, situational theories proclaim that the situational context influences leadership behaviour. Interactionist theories take into account both the personality of the leader and the situation, and the effectiveness of the group is contingent upon the interaction between leadership style and the situation. Normative leadership approaches are prescriptive as they describe appropriate leader behaviours for specific situations.

Personality Theories

Early leadership research attempted to identify the personality traits that distinguished leaders from followers. The search for personality traits was driven by a belief that leaders were different. Personality theories like "great man theory" (Carlyle, 1910), proposed that great leaders would be great leaders in all situations. It was assumed that the individual achievements of great persons were the causal factors

of progress. Personality theories emphasised who the leader was rather than what the leader did. Various personality traits, social traits, and physical traits were identified to differentiate leaders from non-leaders (Filley & House, 1969). These theories were unsuccessfully applied to sport to try to identify personality traits and behaviours that predicted leadership effectiveness (e.g., Danielson, Zelhart, & Drake, 1975; Hendry, 1968; Lenk, 1977; Oglive & Tutko, 1966; Penman, Hastad, & Cords, 1984; Tutko & Richards, 1971).

To date, there has been little support for a common set of traits that differentiate between effective and ineffective leaders (Bass, 1981; Stoghill, 1974). Fiedler and Garcia (1987) argued that the weakness of this line of research is firstly that everyone is either a leader or follower on some occasions; hence, if everybody fulfils each of those roles, it is difficult to separate them based on personality attributes. Secondly, a person might be an effective leader in some groups and ineffective in others.

Locke (1991) claimed that trait theories (e.g., great man theories) are not totally wrong and yet are not fully accurate as theories of leadership. The possession of certain traits, such as honesty and high levels of energy, is a necessary precondition for effective leadership. If leaders are to be effective, however, they must use their traits to develop a vision, and implement the vision into reality. Therefore, traits only represent part of the picture.

Situational Theories

As personality theories proved ineffective as predictors of group performance, leadership research changed direction. Instead of investigating the effect of the leader on the situation, researchers investigated how the situation influenced leadership behaviour and their subordinates' performances (Barrow, 1977). The situation referred to variables in the external environment.

Situational variables, such as subordinate behaviour, task type, task complexity, technology, and the size of the organisation, were found to influence leader behaviour (Bass, 1965; Baumgartel, 1956; Blau & Scott, 1962). As those factors continue to influence leader behaviour, however, the leader also influences, in turn, the situational factors.

Situational theories have been applied to sport irregularly. There has been more interest in exploring specific variables and their influences on leader behaviours compared to developing a deeper understanding of the leadership process. Hersey and Blanchard's (1969, 1977) situational theory was adapted and applied to the sport context to investigate the effect of athlete maturity on leadership behaviour (Chelladurai & Carron, 1983). Hersey and Blanchard (1969) defined maturity as the capacity of the person to set high but attainable goals, to be willing to take responsibility, in addition to the education and experience of an individual in a group. This definition was loosely applied to the sport domain, which led to difficulty in interpretation of results.

Fiedler and Garcia (1987) voiced concern over the exclusion of individual personality from the leadership equation in situated theories. Although the situation is important, it does not account for the differences observed in performance within two organisations with the same situational structure (Fiedler & Garcia, 1987).

Interactionist Theories

Interactionist theories underpin current models and research in the study of leadership effectiveness in sport. Proponents of these theories have considered a whole set of situational variables that may change the impact of a given set of leader behaviours. Variables, such as leader-member relations, task variables, structures and ambiguity, and the personality of both leaders and followers, are taken into consideration (Hunt & Larson, 1974). The interactionist approach is typified in

models such as contingency theory (Fiedler, 1967), path-goal theory (Evans, 1970; House, 1971; House & Dessler, 1974), and adaptive-reactive theory (Osborne & Hunt, 1975).

Contingency Theory

Contingency theory (Fielder, 1967), describes the effectiveness of a leader or group as contingent on: (a) the leader's need structure, specifically, whether the leader is motivated through task achievements or the development of interpersonal relationships; (b) the leader's situational control, which refers to the leader's confidence that the task will be accomplished; and (c) the interaction between the leader's need structure and situational controls. Task-oriented leaders perform best in situations in which they either have high or low control. Relationship-oriented leaders perform best in situations where they have moderate control.

The leader's need or preference for a specific structure in contingency theory reflects the leader's personality. Personality is separated into two dimensions; the leader is either relationship-oriented or task-oriented. Relationship-oriented leaders derive satisfaction from developing relationships with their subordinates and are influential if the subordinate perceives the leader in a favourable manner. If the leader is task-oriented, then the focus is on completing the task. Such leaders derive satisfaction from completion of the task, rather than from leader-subordinate relationships (Fiedler, 1967).

Although the leader may have a specific personality disposition (task or relationship), once outcomes are achieved it is probable that the leader will return to less important goals. Therefore, the task-oriented leader, having achieved the outcome, will return to the less important goal of maintaining relationships with co-workers. The relationship-oriented leader will not strive to better good interpersonal relations when they are already established. Under these conditions the leader will

attend to the task. Leaders shift from primary goals to secondary goals depending on the level of situational control. Situational control plays an important role in providing flexibility to shift from primary to secondary goals. It predicts when a task-oriented leader is in a position to concentrate on interpersonal relationships and vice versa.

Leadership situational control involves factors in the environment that are unpredictable and are capable of producing feelings of anxiety. An environment that lacks structure (e.g., poor organisation support, unreliable athletes) is likely to create feelings of insecurity, unease, and lack of control. Leaders have high control when they are assured of achieving the outcomes. Insecurity is likely to occur when the task outcome is uncertain. The determinants of situational control are: (a) group member support for the leader; (b) clarification of the leader's role, that is, how the job is to be performed; and (c) evidence of organisational support for the leader and their dealings with subordinates. The most important element of situational control is the group member's support for the leader because leaders feel more relaxed when they know that they can depend on their subordinates (Fiedler & Garcia, 1987).

The second important element of situational control is the task structure, which is divided into four dimensions. The first dimension refers to the clarity of task description, that is, the goals and standards required. The second dimension is the method to be employed to ensure task achievement. Here the critical issue is whether there is more than one method that could be employed. The third dimension addresses expected task outcomes, and the last dimension refers to how the task will be monitored to ensure that everything is going according to plan.

The final element of situational control explores the real power the leader possesses to achieve the task. The organisation's capacity to confer enough power to enable the leader to exert influence on the subordinates to perform the task is the important factor. In sport, if the administration does not provide power and support to

the coach, it is unlikely that athletes will complete the task or perform to expectations, because the coach is viewed as essentially powerless. Power is also visible through rank, the power to dispense reward and punishment, and the group's physical distance to the next highest boss. If a coach works in a country town 600 kilometres from the regional centre, then the athletes will be more dependent on the local coach to achieve personal outcomes due to ease of physical access.

The major point emerging from this theory is that leadership effectiveness, as measured by group performance, depends as much on the group situation as it does on the leader. One style of leadership is not better than another, nor is one type of leadership behaviour suitable for all types of situation. Therefore, almost anyone can succeed as a leader under some conditions and almost anyone is likely to fail in other situations (Fielder, 1967).

Fiedler and Garcia (1987) made several criticisms of the contingency model that relate to method. Task and relationship leadership measures correlate poorly with personality trait scores and various leader behaviour ratings. Only when situational factors are taken into account is there a correlation between task/relationship measures and interpersonal behaviours. A second criticism concerns the lack of a clear definition for situational control and, hence, a valid means of measuring the dimension. Situation control refers to the effects of the environment and how this psychologically affects leadership behaviour. There is a question as to whether this definition is too broad to be of considerable value. A third limitation is the lack of attention given to macro variables, such as size, structure, and technology. One such example is the adaptation of leadership behaviour based on organisational structure and culture. This adaptation of leadership behaviour suggests that leadership behaviours are externally driven as opposed to leaders using their preferred style of leadership. The most pertinent criticism of the contingency model is its inability to

predict performance from the interaction between task and relationship-orientated behaviour and situational control (Strube & Garcia 1981).

Path-Goal Theory

According to the path-goal theory of leadership (House, 1971; House & Dessler, 1974), leaders are effective because of their impact on subordinates' motivation, which leads to satisfaction and the ability to perform effectively. There are two general propositions: (a) that leader behaviour is acceptable and satisfying to subordinates to the extent that the subordinate identifies immediate or future satisfaction, and (b) that leader behaviour will be motivational (i.e., subordinates' needs are met in return for effective performance). The leader who provides a supportive environment may achieve these outcomes.

In path-goal theory, the strategic functions of the leader consist of: (a) recognizing subordinates' needs for outcomes over which the leader has some control, (b) increasing personal rewards to subordinates for work-goal attainment, (c) clarifying the path to achieve those goals, (d) helping subordinates clarify expectancies, (e) reducing obstructions, and (f) increasing opportunities for personal satisfaction dependant on effective subordinate performance. Effective leaders vary their behaviour in accordance with the task, the personal characteristics of the subordinate, and the environmental pressures of the situation that the subordinates must deal with in order to accomplish work goals and satisfy member needs. Unlike other theories, in path-goal theory, House (1971) attempted to suggest not only what type of leadership style may be most effective in a given situation, but also to explain why it is most effective.

There has been strong support for the path-goal theory of leadership with regard to subordinate satisfaction, but not with regard to performance. The ideas

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expressed in path-goal theory on the leader/subordinate relationship has markedly shaped leadership research (Dessler,1973).

Adaptive-Reactive Theory

The adaptive-reactive theory (Osborn & Hunt, 1975) was an extension of path-goal theory. To be effective, leaders must also adapt to the individual needs of their subordinates and to the situations. By adapting to the situation and by meeting the needs, desires, and pressures of the subordinates, it is assumed that the subordinates will respond to the reactive behaviours of the leader. This adaptation becomes a two-way relationship; with leaders' behaviours influenced by the preferences and needs of the subordinates, and the subordinates responsive to the behaviours of the leader. This theory assumes that the leader has the capacity to identify and respond to the subordinates' needs, desires and pressures. Although an attractive proposition, it is hampered by issues of measurement and identification of subordinates' motivations (Lahey & Laskow, 2001).

Normative Approaches to Leadership

The normative leadership approach is prescriptive; it recommends leaders use specific types of leadership behaviour based on the situation and member knowledge. Leader behaviours and situational circumstances are identified; prescriptions are provided to assist in analysing the situation, after which the leader engages in an appropriate behaviour to achieve the optimal effectiveness in that situation. The normative model of decision styles in leadership (Vroom & Jago, 1974; Vroom & Yetton, 1973) and the discrepancy model (Yukl, 1971) have both been applied and adapted to the sporting environment.

The Normative Model of Decision Making Styles

Chelladurai and Haggerty (1978) proposed a normative model of decision-making styles for coaching, based on the original work of Vroom and Yetton (1973).

The model incorporates three styles of leadership: (a) autocratic, (b) participative, and (c) delegative. The premise of the model is that particular situations require a specific leadership style. The situational variables include: (a) the importance the decision, (b) what information is required and whether the leader possesses that information, (c) the complexity of the problem, (d) the degree of integration among group members, (e) the presence or absence of time restrictions, (f) the degree to which group acceptance of the decision is necessary or crucial, and (g) the amount of power the leader holds with regard to team members. For example, in sport, if there is time restriction and the coach has relatively high information, then an autocratic style of leadership is appropriate. Chelladurai and Haggerty (1978) stated that the premise of the model is that leaders do not, or should not, adhere to only one decision style. They should adapt their behaviour as a function of the situation and the characteristics of the group and its leader. The model provides a good representation of specific situations that can occur in the competitive situation it is not, however, definitive, as no two situations are the same.

The Decision-Style Questionnaire (Chelladurai & Arnott, 1985; Chelladurai & Quek, 1991) was developed to measure athletes' preferences for context specific decision making styles. The questionnaire consists of a number of common problem cases or scenarios which need to be solved. The athlete identifies the decision making style they would prefer the coach to use in that case. Coaches preferred coaching style can also be measured. The coach reads the problem and responds with the decision making style they would use in that situation. Research investigating athlete and coach preferred decision making style is limited but does show promise for understanding the role of situational variables.

The Discrepancy Model

This model, as proposed by Yukl, (1971), describes satisfaction as being a

function of the congruence between leadership behaviours preferred by the

subordinates and the actual behaviour exhibited by the leader. Effective leaders must

first be able to recognise the desires and needs of their subordinates and then deliver

leadership behaviours that are consistent with those behaviours. The two leadership

behaviours are: (a) consideration and initiating structure, and (b) decision-

centralisation. Consideration refers to how and to what degree leaders act in a warm

and supportive manner and show concern and respect for their subordinates. Initiating

structure describes the degree to which leaders define and structure their own and the

subordinates' roles, as a method of achieving goal attainment. Decision centralisation

describes the various decision-making procedures used by the leader, such as

delegation, joint decision-making, consultation, and autocratic decision-making.

Yukl (1971) postulated that leader behaviours of consideration, initiating

structure, decision-centralization, and various situational variables interact in their

effects on several intermediate variables to determine leadership effectiveness. The

intermediate variables are: (a) subordinate task motivation, (b) subordinate task skills,

and (c) task-role organisation. The model predicts that subordinate task motivation is

highest when the leader is high on both initiating structure and consideration

behaviours; low decision-centralisation behaviours (participative styles) will cause

high subordinate task motivation, and implicitly, greater subordinate performance, and

leader initiating structure behaviours are positively related to subordinates' task skill

level. Yukl (1971) also hypothesized that even highly motivated subordinates will not

perform well if they lack the necessary knowledge or skills to carry out their

assignments. In this case leaders need to evaluate performance and correct deficiencies

in subordinate task skills and knowledge through on the job instruction and improved

communication or task-relevant information. Task-role organisation refers to organisational skills, technical knowledge, and an understanding of subordinate knowledge. The relation between decision centralisation and task-role organisation is moderated by whether the leader or subordinate has greater organisational skills and task knowledge. When the leader has greater organisational skills and task knowledge but the subordinate lacks the necessary skills there is a negative relationship between participation and task-role organisation. When the subordinate has more relevant skills and knowledge than the leader, the assumption is there is a positive relationship between participation and task-role organisation. Decision centralisation therefore affects the relationship between subordinate motivation and participation. Thus, an intermediate degree of decision-centralisation will probably be best with respect to group performance.

In the discrepancy model, satisfaction is a function of the difference between a person's preference for a particular dimension of leadership and their actual experience. The smaller the discrepancy between the subordinates' leadership preferences and actual leadership experience, then supposedly, the greater is the satisfaction. One of the issues with the discrepancy model is that the discrepancy score, a score reflecting differences in subordinate satisfaction between preferred and actual leadership behaviour , may be affected by the importance placed on needs by the subordinate. If the needs are of little value, then the subordinate may not have a preference for a particular leadership dimension. Yukl (1971) suggested that, in the future, it may be necessary to build in a correction for importance; otherwise, discrepancy scores cannot be compared.

Yukl's (1971) model specifies direct linkage between certain leader behaviours, subordinate behaviours, and expected outcomes. This model unravels and explores a number of components associated with leadership behaviour. Although the

measuring tool is designed to score subordinate satisfaction, it seems there is much to be gained from developing a tool to measure actual leadership behaviours.

The leadership research area has a long history; yet knowledge accumulation and theory construction are still in their infancy. As leadership research has evolved, it is evident that leadership is multifaceted. Although causal studies in leadership are rare, there is evidence that leadership style, disposition, or character do play some role and that there is a relationship between leadership behaviour and subordinate satisfaction. These early theories have provided the foundation and the direction for coaching and leadership research in sport.

<div align="center">Leadership in Sport</div>

During the last 25 years, two major models of leadership in sport have emerged. The first of these is the multidimensional model of leadership (Chelladurai, 1980; Chelladurai & Carron, 1978) and this model was designed specifically for the sport domain. It theoretically represents and displays the components of leadership effectiveness and their interactions based upon the characteristics of both the members and the leader, and the parameters of the situation in which they find themselves. The multidimensional model (Chelladurai, 1980; 1990), unlike the previous theories, placed equal emphasis on the role of the coach, the athletes, and the situations, to account for performance and satisfaction in the sporting context. Smith, Smoll, and Hunt (1977) devised a second approach that investigates the ecology of the youth sport experience using a mediational model. The model's foundation is that the relationship between the child athlete and coach is significant in determining the quality of the experience. It is distinct because its conceptual development is grounded in sport, and it takes into account the dynamic relationship between the coach and athlete, the situation, players' and coaches' perceptions of leadership behaviour, and the coaches' overt behaviours.

Multidimensional Model of Leadership in Sport

Chelladurai (1978, 1990) recognised in the sport domain, that situational

theories were unable to explain fully the components of effective leadership. He

developed the multidimensional model of leadership (MML), based upon contingency

theory (Feilder, 1967), path-goal theory (House, 1971; House & Dessler, 1974), the

adaptive reactive theory (Osborn & Hunt, 1975) and the discrepancy model of

leadership (Yukl, 1971).

In the model, Chelladurai proposed that effective leadership is

multidimensional and measured in terms of two outcomes, athlete performance and

member satisfaction. The MML is a combination of three states of leader behaviour:

required, preferred, and actual. The main supposition of the model is athlete

satisfaction and performance are a function of balance between these three states of

leadership behaviour (see Figure 1).
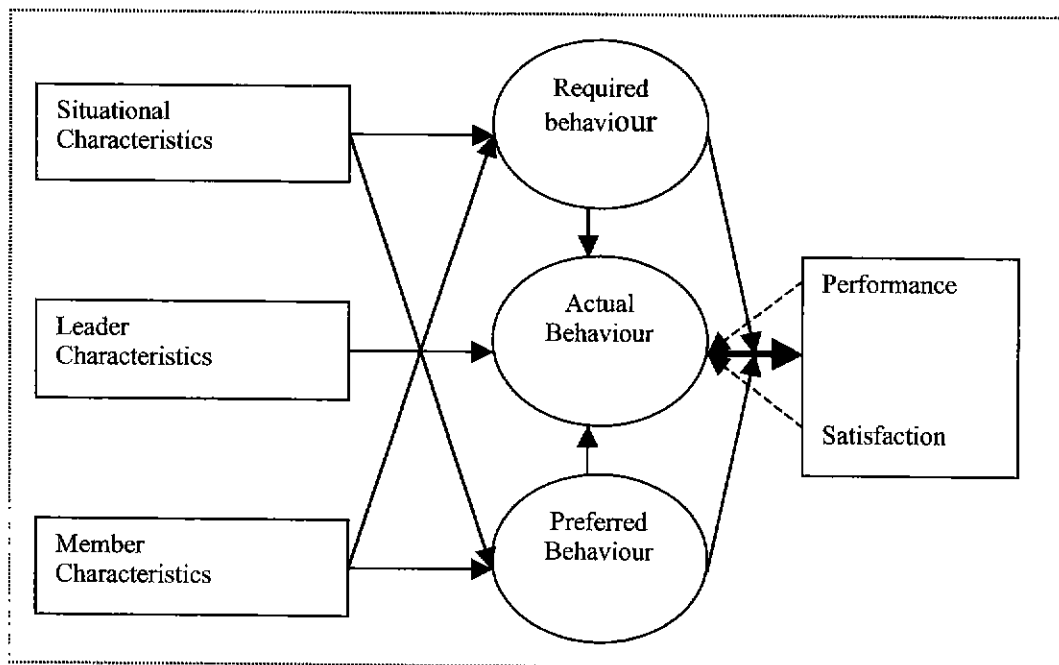
Figure 1. The multidimensional model of leadership (Chelladurai, 1991).

Leadership Behaviour Required By Situational Demands

The constraints and parameters of the organisation and its environment influence the leader's behaviour. Factors such as the goals of the organisation, cultural values, and even government regulations encroach on leader behaviour. For example, the situational demands of a recreational coach and a professional coach are vastly different. The community basketball coach may only be concerned with factors affecting the athlete's context, whereas the professional basketball coach would need to consider, at a minimum, the goals of the organisation, and the athlete and team context.

Leadership Behaviour Preferred By Group Members

The preference for particular leadership behaviours is determined by the characteristics of the individuals within the team or group. Variables such as goal orientation, perceived competence, and need for affiliation influence the members' preferences for training and instruction, leadership style, social support, and positive feedback. An athlete with low perceived competence and a mastery goal orientation may prefer a coach who creates a mastery learning environment where performance is self-referenced and high levels of positive feedback behaviour are provided.

Actual Behaviour Displayed By Leader

The leader's actual behaviour is determined by personal characteristics, including personality, ability, and experience. The other factor that influences actual behaviour is the situation. The requirements of the situation frequently dictate leadership behaviour. Therefore, when measuring the coach's actual behaviour it is also necessary to identify the situational demands of the context.

Performance and Satisfaction

The athlete outcomes are reflected in performance and member satisfaction, and these are enhanced as a direct result of leadership behaviour. Chelladurai and

Carron (1978) pointed out that performance and satisfaction are not independent of each other, and are both are enhanced as a result of leader behaviour. All three states of leadership behaviour jointly affect member performance and member satisfaction.

Chelladurai (1990) refined the MML to include the relationship between member characteristics and leader behaviour. He surmised that there were specific situations where athletes made poor decisions about their preferences for specific leader behaviour. These decisions encompassed situations where athletes lacked the intelligence, ability, experience, or personality dispositions needed to make judgements about their personal needs and desires and what was best for them in a specific situation. In these situations the leader would be required to make the decision for the athletes. Required leadership behaviour is influenced by the contingencies of the situation and by member characteristics (Chelladurai, 1990).

Research on the Multidimensional Model of Leadership in Sport

To date only segments of the MML have been tested. This research has concentrated on: (a) measurement of leadership behaviour, (b) factors affecting preferred leader behaviour, (c) factors affecting perceived leader behaviour, and (d) factors affecting the consequences of leadership.

Measurement of Leadership Behaviour in the Multidimensional Model of Leadership

The Leadership Scale for Sport (LSS; Chelladurai & Saleh, 1978, 1980) was designed to measure preferences and perceptions of coaching behaviour within a sporting context. The LSS measures five specified coaching dimensions. The five dimensions of leader behaviour are: training and instruction, social support, autocratic behaviour, democratic behaviour, and positive feedback (see Table 1 for behaviour definitions). The development of the LSS operationalised and allowed for measurement of the components of the MML. There are three versions of the scale,

measuring; (a) athletes' perceptions of coaching behaviours, (b) athletes' preferred coaching behaviours, and (c) coaches' perceptions of their behaviours.

The LSS consists of 40 items representing the five dimensions of leadership behaviour. Of the 40 items, 13 measure training and instruction behaviour, nine assess democratic behaviour, five relate to autocratic behaviour, eight measure social support behaviour, and five report on positive feedback behaviour. Participants respond to each item by selecting one of five response categories, (a) always (100% of the time), (b) often (75% of the time), (c) occasionally (50% of the time), (d) seldom (25 % of the time), and (e) never (0%). The three versions of the scale are differentiated through alteration of the item stem.

The LSS was developed using a two-stage process (Chelladurai & Saleh, 1978, 1980). In the first stage, the original pool consisted of 99 items derived from existing leadership scales; the items were modified to better reflect the sport context Chelladuria and Saleh (1978) administered the scale to 160 physical education students (male = 80, female = 80) at a Canadian University. Following analysis, five factors were found to be the most meaningful: training, democratic behaviour, autocratic behaviour, social support and rewarding behaviour. Items were selected to represent the five dimensions based on high loading on one factor and low loadings on the other factors. The original pool was reduced from 99 items to 37 items. In the second stage of development, several items were added to tap into the coaching behaviour of "teaching and training strategies in sport", increasing the scale to 50 items. The revised questionnaire was administered to a sample of 102 physical education students (*males* = 45, *females* = 57) and to a male sample of varsity athletes

Table 1

Leadership Behaviour Dimensions in Sport (Chelladurai, 1989)

Dimension	Description
Training and instruction	Coaching behaviours designed to improve athlete performance by creating a climate that emphasises hard and strenuous training, skill development, techniques, and tactics of the sport; role clarification of member relationships, and structuring and coordinating member activities.
Democratic behaviour	Coaching behaviours that encourage member participation in decision making pertaining to group goals, practice organisation, and game tactics and strategies.
Autocratic behaviour	Coaching behaviours where all authority and decision making power are exercised by the coach.
Social support	Coaching behaviours that reflects a concern for player welfare outside of the game or practice situation.
Positive feedback	Coaching behaviours that reward athletes for good performance within the game and practice situation.

(n = 223) from different Canadian universities. The results supported a five-factor structure, but only accounted for a limited amount of variance across each data set (physical education students' preferences, athletes' preferences, and athletes' perceptions of coaching behaviour). Ten items were excluded based on low loadings and whether the item surfaced across all three solutions. Although specific coach behaviour items were added to the scale, there may still be areas of leadership that the

scale does not address. It is also possible that coaching does not reflect leadership at least as conceptualised with this instrument and requires the development of an alternative measuring tool derived from a different theoretical underpinning.

One example of an instrument derived from a different theoretical underpinning is the Coaching Behavior Scale for Sport (CBS-S; Baker, Cote, Hawes, 2000; Cote, Yardley, Hay, Sedgwick, & Baker 1999). Unlike the LSS (Chelladurai & Saleh, 1978, 1980), which was adapted from organizational psychology for the sport context, constructs and item scales for the CBS-S (Cote et al., 1999) were extracted from a series of qualitative studies with athletes and coaches and input of experts on coaching at the Insitut National du Sport et de l'Education Physique. The input of coaches and athletes was valued for the authenticity and intimate knowledge they have of the training, competition, and organizational environment.

Psychometric Properties of the Leadership Scale for Sport

Reliability. The results from the test-retest reliability estimates from 53 physical education students after a four-week interval were .72 for training behaviour, .82 for democratic behaviour, .76 for autocratic behaviour, .71 for social support, and .79 for positive feedback (Chelladuria & Saleh, 1978, 1980). The reliability values are satisfactory and compare favourably to those reported in the literature for similar scales. Dwyer and Fischer (1988) investigated the psychometric properties of the coaches' version of the LSS. To increase the internal consistency of the coaches' version of the LSS, items were deleted from the democratic, autocratic, and the social support subscale. Although the three subscales did show improvement in their coefficient alphas, the results were less than the recommended level, so interpretation of data using these subscales should be carried out with caution.

Several authors have investigated the internal consistency of the LSS

(Chelladuria, 1986; Chelladuria & Saleh, 1980; Chelladurai, Imamura, Yamaguchi, Oinuma, & Miyauchi, 1988; Dwyer & Fischer, 1988; Isberg & Chelladurai 1990; Keehner, 1988;). The internal consistency estimates are adequate; however, the estimates for the athletes' perceptions version were higher than those for the athletes' preferences version. Of concern were the low internal consistency estimates for the autocratic behaviour scale, hence the recommendation to use the scale with caution.

Validity. Chelladurai and Saleh (1980) claimed factorial validity (i.e., construct validity) on the basis of replication of the five-factor solution over three different data sets (preferences of physical education students, preferences and perceptions of varsity level athletes). The percentage of variance explained by the five-factor solution was 41.2% for physical education students' preferences, 39.3 % for athletes' preferences, and 55.8 % for athletes' perceptions. This relatively limited amount of explained variance remains a source of concern.

The establishment of a five-factor solution and the fact that the leadership descriptions and subscales are similar to previous findings in leadership research (e.g., Fleishman, 1957; Halpin & Winer, 1957; House & Dessler, 1974) provide support for content validity (Chelladurai & Saleh 1980). Further support for the pre-specified subscales structure have been demonstrated in several contexts. The contexts were French Canadian hockey (Lacoste & Laurencelle, 1989), Greek soccer (Iordanoglou, 1990), Indian athletics (Chelladurai, 1986), Japanese athletics (Chelladurai, Imamura, & Yamaguchi, 1986; Chelladurai et al. 1988), Korean university athletics (Kim, Lee, & Lee, 1990), Swedish athletics (Isberg & Chelladurai, 1990), youth sports (Chelladurai & Carron, 1981), coaches' perceptions of their own behaviour (Dwyer & Fischer, 1988), and fitness leadership (Keehner, 1988).

Issues Concerning the Leadership Scale for Sport

There are several issues of concern with the LSS. The LSS has its roots in leadership scales designed for measuring leadership behaviour in business organisations. These may not reflect fully, or with appropriate emphasis, the sporting context. Leadership in business and coaching may be conceptually different. For example, Kellett (1999) conducted interviews with 12 Australian Football League coaches asking them the question, "are professional coaches leaders?" The coaches did not see themselves as leaders, although they readily described their players as leaders. They saw their role as facilitators responsible for developing and empowering others. Leadership had a negative connotation for these coaches and was strongly associated with autocratic behaviour. The term leadership, and its associated behaviours, may need to be redefined for sport.

A second major issue relates to context of the leadership behaviour. The scale measures the frequency of behaviour, but does not address the context in which it is occurring. Coaches may behave differently in training and game situations, depending on internal and external stressors. For example, a coach may exhibit different degrees of democratic behaviour across several training sessions depending on time of season and what happened in the previous game. The snap shot view is limited by time, and this restriction must be taken into consideration when interpreting results. In an Australian study (Sherman, Fuller, & Speed, 2000), investigating preferred coaching behaviours of athletes ($N = 312$) from three distinct Australian contexts in dual-and single-gender sports, the authors noted the importance of collecting relevant information about the context. For example, this study found few gender differences with reference to coaching preferences in an Australian sample. In a North American sample (Chelladurai and Saleh, 1978) gender differences were significant in influencing preferences for specific coaching behaviours. Sherman et al. suggested

that differences in results between their study and previous research were due to historical and cultural contexts. They explained the results of athlete gender on preferred coaching behaviour, and made the point that societal change over the last thirty years now mean that there is greater acceptance of females as athletes. Also highlighted in this study was the environmental context, specifically, that differences in sport participation and structure is likely to influence the results. Longitudinal data may provide a better account of consistency of behaviour and/or provide more knowledge of the effect of context on leadership behaviour. A further stage in the LSS development should involve ensuring context is considered within the scale.

It is evident in previous studies from the variance accounted for, that the LSS still requires further development. One of the subscales is unstable (autocratic) and comes with warnings regarding interpretation of results. The concept of the MML is farsighted and builds upon many of the models and theories presented in the business world. A future direction is to identify how to adapt and build the LSS to better reflect and measure leadership behaviour in sport. Or to develop a new measuring tool that better reflects and measures the coaching process. As Chelladurai (1990) suggested, "future research should focus on identifying and generating items based on experiences and insights of coaches and athletes" (p. 340).

Even with refinement, however, the scale may be better used in combination with qualitative methodologies that tap into why certain behaviours are preferred, perceived, or executed in specific situations. To date, the LSS is the only sport-specific scale designed to measure the relationships within the MML. All three versions of the LSS have been used extensively in research. The conceptual and measurement limitations of the LSS, however, are not the only issues facing researchers exploring leadership issues in sport. Further exploration needs to move beyond quantifying behaviour, and address issues of whether or not relevant behaviours have been

targeted. It is also important for coaches to interpret behaviours, so there is some

understanding of what those behaviours mean. Coaches are in a position to situate

their behaviours in the broader context and give meaning to those behaviours, whereas

the athlete is in a position to identify the behaviour but the context is often limited to

the athletes needs.

Factors Affecting Preferred Leadership Behaviour

Factors found to affect preferred leadership behaviour are the athlete's

individual characteristics, the situation, and the outcome. Individual characteristics

have been paid the greatest amount of attention in the research. The characteristics of

gender (Bolkiah & Terry, 2001; Chelladurai & Arnott, 1985; Chelladurai & Saleh,

1978; Erle, 1981; Massimo, 1980; Serpa, 1990; Sherman et al. 2000; Terry, 1984;

Terry & Howe, 1984), age (Serpa, 1990; Terry & Howe, 1984), experience and

maturity (Chelladurai & Carron 1983), motivation, and cognitive structure,

(Chelladurai & Carron 1981; Erle, 1981) have been examined. The situations explored

were the type of sport (interdependent, independent), level of competition (high

school, college, university), organisational goals (recreational as compared to elite

teams), and cultural differences (international cultural comparisons) (Bolkiah & Terry,

2001; Chelladurai, 1978; Chelladurai, Malloy, Imamura, & Yamaguchi, 1987; Erle,

1981; Kim, Lee, & Lee, 1990; Terry, 1984; Terry & Howe, 1984). The outcomes, as

operationalised by satisfaction and performance, have been investigated with reference

to type of task (open, closed), player status (starters versus substitutes), and coach

status (Chelladurai, 1978; Horne & Carron, 1985). The research to date is exploratory,

with attempts to gather evidence in support of the MML, as opposed to using the

model as a predictor of leadership behaviour.

Gender. The effect of athlete gender on preferred leadership has been tested

across a wide variety of sports and across a number of sporting situations (Bolkiah &

Terry, 2001; Chelladurai & Arnott, 1985; Chelladurai & Saleh, 1978; Erle, 1981; Massimo, 1980; Sherman, et al. 2000; Terry, 1984; Terry & Howe, 1984). There are a number of inconsistencies in the results, some of which may be explained by time and cultural shifts related to gender roles in sport.

Early studies, conducted during the 1970s and 1980s, reported significant gender differences, with reference to preferred leadership behaviour. Chelladurai and Saleh (1978) examined gender as a determinant of preferred leadership using a sample of physical education students ($N = 160$) and discovered that males preferred more autocratic behaviour compared to females. In a similar study, Erle (1981) examined preferred leadership behaviour of male and female intramural and intercollegiate hockey players ($N = 335$) and found that males preferred higher levels of training and instruction, more autocratic behaviour, increased social support, and less democratic behaviour compared to their female counterparts. Chelladurai and Arnott (1985) investigated the decision-making style preferences of university level athletes ($N = 144$) and discovered that females preferred a more participatory style of decision-making, as compared to their male counterparts. Both the type and amount of research make it difficult to establish any conclusive results from these studies.

A study by Terry and Howe (1984), which also investigated preferred leadership behaviour of male and female varsity athletes ($N = 160$) across 16 sports, found much in common between the genders. Males and females preferred democratic behaviour, occasional social support, and limited autocratic behaviour. Terry (1984), in a similar study, examined elite male and female collegiate athletes ($N = 160$) in a number of dual gender sports (basketball, volleyball, track and field, gymnastics, swimming, and fencing), and found comparable results in elite level competition to Terry and Howe (1984). This finding was supported by Sherman et al. (2000), in a study investigating gender differences in an Australian context. In this study, athletes

from either a dual gender sport (basketball) or gender specific sports (netball and football) were compared for gender differences in preferred coaching behaviour. As in the study by Terry (1984), there were only small differences between the genders, with all groups, recording the same preference order for coaching behaviours. In contrast, Bolkiah and Terry (2001), investigating cross cultural differences between athletes participating at national level in Brunei Darussalam ($n = 159$) and athletes participating at university and club level in the London area ($n = 220$) found a main effect for gender, with males across both groups preferring autocratic behaviour.

The majority of the research on gender differences was conducted in the 1970s and 1980s, suggesting that the results may be more valuable as an historical snapshot of gender preference for specific coaching behaviours at that time. In the earlier research, the samples are narrow (sport oriented university students), which also makes it difficult to generalise the results. Later studies (e.g., Sherman et al., 2000; Bolkiah & Terry, 2001) used a broader representative sample. The effect of athlete gender effect on preferred coaching behaviours are still inconsistent. The one area of commonality is a preference by males for autocratic behaviour. Males' preferences for autocratic behaviour are also questionable due to issues concerning the internal consistency of the autocratic subscale (Chelladuria, 1993). Problems with internal consistency suggest that the LSS is not capturing the essence of autocratic behaviour. Gender issues may be identified more clearly by conducting qualitative research with coaches and athletes aimed at clarifying whether gender does play a role in athlete preferences for particular coaching dimensions, and, whether coaches behaviour is affected by gender.

Age, maturity, and experience. There is a limited body of knowledge on how age, maturity, and experience influence athletes' preferences for specific coaching

behaviours. Questions also arise as to whether coaches behave differently according to the athlete's age, maturity, and experience.

An athlete's age is commonly used to determine level of competition. For example, in junior sport, age corresponds to level of competition. In sport programs embedded within an education system, age correlates with whether the athlete participates in midget, junior high school, high school, or university level competition, or year level equivalent. In club sport programs, athletes compete in under age competitions determined by birth date. In masters' and veterans' games, age is used to determine competition class.

Serpa (1990) investigated the effect of age on preferred leadership behaviour in women's basketball in Portugal. The study compared two age groups, 12 to15 year-old (n =17) and 17 to 29 year-old female athletes (n =23). The younger athletes relative to the older athletes preferred coaches to be more socially supportive, and to display more democratic behaviour and less autocratic behaviour. In contrast, Terry and Howe (1984) reported that age was not a factor in determining coaching preference for specific leadership behaviours. No significant differences were found in the preferences of athletes participating in club sport (N = 160) across a wide range of age levels (17-40 years) in a variety of different sports. This study did not examine children and younger adolescents. More research comparing younger age groups with adults and within gender differences might be productive.

Maturity is more difficult to identify. Chelladurai and Carron (1983) defined it as "relative mastery of skill and knowledge in the sport, the development of attitudes applicable to the sport and a capacity to set high but attainable goals" (p. 372). In the research, however, maturity is assumed to be a function of the athlete's successful progression from one level of competition or achievement to the next, however, succession does not necessarily guarantee maturity. If years of participation are used

to determine experience there are problems associated with quantity and quality of participation. An athlete with five years experience may have competed and trained once a week, whereas another athlete with three years experience trained three times per week and competed twice a week. Based on years of participation, the player with five years experience is deemed more experienced, but has trained and competed less often.

Chelladurai and Carron (1983) investigated basketball players preferred leadership behaviours based on player maturity levels. The sample consisted of 67 high school midget, 63 high school junior, 63 high school senior, and 69 university level basketball players. There were two significant results. First, there was a progressive decrease in preference for training and instruction as players progressed from high school midgets to high school seniors. At the university level, this trend was reversed with university basketball players showing a preference for training and instruction. Further analysis investigating the effect of age and experience on preferred coaching behaviours yielded the same results. The results were not surprising, because these two variables have been used interchangeably as measures of maturity in situational leadership. Lack of differentiation between age, experience, and maturity is problematic and requires further investigation. Without clear differentiation it is difficult to draw meaning from research using these constructs.

An accurate measure and clear differentiation between the constructs of age, experience, and maturity is yet to be obtained. If progression is a measure of maturity, then it is assumed that all team members possess the same level of maturity. This is rarely the case in sport teams although team members may be of a similar age. The original definition of maturity, proposed by Chelladurai et al. (1983), made reference to psychomotor development (relative mastery of skills), cognitive development (knowledge of the sport), moral development (development of attitudes),

and the capacity for the athlete to control their destiny through setting high, but attainable goals (motivation).

To date, the research appears to have assumed maturity through successful progression to the next level of competition. This might reflect psychomotor maturity, but it certainly does not address or measure the other components of maturity. Even assuming that psychomotor development guarantees successful progression is questionable. Some athlete's progress based on limited numbers of people wanting to participate at the next level, or based on their physiological or physical advantage, for example, tall athletes are recruited in basketball; the athlete is not necessarily skilled or psychologically mature. Hence, although there is a definition (Chelladurai et al.1983), it has not been operationalised in the research. Both experience and maturity require further investigation. The terms need to be clearly defined before the relationship between the constructs and leadership can be measured. These variables also need to be investigated from a coaching, as well as, an athlete perspective.

Personality variables. Early studies (Chelladurai & Carron, 1981; Erle, 1981) briefly explored personality as a variable associated with preferred leadership. Erle (1981), as cited previously, assessed the effects of motivation on leadership preference in intramural hockey players (N = 335) and found that athletes high on task motivation preferred more training and instruction, whereas those high in affiliation preferred a high level of social support. In a study investigating cognitive structure (i.e., the need for more information and structure in one's environment) and impulsivity (Chelladurai & Carron, 1981), athletes high on cognitive structure preferred more training and instruction, and less autocratic behaviour from the coach than those athletes lower in cognitive structure. Athletes with high levels of impulsivity preferred higher levels of social support, as compared to athletes with low levels of impulsivity. Limited research in this area makes it difficult to draw any

conclusions. Research investigating personality variables in sport psychology has previously failed to reveal any consistent predictor of sport performance and behaviour (Morris,1992). Vealey (1992) suggests this might reflect less precise theories and methods and there may be more benefit in studying personality by investigating self-worth, perceived ability, and achievement goal orientation of the coach and athlete.

Situational variables. There are several situational variables that have been investigated in the leadership context. They are categorized as follows: (a) type of sport, (b) organisational goals, and (c) culture.

The type of sport has, typically, been defined in terms of two particular task attributes, the degree of task variability, and the level of interdependence required between group members. Task variability in sport, as a factor affecting preferred coaching behaviours, describes the situation under which sports are performed. In open sports (e.g., football, basketball, tennis, netball), the situation is continually changing and athletes adapt their skills to the situational demands. Closed sports involve a static situation where athletes perform skills in an unchanging environment (e.g., diving, gymnastics, archery). The classification of different sports according to group interdependence is based on the degree to which athletes must work together to achieve success. Examples of highly interdependent sports include water polo, rugby, and netball, whereas diving, archery, and track and field individual events exemplify sports low on interdependence.

Chelladurai and Saleh (1978) found that task attributes of dependence and variability had significant effects on preferences for sport leadership. Male *(n =80)* and female *(n =80)* physical education students who were active participants in competitive sport took part in the study. The sports were categorized according to whether they were: (a) independent closed sports (e.g., diving, golf, gymnastics), (b)

independent open sports (e.g., badminton, fencing, swimming, track and field), (c) interdependent closed sports (e.g., rowing, synchronized swimming), and (d) interdependent open sports (e.g., baseball, basketball, hockey, soccer). The results indicated that athletes in interdependent sports preferred their coach to emphasize more training than athletes in independent sports. Athletes in closed sports preferred their coach to emphasize more training behaviour than athletes in open sports. The results, although significant, provided only speculation as to why athletes involved in sports differentiated by task dependence and task variability preferred certain coaching behaviours.

In another study, Bolkiah and Terry (2001) found contrasting results to Chelladurai (1978). In their study, investigating task variability and level of dependence in a cross-cultural situation, athletes ($n = 379$), who participated in sports requiring independence and characterised by high task variability (open sports) preferred more training and instruction than those athletes who performed interdependently. Bolkiah and Terry also reported a difference in preferences for leadership behaviour based on dependence. Athletes participating in sports requiring high levels of independence preferred democratic and social support behaviour as compared to athletes participating in interdependent sports.

Terry and Howe (1984) found no significant differences between athletes' preferences for specific leadership behaviour based on task variability. Interdependence was associated with athlete preferences for specific leadership behaviours. In a follow-up study, Terry (1984) replicated the findings with a sample of collegiate athletes ($N = 160$). Interdependent sport athletes showed greater preference for high frequencies of training and instruction and rewarding behaviour and less preference for democratic and social support behaviour than did the independent sport athletes.

In reviewing the research on type of sport as a situational variable, the only consistent result is that athletes participating in independent sports prefer more democratic coaching behaviour, as compared to athletes participating in interdependent sports. These results are limited as the results depend on group data and do not take into account individual athletes perspectives of preferred leadership behaviour. There is no support for task variability influencing preferences for specific leadership behaviour. Either the LSS is not sensitive enough to differentiate between these groups, or there are no differences between these groups. Other research methods or combinations of research methods are required to extract more fine grained information about this variable.

Organisational goals reflect what outcomes are important for the group. For example, in recreational sports, enjoyment and affiliation may reflect the organisational goals, as compared with goals in professional teams, where high-level performances culminating in successful outcomes typically reflect the focus.

Research investigating organisational goals is limited. Erle (1981) investigated differences in preference for leadership behaviour between intercollegiate hockey athletes and intramural hockey athletes ($N = 335$), based on their organisational goals. The organisational goal of the intercollegiate hockey teams was the pursuit of excellence and, for the intramural teams, it was the pursuit of pleasure. The intercollegiate athletes preferred their coaches to demonstrate higher levels of training and instruction and social support, less positive feedback, and less democratic behaviour than the recreational athletes. Situational factors, such as organisational goals, are important issues for the coach, because athletes will expect different types of leadership behaviour in different settings (Chelladurai, 1984). A critical question is whether the organisation's goals belong only to the team or whether they are

influenced by other macro variables, for example, parental influence, club owners, management, or National interest.

Research into leadership and culture examined preferred coaching behaviours based on cultural differences. In a number of studies, culture has been examined by comparing university athletes and physical education students from different nations. A limitation is the small amount of research that examines cross-cultural differences outside educational institutions, and the classification of cross-cultural groups. Exploration of coaching styles across true cross-cultures groups suggests that different models are successful in different cultures and become the socially accepted model of leadership.

Terry (1984) investigated athlete preferences for leadership behaviour by administering the LSS to elite athletes ($N = 160$) from Canada, Great Britain, the United States, and other nations competing at the 1983 Universiade. There were no significant patterns of preferred leadership across nations. Terry speculated that there were more cultural similarities as compared to differences between several of the nations, hence explaining the uniformity in results.

Chelladurai, Malloy, Imamura, and Yamaguchi (1987) examined cross-cultural differences between Japanese physical education students in modern sports (e.g., track and field, rugby, volleyball), Japanese in traditional sports (martial arts), and Canadian physical education students in modern sports. The researchers predicted that differences in culture and beliefs and values between the groups would be reflected in their preference for leadership behaviour. The other finding of interest and under investigation was the influence of type of sport on preference for leadership behaviour. The results confirmed significant differences between type of sport and cultural background. The Japanese physical education students in modern sports preferred more democratic behaviour than the Canadian physical education students;

the Japanese students in traditional sports showed greater preference for autocratic behaviour than did the other two groups. Higher levels of social support were sought by both Japanese groups, as compared to the Canadian athletes, and the Canadian athletes preferred a larger quantity of positive feedback behaviour than Japanese athletes competing in traditional sports.

Bolkiah and Terry (2001) investigated cross-cultural differences between National level athletes in Brunei Darussalam and British athletes participating at club and university level. The Bruneian athletes preferred more training and instruction, democratic behaviour, and social support, as compared to their British counterparts. An issue of concern was the comparison of athletes participating in different levels of competition, which may have clouded the results. In the following two studies, which further explored cultural differences, both preferred and perceived leadership behaviours were investigated. In a follow-up study to Chelladurai et al. (1987), Chelladurai, Imamura, Yamaguchi, Oinuma, and Miyauchi (1988) compared Japanese ($n = 115$) and Canadian university male athletes ($n = 100$) on their perceived and preferred coaching behaviours and member satisfaction with leadership behaviour and personal outcome. The results demonstrated that Canadian athletes preferred significantly more training and instruction, as compared to the Japanese athletes, who preferred more autocratic behaviour and social support. The Canadian athletes also perceived their coaches to provide more training and instruction, as well as more democratic and rewarding behaviour, whereas the Japanese athletes perceived their coaches to be autocratic.

In a Korean context, Kim, Lee, and Lee (1990) compared differences between preferred and perceived leadership behaviours of three groups of athletes in individual, combative, and team sports. There were differences between the three groups in all dimensions, except in preferred training and instruction. The combative

sports athletes perceived and preferred their coaches to demonstrate autocratic, social support, and positive feedback behaviours, as compared to the other two groups. Athletes involved in individual sports perceived and preferred their coaches to exhibit more democratic behaviour as opposed to the other two groups. In both studies (Chelladurai et al., 1988; Kim et al., 1990), little difference was found between athletes' preferred and perceived leadership behaviours.

An Australian study (Sherman et al., 2000) revealed widespread similarities in coaching preferences of males and females in dual and gender specific sports (basketball, netball, and Australian Rules football). In these Australian sport, there was low preference for social support that suggests these athletes do not rely on the coach for support outside of the sporting context.

Limited research makes it difficult to form any conclusions about the influence of cultural differences on preferred or perceived leadership behaviour. The definition of culture has been narrowly applied to differences between athletes from different nations.

Factors Affecting Perceived Leadership

Perceived leadership involves how people interpret behaviour, as opposed to reflecting actual behaviour. The research is diverse, but sparse and limited to the following areas: (a) the relationship between athlete ability and athlete perceptions of leadership behaviour (Garland & Barry, 1988; Luikkonen & Salmimen, 1995; Salminen, Luikkonen, & Telama, 1990), (b) athlete and coach differences in perceptions of actual coaching behaviours (Gordon, 1986; Horne & Carron, 1985; Luikkonen & Salminen, 1995; Liukkonen & Salminen, 1990; Salminen, Liukkonen, & Telama, 1990), and (c) cultural differences in perceptions of coaching behaviours (Chelladurai et al.,1988).

Athlete ability has been identified as a variable that may affect perceptions of leadership behaviour. Some of the difficulties in evaluating and comparing research on this issue are the lack of a clear definition of ability and the divergent contexts where it has been operationalised. The majority of the research has either selected elite teams as a measure of high ability or ability grouped players of the same team according to allocated playing time. In a Finnish study (Liukkonen & Salminen, 1990) of 399 young athletes, high ability athletes, as determined by competition level, perceived their coaches to be more autocratic and less democratic, rewarding, and socially supportive as compared to low ability athletes. Using the same data set, Liukkonen (1999) investigated differences between athletes' ($n = 399$) and coaches' ($n = 68$) perceptions of the coach's behaviour, based on competition level. The most significant differences occurred at the National level of competition; National junior level athletes perceived their coaches to be more autocratic, less socially supportive, and providing fewer rewarding behaviours as compared to the coaches perception of their own behaviours. In summary, athletes high in ability or playing at elite level appear to perceive their coaches as autocrats, who demonstrate low levels of supportive and rewarding behaviours.

Garland and Barry (1988) measured the effects of personality traits and length of time spent in the game situation over the season on perceived leadership behaviour of football players. Groups were established according to length of time athletes spent in the game situation over the length of a season. The athletes were identified as regulars ($n = 94$), substitutes ($n = 94$), and survivors ($n = 77$). Unlike the previous studies, Garland and Barry investigated ability within the team as opposed to between teams. The more successful (regulars, who started and took part in at least 50% of plays during the season), as compared to the less successful athletes, perceived their coaches to emphasize training and instruction, to be more participative in decision

making, less autocratic, more socially supportive, and to provide additional positive feedback. In contrast to the Finnish studies (Luikkonen et al.,1995; Luikkonen, 1999), the results reveal that athletes high in ability perceive their coaches to demonstrate more rewarding behaviours and socially supportive behaviour, as compared to athletes with lower levels of ability. The research is yet to isolate whether high ability athletes perceive their coaches differently to low ability athletes, or whether coaches treat these athletes differently. Both sets of perceptions could be correct. Issues of perception aside, it is difficult to draw any conclusions based on this research, because the definitions of ability are diverse (between teams and within teams) and the context is specific to each data set. Consistency in the methodological approach and the operational definition of ability may deliver more conclusive results.

Solomon (1996) suggested that a more productive line of research is the investigation of coaches' expectations of athlete performance. If the coaches' expectations of athlete ability influence how the coach reacts to the player, Solomon argued that it would be logical to assume that athletes receiving more feedback will see their coach to be more rewarding and supportive.

Studies of athletes' and coaches' perceptions of actual behaviour (athletes' perception of behaviour, not observed behaviour) have demonstrated that coaches have poor recall of their behaviours and overestimate their demonstration of specific behaviours. Horne and Carron (1985) found that Canadian coaches rated themselves higher on training and instruction, democratic behaviour, and positive feedback than did their athletes. Coaches' perceptions of their own autocratic behaviour did match athlete perceptions. Gordon (1986) revealed that coaches' self-reports on autocratic behaviour were positively correlated with all other behaviour dimensions, except democratic behaviour which would be expected. Coaches perceived themselves to be autocratic and benevolent. In contrast, athletes' perceptions of autocratic behaviour

were negatively correlated with all other behaviour dimensions. Hence, autocratic coaches were perceived as less benevolent. In a Finnish context, Salminen, Liukkonen, and Telama (1990) reported that coaches ($N = 97$) perceived themselves to be more instructive, socially supportive, and rewarding, and less autocratic, than did their athletes. Coach gender and athlete age had no significant effect on the athletes' perception of leader behaviour in coaches. Salminen et al. suggested that this discrepancy between coaches' perceptions of their own behaviour and the perceptions of athletes arises because people have a tendency to overestimate their social desirability and underestimate socially undesirable behaviours. To date, the majority of the research has concentrated on athlete and coach perceptions of actual coaching behaviour. One of the questions arising from this research is how best to measure actual coaching behaviour. The MML has not defined clearly what actual behaviour represents or how to measure it. Until it is known exactly what it is that coaches do, and why and how they do it, it is very difficult to measure it.

Salminen and Liukkonen (1996) conducted a study examining the coach-athlete relationship and its connection with coach behaviour in training sessions. The researchers used an mixed methodology, whereby coaches ($n = 68$) completed a self rating version of the LSS, athletes ($n = 400$) were administered the perceived version of the LSS, coaches were videotaped and their recorded behaviour was content analysed using a systematic observation system consisting of 17 categories. Actual coaching behaviour was a measurement of observed coach behaviour in the field. The coaches' and athletes' ratings differed significantly. Female coaches' self-ratings for democratic and autocratic behaviour were significantly closer to the athletes' ratings, as compared to male coaches. Coaches and athletes from individual sports were closer in their perceptions of what leadership behaviours occurred during training sessions, as compared to coaches and athletes involved in team sports. Both the

coaches' and athletes' ratings of democratic behaviour were highly correlated with observed coaching behaviour. The affective component of the coaching behaviour and leadership style was significantly correlated. Salminen and Liukkonen proposed that the coach-athlete relationship depends on coaches being in tune with athletes' feelings, and listening to their opinions.

Using a similar methodology to the previous study (Salminen & Liukkonen, 1996), Liukkonen, Laakso, and Telama (1996) investigated the extent to which the training climate developed by Finnish youth coaches corresponded to the key challenges relating to children's growth and development. They also investigated the relationship between competition level and coaching behaviours. Coaches were observed and behaviour was coded during the training session; a rating scale was also used after the coaching session to measure teaching arrangements, communication skills, and working methods. Interaction and athlete participation, and coach behaviours were also assessed using the LSS. The overall result was that coaches perceived themselves to be educators, however, they were content oriented, rather than human relations oriented. The common form of delivery was direct teaching, and training consisted of one-sided, event-specific practices. There was very little input from athletes in the design of the training program, decision making, or in tasks that demanded initiative. The coaches tended to use an authoritarian style and paid little attention to individuality. As the level of competition became more competitive, there was a decrease in humanistic and responsive coaching behaviours. The emphasis on sport as a platform for social development in Finland seems to have influenced coaches' perceptions of their behaviour. Influences beyond the coach-athlete relationships require consideration when exploring the coaching process. The results gleaned from the last two studies demonstrate the importance of exploring and combining different methodologies and leadership models to inform, enrich, and build

a body of knowledge in coaching science. The role of context is yet to be encapsulated within the LSS and systematic observation systems that are redused to specific categories of behaviour.

To date, culture has been explored narrowly, with most research investigating differences between how university athletes or physical education majors living in different countries perceive leadership. Differences between athletes' perceptions of leadership behaviour have been shown to differ according to cultural background. Chelladurai et al. (1988) examined Japanese ($n = 115$) and Canadian ($n = 100$) university male athletes' perceived and preferred coaching behaviours, and member satisfaction with leadership behaviour and personal outcome. Canadian athletes were identified as perceiving their coaches to provide more training and instruction, as well as more democratic and rewarding behaviour, whereas the Japanese perceived their coaches to be autocratic. It is very difficult to draw any conclusions without a thorough understanding of the context, for example, are cultural differences between and within sports more or less influential than other cultural differences? This area requires further exploration if any conclusions are to be drawn regarding cultural differences in coaching behaviour.

Consequences of Leadership

The consequences of effective leadership as depicted by the MML are high or increased levels of athlete satisfaction and athlete performance. Athlete satisfaction is multifaceted and describes satisfaction with personal performance, team performance, type of leadership, and team climate. The various components of athlete satisfaction are measured using a Likert style questionnaire. Performance is a difficult construct to define as success and failure are often in the eye of the beholder. For example, athletes might perceive themselves to be successful through achieving a personal best in an event, whereas the observer may view this as failure, the athlete finished in third

place and did not win. The converse is also possible, where the athlete aims only for victory and coach may take a longer term view. Athlete satisfaction and performance have been measured using a myriad of approaches in an attempt to understand the various relationships within the MML. Researchers have attempted to measure performance typically using the following criteria: (a) team win-loss percentage (e.g., Weiss & Friedrichs, 1986), (b) playing time, starter status (e.g., Garland & Barry, 1988), and (c) individualized perceived performance outcomes (e.g., Horne & Carron, 1985).

Athlete Satisfaction. Although there is a breadth of knowledge on leadership behaviours that affect athlete satisfaction and performance, there is little more than general support for the role of athlete satisfaction and performance in the MML. Chelladurai (1978, 1984) investigated the congruence of leadership behaviour with athlete satisfaction and performance from a number of angles. He studied the individual as the unit of analysis, the situation, and cross-cultural effects on athlete satisfaction and performance. In his early research, Chelladurai (1978) investigated the leadership preferences and perceptions of 216 university level athletes from both team and individual sports. He found that congruence between preferred and actual behaviour in the autocratic behaviour and positive feedback dimensions affected satisfaction with the coach in a curvilinear manner. As actual leadership behaviour (as perceived by the athlete) shifted closer to preferred leadership behaviour, athlete satisfaction with the coach increased. If the actual behaviour deviated in either direction from the preferred behaviour, athlete satisfaction decreased. Chelladurai (1984) reanalysed the data from the study reported in 1978, using the individual as the unit of analysis, and found that the discrepancy between the athlete's preferred coach behaviour and the athlete's perception of leadership behaviour was linked with member satisfaction with leadership, team performance, and overall involvement.

The discrepancy scores (i.e., the difference in scores between perceived coaching behaviours and preferred coaching behaviours) that had the greatest impact on athlete satisfaction across all sports were for the training and instruction and positive feedback dimensions. The discrepancy scores between both sets of variables explained more of the increased variance in satisfaction scores than did either variable by itself. This supports the argument that, if the coach exhibits behaviour preferred by the athlete, the athlete is satisfied. This is common sense, but is does not guarantee that the behaviour is appropriate in an extended context (beyond the player-coach relationship) or that outcomes beyond satisfaction are achieved. It fails to expand on what are good coaching behaviours, it just adds to the literature on what makes certain groups satisfied.

Horne and Carron (1985) provided further support for Chelladurai's (1984) findings. Their results showed discrepancy scores representing training and instruction, social support, and positive feedback predicted athlete satisfaction with coach leadership. As the coaches' behaviours in these dimensions increased in relation to athlete preferences, there was an increase in athlete satisfaction. As the relationship between actual and preferred leadership behaviour increased, group satisfaction also increased. In Schliesman's (1987) study of university track and field athletes ($N = 40$), perceived democratic behaviour and social support were related to general satisfaction with leadership. Discrepancy scores in training and instruction, social support, and positive feedback were significantly related to satisfaction with all three coaching behaviours. In support of Schliesman's (1987) study, Dwyer and Fischer (1990) found that wrestlers, who perceived their coaches as having exhibited high levels of training and instruction and positive feedback, recorded higher levels of leadership satisfaction. This also demonstrated in theories of motivation and perceived competence (Nicholls 1984; Roberts 1992); if a coach invests time in

developing athlete's skills that culminates in improved performance, the athlete is more likely to be satisfied with the coach. The wrestler also perceived coaches as more effective and affecting leadership satisfaction when lower levels of autocratic behaviour were displayed.

In a cross cultural context, Chelladurai et al. (1988) investigated athlete satisfaction based on leadership factors with Japanese and Canadian athletes. In opposition to previous studies, perceived leadership scores explained greater amounts of variance than discrepancy scores. There was a significant relationship between perceived leadership behaviour and satisfaction scores, however, the particular leader behaviours that were most predictive were different across cultural groups. The Japanese athletes preferred higher levels of autocratic behaviour and social support. In comparison, the Canadian athletes preferred higher levels of training and instruction. The Canadian athletes were more satisfied with leadership and personal outcome than the Japanese athletes. This provided support for cultural influence, however, more information on the broader context beyond cultural differences might have provided more fine grained information as to why these differences arose.

Performance. Few studies have isolated performance as a measure of coaching effectiveness. As discussed previously, it is very difficult to clearly define performance and have general agreement on the definition.

Weiss and Friedrichs (1986) investigated effect of athlete performance on member satisfaction, with 251 collegiate basketball players and their coaches, against a number of coaching variables, which included personal characteristics (age at time of coaching appointment, coaching and playing history, win-loss record), coach's leadership characteristics, and situational factors (enrolment, size of school, basketball budget, number of scholarships, culture of winning, length of engagement, and effect on winning culture). Performance was measured by the seasonal win/loss record and

for satisfaction a self-report form was used that included dimensions associated with the athlete's sport situation. Weiss and Friedreich's reported that coaching behaviours that increased member satisfaction were rewarding behaviours, social support, and democratic decision-making. Social support was negatively associated with win-loss percentage. The personal characteristics of the coach that were allied with leadership effectiveness and level of satisfaction were age at time of hire (hired at a younger age), successful previous win/loss record, and less playing experience. Although the research did highlight the relationship between the leader, the situation, and athlete performance, it still accounted for a small percentage of the variance. This study quantified behaviour and did little to expose why and how these relationships occurred.

Individual performance also influences athletes' perceptions of effective leadership. Gordon (1986) investigated Canadian university soccer players and discovered that those athletes from more successful teams perceived their coach to display higher levels of training and instruction, autocratic behaviour, social support, and positive feedback. Horne and Carron's (1985) study revealed that athletes' perceptions of positive feedback were positively correlated with their own performance. Solomon (1999) questioned whether actual performance, as opposed to the coach's evaluation of performance, is more significant in influencing athletes' perceptions of coaching effectiveness.

Chelladurai (1984) has grappled with defining and differentiating between performance and satisfaction. He stated that winning and losing are not absolute events and are contingent upon the perception of goal attainment, and therefore should be considered a psychological state. In some ways, satisfaction has become a *catch all* term that is difficult to define, and performance has not proven to be significant in the research. The research has yet to tease out the difference and the

relationship between satisfaction and performance. In addition, there is still debate about how to measure them effectively. Future research needs to explore what these states really reflect from an athlete and coach perspective.

The Revised Leadership Scale for Sport

In an attempt to expand upon the MML, Jambor and Zhang (1997) measured differences between male and female coaches and among different coaching levels, using a Revised Leadership Scale of Sport (RLSS; Zhang, Jensen, & Mann, 1996). The scale was modelled after Chelladurai and Saleh's (1980) LSS. The RLSS included a sixth behaviour dimension, named situational considerations. This leadership dimension describes setting up individual goals and clarifying ways to reach goals; differentiating coaching methods at different maturity stages and skill levels. Using the RLSS, Jambor et al. found no significant differences between male and female coaching styles. The results supported differences in leadership behaviour across levels of coaching (junior high, high school, and college). On the situational coaching dimension, high school coaches utilized democratic leadership behaviour to a higher degree than college coaches. Training and instruction were used to a lesser extent by junior high coaches compared to high school and college coaches. Junior coaches also reported significantly less social support leadership behaviour than high school and college coaches. The results support Chelladurai's (1990) previous comments that leadership is only significant within the context of the group. Thus specific coaching behaviours are required in relation to environmental demands.

Summary

The athlete version of the LSS has proven to be valid and reliable in four of the five dimensions of leadership behaviour, however, the autocratic behaviour subscale remains unstable (Chelladurai & Saleh, 1980). The coaches' version has proven more problematic with poor reliability results across three subscales (Dwyer & Fischer,

1988). Although the LSS may be valid and capable of measuring dimensions of leadership, leadership may not truly reflect coaching. To date, only segments of the MML have been tested, and some of that research is difficult to decipher due to poor delineation of constructs. There is evidence of strong correlations between elements of the MML but causal linkages still require further investigation. This requires testing using more sophisticated procedures. To date, the value, meaning and hierarchy of information accumulated in the research is still to be established. For example, which behaviours come into play regularly, and why do they do so? Serpa (1995) argues that there is too much emphasis on group results when the coach-athlete relationship is often based on one-to-one interactions. He also recommends going beyond athlete satisfaction and performance outcomes and considering the psychological implications of the coach-athlete relationship. The majority of the research has focused on athletes' perspectives and preferences for coaching behaviour. The coaches, the pivotal figure in the coaching process, have played a very small role in decoding the complexity of the coaching process. Coaches are in a position to cognitively unravel their own behaviour and explain the interactions and priorities that occur in the coach-athlete relationship. Chelladurai (1990) and Horn (1992) have suggested that future research should focus on generating items based on the experiences and insights of coaches and athletes to determine if the LSS subscales really capture all the elements and nuances of effective leadership behaviour.

Systematic Observation of Coach Behaviour

Since the beginning of the 1970's, systematic observation systems have steadily gained favour as a method for exploring coaching behaviour. The development of reliable and valid observation systems has provided researchers with a valuable method for describing and quantifying specific coach behaviours. These observation systems list coaching behaviours within distinct categories that trained

observers identify and record when observing the coach in a naturalistic setting. Depending on the methodology, behaviours are recorded using either a time interval, for example, recording the coach's behaviour every 10 seconds, or event recording, a procedure Hall (1971) and Seidentop (1976) described as the cumulative record of a number of discrete events within a specified time.

Historically this form of describing and quantifying behaviour has its roots in mainstream educational research (Douge & Hastie, 1993). A number of coding systems designed for observing physical education teachers and their students have been used to observe coaches and athletes in the sport setting. There are issues, however, that need to be considered when using a coding system that is based on research in a specific domain and context. The coding behaviours may not reflect the sport context, and there may be other behaviours that warrant inclusion.

The seminal research of Tharp and Gallimore (1976) used direct observation to study John Wooden, college coach of the UCLA Bruins. Wooden was selected based on his outstanding basketball record. He led his team to an unprecedented 10 division one basketball championships in a 12-year period in the 1960's and 1970's. The observation system developed to observe Wooden was the Coaching Behaviour Recording Form (CBRF). It consisted of 11 categories derived from Tharp and Gallimore's (1976) clinical research and included the following categories: instruction, hustles, modelling-positive, modelling-negative, praises, scolds, nonverbal rewards, non verbal punishment, scold/reinstruction, other, and uncodable behaviours. The results indicated that Wooden used a high percentage of instructional behaviour (75% contained some form of instruction) defined as verbal statements about what to do and how to do it. Most of the statements related to the basic, fundamental skills of the game of basketball. Although Wooden seldom used positive

statements, he always followed up his negative statements with instruction and never used physical activity as a punishment.

Based on Tharp and Gallimore's research, the behavioural observation of coaches has been replicated by several researchers. Williams (cited in Lacy & Darst, 1985) studied a high school basketball coach, Langsdorf (1979) observed a university football coach, using a variation of the CBRF that provided more descriptive category terms, and Dodds and Rife (1981) examined the coaching behaviour of a winning, female, field hockey coach. A study by Lacy and Darst (1985) investigated the behaviours of a group of successful high school football coaches using the Arizona State University Observation Instrument (ASUOI; Lacy & Darst, 1984). This system is an is an extension of the CBRF that contained 11 specific categories of coaching behaviour, of which several are instructional categories, enabling a breakdown of the generic "instruction" category that has dominated the behaviours of coaches in previous studies. Segrave and Ciancio (1990) investigated the profile of a successful junior football coach using the CRBF and then compared his coaching behaviour profile to the coaching profiles of John Wooden (Tharp & Gallimore, 1976) and Frank Kush (Langsdorf, 1979). All of the above studies propose instruction as the predominant coaching behaviour. Other coaching behaviours varied between successful coaches.

Research based on systematic observation commonly identified and quantified behaviours of successful coaches. There are several problems, however, with this type of methodology. Coaching behaviours do not happen in isolation. By only profiling the coach, the coach-athlete interaction is devalued. The context is critical and is treated as unimportant in this type of research. Some of the research explores the game context, others the practice context and, in a minority a combination of both. There is no research using systematic observation that has explored the context in

relation to athlete performance level. A more systematic approach to the research is required that controls aspects of the context and allows for repetition of studies to validate results.

As research on coach effectiveness gained momentum, more inclusive instruments were designed to facilitate the study of the behavioural interaction between the coach and athlete. Rushall (1976) designed two schedules for sport and physical education environments. One schedule categorized coach/teacher behaviours, and the other categorized athlete/pupil behaviour. The coach/teacher schedule contained nine categories, and the athlete/pupil consisted of 11 categories. Crossman (1985) developed a similar schedule that also recorded both the coach's and the athlete's behaviour in the sport setting. The Athlete Observation Code (AOC) and the Coach Observation Code (COC) categorized the behaviour of the coach and the behaviour of the group (team) as a whole at the time of observation. It consisted of 17 athlete behaviours and 16 coach behaviours, thus, yielding more complex descriptions of behaviour than previous coding systems. The Lombardo Coaching Behaviour Analysis System (LOCOBAS; Lombardo, 1984) recorded and described the interaction between the coach, athletes, officials, and others within the sport context. The focus of the LOCOBAS was on the type of interaction between coach and other relevant participants in the sport context, and the quality of that interaction. The development of more inclusive observational systems has shifted the focus beyond a list of coaching behaviours deemed effective, based on the premise that successful coaches exhibit them. The results, however, raise more questions than they resolve. The systematic observation system, even with its emphasis on coach-athlete interaction, still does not isolate the individual interaction level between athlete and coach. The majority of the research conducted has investigated the coach athlete relationship within team sport that may not reflect what happens in individual sport.

Emphasis on context is still negligible. Context is narrowly defined and represented as either practice or game time, or the breakdown of the training session or season. In educational research, context is a major determinant in identifying effective teachers and understanding how context affects the teacher-student relationship. The context considers the student, teacher, school, and wider community, as well as the dynamic nature of interactions that occur between them (Jarman, 2002; Cripps-Clarke & Walsh, 2002). There are still questions with reference to identification of behaviours that reflect attitude and emotion, which few researchers in sport and education have chosen to tackle.

The best-known systematic observation system developed to observe overt coaching behaviour is the Coaching Behaviour Assessment System (CBAS; Smith, Smoll & Curtis, 1978; Smith, Smoll, & Hunt, 1977). Unlike other observational systems, it is part of an integrated approach developed to investigate the relationship between overt coaching behaviours, player perception of those behaviours, and player attitudes. This approach is based on a mediational model (MM; Smith, Smoll, & Curtis, 1978; Smith, Smoll, & Hunt, 1977). It assumes that players' evaluative reactions to the coach's behaviours are mediated by the player's perceptions and recall of those behaviours, as presented in Figure 2. Only parts of the mediational model have been tested, but it does provide a paradigm for exploring the athlete-coach relationship and offers some direction for improving the experience.
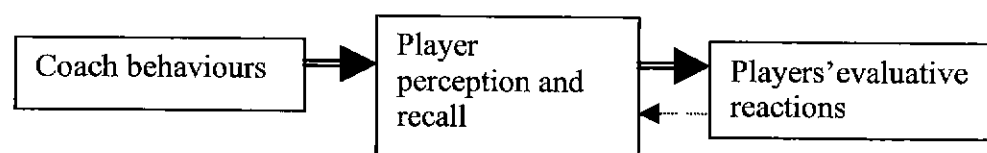
Figure 2. The Mediational Model of Leadership (adapted from Smoll, Smith, Curtis & Hunt, 1978)

The Mediational Model of Coach-Player Relationships

The MM provides a framework for examining the cognitive and affective processes

that mediate an athlete's reaction to the coach's behaviour (Smoll, Smith, Curtis, &

Hunt, 1978). The original and basic model consisted of three elements; coach

behaviour, player perception and recall, and players' evaluative reactions. Based on

research (Smoll & Smith, 1989) over a ten year period the model was expanded to

include three sets of factors: (a) coach individual difference variables (for example.,

sex, gender, goals, behavioural intentions), (b) player individual difference variables

(including, age, sex, gender, achievement motive, competitive trait anxiety), and (c)

situational factors (such as, type of sport, level of competition, win/loss record,

cohesion). The model is displayed in Figure 3.

The central premise of the MM is that the player's evaluative reactions to the

coach's behaviour are mediated by their perceptions and recall of those behaviours

(Kenow & Williams, 1999). That is, the coach behaves in a certain way, the athlete

perceives and recalls these behaviours, and, based on the perception and recall, the

athlete evaluates and responds. It is the meaning attributed to the behaviour that

evokes a response, not the actual coaching behaviour. The mediational approach also

allows for reciprocal interactions among relevant variables. For example, the athlete

perceives and interprets the coach's behaviour and makes an evaluative response, and

the coach responds according to their perception and interpretation of the athlete's

behaviour (Curtis, Smith, & Smoll, 1979).

Many of the variables outlined in the model are yet to be confirmed and

measured. The basic elements of the original model are: (a) the overt behaviours of

the coach, (b) players' recall of coaching behaviours, and (c) player reactions to
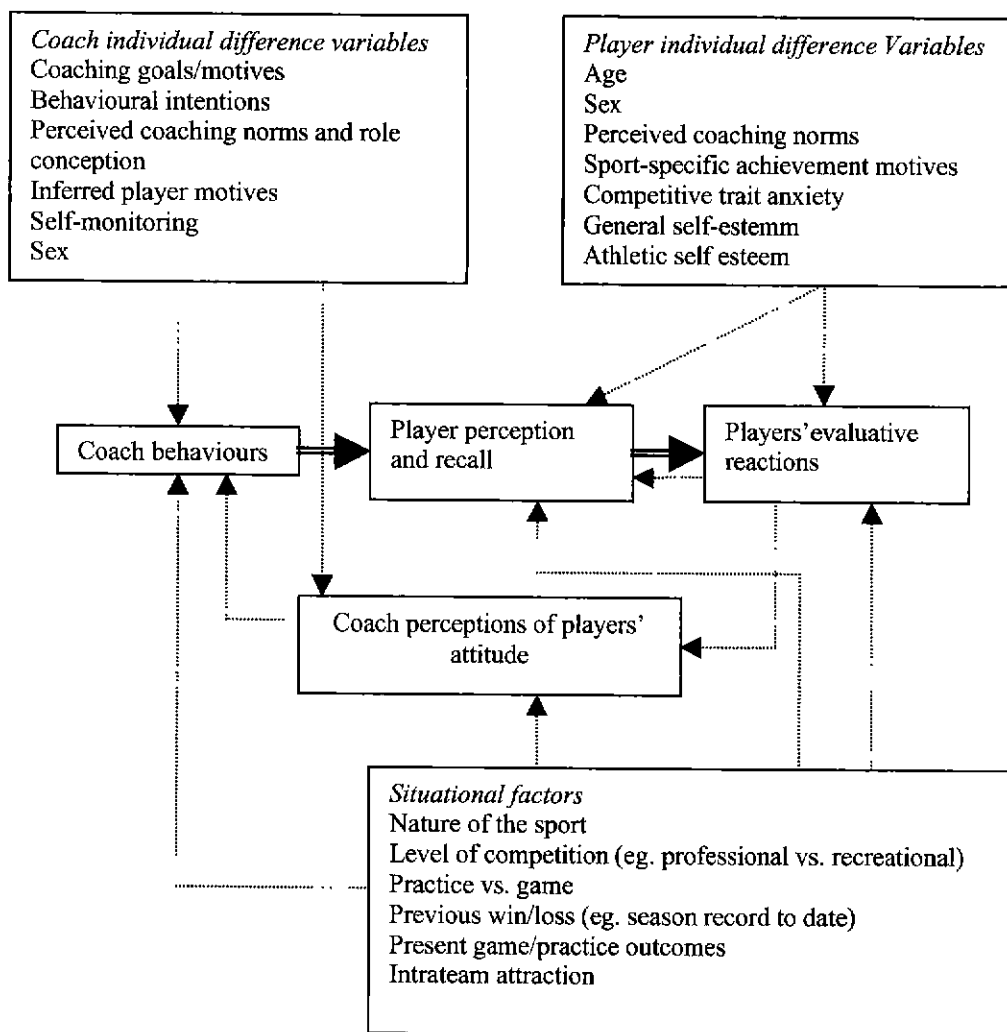
Figure 3. The Mediational Model of Coaching Behaviours (Smoll & Smith, 1989). coaching in sport experience have been well-defined and measured (Chelladurai, 1993).

The conceptual basis of the MM requires independent measurements of overt coaching behaviours, player perceived coaching behaviours, coach perceived coaching behaviours, player attitudes, and coach perceptions of player attitudes. The CBAS was designed to permit direct observation and coding of coaches' behaviour during practices and games. Perceptions of coach behaviour and player attitude have traditionally been measured using paper and pencil questionnaires.

Research on the Mediational Model of Coach-Player Relationships

Research investigating the coach-player relationship based on components of

the MM has focused on: (a) developing and validating the CBAS and the observer

training program, (b) measurement of athletes' perceptions toward coach behaviours,

(c) coach's perceptions of coaching behaviour, (d) player attitude toward

participation, and (e) measurement of coach behaviour. This research has identified

multiple factors that influence the coach-player relationship. The level of influence

and the interaction between various factors are yet to be clarified.

Measurement of Leadership in the Mediational Model of Coach-Player Relationships

The Coaching Behaviour Assessment System is a coding system designed to

measure overt coaching behaviours in a naturalistic setting. Its purpose is to

investigate the relationships posited by Smoll and Smith's (1989) MM of coach-

player relationships. The CBAS and its variations have also been used to examine the

coach's influence on children's psychological development through sport

participation (Smith, Smoll, & Hunt, 1977).

Smith, Smoll, and Hunt (1977) developed the CBAS over several years

through a process of using observers to record soccer coaches' behaviour in practice

and game situations, and verbally recording their behaviours using a time sampling

technique. Categories of behaviour were derived from content analysis of observers'

verbal descriptions of coaches' behaviour. The categories consist of 12 types of

behaviour, which can also be classified into either reactive or spontaneous behaviour

classes, all of which are grounded in social learning theory (see Table 2). Reactive

behaviours are the coach's immediate response to player or team mistakes, efforts, or

misbehaviours. Spontaneous behaviours describe the coach's response to players

during a game.

Table 2. *Response Categories of the Coaching Behaviour Assessment System*

<div align="center">Class 1: Reactive Behaviours</div>

<u>Reponses to player desirable behaviours</u>

Reinforcement	A positive, rewarding reaction, verbal or nonverbal, to a good play or good effort.
Nonreinforcement	Failure to respond to good performance

<u>Responses to player mistakes</u>

Mistake-contingent encouragement	Encouragement given to a player following a mistake.
Mistake-contingent technical instruction	Instructing or demonstrating to a player how to correct a mistake.
Punishment	A negative reaction, verbal or nonverbal, following a mistake.
Punitive technical instruction	Technical instruction given in a punitive or hostile manner following a mistake.
Ignoring mistakes	Failure to respond to a player mistake.

<u>Response to player misbehaviour</u>

Keeping control	Reactions intended to restore or maintain order among team members.

(table continues)

Table 2 (continued)

Class 2: Spontaneous Behaviours	
Game-Related	
General technical information	Spontaneous instructions in the techniques and strategies of the sport (not following a mistake).
General encouragement	Spontaneous encouragement that does not follow a mistake.
Organisation	Administrative behaviour that sets the stage for play by assigning duties, responsibilities, positions.
Game-irrelevant	
General communication	Interactions with players unrelated to the game.

(Smith, Smoll, & Hunt, 1977)

Reactive behaviours by the coach are driven by player behaviour and can occur in practice and game situations. They encompass the coaches' immediate response to desirable performance, player mistakes or errors, or misbehaviour. For example, in a basketball game situation immediately after a player has made a poor passing decision, the coach might instruct the player to make a particular pass to a specific player. Spontaneous behaviour refers to responses that may be game related or game irrelevant. Citing the same example as above, during a time out the coach might suggest that the player vary their pass more often and think about the options that are available.

Coding and training procedures. CBAS observers undertake rigorous training procedures in preparation for observing coaches in the field and to ensure reliability of the coding procedure. As with any observational coding system, a major goal is to

ensure high inter-rater reliability. Smith, Smoll, and Hunt (1977) designed the training

program to achieve that goal. The training program included: (a) extended study of a

training manual and associated module, (b) group instruction on the use of the coding

system, including viewing and discussion of a video-taped training module, (c)

written exams in which trainees were required to define CBAS categories and score

behavioural examples, (d) the scoring of video-taped sequences of coaching

behaviours, and (e) extensive practice in the use of the CBAS in actual field settings.

Several studies have investigated inter-rater reliability (Smith, Smoll, & Hunt,

1977). In the first study, trainees ($N = 31$) viewed a videotape of 48 randomly-ordered

sequences of coaches' behaviours. There were four examples of each of the 12 CBAS

categories. Scoring accuracy was determined by comparing trainees' results with

those of the authors. The number of scoring errors ranged from 0 to 5, with a mean of

1.06 errors per observer. The average agreement with expert scoring was 97.8%.

Scoring consistency over time was examined by readministering the videotape

displaying the 48 coaching behaviours to 24 of the trainees one week after the first

viewing. No feedback was provided between the first and second

viewing. Reliability and consistency of scoring was determined by the percentage of

behaviours scored identically over time. The results ranged from 87.5% to 100%, with

a mean of 96.4%.

Two studies were conducted to determine inter-rater reliability in a naturalistic

setting (Smith, Smoll, & Hunt, 1977). In the first study, five trained observers

independently and simultaneously coded the behaviours of a female little league

baseball coach during part of a game. The correlation coefficients of the coding

frequencies between coding pairs across the 12 CBAS categories ranged from .77 to

.99. The average inter-rater reliability was .88. In a further extension of the study,

two of the authors and 19 observers used the CBAS independently to code behaviours

of a male little league coach during a baseball game. The authors scored the behaviours in consultation as a means of determining the accuracy of the observers. Reliability coefficients were computed across all possible pairs of observers. The mean inter-rater reliability was .88. The level of accuracy observed between the observers and the criterion coding of the authors indicated high levels of agreement in the coding of data. The reliability coefficients ranged from .62 to .98, with a mean reliability coefficient of .86.

Smith, Zane, Smoll, and Coppel (1983) tested the inter-rater reliability and accuracy of observers using the CBAS coding system by comparing the results of trainees with those of the experts. Trainee observers ($N = 17$) participated in a 4-week training program, previously established by Smith et al. (1977), with the exception that field testing was conducted in a sport other than the one studied in the main phase of their training [basketball]. The trainees and experts agreed on the video-taped sequences 90% of the time. In the field setting, the correlation between experts' and trainees' observations across 10 behavioural dimensions (two categories were excluded due to difficulty in scoring them in the game of basketball) ranged between .85 and .98, with a median of .96.

Measurement of actual coaching behaviour explores one component of the MM. Data on athlete and coach perceptions of actual coaching behaviour and player attitude help explain the coach-athlete relationship and the consequences of the relationship.

Measurement of athletes' perceptions toward coach behaviours. Data concerning athlete perceptions and recall of coach's behaviour is obtained either through a structured interview or administration of a questionnaire. Athletes are provided with a description and example of each of the 12 CBAS categories. In the structured interview, the measure of an athlete's perception of coach behaviour is

presented as a recall test, in which athletes are asked to give a verbal description and example of each of the 12 CBAS behaviours. The athletes respond on a 7-point scale ranging from 1= *never* to 7 =a*lmost always*, as to how often the coach engages in the behaviour. When using a questionnaire, athletes were asked to indicate the extent to which the coach engaged in the 12 CBAS behaviours using a 7 - point scale as described for the structured interview.

Coaches' perceptions of coaching behaviour. As in the athletes' case, the coaches are asked to indicate how often they engage in each of the 12 CBAS behaviours. The responses are made on the same 7-point scale used by the athletes to measure perceptions of behaviour.

Player attitude toward participation. Athletes are asked to respond to a questionnaire about various aspects of their participation. Athletes use a 7-point scale to answer the questions. The response stem changes according to the nature of the question asked. For example, questions related to liking range from 1 = *dislike a lot* to 7 = *like a lot*, questions relating to the coaches knowledge range from 1 = *almost nothing* to 7 = *almost everything*.

Measurement of coach behaviour. Within the structure of the mediational model, coach behaviour is measured in three ways: the measurement of overt coaching behaviours, the player's perception of the coach's behaviour, and the coach's perception of their own behaviour. Smoll, Smith, Curtis, and Hunt (1978) investigated the relationship between the different measures and found the relationship weak, except in the case of observed overt behaviour and players' recall of those behaviours. The results of the study involving athletes ($n = 542$) and coaches ($n = 51$) from Little League Baseball programs indicated that players' perceptions of the coach's behaviour corresponded closely to observed coaching behaviour, except in the frequency of keeping control behaviour. Athletes perceived a higher that actual

frequency of this behaviour. Smith, Smoll, and Curtis (1978) also investigated the relationship between overt coaching behaviours, player perceptions, and player attitudes. In investigating these relationships, male coaches ($n = 51$), were observed and measured using the CBAS in a game context. Coaches also completed a series of measures rating their own behaviours against the 12 CBAS categories. The athletes, male little league baseball players ($n = 542$) aged between 8 and 15 years, were interviewed and administered questionnaires relating to perceptions of coach behaviour, attitude toward the coach, attractions toward their team mates, enjoyment of the baseball playing experience, and their general self-esteem. Observed coaching behaviour and player perceived coaching behaviour (apart from keeping control behaviour), were closely correlated. The players' perceptions of punitive behaviour were the most accurate, although only representing 2.8% of behaviours players were able to use this behaviour to differentiate between coaches. The overt behaviours and player perceptions of these behaviours reflected player attitude toward coaches in an organised athletic program. Player attitude were best predicted by whether the players perceived that the coach demonstrated a supportive versus a punitive orientation. These results suggest that players are focused on a self-related context and therefore differentiate between coaches based on how they are treated personally. This narrow player focus limits understanding as to why coaches engage in particular behaviours.

Curtis, Smith, and Smoll (1979) demonstrated similar results in a study investigating coach behaviour, team performance, and morale. Little league baseball coaches ($n = 51$) were observed and their behaviours measured during games. Also recorded were player ($n = 542$) and coach perceptions of the behaviour. Additional data was collected on the win-loss record and players' attitude toward the experience. The data was collected over two seasons to allow replication of the first year results.

The strongest agreement on actual coaching behaviour amongst observers, players, and coaches concerned punitive behaviour. In the case of the coaches and perceptions of their actual behaviour, punitive behaviour was the only behaviour they could identify with accuracy, which supports the results of Smoll et al. (1978). Team perceptions of most behavioural categories were related to attitudes toward the coach, whereas only two CBAS categories (general communication and keeping control) exhibited such relationships. The behaviour that contributed most to intra-team attraction was keeping control. Curtis et al. suggested that the frequency of this behaviour may be an indicator of team harmony. The results support a relationship between coaching behaviours and morale, but questions remain regarding the causal nature of the relationships.

The type of coach behaviours exhibited during games was a key parameter in this research. In the game context, coaches of losing teams were more likely to engage in proportionately more reactions to player mistakes and misbehaviours than were winning coaches. The coaches of losing teams engaged in a higher percentage of punitive behaviours, as compared to coaches of winning teams, who were more likely to engage in more spontaneous behaviours. Curtis et al. suggested that the coaches of losing teams are more likely to be working with teams where players are making more mistakes than the winning teams. If athletes are sensitive to punitive behaviour, it could be surmised that belonging to a losing team increases the likelihood of developing a negative team attitude, which in turn may affect performance. Overall there was only a modest relationship between the team win-loss record and the team attitude toward the coach, which suggested that team attitude, is only partially explained by the coach's game behaviour, or that the inventories used to identify team attitude were not sensitive enough to identify the relationship.

In summary, there are four major points that arise from the observational research that has employed the CBAS, relating to: (a) the validity of the CBAS, (b) coaches' inability to accurately recall their own behaviour, (c) athletes' recall of punitive behaviour, and (d) the influence of context on coach behaviour. There are a number of issues that do question the validity of the CBAS. The CBAS has predominantly been used in a North American context, with junior athletes participating in team sports. The team sports selected allow for better observational opportunities, due to their stop-start mode of play. It is questionable whether the CBAS has the same applicability to individual sports and whether results can be generalised between team and individual sports.

The second point referred to coaches' inability to accurately recall their own leadership behaviours. An alternative explanation that explains coaches' inability to recall their own coaching behaviour might be the notion that once coaches' behaviour becomes automated, it becomes increasingly difficult for coaches to remember and identify specific behaviours that are isolated from the athlete context and the situation. A more strategic approach in future research would be to ask coaches to interpret specific examples of their overt coaching behaviour and identify the tacit knowledge that underpins the decision-making process. This might also provide insight into how coaches organise, locate, adapt, and communicate their knowledge to meet athlete needs. In the education literature, this is referred to as pedagogical content knowledge (Shulman, 1986, 1987).

It is worth noting that the behaviour that athletes recall most prescriptively and accurately is punitive behaviour. If players are best at recalling behaviours that affect them personally, then player recall and understanding of the coaching process is limited to coach-player interactions. Within a sporting context, team and outside factors may also influence coach leadership behaviour. Limiting the focus of coach

leadership behaviour to the athlete-coach relationship indicates that other factors, outside this relationship, have no impact on the coaching process.

The fourth issue was the importance of the context in relation to athlete attitude. Coaching behaviours in a game may not be as important to athletes as behaviours in a practice session. The athletes might perceive game behaviour reflected less on them as individuals and more on the immediacy of the context. Behavioural consistency is more likely to occur in training, where the coach has more control of the climate, as compared to a game situation. Future research needs to address the issue of context, and explore alternative methods of investigation where the individual is the unit under examination.

Research Investigating Leadership Behaviour Based on the Mediational Model of

Coach-Player Relationships.

Research investigating coaching behaviour within the MM falls into three categories; (a) coach effectiveness training, (b) coach influence on athlete psychological development, and (c) coaches' perceptions of athlete ability and its effects on coach and athlete behaviour. The research is limited to specific contexts such as type of sport, age of athlete, and level of coaching expertise.

Coach Effectiveness Training

Research (Smith, Smoll, & Curtis, 1979) investigating overt coach behaviour in the field examined the differences between coaches with and without coach effectiveness training (CET) on coach behaviour, player perceptions, attitudes, and self-esteem. Little league baseball coaches ($n = 18$) participated in the CET program that consisted of a verbal and written presentation of behavioural guidelines, modelling, behavioural feedback, and self-monitoring of coaching behaviours. Coaches' behaviour was assessed using the CBAS during game situations, and compared to the behaviour a group of untrained coaches ($n = 16$) who were also

assessed. The male children (n = 325), aged between 10 and 15 years of age, completed questionnaires on perceptions of coach behaviour, player attitude toward themselves, the coach, team-mates, and the sport. There were no differences in behaviour rates between the untrained and CET trained coaches, however, there were differences in the type of behaviour in which they engaged.

The CET trained coaches, as compared to the untrained coaches, displayed higher behavioural frequencies of reinforcement, mistake contingent encouragement, and general instruction. The coaches also recorded lower frequencies of non-reinforcement, punishment, and punitive technical instruction. Children who played for the CET-trained coaches indicated their preference to play for the CET-trained coach in the future. The children coached by CET-trained coaches gave significantly higher ratings to those coaches as teachers as compared to the children taught by untrained coaches. There were also group differences in player perceptions. Children who played for the CET-trained coaches perceived a more positive interpersonal climate with the coach and team-mates. There were no significant differences between the two groups with reference to attitude to sport. Smith et al. (1979) proposed that player attitude toward the sport may be well established over a substantial period of time and not readily affected by a relatively short-term change in coaching behaviours. As suggested earlier research (Curtis, et al.,1979), significant changes may relate to the situation (game or practice), where the behaviour is exercised. Children's self-esteem was influenced strongly by the trained coaches' behaviour. Children who played for the CET-trained coaches not only had higher levels of self-esteem than those who played for the untrained coaches, but those playing for CET trained coaches also rated the intra-team attraction more positively. There were no significant differences between the CET trained coaches and the untrained coaches

based on win-loss percentages. These are always difficult constructs to measure, because performance and achievement are not always reflected by the scoreboard.

Based on results of the CET intervention program there is evidence that coach behaviour can be changed. More importantly, this study verified the role of significant others (coaches), in the determining quality of the youth sport experience. It is difficult to isolate whether specific behaviours or a combination of behaviours lead to changes in children's perceptions, attitudes, and self-esteem, or whether certain coach behaviours resulted in specific changes in the children because of the number of coaching behaviours targeted in the intervention. In future research, intervention programs need to have narrower focus or else employ a mixed methodology that allows further drawing out of information, so that relationships can be examined between specific coaching behaviours and changes in athletes' cognitive, affective, and psychomotor behaviour.

Coach Effect on Athlete Psychological Development

There have been very few studies that have established causal relationships between coaches' behaviours and athletes' psychological development. Relationships between individual variables have been identified, such as state and trait anxiety (Kenow & Williams, 1999), self-esteem (Smith & Smoll, 1990; Smith, Smoll, & Curtis, 1979), children's perception of their physical competence (Horn 1984, Rejeski, Darracott, & Hutlar, 1979), and coach feedback (Horn, 1985, Wandzilak & Ansorage, 1988).

In an attempt to understand how athletes' individual differences might influence athletes' perceptions of coaching behaviour, Kenow and Williams (1999) investigated coach-athlete compatibility, and its interaction with athlete trait and state anxiety and state self-confidence. Female basketball players ($N = 68$) completed the Coaching Behaviour Questionnaire (Kenow & Williams, 1992), the Sport Anxiety

Test (Martens, 1977), and the Competitive State Anxiety Inventory 2 (Martens, Vealey, & Burton, 1990), which measures somatic and cognitive anxiety and self-confidence. Athletes were asked to rate how compatible they felt they were with their coach on a 9-point Likert scale. Compatibility was based on the degree to which the athlete's goals, personality, and beliefs were consistent with the coach's goals, personality, and beliefs.

The results indicated that high trait anxious athletes evaluated overall coaching behaviours more negatively, than did low trait anxious athletes. Athletes high in cognitive anxiety also evaluated overall behaviours, and the perceived cognitive/attentional and somatic effects of coach behaviour more negatively. Athletes high in state somatic anxiety evaluated the coach's communication ability more negatively. Athletes low in self-confidence evaluated overall behaviours, the coach's supportiveness, perceived cognitive/attentional and somatic effects of the coach's behaviours more negatively. Athletes who were highly compatible with their coach evaluated overall behaviours and each behaviour factor more favourably than athletes who were less compatible with their coach. Kenow and Williams reported that the best predictor of athletic perception and evaluation of coaching behaviours was athlete-coach compatibility. Compatibility correlated only with self confidence; however, the question remains, does compatibility lead to increases in self-confidence or does self-confidence lead to increases in athlete-coach compatibility? An alternative explanation is that the compatibility measure employed in the study is not sensitive enough to tap into some of the more complex interrelationships surrounding compatibility, such as player anxiety. The results do provide support for inclusion of trait anxiety, state cognitive and somatic anxiety, and state self-confidence as individual difference variables, requiring consideration in Smoll and Smith's (1989) model for leadership behaviours in sport.

Previously, Smith et al. (1979) demonstrated that players of trained coaches evaluated the coach and team's interpersonal climate more positively than did players of untrained coaches. In an extension of this research, Smith and Smoll (1990) focused on the effect of self-esteem on children's reactions to youth sport coaching behaviour. Of particular interest was the relationship between athlete general self-esteem and their liking of coaches who differed in supportiveness and instructional behaviour. Coaches ($n = 51$) and players (male; $n = 542$), participating in a little league baseball program, took part in the study. Coaches' actual behaviour was measured across three games, using the CBAS, and players completed a player attitude questionnaire and a general self-esteem scale.

The results indicated that player self-esteem was unrelated to coach attraction. Significant links were found between player self-esteem and the instructiveness and supportiveness behaviour dimensions. The players were attracted to coaches who were high in these dimensions. Children with low self-esteem were the most sensitive to variations of these coach dimensions. This could indicate that children are sensitive to behaviours that are most likely to increase their competence, and can identify coaches who exhibit and practice these behaviours.

Coaches' Perceptions of Athlete Ability and its Influence on Coach and Athlete Behaviour. Rejeski, Darracott and Hutslar (1979) were the first to explore whether the "pygmalion effect" operated in youth sport. In other words, does the coach's perception of an athlete's ability affect how the coach relates to the athlete, inadvertently controlling the athlete's achievement behaviour? It is already evident from previous research (Smith & Smoll, 1990) that children with low self-esteem are particularly responsive to variations in supportiveness from significant others. Rejeski et al. raised the question as to whether coaching behaviours covary with the coach's perception of children's ability.

Rejeski et al. examined coaches' ($n = 14$) game and practice behaviours and compared distribution and type of behaviours experienced by high and low expectancy children ($n = 71$). The results revealed that low expectancy children received more general technical instruction and encountered fewer situations of non-reinforcement than high-expectancy children. High expectancy children experienced a higher rate of reinforcement and non-reinforced behaviours. In comparison to results reported in academic achievement (Brophy & Good, 1974), coaches acted more favourably to low as compared to high expectancy children. Rejeski et al. postulated that there were several possible reasons for the discrepancy between results in the academic achievement and sport contexts. In junior sport competitions where the rules stipulate equal time for all players it is to the coach's advantage to work with low expectancy children, to help them contribute to the overall team success. Criteria for success may differ between the academic achievement setting with the youth sport setting, which affects the way teachers and coaches interact with children. In the academic achievement setting there are predetermined criteria which students are expected to achieve, whereas in the youth sport setting where coaches may perceive it acceptable to have alternative goals such as fun, performance is not necessarily the only criteria for success. Differences between academic and sport contexts may also be a result of the differing environments. In the youth sport setting, children are active participants, while in the academic setting they are confined to specific areas and behaviours are controlled. For example, students may be asked to sit and listen and put their hand up if they have a question. The low expectancy students are at a disadvantage in the academic setting because brighter students respond quicker and control a higher percentage of the teacher's interactions. In the sport context, there are distinct divisions within the context; there are game and practice situations that are not evident in the classroom context. One of the methodological issues in this

research is the lack of differentiation between game and practice situations. Horn (1984, 1985) acknowledged this problem and addressed issues of context in her investigation of expectancy theory in the sport context.

In an effort to further explore and extrapolate information about expectancy theory in the sport context, Horn (1985) concentrated on addressing methodological problems arising from earlier research. The issues arising were control of the situation, direction of coach-athlete interaction, and the stability of the coach's perceptions of athlete ability. In Horn's study, the situation was controlled by separately recording practice and game behaviours. Coach and athlete initiated interactions were recorded to determine whether the coach or the athlete was responsible for increases in interactions. The stability of the coach's initial expectations between pre- and post-season was assessed. The main objective of the study, apart from the methodological sub-purposes, was to assess the degree to which coaches' expectations of athletes influenced their behaviour when interacting with individual athletes. The softball coaches ($n = 5$) ranked players' ($n = 72$) expectations concerning potential softball ability at pre-season and during the last week of the competitive season. An extended version of the CBAS was used to record coach behaviours and player-initiated behaviours. Observations took place during four practice sessions and three games.

The results confirmed that patterns of coaching behaviour related to expectancy effects differed according to situation (i.e., game as compared to practice). In the practice situation, low expectancy athletes initiated fewer interactions with their coach as compared to high expectancy athletes, but in the game situation, low expectancy athletes initiated significantly more interactions with their coach as compared to high expectancy athletes. Coach interactions with athletes differed with respect to game and practice situations. During game situations, coaches initiated

more communication with high expectancy athletes as compared to interactions with low expectancy athletes, whereas in the practice situation there were no differences. Of note was the finding that the number of behaviours initiated by the athletes, not the coach, in both practice and games were the two most powerful discriminators of high and low expectancy group differences. There were also significant differences between the quality of coaching behaviours in reference to coaches' expectations of player performance. The low expectancy athletes were given more technical instruction and feedback, both in general and in mistake contingent situations. Low expectancy athletes received more reinforcement after a successful performance than did high expectancy athletes, whose success was often ignored. Horn suggested that the coaches were trying to make the best of low ability players' successful performances. This might reflect the importance of each athlete's contribution in achieving success in a team game, hence the investment in all members of the team, a premise also supported by Rejeski et al. (1979). Whereas in the classroom, academic achievement is individualised in the majority of situations, and success is not measured by class academic achievement, many of the above propositions are based on research conducted with teams. A further extension of this research would be to repeat the study with athletes participating in individual sports, where success is individualised, and less dependent on intra-group co-operation. This research might provide some insight into why coaches invest time in coach-athlete interaction and whether or not it is driven by the nature of the sport, or is more reflective of how coaches perceive their role.

In an earlier study, Horn (1984) noted that the quality of feedback differed according to whether the coach perceived the athlete as low or high in ability. In an extension of that study, Horn (1985) examined whether coaches' feedback influenced children's perception of their physical competence, using the same data set that was

used in 1984. Coaches' behaviours were assessed using an extended version of the CBAS, designed to elaborate on specific components of the reactive feedback category. Athletes' self perception was measured using the Perceived Competence Scale (Harter, 1982), the Multidimensional Measure of Children's Perception of Control (Connell, 1980), and the Generalized Expectancy of Sport Success Scale (Coulson & Cobb, 1979). An estimate of each player's level of softball ability was determined through peer ranking in pre- and post-season. Horn controlled the context by differentiating between coaching behaviours in both practice and game situations, which has generally been poorly controlled in the research.

The results revealed that coaching feedback in response to desirable performance was a significant contributor in altering athletes' perceptions of competence, but it was negatively related to increases in player perceptions of perceived competence in the physical and cognitive domains, whereas punishment received in response to player mistakes was positively associated with increases in perceived competence. Horn proposed that feedback that is non-contingent on actual performance sets lower expectations for player performance. When successful performance is ignored, or when punishment occurred following poor performance, athletes perceived that the coach had higher expectations of their ability and that an investment in effort was required. This has implications for interpreting results from systematic coding systems where positive feedback has been classified as a positive coaching behaviour.

Important situational differences were identified between practice and game behaviour in Horn's research. Coaches' behaviour differed qualitatively between practice and games, and, significantly, players perceived coaches' practice behaviours to be more salient indications of their ability than coaches' game behaviours. Peer-

assigned ability was also a significant predictor of changes in players' perceptions of competence.

A study by Wandzilak, Ansorage, and Potter (1988) also investigated feedback practices in practice and game situations. Soccer coaches ($N = 17$) were observed, using specific behaviours from the Coaching Behaviour Assessment Inventory (CBAI). The four sections of the inventory analysed were: encouraging remarks, instructional/organisational comments, positive reactions to participants' actions, and negative reactions. In the practice situation, coaches used a high percentage of instructional/organisational comments, followed by an equal percentage of encouraging remarks and positive reactions. In the game situation, there was an equal percentage of encouraging and instructional/organisational comments. Thus, in the game situation, coaches were more encouraging as compared to the practice situation. Of note, and in line with previous research, coaches perceived themselves as displaying higher levels of encouraging behaviour than those which actually occurred in the practice and game situations. The results also identified inverse relationships between the percentage of encouraging remarks and instructional/organisational comments made in the game. This also occurred between instructional organisational statements and positive remarks in practice. Wandzilak et al. suggested that coaches who provide information may not encourage athletes to a great extent. They further hypothesized that coaches who lack competence in sport discipline knowledge may compensate by using encouraging statements, because they have little else to offer.

In conclusion, both Horn (1984, 1985) and Rejeski et al. (1979) uncovered interesting and unexpected results in expectancy patterns in the sport context. Low expectancy athletes were treated more favourably than high expectancy athletes. High expectancy athletes interpreted criticism and lack of acknowledgement by the coach as an indication of the coach's belief in their ability. This has implications for

systematic coding systems and the interpretation of behaviour. Wandzilak et al. (1988) surmised that the quality of feedback might be a reflection on the coach's knowledge of the sport. Horn (1985) reported that high ability athletes positively responded to no feedback or performance criticism. Thus, to differentiate feedback quality based on individual athlete characteristics may be a misnomer. Horn (1985) highlighted the importance of situation, for example differentiating between game and practice behaviour. As practice behaviours are the more salient behaviours from an athlete perspective, perhaps it is time to devote energy to this area. A more systematic approach to the research is required, for example, control of situation, in order to build up a body of knowledge that also has practical implications for coach education.

The two predominant theoretical models, the MML (Chelladurai, 1978; Chelladurai & Carron, 1978) and the MM (Curtis, Smith, & Smoll, 1979; Smith & Smoll, 1990; Smith, Smoll, & Curtis, 1978, 1979; Smith, Smoll, & Hunt, 1977) are conceptually driven by different research agendas, however, both provide a working description of the coaching process, and have much in common. Although the models have their roots in different conceptual frameworks and use different research methodologies, there is much commonality in the behaviours and relationships identified. In an evolving domain, this type of research provides a starting point and some insight into what is happening in a specific field. It has been pointed out by several researchers (Horn, 1985; Rejeski et al.,1979; Wandzilak et al.,988), however, that some commonly held beliefs about specific coaching behaviours may be incorrect, and that has implications for how results are interpreted. Due to the dynamic nature of coaching no one model may ever be able to unravel the complexity of the coaching process where human interactions dominate.

Summary

One of the major limitations of the research is that, like a checklist, the behaviours can be ticked off and quantified but they provide little information about what interactions are occurring and why coaches are using specific behaviours. The coach is the only person who can provide the answer to the "why" question. It is evident from the research that the methodologies used do not to tap into the coach's knowledge of the coaching process. The analysis of data has typically relied upon inferential correlations and tests of significance, all of which have difficulty capturing the quintessence and richness of the coaching process. The research (e.g., Horne & Carron, 1985; Smith et al., 1978) suggests that coaches have poor recall of their own behaviour. It may be the case that the limited number of behaviours, (e.g., the CBAS reduces coach behaviour to 12 behaviours), do not account for some of the most important coaching behaviours (e.g., non-verbal behaviour) or that the categories are not meaningful to coaches. Expertise research (e.g., Abernethy, 1993; Bloom 1995) suggests that experts cannot accurately self-report on their own expertise. Abernethy (1993) proposed that expert athletes have difficulty self-reporting on those processes which are under automatic control. If this also resonates with expert coaches it may be that coaches cannot recall with accuracy how they have developed expertise. Hence, it is necessary to investigate other methodologies that are capable of tapping into, capturing, and deciphering the richness of the coach's knowledge of the coaching process.

During the 1990's coach research was revisited and examined using a variety of research methods. Coach expertise was explored using qualitative research methods. This allowed researchers to understand the coaching process from the

coach's perspective and develop theory from the data. The following section investigates expertise research using qualitative research methods.

Qualitative Research

Previous research in leadership has predominately used quantitative methods to investigate the role of the coach in sport. The questionnaire-based research (e.g., Chelladurai, 1978) and classification-based research (e.g., Smith, Smoll, & Hunt, 1977) have limitations in terms of the richness and information gathered and the condensing of information into limited categories. Some researchers (e.g., Horn 1992) have argued that, to understand coaches, more in-depth approaches are required that do not predetermine what coaches can say or how the information is categorized. Researchers (e.g., Côté, Salmela, & Russell, 1995b; Salmela, 1995) have recently adopted alternative methods to explore the coaching process in more depth.

As compared to quantitative research, qualitative or applied research does not focus on quantitative, generalisable results, and statistical validity. As described by Peshkin (1983), "Qualitative research is based on a coherence theory of knowledge that encourages exploring phenomena from a number of angles to illuminate the previously or tenuously unknown through rich description, and to obliterate faulty understanding". Nicholson (2001) notes, in qualitative research the viewpoints are broader on the issue of what constitutes 'research' and have a less rigid theoretical framework, in which qualitative and interpretive research are both valued and legitimised. For example, researchers are no longer outsiders; they locate themselves within the research process alongside the participants. The tacit knowledge the researcher brings to the research is valued and integral to the process of knowing (Martens, 1987). The research methodology is driven by the nature of the problem, and the knowledge, understanding and skills that the researcher brings to the task. There is a strong emphasis on contextual delineation; behaviours do not happen by

themselves, the context changes and shapes behaviours, hence the need to understand the impact of context. Qualitative research is not about trying to prove something. Instead, the heart of the research is about understanding the broader social context and all that it entails (Dewer & Horn, 1992; Strean, 1998).

In leadership research, there are several studies that have applied a qualitative or heuristic approach to exploring leadership behaviour in sport. The methodology is typified by a grounded theory approach using in-depth interviews. The knowledge arising from the research is categorized according to the following areas: (a) expertise development, (b) elite athlete development, and (c) sport specific theories of coaching.

Expertise Development

Although the development of expertise has been investigated in other disciplines (e.g., education, business), it has only recently been explored in sport. In education, types of knowledge required, and the process of acquiring that knowledge, have been targeted as important areas of investigation for informing pre-service teacher education, and for establishing standards for teacher evaluation. In many ways, the role of the teacher and coach are similar, hence it is worth summarizing some of the findings from the education field.

Bloom (1985) was one of the first educational researchers to investigate the development of expertise. He examined expertise across several domains including the arts, science, and sport, and identified three stages of development culminating in expertise. According to Bloom, the three developmental stages leading to expertise were: (a) initiation into the specific domain (e.g., tennis), (b) technical development of talent, and (c) full time commitment to the development of talent. In the first stage, there was a close interaction between the performer and mentor, the experience was positive, and the emphasis was on developing a love of the activity in contrast to

achievement. Stage 2 involved participation in specific practice with increased levels of technical development. The performer was achievement oriented and welcomed constructive criticism that lead to enhanced performance. Competition was then used as a measure of success. The performer's mentor or coach possessed superior levels of technical knowledge and also took a personal interest in the performer as well as their performance. When the performer reached stage 3, developing and fine-tuning expertise in their domain dominated their life. Performers understood the dimensions of their own knowledge base and how they self regulated. They were willing to put the required effort into the performance in order to achieve success. The relationship between the mentor and performer was further strengthened through strong emotional ties. The research highlighted the role of significant others and/or mentors in the development of expertise. Of interest, was the changing role of the mentor through the different stages of expertise development.

Berliner (1989) used a five-stage model, based on the model developed by Dreyfus and Dreyfus (1986), to describe the stages of teacher development. Berliner reported that during the novice stage of teacher development, which is stage 1, context-free rules were learned. Performance at this stage was rational and relatively inflexible. During the second stage, the advanced beginner started to be guided by context, and procedural knowledge was further developed. The competent performer, which is the third stage, was where the individual developed priorities and drew up flexible plans to meet reasonable goals. They knew what to attend to and could prioritize according to importance. A smaller group of teachers progressed to the proficient stage, stage 4, which was demonstrated by pattern recognition and possession of an intuitive, holistic sense of the situations they faced. An even smaller number of proficient teachers became experts, which is stage 5. These teachers possessed good perceptual ability and could respond intuitively when faced with

complex situations. They appeared to respond effortlessly, smoothly, and appropriately. Berliner also emphasised that knowledge growth took place over an extended period of time.

In a later study, Berliner (1991) investigated sources of knowledge required by the experienced teacher. The three sources of knowledge identified were: (a) content knowledge, (b) pedagogical content knowledge, and (c) pedagogical knowledge. The first of these sources, content knowledge, referred to the teacher's understanding of the structure, salient concepts, relations among concepts, and ways of thinking that were characteristic to specific curriculum areas. Pedagogical content knowledge, the second form of knowledge, was the teacher's ability to transform content knowledge into an appropriate form that students could understand. The third form of knowledge was pedagogical knowledge, best described as classroom management, assessment, personal knowledge of students and their families, and social interaction skills.

Morris and Thomas (1995) used Berliner's (1988) knowledge development theory as a framework for understanding the professional development of applied sport psychologists. Like teachers, in the early stages of developing competence, sport psychologists work with context-free rules and procedures and are inflexible. As the sport psychologist developed, the context played a more significant role, they could draw on experience to make decisions, became more intuitive and developed a holistic awareness and recognition of similarities and patterns. The expert sport psychologist was characterised by the ability to perform tasks fluidly. The sport psychologists were proficient performers, who were intuitive and arational, in that their behaviour did not employ calculation or deliberate thought. Deliberate analytical thought process only came into play when anomalies occur. It was important to note that few performers, whether they were athletes, coaches, teachers, or sport psychologists become experts.

Much of the teacher expertise research in education was mirrored within the sport context, although the amount of research was limited. McCullick, Cumings, and Demarco (1998), drawing on Berliner's (1994) research, described the developmental stages of coaches as: (a) beginner, (b) competent, (c) proficient, and (d) expert. Their description of the different stages of coaching reflected a shift from an authoritarian, rule-focused environment to an athlete, context-focused, and empowering environment. The importance of experience was noted, and discussed in terms of developing schemas that enabled the coach to change and adapt to different contexts. Although McCullick et al. (1998) discussed experience with some reference to type of experience, they never really addressed the quality of the experience. Some coaches have a great deal of experience, however, it has a narrow focus or exposure and it does not provide a foundation for further growth. Through the use of qualitative research, it has been possible to explore some of these issues in depth and develop a greater insight in to what, why, and how coaches evolve, communicate, develop athlete expertise, and adapt according to different sport contexts.

The Development of Coach Expertise

Salmela (1995) appears to be the first researcher to have explored how expert coaches evolve across their career, using a qualitative research methodology. He interviewed expert coaches ($N = 21$) from a selection of team sports (basketball, volleyball, ice hockey, and field hockey), in an attempt to examine in detail the nature and evolution of their applied coaching knowledge. The results provided a road map that described and provided insight regarding the coaches' career transitions from player through to expert coach , and crystallized and clarified specific coaching behaviours.

The themes arising from Salmela's (1995) study provided a chronological description of the development of coaches he interviewed, from player to expert

coach, and highlighted the behavioural, cognitive, and affective changes in coaching

behaviour over time. All the coaches in Salmela's study cited having had an

opportunity to participate in high-level sport from a young age, but not necessarily in

the sport that they coached when Salmela interviewed them. The coaches in

Salmela's study believed it was their passion and leadership that separated them from

others, not necessarily their player ability. Salmela (1995) identified specific

behaviour patterns associated with different stages of coach development. When the

respondents in his study were novice coaches they struggled with communication, and

as a consequence, so did their athletes. When Salmela's participants were novice

coaches, mentors played an important role, and helped pave the way to significant

success. With experience, according to these coaches, personalized models of

coaching developed and became more flexible and athlete centred. As expert

coaches, the individuals in Salmela's study communicated and clarified the climate

with all athletes, so the athletes understood the coach's role. These coaches

maintained high standards and principles and a high passion for the game that was

moderated by caring for the athlete, and understanding of the individual and

organisational needs. Training was focused and directed by long-term plans involving

technical, physical, tactical, and mental components. The coaches that Salmela

examined emphasized the need for creating learning environments that were exciting,

and provided opportunities for constant communication and problem resolution.

Competition was used to evaluate training and to control personal and training

intensity. These coaches did very little teaching in the competition situation, making

small adjustments for already well-learned strategies. Stable competition strategies

were designed to provide confidence in training, while not overloading the athlete.

The competition results were used to direct the next training session. In relation to

coach education and training, the coaches in Salmela's study emphasized the need for

a formalized educational experience that also involved some form of mentorship and experiential learning.

Salmela (1996), in an extension of the previous study (Salmela, 1995), investigated the strategies expert coaches used to develop expert athletes. Previous research (Berliner, 1989) cited number of hours in practice as explaining a high percentage of variance in expertise. The coaches in this study ($N = 21$) were experienced, elite coaches from across a number of team sports (basketball, volleyball, ice hockey, field hockey). The strategies that emerged were: (a) setting the direction, (b) teaching skills, (c) work ethic, (d) simulation, and (e) the next practice.

Salmela (1996) cited the coaches' ability to set the long-term vision for the team and to progressively translate the vision into specific attainable short-term goals as the most important human resource provided by expert coaches. This was achieved through building a roadmap and establishing individualized goals for each athlete, so that they could navigate their way. As a strategy to encourage athletes to buy into the goals, coaches in this study reported that they empowered athletes by giving up some of their own control as part of the process. Once the goals were agreed upon, the next task was monitoring them. The coaches Salmela interviewed in this study related goals, not only to the outcome of the game, but also to the process of achieving goals during practice. Salmela (1996) described the central coaching role as keeping athletes on task and committed to providing the effort required for the development of expert performance. To achieve the agreed goals, the coach provided the physical resources, for example, facilities, sports equipment, and access to the practice and playing environment, so that athletes were able to develop their skills. Salmela (1996) attributed successful teaching to a flexible and creative outlook, and providing training situations that simulated the demands of the sport. Salmela proposed that skill development was progressive, with a mix of tactics and strategies. He reported

that coaches emphasized the need for a strong work ethic in elite level sport. At this level of performance, enjoyment had to be carefully blended with hard work. According to these coaches, there are also certain non-negotiable rules regarding specific behaviour.

In summary, Salmela (1996) noted that it was a combination of skills and knowledge that the coaches required and employed when building effective learning environments. The coaches were required to train smart by controlling the mix of deliberate practice with periods of recuperation. Salmela (1996) also made it clear that training smart required a different set of skills to competing smart. Salmela's study emphasised the complex web of skills and knowledge required by expert coaches to perform their role. While emphasising the complexity of the coaching process, Salmela (1995, 1996), in extracting the themes did very little in the way of theory development. Salmela's research did unearth the lack of knowledge and understanding of the important milestones in coach development and their implications for coach education.

Expert Professional Coaches.

Kellett (1999) conducted a study to understand coaching and leadership from the professional coach's perspective. Professional Australian Rules Football League coaches ($N = 12$) were interviewed to investigate how they viewed coaching and leadership, terms that are often used interchangeably, and how they viewed their role as coaches. Kellett (1999) found it noteworthy that these coaches did not feel comfortable using the term leadership as a descriptor of their own behaviour, although they believed one of their roles was to develop leadership skills in their athletes. The coaches preferred the term facilitator or people manager, the term leadership had negative connotations attached, such as dictatorial behaviour.

Kellett (1999) described the coaches as being explicit in the description of their tasks. The tasks were categorized as: (a) empowerment, (b) communication, (c) planning, and (d) providing a supportive environment. Empowerment was defined as giving players and staff responsibility, so that each can carry out specific objectives, based on their area of expertise. Communication was narrowly defined by the coaches as having a feedback role, providing counseling, and listening to players and assistant staff. Kellett (1999) reported that the communication between the coach and player was highly personal, and used if to evaluate the player's psychological state. The coaches in Kellett's study emphasised the importance of planning both short - and long-term goals, and strategies for putting such planning into action. Most important was ensuring that flexibility was built into the planning process, and creating opportunities for players and assistant coaches to contribute to the planning process. Kellett (1999) described the coaches as being very articulate in highlighting the requirements of a supportive learning environment. The coaches that Kellett interviewed described the learning environment as a place where players worked on skill and teamwork; it was an environment that provided opportunities for players to develop themselves. The coach intervened only when the learning environment was compromised. The coaches indicated that they were not there to teach or direct, but to maintain the environment that supports shared development of skills and teamwork. All tasks were embodied by an overall philosophy of developing players as athletes and as people. Kellett's research suggested that the coaches' earlier claim of being people managers sits comfortably within their humanistic philosophy. Their actions were directed to clarifying the goal, creating the climate, and providing opportunities for athletes to control their own destiny. As Kellett emphasized (1999), it is worth noting that the coaches did work with elite athletes who were expected to have a high level of skill development and knowledge of the game by the time they reached this

level of competition. This study draws attention to how leadership is defined, and the way in which expertise is measured. One of the limitations of qualitative research is the inability to generalize results, hence coaching expertise at recreational or junior level sport may not correspond to expert coaching behaviors identified at the elite level of competition.

Development of communication expertise. The role of coach communication was highlighted in the research (Kellett, 1999, Salmela, 1995) and in popular literature as being a predictor of effective coaching. There is, however, very little research to support this supposition in the sport context. Bloom, Schinke, and Salmela (1997) conducted an in-depth study on coach communication and examined changes in communication styles over time, according to the four stages of Schinke, Bloom and Salmela's (1995) developmental model of coaching. The four stages of coaching were: (a) novice coach, (b) developmental coach, (c) national elite coach, and (d) international elite coach. In interpreting the data, Bloom et al. (1997) reported that, when coaches recalled different stages of their development, they were able to clearly articulate changes in their communication style. The coaches indicated that as novice coaches, they were autocratic and tended to alienate athletes. During the developmental stage, the coaches reported that they started to understand the importance of the training climate and its impact on the athlete. A structured and enjoyable climate was considered to be important for the athlete. Bloom et al. (1997) reported that it was also a time during which the coaches were prepared to take risks with their interpersonal approaches to communication. At the national, elite level, coaches moved beyond technical preparation of the athlete and considered areas such as nutritional, social, and scholastic development as also important. The feedback they gave to athletes was reported to be constructive and caring; the coach also understood the impact of how, as well as what, they communicated to the athlete. Coaches were

also aware of their responsibility for team success and ensured this through the environment they created for the athletes. Bloom et al. reported that these coaches recognized the transition to international, elite coaching involved a further commitment to national sport federations, the media, and the public. At this level, coaches were aware that job security was contingent upon their success. Coaches communicated the realities of the situation to the athletes, so that all members understood their roles and commitments. The coaches that Bloom et al. interviewed understood the importance of empowering athletes by involving them in the decision-making process. They also understood that two-way communication was essential, if the team vision was to succeed. Coaches stated that feedback, clear communication, fairness, and honesty were required of them. Athlete life balance was a high priority, and experience outside sport was valued. The coaches emphasised the need to communicate across all facets of their athletes' lives. The study by Bloom et al. established a pattern of communication styles across the four stages of coach development. Issues arising from the research are whether communication is classified as one of many behaviours required by the coach, or whether it plays a bigger role as an enabler for expressing and filtering other behaviours. This has implications for coach education. If communication is the key to good coaching, then communication skills need to be part of the coach education program at all levels and given the same priority as technical game skills. It was evident from this study that coaches shifted from a coach-centric position, to a more open form of communication that was athlete focused. There was little information, however, regarding what triggered change in communication styles, what strategies the coaches used that were effective, and what underpinned those strategies.

Deliberate Practice. Ericsson, Krampe, and Tesch-Römer (1993) were the first to coin the term "deliberate practice". Deliberate practice refers to the quality,

specificity, and quantity of practice. Ericsson et al. explored expertise from the perspective of deliberate practice as opposed to ability based on natural talent. Although the research Ericsson et al. conducted used a quantitative methodology, the framework deserves further explanation as it is now being used in different contexts, such as sport, using qualitative research methods.

Ericsson et al. developed an expertise framework driven by amount, specificity, and quality of practice, not generic attributes. Ericsson et al. did concede however that initial entry to the domain occurred because a parent, teacher, or significant other identified exceptional promise that lead to the onset of early training, so there is the possibility of talent identification during the early stages of development. Expertise is not attained automatically through extended hours of practice, it occurs slowly over at least a 10 year period, and requires guidance and direction from significant others (practice design), which supports previous research on expertise (Berliner, 1989, 1991; Bloom, 1995; Dreyfus & Dreyfus, 1986).

Deliberate practice differentiates itself from other forms of work and play by the type and specificity of practices designed to improve the current level of performance. The learning environment is characterised by repeated experiences whereby the individual attends to critical components of the situation to improve his or her performance in response to knowledge of results, feedback, or both, from a teacher or coach.

The outcomes of deliberate practice differ from other activities, as does the frequency with which individuals pursue the activity. Engagement in deliberate practice requires high levels of intrinsic motivation because it is effortful and not always enjoyable. Deliberate practice also requires time and energy for the individual as well as teachers, training material, and training facilities. Research conducted by

Ericsson et al. (1993) investigating music expertise, (violin and piano players), supported the theoretical framework that expert performance is the result of extended daily amounts of deliberate practice. Although the research demonstrated support for the role deliberate practice plays in physiological and physical adaptation, and cognitive memory organisation, the results highlight the possibility that an individuals' motivation to practice may be influenced by hereditary factors. The role of deliberate practice has many implications for sport. To date, the research exploring the connection between deliberate practice and sport expertise is limited but it does hold promise for understanding athlete and coach expertise and improving coach education programs.

Kitamura, Salmela, and Moraes (2001) investigated coaches' perceptions of expert coaching in a Japanese soccer context. Professional Japanese football coaches $(N = 4)$ coaching soccer at the Division 2 league level were interviewed about their perceptions of concepts related to teaching practice and the policy of their team management. Kitamura et al. (2001) reported that the coaches divided their role into three components, they were: (a) play, (b) work, and (c) practice. Play referred to the players' flow state or experience when playing soccer, work described intensity of training and all it entails, such as player commitment and concentration, and practice encompassed task analysis, training design, and implementation of deliberate practice. The coaches indicated that there was a strong relationship between all three components and that by encouraging players to commit to deliberate practice, it overcame the constraints of talent development, motivation, effort, and resources.

As in previous research, the coaches in the study by Kitamura et al. (2001) emphasized creating an environment where athletes had the opportunity to express their ability and shift into a strong flow experience. The coaches in the study indicated that they understood that enjoyment of the game was important and they needed to

structure that into the practice environment. In their coaching, they experienced a constant dilemma between coaching and teaching, and the coach sometimes had to stand back and provide opportunities for athletes to make decisions. The participants in the Kitamura et al. study of Japanese soccer coaches indicated that, in the competition situation, the coach had less chance to influence the athletes, but the coaches believed that the athletes were more focused on the game, hence, concentration and effort on the part of the athletes increased. Work practice was described as "...effortful, continuous training" (p. 219). Rules were established, to enhance team-building and as necessary measures for protecting player health (e.g., physical and mental rest). Practice was designed with a deliberate focus, based on task analysis. Team vision needed to be incorporated into the seasonal plan and physical and team resources needed to be maintained in good order to ensure deliberate practice could always take place to ensure that the team reached its ultimate goal. An emphasis on deliberate practice seems to be a constant theme throughout the literature. The need to develop an understanding of deliberate practice also suggested that coaches required deliberate experience, so that they are in a position to effectively create appropriate learning environments.

Characteristics of expert high school coaches. Hardin (2000) investigated the characteristics of expert high school coaches ($N = 5$) using ethnographic techniques; these techniques included interviews, field observations, and document analysis. Using a pedagogical framework, Hardin identified the following themes: (a) planning, (b) experience, and (c) continuing education, as reflecting expert high school coaches. The coaches in Hardin's study used planning as an organisational strategy, and all coaches used written plans in practice; plans were flexible and adaptable to the context. Experience as a player was viewed by the coaches in the study as supplementing their coaching. All the coaches in Hardin's study elaborated on the

importance of further education to enhance coaching performance. From a pedagogical point of view it would have been interesting to explore what knowledge base underpinned the coaching process. This surely effects the quality of the planning, the ability to extract pertinent experience and transform it to suit the present context, and determines what type of further education is required.

Hardin and Bennett (2002) used ethnographic techniques to investigate the instructional attributes of a successful college baseball coach. Using structured interviews, field observation, stimulated recall, and document analysis, Hardin and Bennett found that several purposeful strategies emerged. These strategies, demonstrated by the coach in Hardin and Bennett's study were: (a) deliberate practice or practicing at game speed to simulate the challenges of a real game situation, (b) detailed planning, (c) ability to provide information succinctly through cueing, and (d) questioning techniques designed to elicit whether or not athletes understood a concept or skill. Themes reflecting deliberate practice, planning and communication have surfaced in most of the qualitative research investigating the coaching process. If viewed as components of an expert coach, there are still questions relating to what elements make up the components. For example, very few studies have elaborated on what planning means both structurally and conceptually in a sport context.

The majority of research to date has concentrated on elite coaches working with elite athletes. Research on elite coaches does provide a benchmark for comparing type, range, depth and application of knowledge at the elite level of competitive sport. The study discussed next provides an insight into how novice coaches progress through the early stages of their development.

Novice coaches. In order to better understand what processes occur during the novice stage of coaching, Weiss, Barber, Sisley, and Ebbeck (1991) focused on the development of competence and confidence in novice female coaches involved in a

season-long coaching internship. This study provided an interesting perspective

regarding novice coaches' perceptions of themselves and the role of the coach. It also

provided insight concerning what novice coaches believed they needed to acquire and

develop to become confident and effective coaches. In this study, female, novice

coaches ($N = 28$) from a number of sports (basketball, volleyball, track and field,

soccer, cross country running, tennis, tai kwon do) attended a coaching workshop and

then completed a season-long internship under a mentor coach. Weiss et al. (1991)

reported the personal coach outcomes for the novice coaches as: (a) satisfaction

working with children, (b) development of coaching skills, (c) social support via

positive feedback from the mentor, and (c) fun, which the novice coaches had

difficulty articulating. The novice coaches often identified the same behaviour as

their strength and weakness. For example, the coaches felt more confident about their

game knowledge but also saw their lack of sport specific knowledge and skills as a

weakness. It was clear that these coaches believed that, to be effective, the most

important behaviours and knowledge were sport-specific discipline knowledge,

planning and management skills, an understanding of athlete motivation, development

of communication and interpersonal skills, as well as injury prevention techniques.

These were explicitly connected to the development of their own self-confidence. It

was interesting that Weiss et al. (1991) identified behaviours of novice coaches that

were similar to those identified by elite coaches (Kellett, 1999; Salmela,1995). The

elite coaches were, however, better able to articulate and give greater meaning to the

behaviours.

The majority of the coaching expertise research provided insight into the

different stages of coach development, but the research is still to explore the

complexity of the coaching process, for example, understanding the interaction

between coaches' beliefs, goals and knowledge base. To truly understand the novice

and expert coach, it is necessary to not only investigate their history but also to examine what role experience plays, and how it manifests itself in stressful situations. Research attempting to differentiate between levels of expertise needed to use methodologies that asked questions about how expertise and experience effects decision making. Although the novice and expert coach may speak the same language, and demonstrate similar behaviour patterns under normal training and game conditions, in stressful situations it may become more apparent as to what differentiates the novice from the expert coach.

Contextual Influences

Context has been acknowledged as having the potential to influence the coaching environment (Horn, 1985). Previous research has investigated the coach – athlete relationship, but has rarely examined the physical and social environment and the ecological relationships between the coach and these contexts (Strean, 1995). The following research reveals the impact context has on coaching behaviour.

Strean (1995) explored the youth sport context, specifically investigating the impact of contextual factors in coach experience. The four contextual factors identified by coaches ($N = 8$), were: (a) parents, (b) spectator location, (c) rules, and (d) time. Strean's study indicated that coaches recognized that parents play an important role in the youth sport context. They support the organisation, deliver children to practice and training, and perform some of the administrative roles, such as scoring and timekeeping during competition. Parents also pose significant problems for the coach. The level of support for the coach is often dependent on the relationship between the coach and parent. The coaches in Strean's study reported feelings that they were better off when the parents knew little about the game. The coaches questioned whether educating the parents, was more detrimental than helpful. The coaches often manipulated spectator location at practice and in competition

situations. The coaches stated that keeping the spectators away from the coach and players avoided many of the problems spectators created. Coaches reported that the rules of conduct influenced their choices. Rules in place ensuring all players received equal playing time ensured that coaches were in line with the league's philosophy regarding equal participation for all players. Some coaches saw it as a constraint, for example, one coach felt he should be able to bench players in response to poor performance to help teach them that hard work was required. The last factor proposed by coaches, time, was viewed as a commodity that limited the coaches' ability to achieve their objectives.

Within the youth sport context, Strean (1995) reported that the coaches were influenced by significant others, the rules of the league or specific game rules, and limited in their ability to achieve their objectives due to time constraints. Research investigating the coach-athlete relationship has often had a very narrow focus, Strean's research suggests that the coach-athlete relationship does not happen in isolation from the social context, and that it is difficult to predict causal relationships without understanding the context and the interrelationships within those contexts.

Sport, as an institution, is as diverse as the people that participate in it. The research presented next highlights differences between sport cultures and contexts and how it influences coach behaviours. Both individual and team sports are represented. Although there are major cultural differences, the common themes arising from the research are use of deliberate practice, and the monitoring of competition to inform practice and evaluate outcomes.

The Knowledge base of expert gymnastic coaches. The ground-breaking research of Côté and associates (Côté, Salmela, & Russell, 1995a,) has provided an insight into how expert, high performance, gymnastics coaches construct their work environment, organize, and use appropriate knowledge to ensure that athletes reach

their potential. In the study by Côté et al. (1995a), the focus was on identifying the types of knowledge used by high performance gymnastic coaches ($N = 17$) during training and competition. Côté et al. reported that coaches responded differently during competition and training. The coaches divided competition into three categories: (a) competition site, (b) competition floor, and (c) trial competitions. Competition site referred to the time on the competition day, excluding the actual competition period, competition floor was the actual competition time, trial competitions were real competitions designed to help the gymnasts develop confidence and improve performance. Côté et al. reported that coaching behaviours varied according to the competition category. During the floor competition coaches cited using intervention behaviours but only when deemed necessary. The coach's preference was to play the role of spectator during the competition and not overload athletes with technical information prior to competition. At the competition site, coaches of male gymnasts discussed helping gymnasts to control distractions and supervising the execution of routines. At trial competitions, coaches of female gymnasts indicated the importance of real competitions to build athlete confidence and improve the execution of skills, with learning being the major aim. Côté et al. (1995a) attributed differences in behaviour between coaches of male and female athletes to differences in physical maturity between males and females. There was no acknowledgement that cultural differences might exist between the male and female gymnastic programs.

Côté et al. (1995a), in examining the training component, identified how coaches' knowledge was used to help gymnasts develop and perform different skills in training. The categories identified by Côté et al. were: (a) involvement in training, (b) intervention style, (c) technical skills, (d) mental skills, and (e) simulation. Involvement in training was a measure of hours spent coaching athletes. Coaches

reported spending between 20 and 60 hours per week coaching gymnasts. The intervention style was defined as a coach's knowledge concerning preferred intervention style in training. The four styles mentioned by coaches of both genders encompassed being supportive, giving responsibilities, providing instruction, and providing positive feedback. The technical skills referred to the coaches' pedagogical knowledge. All the coaches highlighted the importance of skill progression in their teaching. The coaches in the study by Côté et al. mentioned the need to be conscious of the gymnast's state of readiness to perform a skill and to keep the skill safe. Mental skills were defined as the coach's knowledge used to develop mental skills in their gymnasts. Coaches of male and female gymnasts emphasized the need to develop the athlete's ability to deal with stress, enhance athlete motivation, and improve athlete self awareness. The last category reported by Côté et al. is simulation. This describes the coaches' ability to develop appropriate scenarios that simulate the technical demands of competition. The coaches that Côté et al. studied exposed their athletes to all possible competition conditions to prepare the gymnasts for competitive challenges.

This detailed investigation not only provided rich information about the coaching process it also described strategies coaches use to enhanced athlete performance. It provided valuable information for coaches working with a gymnastics cohort. Many of the behaviours and knowledge identified in the study were well supported by research (e.g., Chelladurai, 1993; Smith, Smoll, & Christensen, 1996). Until this study is repeated across sports, it is difficult to generalize the information.

Côté, Salmela, Trudel, Baria, and Russell (1995), in an extension of the previous study (Côté, et al. 1995) investigated how expert coaches build mental models to enhance athlete development and solve problems. Mental models are internal representations of a problem and possible solution. In creating a new mental

model, specific knowledge structures are manipulated to represent new situations
through the use of generic knowledge. In the coaching context, it is assumed that the
coach would develop a new mental model for each athlete, which is in contrast to
adjusting a schema which consists of precompiled generic knowledge that is adapted
to meet the athlete's needs.

Using information gleaned from the previous study about the type of
knowledge coaches elicit in training and competition, Côté et al. (1995) examined the
conceptual links between the components and developed a heuristic model to explain
the coaching process used by high-performance, gymnastic coaches. The components
of the Coaching Model (CM) and their dynamic relationships are illustrated in
Figure 4.

Côté et al. (1995) found that coaches required a broad base of knowledge to be
able to create a mental model of the athlete's potential. According to Côté et al., the
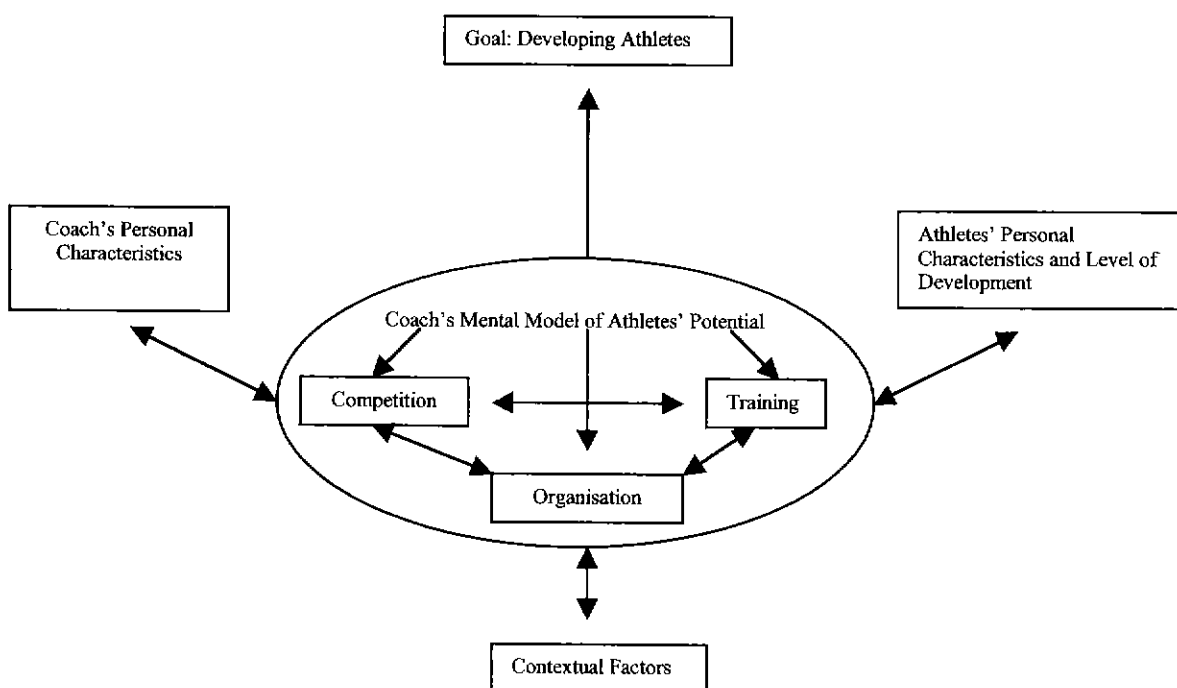
Figure 4. The Coaching Model (Côté et al. 1995).

coaches used organisational knowledge to establish an optimal learning environment for training and competition by structuring and coordinating the tasks involved in reaching the goal of developing the elite gymnast. At training, coaches reported using knowledge to assist athletes to develop the necessary technical and mental skills. In competition, coaches reported using knowledge to help athletes perform to the best of their competition ability. Competition, training, and organisational skills were constantly monitored and adjusted in line with the coach's mental model of the athletes' potential.

The central process of the model is the development of elite gymnasts. According to Côté et al. (1995c) the coaching process revolves around competition, training, and organisational components. These in turn are influenced by the coaches' personal characteristics, the athletes' personal characteristics and level of development, and some contextual factors. The coach's mental model of the athlete's potential and the goal, which represents the most obvious task of the coach, were proposed to be additional factors that complete the model. A number of these components, such as the athletes' and coaches' individual characteristics, have appeared in other models (e.g., MML; MM).

According to the Côté et al. (1995) model, the coach's mental model of the athlete is influenced by the peripheral components of the model, as well as the coach's mental representation of what is required for the athlete to reach their potential. The athlete's potential can be raised or lowered, depending on the peripheral components. The peripheral components can have a positive or negative impact on the coach's mental model of the athletes' potential. The coach's personal characteristics, for example, philosophy, perceptions, or beliefs, can influence the training, organisation, or competition components. The athletes' personal characteristics, which may include variables such as the athlete's stage of learning,

age, personal abilities, and characteristics, could affect the coaching process.

Contextual or unstable factors, aside from those related to the coach and athlete, such

as sport politics or poor training facilities, can have a positive or negative affect on the

coaching process.

Of interest to Côté et al. (1995) was how coaches developed the mental model

of athlete potential. Rather than using schemas, they found that coaches considered

the athletes' personal characteristics, level of development, and contextual factors.

From that information, coaches built a new mental model of what needed to be done

to develop particular athletes. The model was then used by the coach to determine

which knowledge was required for use in competition, organisation, and training

components. The combination of the model, and the coach's estimation of the

athlete's potential, served to create an action plan for the development of a particular

athlete.

The Côté et al. (1995) model, although promising, has been based on a limited

number of studies. These studies have also been within the confines of one sport,

gymnastics, that may have its own cultural and sport specific anomalies that are not

reflected across all sports. As in all qualitative research, it is important not to

generalize beyond participants in particular studies. The model, like some of the

previous coaching models (e.g., MML; MM), identified the peripheral components

and their impact on the coaching process but has identified limited variables within

these components. As a model it has provided some theory of the components and the

relationship among components; as a predictive power it is still in its infancy, and as

far as scope is concerned, it is narrow and needs to move beyond the realm of

gymnastics. The CM, and the notion of mental models, however, provides a new

pathway for investigating the coaching process. Still to be identified are the range of

variables within each component, the applicability of the model to other sports, and an understanding of how coaches develop and use mental models.

Cultural influences. A study by d'Arripe-Longueville, Fournier, and Dubois (1998) investigated coaches' and athletes' perceptions of coach-athlete effective interactions and the reason for their effectiveness. d' Arriple-Longueville et al. used in-depth interviews to explore expert French judo coaches' (n = 3) and elite female athletes' (n = 6) behaviours and strategies used in training and competition settings.

d'Arripe-Longueville et al. (1998) set the contextual scene highlighting the influence of the broader social context on coach and athlete behaviour. d' Arripe-Longueville et al. reported that coach and athlete perceptions of effective interactions within the judo culture are limited by a history of international success and associated national pride and passion. Attached to this success are cultural norms for both coach and athlete behaviour. Coaches follow in the footsteps of their predecessors, perpetuating behaviours and strategies that were associated with success.

d'Arripe-Longueville et al. (1998) concluded from the interviews with the coaches that, for interactions to be effective a coach was required to exhibit an authoritarian coaching style. This was manifested by exerting control over the athletes, unilateral decision making, maintaining a continuous presence at training and competition, creating a rigid training environment, and use of negative feedback. Strategies emerging from the autocratic coaching style were: (a) encouragement of interpersonal rivalry between players, (b) provoking athletes verbally, (c) displaying indifference to athletes, (d) entering into direct conflict with athletes, (e) exhibiting favoritism to successful athletes, and (f) developing specific team cohesion.

d'Arripe-Longueville et al. (1998) reported that each strategy was designed to elicit a particular response from the athlete. Stimulating interpersonal rivalry between the athletes was manifested to encourage social comparison between athletes, and

create a competitive climate to increase athlete motivation. The second strategy, provoking athletes verbally, was viewed by the coaches as essential for developing each athlete's technical, tactical, and mental skills and knowledge. It was also viewed as a positive stimulant for optimizing performance. The coaches reported displaying indifference to athletes to encourage athletes to acclimatize to the situation. This was mainly used when athletes were injured or had lost a competition. Entering into direct conflict with athletes was deemed effective by coaches, because it would either force athletes to give up and quit or adapt and win. Coaches also displayed favoritism and preferential treatment for athletes they supported. This manifested itself in increased feedback and instruction during training. Developing specific team cohesion through challenging situations was achieved by engaging the athletes in dangerous physical activities in pre-competition training camps. The program was developed to build team spirit through the shared experience. The outcome, team cohesion, was designed to intimidate adversaries and maintain the French tradition of excellence in judo. d'Arripe-Longueville et al. concluded that athletes adhered to the system because it was effective and produces results, however, it is in opposition with the athletes' needs for self determination. d'Arripe-Longueville et al. proposed that the strategies athletes used were designed to protect their autonomy while still allowing them to survive the system through tacit cooperation.

Autonomy was the dominant interaction style used by athletes. d'Arripe-Longueville et al. described autonomy as a sense of independence that satisfied the athletes personal needs, while alleviating the pressures of obligation to the sport. The five strategies within the autonomous interaction style that emerged from the study were: (a) showing diplomacy, (b) achieving exceptional performance, (c) soliciting coaches directly, (d) diversifying information sources, and (e) bypassing conventional rules. Showing diplomacy provided athletes with a sense of autonomy, while

maintaining harmony and avoiding conflict in the teacher student relationship. By achieving exceptional results, athletes overcame the subjective selection procedure ensuring their place on the team. Soliciting the head coach directly was motivated by the athletes' need for feedback and resulted in positive consequences for their personal self-determination and well-being. By diversifying sources of information, athletes were able to obtain information from a variety of coaches with different competencies that catered for their specific needs. The last strategy was bypassing conventional rules; seeking and utilizing other assistance related to auxillary assistance, for example, personal trainers, or sport psychologists, based on perception of their needs. d'Arripe-Longueville et al. concluded that athletes' subsequent autonomous strategies and subsequent displays were perceived as effective, because they were a way of exerting self-determination, while maintaining their position in the national team. Overall, athletes behaved in a way that maintained the status quo and avoided conflict.

The aim of the research by d'Arripe-Longueville et al. (1998) was to investigate coaches' and athletes' perceptions regarding effective interactions, although it is still not clear what are the main factors required for successful interaction. Athletes cited the development of autonomy and coping strategies as essential for survival at the elite level. From the coaches' perspective, it is not evident whether they identified the development of autonomy and copying skills as necessary for success and hence used specific strategies to promote the development of these skills, or whether the development of these skills was a serendipitous outcome of how the coaches worked with their athletes. The study does highlight the importance of taking into account the cultural and sport context when investigating the coaching process. In the French judo culture at the elite level of competition d'Arripe-

Longueville et al. (1998) concluded that female athletes who achieved success are those athletes that can independently establish and navigate their own pathways.

In another study, Cross (1995), using interviews, investigated coaching effectiveness in hockey within a Scottish perspective. Six elite hockey coaches and six national hockey players participated in the study. The coaches cited a number of limitations that impacted their effectiveness. The limitations were finance, and time available for preparation and planning. All coaches had to earn a living outside coaching, which reduced time available for planning. Some coaches also mentioned low personal confidence as a limitation affecting effectiveness.

Cross (1995) reported that athletes and coaches measured effectiveness against competition outcomes. Team cohesion was also mentioned as reflecting coach effectiveness. It is worth noting that, in previous research (Curtis, Smith, & Smoll, 1979), team cohesion was associated with "keeping control" behaviour. In the study by Cross (1995), self-appraisal through personal reflection was used by half the coaches as a measure of coach effectiveness. The importance of planning was emphasized by the coaches, and, in the majority of cases, was based on intuition and scientific principles. Feedback was given immediately, if appropriate. Following a loss, most coaches delayed the feedback to allow for emotional recovery to take place. Behaviours coaches admired in their colleagues were knowledge of the game, commitment, and success.

Athletes identified the main limitations to be restricted training, player availability for training, standard of umpiring, and issues related to national selection in the British team when you play in Scotland. Important elements of the coaching process were split between the need for collaboration between coach and athlete, and trust, where players trusted the coach to make the correct decision. Social support was not important for the majority of players. This is a recurring theme; social support

does not seem to be as important in sports outside the boundaries of an education system (Sherman et al., 2000). Players considered that athletic success is measured by whether the athlete made the national team.

In the study by Cross (1995), coach behaviours that athletes valued were good communication skills, honesty, and consistent behaviour. According to the players, coaches needed to be flexible in their interpretation of plans, and to provide lots of feedback, not only on performance, but also on coaching decisions. Players thought that coaches required skills in program evaluation and needed to have good crisis management skills.

Apart from its exposition of the Scottish hockey context, the research by Cross (1995) provided an insight into the lives of part-time coaches; what they struggled with and how they measured success. The athletes were focused on behaviours that had a direct impact on their future. This highlights the importance of relying only on athletes' perceptions of coach effectiveness. Because they often have a single focus, they sometimes do not take into account all the stakeholders that the coach is answerable to at the elite level of competition. Of importance, was the need for coaches to display consistent behaviour and honesty, and to provide feedback on game decisions, as well as on individual performance. The athletes emphasised the need for clear communication as they do not have time to interpret and decipher inconsistent coaching behaviour.

Comparisons between Expert and Novice Coaches

Ahlgren, Housner, and Jones (1998) evaluated expert experienced ($n = 10$) and inexperienced ($n = 10$) basketball coaches as they executed a 30-minute practice session of the "give and go" play in basketball. The focus of the study was to investigate the quality of practice sessions conducted by experienced and inexperienced coaches. The criteria for selecting experienced coaches were related to

coaching experience, success, peer recognition, professional involvement, and teaching certification. Inexperienced coaches were identified as having two or less years of experience.

The methodology consisted of three phases. In the first phase, coaches were asked to think aloud as they designed a training session on the "give and go" play. In the second phase, they had 30 minutes to execute the practice session with a group of volunteer players. This phase was video-taped. At the end of the practice session, coaches took part in the third or debriefing stage. They viewed the video and were asked a standard series of questions related to their interactive decisions. All verbalizations were audio recorded and transcribed.

The data was analysed using quantitive and qualitative research methods. Five observer coaches were selected to evaluate the effectiveness of the training session. They were selected based on years of experience and coaching record. Each observer coach viewed and analyzed five practice sessions. The observer coaches were provided with a conceptual framework to guide their observations, but were not constrained to the guide. Observer coaches were instructed to verbalize their evaluations of the training session. All verbalizations of the observer coaches were recorded and transcribed for analysis. The quantitative results indicated that the expert coaches made 83 summary statements; 64.55 % were positive and 34.9% were negative summary statements. In contrast, the inexperienced coaches made 52 summary statements, 28.8% were positive and 69.2% were negative summary statements. The aim of the analysis was to gain insight into the perceptions of the observer coaches.

Ahlgren et al. (1998) reported the following profile on effective coaching based on the qualitative analysis of the observer coaches' verbal protocols. Effective coaching was characterized by practice sessions that concentrated on skill instruction.

According to the observer coach, effective coach clarified the climate and made students aware of the objectives and purpose of practice. Detailed explanations and demonstrations were characterised by the use of instructional cues. Student engagement was guaranteed through well organised and sequential instructional tasks. Specific feedback and checks for understanding were used to ensure students understood the task and were performing the skill correctly. The climate was positive, the coach established rapport, and students demonstrated enthusiasm. Experienced coaches exhibited significantly more technical instruction and feedback whereas inexperienced coaches exhibited significantly higher frequencies of silent observation. The experienced coaches and inexperienced coaches both demonstrated similarity in the implementation of practice according to their plan. Inexperienced coaches, however, were less inclined to alter their plan when problems arose.

In a practice context, the findings of the study by Ahlgren et al. (1998) provided an insight into some effective coaching behaviours. The level of exploration, however, was shallow. It condensed the role of effective coaching to the basic execution and teaching of skills and was more reflective of a training environment. By providing such a controlled environment, the people or relationship element was removed, which many would claim is central to good coaching. In the planning phase, it may have been informative to ask coaches what they needed to know to make informed decisions about planning, for example, was the context important. Previous research (e.g., Berliner, 1989) on the development of teacher expertise suggested that novice teachers work with context free rules and are inflexible. As teachers develop they are guided by the context.

In some ways, the methodology used in the study is not very different from systematic observation. In this research design, however, the observer coach was part of the process and was not required to demonstrate their objectiveness. The observer

coach's opinion and experience was valued in this research. The method by which judgements were made by observer coaches also allowed for the identification of behaviours not necessarily contained in observation inventories. There are, however, other areas of methodological concern that are problematic with this type of research (Bereiter & Scardamalia, 1993). Comparisons of experienced and inexperienced coaches provide a very static picture. Although the study may indicate what experienced coaches know and do at a specific point in time, there is little information about how the experienced successful coach got to where they are and how they maintain their expertise. A second concern is the choice of task. The "give and go" task is easy for the experienced coach and well within their comfort zone and competence. The choice of task allowed the novice to handle the task but it did not really call on the experienced coach to demonstrate expertise. To do this required a task that challenged them, and is therefore at the leading edge of their competence.

Summary

In summary, research investigating the coaching process using qualitative methodologies has shed light on elements of the coaching process previously unattainable using other methods. Of significance, the coach has been a central figure in the research investigating the coaching process, and provided views that are rich in description and detail. The use of qualitative methods has enabled researchers to investigate coaching using an alternative lens. This lens has given power to the participants to tell their story, to discuss coaching behaviour and decision making, to explain what is valued, and to put it into context.

The majority of the qualitative research has investigated the history and performance of expert coaches working with elite athletes. This has provided a rich description of how coaches developed expertise and communication skills over time, and how coaches behaved and construct their work environment. There is limited

research investigating the coaching process from a novice coach perspective. The research conducted investigated novice coach perceptions of the coaching process including evaluation of their strengths and weaknesses. Other research has compared the novice and the expert coach in tasks that fail to test both participants or simulate a true coaching environment. There are still gaps in the literature investigating coaches working with athlete cohorts other than elite mature athletes, and information on the coaching process relative to the coach's stage of development in real time rather than through recollection. Some of the more interesting information about the coaching process has been gleaned from research focusing on the context. It has highlighted the importance of considering the role of the physical, social, cultural, and ecological environment in the coaching process.

<div align="center">Literature Review Summary</div>

The review of literature, investigating the role of the coach, has highlighted a number of gaps in the research. In most cases the research has created more questions that it has answered. Questions arising from the research relate to whether or not the coach is a leader; if there is no relationship between leadership theory and the role of the coach, then, this type of research is unlikely to uncover relevant information about the coaching process. The observation of coaching behaviour provides information about what actually happens in practice but questions remain about what that behaviour represents. De-contextualized behaviour may be of no value as the behaviour executed may be based on families of strategies, which are not explicit through action, understanding the decision making process that culminated in the choice of the behaviour may be more informative. Unpacking expertise is difficult (Abernethy, 1993). If the measuring tools (e.g., LSS, CBAS) limit choice and restrict further elaboration by the participant, unravelling the complexity of the coaching process is not easy. Qualitative research utilizing interview techniques has provided a

richer understanding into some segments of the coaching process (e.g., Salmela, 1995; Côté et al., 1995b). The development of the expert coach working with elite mature athletes has been explored, but what does this mean for the greater percentage of coaches working with athletes that are still in the developmental stage of their career? Understanding the context has surfaced as a key component of the coaching process (e.g., Strean, 1995; d'Arripe-Longueville et al., 1998). If this is the case then it is important to explore how different contextual components influence different coaching situations. With innovative approaches to research design investigating the coaching process, there are opportunities for gaining new insights that will help contribute to the establishment of a recognised body of coaching knowledge.

The literature review indicated that coaching as a domain still lacks a theoretical underpinning. This means that coaching, unlike teaching, is left to flounder as a profession. The implications are that without a knowledge platform it is difficult to move forward. Education and professional development programs become hit and miss when they fail to build upon and make connections with the profession. This requires an understanding of what knowledge and experience underpins the profession.

CHAPTER 3: METHOD

Introduction

The purpose of this chapter is to provide a rationale for the method selection

process in this research and to describe and explain how the research methods were

implemented. This chapter also elaborates on the process of data analysis and the

procedure for establishing trustworthiness of the results.

Rationale for the Research Methodology

The literature reviewed indicated there is a comprehensive body of knowledge

related to the coaching process based on leadership theory, however, research examining

the role of the coach, and coach expertise is miniscule. Kellet (1999) indicated that

professional coaches do not view themselves as leaders but prefer the term people

facilitators. If coaching does not infer leadership, then researchers need to clarify what

role coaches perform and what expertise is required to perform that role. In the last 15

years qualitative research methods have explored the role of semi-professional and

professional coaches using in-depth interviews and provided insights into the coaching

process previously unattainable (e.g., Bloom et al., 1997; Côté et al., 1995a; Kellet,

1999; Salmela, 1995). The use of qualitative research methods in these studies provided

an opportunity for researchers and participants to go beyond the boundaries of

predetermined ideas that have in most cases, identified leadership and coaching

behaviours independent of context.

The rationale for examining expert coaches of junior-elite athletes was based on

limited amount of research available on this coaching cohort. The majority of research

has focused on examining elite coaches working with semi-professional athletes. The

researcher wanted to establish the relationship between expertise and complexity of the context. That is, what role does the coach perform when working with athletes at the performance-development stage of their career, and what expertise is required to perform that role? Sherman and Webb (1988) advocated that context needs to be studied for the behaviour to be understood and qualitative research provides this opportunity.

There are very few studies in the sport leadership and coaching literature that have been conducted using in-depth interviews from a qualitative perspective. Yet to apply an in-depth analysis to the meanings, and processes that coaches identified as being significant in the development and application of expertise a qualitative perspective is required. A grounded theory approach was chosen because this would best allow the coaches to identify their own perceptions of expertise, and provide information about the expertise development and application within a performance-development athlete context.

Research Design

The research design used in this study was a grounded theory approach, a qualitative research technique developed by Glaser and Strauss (1967). It uses a qualitative approach based on systematic techniques and procedures of analysis to develop a substantive theory. A grounded theory approach extrapolates theories directly from the data, rather than using priori assumptions, other research, or existing theoretical frameworks (Taylor & Bogdan, 1984).

In this study in-depth interviews using a recursive model were used to collect data. The recursive model uses a semi-structured interview to guide the conversation that took place between the interviewer and the participant.

In this research method, theory is drawn or teased out of the data, often sentence by sentence, phrase by phrase, or word by word from field notes, interviews, and other documents. The aim of the analysis is to find meaning in the information gathered through identifying meaning by grouping similar data under conceptual labels, which requires interpretation of the data (Strauss & Corbin, 1990). Data is grouped into categories and further refined. Data collection continues until no new categories emerge and no new material adds to the current categories and theoretical saturation occurs. Theoretical saturation of each category occurs when: (a) no new or relevant data seems to emerge regarding a category, (b) the category development is dense, and (c) the relationships between categories are well established and validated (Strauss & Corbin, 1990). Strauss and Corbin (1990) stressed the importance of striving for this level of saturation to produce a theory that is conceptually adequate. The analysis culminates in the development of theory that is fully grounded in the data.

The development of a grounded theory is derived from the study of the phenomenon it represents and then theory emerges without any particular commitment to specific kinds of data, lines of research, or particular theoretical interests. The methodological guideline for theory development employs systematic data collection and analysis of data that requires constant comparisons and the use of a coding paradigm to ensure theory development and consistency (Strauss & Corbin, 1990).

Participants

The participants in this study were elite, successful coaches who worked with Australian junior elite sport participants. The coaches were also selected to cover a

diversity of sports and to provide a gender balance across sports. They included: (a) coaches of team sports, (b) coaches of individual sports, (c) female coaches, and (d) male coaches.

Two approaches were chosen to select coaches. The first sampling technique involved writing to Coaching Directors in State sporting organisations and asking them to nominate coaches they felt met the criteria for a successful junior coach. The only criteria provided was that the nominated coaches were: (a) working in a junior elite program, and (b) viewed as successful by that sporting association. The researcher contacted the nominated coaches by telephone and explained the significance of the study. Coaches choosing to participate returned a form confirming their availability. The second method used involved the snowball sampling technique. The participating coaches were asked if they knew any coaches who met the criteria and may be interested in taking part in the study.

The participants in the study were 20 coaches, with experience coaching junior elite athletes. Ten coaches were selected from team sports (basketball, cricket, volleyball, hockey, football, and netball) and 10 were from individual sports (athletics, diving, gymnastics, golf, and cycling). Ten were female and 10 were male coaches. Eighteen of coaches had minimum level 2 coaching accreditation from the National Coaching Association in Australia. Eleven of the coaches had international level coaching experience, six had national level experience and four had coached at the state league level.

Pre-Fieldwork

The target group for this research were coaches who had a successful reputation for working with junior elite athletes. One of the main problems of this study was gaining access to this group as the total pool of available coaches was small. Most sporting organisations only recommended one or two coaches for the study. These coaches were under time constraints; the majority were employed outside of coaching and their coaching commitments took up most of their available time.

Data Collection

Data were collected through in-depth interviewing using a recursive model. This model is the most commonly used method of in-depth interviewing and the preferred technique when using a grounded theory approach (Minichiello, Aroni, Timewell, & Alexander, 1990). Unstructured or semi-structured interviews are the techniques most commonly used in a recursive model and in this research a semi-structured interview guide was developed for use with the coaches. The recursive model of questioning relied on conversational interaction, and previous comments from the informant shaped the direction of the next question. This model also allowed the researcher to determine what information gleaned from the previous interview should be followed up and investigated with the next informant (Schwartz & Jacobs, 1979).

The recursive model relies on the natural flow of conversation to direct it, and it is possible for the interview to go off on a tangent (Minichiello et al., 1990). The researcher however was able to refocus the informant's attention back on the topic using the technique of transitions. Transitions were accomplished by connecting something that the informant has said with the topic of interest (Minichiello et al., 1990). The

advantage of using this method was that it allowed coaches to provide depth and breadth of meaning to behaviours they perceived to describe expert coaching. The advantage of using the recursive model of questioning was that it allowed the researcher to treat people and situations as unique and to alter the research technique in the light of information fed back during the process itself (Schwartz & Jacobs, 1979).

Interview Content

Demographic information covering the coach's name, age (optimal), gender, sport, gender coached, coaching experience, level of team or athlete coached, and coaching qualifications, was collected at the start of the interview (Appendix A). The demographic information gathered allowed the researcher to develop a profile of each coach. It also provided the researcher with an opportunity to compare the data with previous criteria used to define expert coaches. Qualitative data was collected using an interview guide designed to capture coaches' perceptions and interpretations of expert coaching behaviour (Appendix B). Although the interview guide was designed to remind the researcher of the purpose and key interview questions, the interview was conducted in conversational style, and flow was maintained as much as possible. Throughout the interview, coaches were asked further questions through the use of probes to clarify or to provide more depth of information on a topic that was not fully answered in response to the original questions. The questions were used to guide the interview.

The interview guide was divided into three sections. The first issue explores the coaches' history in an attempt to capture some of the early developmental processes that encouraged and supported the participant's decision to pursue a coaching career. In examining expertise, Bloom (1985, 1986) emphasises the role early participation,

practice and mentors play in the development of expertise. The second issue, coaching

behaviour and expertise, was designed to provide insight into the participants'

perceptions of coaching behaviour and expertise. This issue was deemed central to the

study as much of the previous quantitative research measured coaching behaviours

adapted from other domains (e.g., Chelladurai, 1990; 1991) or contexts (e.g., Smith,

Smoll, & Curtis, 1979; Smith, Smoll, & Hunt, 1977). The final issue addressed in the

interview guide focused on the role coach education plays in expertise development.

Research investigating coach education programs and their outcomes is limited and has

not attempted to capture the long-term impact of programs (Dickson, S. 2001a).

The interview was designed to provide informants with an opportunity to freely

discuss their perceptions and interpretations of coaching expertise. Through the first and

second questions, "Tell me why you decided to coach", and "How has your career

developed", the researcher was trying to encourage coaches to talk openly about their

coaching and allow them to perceive that the interview was about them and that they

owned it. Depending on the coach, this opening question often covered several of the

questions on the interview schedule.

Questions 3, 4, and 5, "Where did you learn most of your coaching behaviours?",

"Who had the biggest influence on your coaching?", and "What did you admire in those

coaches?", investigated how coaches learned about coaching behaviours and who was

responsible for influencing them. Through these questions, the researcher tried to

establish insight into the process of how coaches developed expertise.

Question 6, "What behaviours did these coaches use that influenced how the

athletes enjoyed themselves or performed well?", asked the coaches to specify and

elaborate on behaviours, so that there was a clear understanding of what that behaviour meant to the coach. Question 7, "If you were to isolate the best coaches in your sport, would you describe what makes them good from your eyes?", revisits what the coach observes in other expert coaches, the meanings they give to their observations, and the influence it has on their own coaching. Question 8 was "What do you think are the most important coaching behaviours that affect an athlete?" This question asked coaches to qualify those behaviours they believe had the biggest impact on an athlete.

Questions 9 and 10, "You are a successful coach; why do you think athletes choose to work with you?", and "What are your strengths as a coach?" asked the coaches to analyse their own expert coaching behaviours, expand on the meaning of expertise, and explain why the behaviour works for them. Question 11, "What would you like to improve in your coaching?" also explored whether or not the coach looked beyond their own present competencies and behaviours as a coach, and what they did about it.

Question 12, "Have you noticed any gender, age, or maturity differences in athletes that affect satisfaction?", explored some of the issues related to coaching youth, such as whether coaching behaviours change according to age, maturity, or gender of athletes.

Questions 13, 14, and 15 were "What is your coach accreditation level?", "How has your coaching accreditation level helped you as a coach?", and "What was beneficial about the coach accreditation program?" These questions asked coaches to critically look at what they learned from coach accreditation courses and analyse course content in relation to their beliefs about expert coaching behaviours. The final question, "How

would you restructure the course?" was teasing out those behaviours and practices that coaches believe are essential for all coaches to learn.

Gaining Access

       In the initial stage of the study, sport organisations were contacted and State Coaching Directors were asked to recommend suitable coaches. The coaching director from each sport was contacted by phone, and the researcher explained who they were and the significance of the study. This conversation was followed up with a letter. A form was supplied to list contact details of suitable coaches, and a self-addressed envelope was included, so that no cost was incurred by the organisation (Appendix C). The coaching directors were asked to contact the nominated coaches and gain permission for forwarding contact details to the researcher. Contact was made with coaches via a telephone call explaining the significance of the study. Coaches interested in participating in the study were sent an information statement and a form to return to the researcher confirming their willingness to participate (Appendix D). This was followed up by a phone call from the researcher that reiterated the nature of the study to them and confirmed their willingness to participate. The data collection method was explained; they were told that the interview would be approximately one to two hours in length and that it would be recorded. The coaches were asked if they had any questions and were informed that they could leave the study at any time. When the coaches agreed to take part in the study, a time and place was arranged. The day prior to the interview, the coaches were contacted to confirm interview arrangements. Due to time constraints experienced by coaches, interviews were arranged to minimize time commitment. The interviews took place at either the coach's home, office, or sport venue. On arrival, the

coach was asked to re-read the information statement and sign a consent form if they were willing to participate, and were reminded that they could withdraw from the study at any stage (Appendix E). The researcher also confirmed that the content of the interview was confidential and that no names would be used in the report.

Data Collection Process

Upon arrival at the interview, the researcher introduced herself and gave a brief introduction to the research. Permission was sought from the coaches to tape-record the interviews. All coaches agreed to this procedure. The interview guide used was designed to gather data to answer the research question. It consisted of a list of general issues that the researcher wanted to cover. The interview guide was used to jog the researcher's memory about certain issues and concerns relating to the research. Probing techniques allowed the researcher to seek out or clarify information on specific issues. The interview guide was revised as coaches provided information that had not previously been thought of and that the researcher thought required further investigation (Minichiello et al., 1990). At the conclusion of the interview, the informant was thanked and provided with an opportunity to ask questions about the research. In all cases, the informants did ask questions, and they provided some insightful information that they were reluctant to have recorded, or thought did not relate to the issues discussed. Informants were offered a summary of the findings when the research was completed.

Field notes. Field notes provide a written account of what is seen, heard, experienced, and the researcher's thoughts in the course of collecting and reflecting on data. Meaning and context of the interview can be captured more completely if the researcher writes out field notes (Bogdan & Bilkin, 1982). Comprehensive field notes

were maintained on all aspects of this research. The researcher kept three types of field note files: (a) personal log, (b) analytical log, and (c) transcript files, providing an exact reproduction of the verbal interview.

Personal log. The researcher kept a personal log that included descriptive accounts of the coaches, the settings, the process by which access was gained, ethical issues, and interview termination with debrief.

a) Gaining access described the method of gaining initial contact with the coach and organising the interview. The researcher recorded their initial perceptions of the first contact to provide a guide as to how the researcher would approach their introduction prior to opening the interview.

b) A descriptive account of the coaches and their settings was a reflection on how the interview opened, progressed, and finished, and how that affected the quality of the interview.

c) The researcher commented on interview termination. Because the researcher works in the same field as the coaches, it was necessary to reflect on how the researcher would detach herself from the coaches.

Analytical log. The researcher kept an analytical log that contained notes on the questions asked in the interview and on the ideas that emerged from the data. At the end of each interview, the researcher reflected on questions asked, information given, and how that would affect the direction of the next interview. This enabled the researcher to design new questions that would add more depth to the research.

Transcript file. The transcript file was a reproduction of the interview that took place between the coach and the researcher. The conversation was recorded on a tape recorder

and then transcribed verbatim. The transcript file was organised to allow for recognition, coding, and recording comments on the file. Minichiello et al. (1990) recommend that the written text be centred in the middle of the page with wide margins on both sides of the page. Initials were used to designate "who said what." The left margin was used to reflect on the researcher's performance during the interview. Information from the analytical and personal log was transferred into the right margin. Each transcript file ranged in length from 30-50 pages.

Data Analysis

The objective of the analysis was to build an organising theory of categories emerging from the unstructured data. These categories represented coaches' perceptions and interpretations of expert coaching behaviour (Strauss & Corbin 1990, 1994; Tesch, 1990). The data analysis followed Glaser and Strauss' (1967) procedure. There was a detailed examination of the field notes and interview transcripts during the early stages of the interview process. Periodical analysis of the data took place, as opposed to case-by-case analysis. A more robust analysis occurred at the conclusion of the data collection process when open-coding process was used to identify meaningful pieces of data (Strauss, 1987). It was used to breakdown, examine, compare, conceptualise, and categorise data (Strauss & Corbin, 1990).

In the initial stages of the analysis it was necessary to develop a list of general codes, as meaning was yet to be identified and organized. The coding families, presented in Table 3 developed by Bogdan and Biklen (1982), were used as a tool for sorting out the raw data. Once developed the codes were recorded in the analytical log. The codes were prefixed with a number to allow sub-categories within each code. Several steps

took place in the data categorisation. The first step was to have an in-depth

understanding of the data. This process involved reading the interview transcript,

breaking down each word, sentence, or paragraph, giving it a code, and recording it in

the column adjacent to the data on the transcript. In the initial stages of analysis the

research problem was used as the basis of the analysis direction. As this was: *how elite-*

Table 3. Coding families (Bogdan & Biklen 1982).

a) Setting/Context Codes	General information on the settings, topic or subjects;
b) Definition of the Situation Codes	How informants define the setting or particular topic;
c) Perspectives Held by the Subjects	How informants think about their situation;
d) Process codes	Refer to activity over time and perceived change occurring in a sequence, stages, phrases, steps, careers;
e) Event Codes	Specific activities
f) Strategy codes	Ways people accomplish things
g) Relationship and Social Structure Codes	Regular patterns of behaviours and relationships.

level coaches develop and apply expertise, development of expertise became one branch

of the analysis and application of expertise was the second branch. During this stage, the

following questions were asked of the data: What is this? What does it represent?

(Strauss & Corbin, 1990). The data were then separated into sub-files using the cut-up-

and-put-in folders approach, as described by Bogdan and Biklen (1982). Using this

approach, the notes were cut up into meaningful units of data, placed in manila folders

each of which was labelled with a code. Prior to cutting the notes, each interview

transcript was given a number, which was recorded on the piece of data to provide easy recognition and access to the original transcript.

As the data analysis progressed, another level of interpretation emerged comparing the codes and organising them into larger, more embracing categories. Once particular phenomena were discovered in the data, concepts were grouped together around each of these phenomena. Then the category that best represented the data in that category was named and in accordance with grounded theory procedure, links between categories were established to develop a conceptual model that would describe what coaches perceive and interpret to be expert coaching behaviours.

Trustworthiness

Qualitative research within a phenomenological paradigm has changed the nature of conventional tests of reliability and validity. The terms used are common in experimental research and describe the stability of methods, verification through replication, and generalisability of findings. Qualitative research in not concerned with generalising results and warns against that process.

Reliability is an assessment of stability, assuming the phenomena are unchanging. Guba and Lincoln (1989) define reliability as a given study's consistency, predicability, dependability, stability, and accuracy. The establishment of reliability for a given study typically rests on replication, assuming that every repetition of the same, or equivalent research will yield similar results. As Le Compte, Preissle, and Tesch (1993) proclaimed, reliability can, at the most, only be approximated in qualitative research. Kirk and Miller (1986) emphasise the importance that documentation of the research procedures has in enhancing reliability. In this study the researcher was careful

to document all procedures and changes in the design created by an increasingly refined understanding of the setting.

Internal validity (do the researchers observe and measure what they think they do?) is a strength of this approach of inquiry (Le Compte, Preissle & Tesch, 1993). The use of in-depth interviewing allowed the researcher to constantly check and recheck the validity of coaches' perceptions and understandings of the situation, so that tentative conclusions could be drawn (Kirk & Miller, 1986). To affirm validity, and reduce discrepancies in the coaches' stories, the researcher applied two checking techniques, recursive interviewing and probing. This allowed the researcher to return to questions for clarification, and probe various answers by asking for more detail or explanation.

Due to the nature of qualitative studies, external validity is compromised as inferences drawn from the data reflect and are significant to the informants and are not to be viewed as generalisable. Its strength may lie in a greater understanding of the situation, but in essence the findings are specific to the group of coaches who participated in the study. External validity is greatly assisted by providing the greatest possible range of information and thick descriptive data.

In the research design, several procedures were put in place to ensure trustworthiness and minimise bias. These were the maintenance of a personal and analytical log, maintaining safeguards, triangulation through multiple methods of data collection, peer debriefing, thick description, and using supportive quotes from the transcripts as a means of internal validity.

Maintaining a Personal and Analytical Log

These logs contained notes on the questions asked in the interview to add depth to the audio-taped interview. This allowed the researcher to constantly reflect on their interpretation of coaches' direct quotes. Relevant demographic information and personal observations of the informant and situation were also recorded in detail.

Maintaining Safeguards

The researcher had prior training in qualitative research techniques and extensive experience in coaching, teaching, leadership, and sport.

Triangulation through Multiple Methods of Data Collection

Triangulation is considered to be the most important tool for assessing the trustworthiness of qualitative data (Fortunato, 1996). This technique combines dissimilar methods, such as interviews, observations, and physical evidence to study the same unit (Merriam, 1988). The process involves checking inferences from one set of data across other sources of data. Denzin (1970) stated that the flaws in one method become the strengths of another, and, by combining methods, the best results can be achieved, while overcoming the unique deficiencies of each method/technique. In this study the three data sets were the personal log, the analytical log, and the transcript file. Triangulation identified agreement between transcripts file, the personal log, and analytical log. On the whole there were some inconsistencies, for example, the decision as to whether mentoring was a sub-theme of "Factors Influencing the Decision to Coach", or "Effective Coaching". These were resolved by revisiting the three data sets, and engaging in peer debriefing procedures to ensure correct theme development.

Peer Debriefing

This strategy involved a colloquium gathering of peers mid-way through the data collection. These peers asked questions and supported the research process. This technique can help establish the credibility of the researcher and value of the research, through peer review and feedback (Patton, 1990). Peer debriefing also occurred between the researcher and her supervisor. The supervisor checked results through all stages of the analysis. The peer debriefing process raised a number of issues, such as the use of a common language, clarification of concepts, and the categorisation of themes and sub-themes. These issues were addressed by revisiting the data, and through the use of recursive questioning in later interviews designed to clarify concepts. Largely, peers supported the process and interpretations.

Thick Description

This provides the possibility for transferability of conclusions in similar contexts. Detailed accounts in the study's write-up may provide an opportunity for the data to be transferable to similar coaching or leadership situations. Thick description enhanced trustworthiness by providing detailed accounts of the pre, actual, and post interview process. The personal log contained details of the interview entry and exit, context, venue, additional notes and questions, emotional responses. The interview transcripts represented the verbatim discussion with participants. One example of the benefits of this procedure was illustrated by tagging information from the coaches by content and emotional response in order to place a value on the importance of an issue. This was evident in discussions related to the coach-athlete relationship.

Summary

Qualitative research provides an alternative approach for investigating

phenomena that requires depth of meaning in areas that have lacked interpretation and

require further investigation to build upon the body of knowledge. This chapter defined

the methodological context used to explore and extrapolate the coaches' perceptions of

expert coaching and application of expertise in sport. It provided a rationale for using a

grounded theory design and described how the research methodology was planned to

suit the study of expert coaching in sport. Rigorous and systematic methods of data

collection and analysis provided the basis for establishing trustworthiness of research

findings.

CHAPTER 4: RESULTS

Introduction

This chapter examines the development and application of expertise of elite
–level coaches working with junior elite athletes. Twenty coaches, working with
junior elite athletes participated in the study. The demographics have been analysed to
provide individual profiles on each coach and to compare expertise criteria that has
previously been used in research. The coaches provided in-depth information about:
(a) factors that influenced their decision to coach, (b) their perceptions of effective
coaching behaviour and the knowledge base required to coach, and (c) the influence
of coach accreditation and education programs in their development.

Interviewer Demographics

In qualitative research, the researcher is no longer viewed as an "outsider" in
the development of theory therefore it is pertinent that my background is also
displayed. I am a female coach, I have coached elite male and female athletes at
national level in a team sport, and have 31 years coaching experience.

Coach Demographics

Individual demographics collected from each participant included gender of
coach, their years of coaching experience and accreditation level, what gender they
coached, performance level of athletes coached and the type of sport coached (see
Table 4 for individual profiles). There is no agreed way to identify "successful"
coaches. Using criteria such as win/loss records, championships won, and years of
experience miss important elements of successful coaching. As an alternative,
successful coaches in this research were identified by the organisations within which
they worked. This ensured that the coaches were achieving what their organisations

believed to be "success".

The results indicated that 16 of the coaches had 10 or more years of coaching experience. Eleven of these coaches had 20 plus years coaching experience. Eleven coaches worked with international level athletes, six with national level athletes and three with state level athletes. Ten coaches had attained a level 3 coach accreditation qualification; eight a level 2, one a level 1, and one coach had no qualifications. It is difficult to draw conclusions from this data, some sports are in the early stages of development, and coaching experience is dependent on the evolution of the sport. Coach accreditation is reliant on whether the sport offers all levels of accreditation and some of the sports represented in this research do not. Also not all the sports have international representation and therefore the coach may never have had an opportunity to coach international level athletes. Therefore the criteria of experience, accreditation, and athlete performance as representing coach expertise, need to be relative to the sport's stage of development and profile.

Factors Influencing the Decision to Coach

The participants in this study highlighted several factors influencing their decision to coach. These factors were: (a) their participation in sport as an athlete and the need to maintain involvement in the sport, (b) family involvement in sport, (c) a belief that they had something to offer the sport, (d) academic background (e.g., study of education, human movement, physical education, coaching science at tertiary level), and (e) the influence of mentoring during the formative stages of their own coaching career.

Transition from Athlete to Coach

All coaches in this study had a previous athletic history and were exposed to good coaches as junior athletes. The coaches described three different pathways into

coaching. These pathways were: (a) athlete retirement followed by a career in coaching, (b) recruited as junior athlete to coach, and (c) recruited as a player-coach. Eleven coaches made the transition from athlete to coach on retirement from their athletic career. Four of these coaches made an informed decision that they were never going to reach the level of achievement to which they aspired and that coaching provided opportunity to maintain involvement in the sport. Typical expressions of this were:

I was always keen as a player. I wanted to play test [sport] and when I realized I couldn't do that myself and being a physical education teacher coaching made sense. [Coach 19]

Eventually I came home and played [sport] again and was basically still interested in playing and I came to Melbourne in 66, and in 67 busted my elbow so I couldn't play any more so I coached. I'm sure that when my legs ran out or I wasn't playing well enough that I would have gone into coaching. [Coach 3]

Mainly because I wasn't good enough to be the level of [sport] that I wanted to be and I love the sport and wanted to maintain my involvement so I became a coach. [Coach 4]

I wasn't good enough as a player, I played State and in the Australian under 21 team, but I was never going to make it, there were always Australian players ahead of me. I was always assisting the coach while I was playing and obviously had a tendency towards coaching and teaching with my teaching career, and teaching courses. [Coach 18]

Table 4. Coaching Profile of Respondents

I.D No.	Coach Gender		Years of Coaching	Accreditation Level	Gender Coached		Athlete Level	Sport
	M	F			M	F		
1	√		30	2	√		S	T
2	√		24	3	√	√	I	T
3		√	40+	3	√	√	I	T
4	√		5	2	√	√	I	I
5		√	7	3	√	√	N	T
6		√	15	2		√	I	I
7	√		15	3	√		S	T
8		√	38	3	√	√	I	I

(table continues)

Table 4. (continued)

#							Athlete Level	Sport
9	√	√	20	2	√	√	I	I
10	√	√	30	3	√	√	N	T
11	√	√	12	2	√	√	I	I
12	√	√	30	2	√	√	N	T
13		√	23	2	√	√	S	I
14		√	22	3	√	√	I	I
15		√	3	0	√	√	N	T
16		√	10	2	√	√	I	I
17		√	20	3		√	N	T
18	√		10	3		√	N	T
19	√	√	30+	3	√	√	I	T
20	√		7	1	√	√	I	T & I

Note.
Key: *Athlete Level*   S = State level   N = National level   I = International Level
      Sport   I = Individual sport   T = Team sport

The main reason I went into coaching was I could no longer participate in my sport. I wanted to remain in my sport so I started off coaching at a recreational level and got a real appetite for coaching. [Coach 16]

In six cases the coaches began their coaching experience while still junior athletes. In all cases the coaches were mentored or supported through the process, enabling them to make rapid progress and build confidence through encouragement and feedback as reflected in the following statements:

In [sport] I was very lucky, I had the Australian coach at the time, he actually took us from Under 12 girls, farmed us out to a bunch of other coaches, but he was hands-on with the whole [sport club] and he actually structured good coaching skills for us to learn as well. He invited me to be a coach at the age of 16 for Under 12's at State level. Now at my age I see that I was way too young but at that age I thought "yeah, I can do this" and basically from the structure he taught us as athletes ourselves I was able to put that into the juniors pretty easily, everything fell into place when teaching them. [Coach 6]

My coaching career developed while I was still [sport] I did a bit of coaching with the coaches I was actually coaching with. [Coach 4]

I started looking towards helping some of the kids as I was training. The head coach started to see what was happening and started to encourage me more to coach than compete. [Coach 14]

Three coaches started their career as player-coaches. In one case, this experience was plagued by problems. It tested personal relationships when the power balance changed to a coach-player relationship. The coach reported issues with game logistics and gaining credibility with the athletes:

I coached top grade men for three year as a player-coach. It was difficult being a player coach. Just the logistics of running a team, and coaching people you'd player with for a long time. When you've been a player and then have to separate from your friends it's a difficult task, gaining credibility and authority. I was young and did not do it very well. [Coach 12]

Family Involvement in Sport

In three cases, family involvement in sport encouraged the participants to take up a coaching career. In some families there was a strong history of coaching, and for others, family involvement in the sport meant coaching was an obvious choice for the participants, as indicated by the following quotes:

Big background family wise with coaching. My dad was a swimming coach and a boxer and also a swimmer and my uncle was a boxing coach and he went to the Commonwealth Games in New Zealand, brother was a basketball coach, but only club level, I only thought about last year, like why am I here or why am I doing this and I just realized all the people around me had not only been coaches but had some kind of an aspect of what is needed to become a good coach and it has just kind of developed me. [Coach 5]

I started off as a club member and we used to do voluntary coaching and it just continued on from there. Turning professional as we had to do in those days, there were no amateurs as there are now, you can coach and not receive money and be excluded from doing the sport, in my days you had to turn professional so I just continued on. I have a son with bad asthma so I continued working with him and built up my own group and just followed through from there on. [Coach 8]

I just sort of fell into it really. I played professional [sport] for a number of years and once I retired from the professional circuit, I just came back to Melbourne and just sort of fell straight into coaching. My brother had a coaching job waiting for

me when I came back so it was just the way things turned out, nothing was particularly planned, it is just the way it happened. [Coach 13]

Need to Contribute to the Sport

The transition from participating in sport to coaching athletes is not an automatic progression. Not all athletes choose to become coaches, nor have the skills to perform that role. Eight coaches in this study believed they had something to offer and give back to the sport. In some cases, it was an opportunity to maintain involvement in the sport, in others it was an opportunity to contribute to the sport, as these statements indicate:

I had a great need to give something back to the sport. [Coach 15]

When I stopped playing, I still want to be involved and coaching really interested me and I thought I had a lot to offer kids. I was really fortunate as a player to be coached by a lot of coaches, all the best coaches that are even around now, I was coached by them, some good some not so good. [Coach 18]

It's hard to say, I started coaching when I was still playing football, and I think I probably did it because I felt that I wanted to put something back into the sport that I loved. [Coach 1]

I decided to coach to put something back into the sport. Before that we had a lot of people who came up and asked if we were interested in coaching and when I retired, I thought it would be nice to put something back and that is how it evolved. [Coach 11]

I felt I had a lot to give other players to short cut the system. I suppose the usual reason why I wanted to coach was to pass on the experiences learnt after a ten year competition period. [Sport] in particular is a ten-year apprenticeship period, so-called professional [sport] can be cut down to two or three years, essentially

with the right information, technically, physically, practically, mentally and professionally. [Coach 9]

Two participants, who coached female athletes, made the decision to coach based on the identification of poor coaching practice of these athletes and believed that they could positively affect change, and pave the way for better coaching practice.

When I came back and started coaching women, which was about five years ago, I came back because they asked me to and I also want to help coaches coaching women, where one team dominated, and I wanted to coach properly and show what could be done. I had seen too many people coaching for the wrong reason and they were often second-rate male coaches. [Coach 12]

Coaching just came about by being an ex [sport], just wanting to be involved in the sport still, still having the yearning for it and having the shop, having girls coming in and saying they want to get into the sport, I thought I could have a role there helping them out. Basically I really didn't have prior knowledge of coaching other than being coached by a couple gentlemen over my years. It was not something that I have a certificate to go out and do, I just wanted to do it to help female [sport] racing improve and stemmed from there. [Coach 6]

Academic Background

Twelve coaches attributed their coaching effectiveness to their academic background. Five coaches had a physical education degree, three a human movement degree, three an applied science degree in coaching, and one had a teaching qualification in an unrelated discipline area. They felt the content of their courses prepared them for what was to come and that the skills required for teaching assisted them in coaching. Typical comments made by these coaches were:

The degree helped because in human movement science we got a whole range of different things. It made you more prepared for what was to come. [Coach 16]

I am glad I had an opportunity to do my degree at university because I did

psychology and that taught me about athlete behaviour and stuff like that. That's

probably more where I learnt about how to deal with athletes. [Coach 4]

Mentoring

Mentors provided scaffolding for the coaches in the early stages of their career.

Eleven coaches acknowledged the role of mentors in instilling beliefs about different

components of coaching. The beliefs varied with each coach and depended on their

stage of development. Typical comments were:

… was my first mentor, he was my boss in my traineeship, he taught me a lot

about specific skills, particularly [sport specific information] play, [sport specific

information] in particular, [sport specific information] play, he also taught me

about the way in which to deal with people, in particular he gave me an ease with

people in communication. … I suppose it showed me the qualities that I believe

that good club professional should have, which is good business acumen, he

always did the right thing by me so he understood good moral credit, he

understood and rewarded good moral behaviour and poor behaviour wasn't, and as

I said his communication skills with the general public and his general

membership was just one version of many I suppose which I have found and used

since. [Coach 9]

He was the first guy that taught me that [sport] is not just about getting players

and putting them on court. There are lots of other things. [Coach 2]

… had a big influence on me because he was able to sit opposite me when I was

coaching and he was a critical friend, he would say "well why didn't you pick

someone up out there, why did you sub so and so, or why did you think that would

work?" From the game tactic point of view he had a great influence. [Coach 17]

I had two main role models one was one of my earlier coaches before he retired. He was young for coaching [sport] and I got along with him very well, I still do. So he was one of my main role models and another one was actually the AIS coach at the time, a fellow Victorian whom I also got along with very well the time. Just the same things again, very young, very easy to get along with compared to the older coaches. Both very laid-back sort of people and I still get comments from people now saying that I am very much like those two blokes. [Coach 4]

With my first mentor I admired the results she achieved, her athletes were very good. Although she was strict she got people to work for her. She set standards, trained hard and looked good. The athletes performed hard but I'm not sure they enjoyed it. She achieved this through a lot of intense programming, the stuff you never get to see as an athlete. [Coach 16]

The coaches personal experiences as an athlete also strongly influenced their career pathway.

Pathways into coaching varied; however, all coaches had a previous athletic background and experienced good coaching. These coaches enjoyed their athletic experience and the culture surrounding the sport. This influenced the majority of the coaches to maintain involvement with the intention of contributing back to the sport. As coaches, they achieved early success and were supported by mentors or had role models in the process. Mentoring provided knowledge platforms that enabled the coaches to capitalize on others' experiences and use it to progress as well as providing the coaches with a feedback mechanism to inform their own coaching. Many of the coaches were influenced by their academic background, in particular, academic courses that contained a pedagogy component.

Effective Coaching Behaviours

The coaches were hesitant to discuss specific coaching behaviors out of context. They felt it was more appropriate to discuss the coaching process as a whole, rather than isolated coaching behaviours out of context, since many of the behaviours practiced were built upon families of strategies developed over years of experience. The coaches described the coaching process in terms of: (a) defining and understanding their role, (b) the ability to evaluate individual athletes, (c) developing programs through goal setting, and (d) the knowledge base and experience required to perform their role.

The coaching process as viewed by the coaches was a dynamic process that began with understanding the athlete. All the coaches placed a high priority on evaluating the athlete in the initial stages of the relationship then using evaluation as an ongoing process to monitor improvement and to provide direction for the next phase of the athlete's development program. The coaches viewed sport discipline knowledge as valuable only when you knew how and when to transmit it and adapt it to the context and needs of the athlete.

The Role of the Coach

All coaches emphasised that the major role the coach was required to perform was to build the athlete confidence through expanding their capabilities, and reducing their limitations. The respondents, as coaches, constantly evaluated the athletes and developed individualised goal setting programs. Evaluation provided the feedback loop for altering each athlete's program.

Developing Athlete Confidence

According to all the coaches, developing athlete confidence is multidimensional. Confidence is achieved by taking time to understand the athlete, building their capacities and having a belief in them. The coaches emphasised the need to make time

to communicate with each athlete and understand what is happening in the athlete's context, as illustrated by these statements:

Confidence. Just find lots of time, my job as coach is just to instill confidence into the [sport]. Self-esteem is one of the hardest things. [Coach 6]

At different times, knowing when they are high and when they are low. Their confidence level, you can watch them, if we are having a great tournament, we would sit down with a couple of girls I am working on, and just kind of talk to them. [Coach 5]

He took time to explain, to work with myself and anyone else who is interested to try and improve technique, it was not just getting in and being part of the group, [sport] up and down, so I guess it was the time in the explanation on [sport] he gave to his pupils. [Coach 8]

We put time into our athletes, we are always there for them, night and day. [Coach 11]

There are lots of different behaviours that we can use with different athletes, obviously some you can chastise to a certain degree, certainly not over the top, but certainly sometimes you need to rev an athlete up and in other cases, you have to calm them down and basically it comes through the amount of time you spend with that individual and knowing how they take it and how to extract the best performance of that particular athlete. [Coach 17]

When an individual has time spent with them they feel special and important and then they want to do well, not only for themselves but also for the coach. Athletes need to feel supported and coached. [Coach 16]

I am willing to put in the time to help those who wish to be helped. [Coach 4]

Confidence building through skill development and success. The coaches built athlete confidence through skill development, ensuring opportunities for the athlete to

experience success, providing feedback, and demonstrating their belief in the athlete. This is demonstrated in the following quotes:

I don't think it's only one thing you do, it's a matter of constantly saying, "you should be getting better confidence because of the success you are experiencing at training and we want to now see that transferred across to game". I think that process that takes place in a cycle that takes place over long period of time. [Coach 19]

I used to probably give them a lot of confidence, I have only coached the girls, so I cannot speak from the men's point of view, and they do thrive on confidence, so I used to as a coach give them a lot of feedback and a lot of positive feedback to help them play and feel good about themselves. [Coach 17]

Always looking to find positives, it is obviously a lot of positive reinforcement, being able to see the standard that they can achieve and reinforcing it. Taking time to have a great interest the athlete as a person. [Coach 2]

Most of my coaching really first came from what I felt was lacking in my own training in my confidence as a [sport] and I wanted to see the juniors girls picked up on that more and I just studied them, their technique and compared it to the guys technique and I just tried to simulate the same, so I'd give the girls the confidence that they can do it as well. [Coach 6]

Pump the skills and encourage them to do the skills so that they know how good they are because you get back to the businesses of self-esteem, how they feel about themselves, all the time you just cannot get away from it. [Coach 19]

...a faith and belief not only in what you are doing but in the people you're working with and they've got to see that faith. [Coach 1]

I have had it happen a couple of times during my coaching career where the player doesn't think I believe in them. They probably are right so subconsciously I must

have done things. Whether it is the way I communicated with them, the feedback

I'd given them, the playing time they got or whatever else that shows that, so I'm

pretty careful now to make sure they know exactly where I am coming from.

[Coach 2]

Empowerment. Nine coaches mentioned the importance of empowering the

athlete, as part of expanding their capabilities and developing their confidence.

Coaches described two pathways to empowerment. One was to give athletes (and

other members of the organization) responsibility and trust them to undertake the role.

The other was to empower athletes through encouraging independence. The coaches

believed in giving the athletes part ownership of the program through empowerment.

The following statements reflect this approach:

I have no doubt in my mind now that the empowerment procedure works best

when people are trusted by others, given a challenge and trusted to coach and get

on with it, but provided with support if needed but not by imposing your will and

suffocating the person, having given them a job saying that well I am not going to

control you through that. It will work best for people who have trusted us, who

have been a good and faithful servant, this is the task and the challenge and we

think you have got the credentials to do that. [Coach 10]

Communication is to let the athletes have input into their programmed and let the

athlete drive the program for a certain amount of the program. [Coach 11]

So with the players, we sat down and set out how we were going to achieve that

by talking and developing along with the players and asked what they wanted to

achieve and also basically they had to accept that they had some ownership of

those roles. [Coach 12]

From a coaching point of view, I guess I just have to get better at developing

independence, it is the one thing I'm quite big on. A very good session for myself

is having a group of athletes that pretty much run the session where I almost say nothing apart from the critical points. [Coach 20]

I guess the athletes have to have some responsibility and role within a program whatever the sport. They need to feel they are empowered and have a role in their own program. [Coach 16]

I've sort of, as I've got older tried to give more responsibility to the team and players. [Coach 3]

Confidence building outcomes. Three participants perceived the outcomes of building confidence as developing athletes who had a strong self belief and a positive perception of themselves.

The number one thing is I want the players to feel good about themselves okay, because self-esteem is very important in all this and if I can I will deliberately set skills that will make players happy, particularly if I know I want to do something difficult later in the day or in that working session, happiness and fun is very, very important in this whole scenario. [Coach 19]

Knowing yourself and feeling good about yourself and having a nicer perception about yourself so that you go out and handle the situation when you are out in the middle that is very big. [Coach 2]

In summary, the coaches highlighted the importance of understanding what their role was in a particular context. To pilot change, the coaches emphasised the need to develop athlete confidence. This was accomplished through creating an environment where athletes developed competence through experiencing success. Demonstrating belief in the athlete was mandatory, and influenced the athlete's belief. As part of confidence building, the coaches promoted empowerment by encouraging independence and relinquishing part of their power enabling athletes to have more control over their own destiny.

Evaluation

According to all the coaches, the first step in the coaching process is the evaluation of the athlete. The coaches reported that they evaluate the athlete from a number of perspectives. These perspectives range from physical capabilities, motivational preferences, contextual factors, athletes' perceptions of their own abilities, to the athlete's personal goals. The coaches expanded on three points relating to the evaluation process. The first point was the importance of knowing the person and having an interest in them when considering how best to implement and design a program that assists the athlete to achieve their potential. If there is no rapport, then it is difficult for either the coach or athlete to achieve their goal. Secondly, coaches acknowledged the importance of recognising the time commitment required for the evaluation process. In some cases it is trial and error, but it is a necessary starting point for determining the shape and direction of the athlete's program. The third point was the need to understand the athlete's psychological profile. The evaluation of the athlete's physical capabilities was referred to, but the emphasis was on understanding what motivates the athlete and how that information can be acted upon to affect change across all areas of their preparation. Typical aspects of evaluation were:

It is not easy, you have got to know the people of course that you are dealing with, it comes with trial and error. The time limit is the factor really because you are trying to move the class along, trying to conduct tasks in a particular time limit and you need to work with individuals with those tasks, so it is not easy at all. [Coach 18]

You have got to know that person is going to get the most out of you as a communicator, you have got to be able to understand their personalities, it goes with what I was saying before, and find out what is going to work for that person. It might not only be the way you are talking to them, but the way to actually

telling them to work with these skills, so you are working with their personality as well as the game. [Coach 19]

It is really getting to know your athlete and knowing what is going to bring out the best in that particular person. [Coach 8]

Well, right from early age, I skill test kids and so forth to establish what they can do but it is mainly to do with finding out about the kids themselves, what they think of themselves and what their perceptions of their abilities are, whether those perceptions are real or not. [Coach 13]

Goal Setting

The coaches all used some form of evaluation process to assist in developing individualised goal-setting programs for each athlete. The coaches described how they evaluated (an ongoing process) the athlete. Based on the athlete's strengths and limitations across a number of domains (e.g., physical and psychological domain), the coach developed pragmatic goals in a programmatic way. The coaches emphasised the need to understand the athlete's motives. The process is best described as athlete-centred and coach-driven. The planning process resembled a coach-athlete partnership, as compared to a coach-subordinate relationship. It required input and understanding from both athlete and coach.

Because I believe the most important person in the coaching scenario is the intentions of the player, if the player does not know where they want to go or I cannot perceive where they want to go, then we go nowhere. [Coach 19]

You always have got to work towards what the athlete wants, not what you want and just helping that athlete get over life's hurdles which everyone comes up against and understanding everyone is different. [Coach 6]

So with the players, we sat down and set out how we were going to achieve success by talking and developing along with the players and asked what they

wanted to achieve and also basically they had to accept that they had some

ownership of those roles. [Coach 12]

Technical Understanding of Goal Setting

The coaches displayed a technical knowledge of effective goal setting. According

to the coaches, for goal setting to be effective the goals set must be realistic and

attainable. The goals need to be broken down into sub-goals and measurable targets

set. The goals, sub-goals, and targets should be specific and set within timeframes.

The coaches were concerned about the psychological ramifications of poor goal

setting, for example, reduced athlete confidence. They made statements such as the

following on this point:

Goal setting in itself, then being specific in goal setting, put in timeframes,

breaking down goals into strategies and into small chunks that are achievable,

being able to plot progress objectively is something I never did when I was

playing, therefore stopping the downward spiral which athletes can get into.

[Coach 9]

I think that comes down to goal setting again I feel. If you set down your goals in

concrete and you map out the program and you set little targets along the way,

they have to be achievable, then athletes aspire to achieve those things and the

overall sort of ultimate goal. [Coach 11]

It is very important. You have got to be able to be very realistic. You cannot set

goals that are unattainable because people lose their confidence, so goal setting is

very important regardless of the level ability that one has. You have got to be able

to evaluate that person and know their skill level and probably the skill level that

they are going to attain and not over set those goals if it is not achievable. [Coach

13]

Evaluation and goal setting were the skills and tools the coaches used to create a structure where learning could took place. Evaluation skills enabled the coach to make decisions about how to motivate the athlete so that change could occur. The coaches emphasised the psychological evaluation of the athlete as the starting point of the evaluation. Coaches depended on goal-setting as a tool to initiate the change process. Establishing a goal-setting plan was a two-way process, where both coach and athlete contributed. To successfully execute a goal-setting program the coach must have a good technical knowledge of how to design and implement a program.

Coach Knowledge Base

In contrast to previous research (eg., Chelladurai & Saleh, 1978; Claxton & Lacy, 1986; Salimen & Liukkonen, 1996; Smith, Smoll & Hunt, 1977), where specific coaching behaviours have been identified and quantified, the coaches in this study described the type of knowledge base required to perform the coaching role. The participants described the importance of knowledge and the acquisition of knowledge. The knowledge base required for coaching fell into four categories, these were: (a) sport discipline knowledge, (b) pedagogical knowledge and skills, (c) contextual knowledge, and (d) personal knowledge.

Knowledge Acquisition

All coaches supported and were examples of life-long learners. They continually expanded their knowledge base through all forms of literature and media, attending courses, observing other coaches, and networking. They discussed the need to not only be informed but to be passionate about the sport. They were obligated to perform their role correctly, which meant constant updating of their knowledge, and self sacrifice, as reflected in these statements:

> Well first of all, they must have a great deal of knowledge about the sport, about
> the requirements of the game and that knowledge is not to just rely upon their own

background, or of what they have read or just picked up from other people, but the ability I supposed to think broadly, to be able to look ahead, to be able to get into the context. We all have bits and pieces of knowledge and it is only after a while we can put into a proper context and see where it fits, but a good coach should almost the like a crystal ball gazer if you know what I mean, so that what he's doing now is relevant to some future goal, not only on a team basis but with the kids. [Coach 7]

I don't think anybody can coach without knowledge, that is number one to me that the coach must have the biggest, in-depth knowledge of people first and the game and what the game really means and I don't mean the skills of the game, I mean the strategies and the things like that, so there is a huge knowledge base there, conditioning and all that sort of things. [Coach 19]

I spend countless hours just finding information. I was studying and planning to get it all done with the team. [Coach 2]

I think the coach has to continually educate themselves whether it is through reading journals or attending courses, because if the coach isn't up to date with the latest information their athlete's are not getting cutting edge technology. [Coach 16]

Watching people and I guess, I learnt a lot of things from my first coach. [Coach 3]

Sport Discipline Knowledge

Sport discipline knowledge is the knowledge base specific to the sport, which includes fundamental skill knowledge, strategic and tactical knowledge, and the role sport science plays in enhancing performance. All participants made reference to the importance of fundamentals, discussing them in terms of the foundation or building blocks of athlete expertise. Typical comments were:

It is paramount. If you cannot do it at basic level, you're going to have great

trouble doing it at the elite level, or advanced level, even at any level really, but

the basics are the most important. It is you're grounding. [Coach 13]

You have got to have coaches who developed the techniques correctly, of course it

depends whether they are juniors or people that have already developed their own

techniques. So if they are young they are going to have to develop their game and

thus they have got to be taught the correct techniques. [Coach 12]

I think it is because I take care of technique and all the little things that the

athletes requires. Ultimately they are the things were going to stop them being No

1 in Australia or number 1 in the world. They are not going to get there if they

haven't been taught initially all those skills and it is no good getting an athlete of

16 or 17 years of age and think you can change them because you can't so I have

success initially with the young ones I like producing my own athletes. [Coach 8]

He felt that the fundamentals and your foot work were the most important things

to develop so in training sessions that is what we did. He started to give me an

appreciation for those things that were important, and that's how I started really

researching the game. [Coach 2]

I still feel because we put time into them. We go back to the basics when we first

get these athletes and we go through and we watch them do starts and their efforts

and their skills structure and we work with them first there and it is a slow

process, and we go along working first correcting their technique, in [sport] a lot

of it is technique. [Coach 11]

Sport science was perceived by nine coaches as playing a significant role in the

preparation of athletes. Hence, the coaches needed to have an understanding of how

different branches of sport science contributed to their sport.

I think there are three things to coaching largely there is fitness, skills and there is motivation. But I think I know it is divided into three basic areas, you've got to have a basic level fitness that is going to depend on the level you're playing at and the same with skills and I think probably the same with motivation. [Coach 19]

Basically there are lots of areas we would like to address, sport science, psychology, the whole biomechanics is unlimited and when I stop striving to learn, it's then time to get out of the sport. [Coach 11]

You have to be a really professional person. So a lot of my work with the Under 21's was done in the area of nutrition, fitness, and the psychological aspects of the game. [Coach 3]

Coaches emphasised the need to not only have a good knowledge of the sport but to have a broad and deep knowledge of the sport. This not only assists in their coaching but allows them to understand related areas of knowledge and converse with experts in the sport science field. These coaches also demonstrated a hierarchical understanding of how to organise skills so that athletes had a good grounding in the fundamentals of the sport.

Sport Pedagogical Knowledge

Sport pedagogical knowledge referred to: (a) planning and organization, (b) the learning environment, and (c) understanding gender differences. The coaches all emphasised the need to plan and be organised in the training and game situation.

Planning and organization. All coaches emphasised the need to plan both short-term and long-term goals, so that not only the coach, but also the players knew the direction of the program. Planning incorporated an understanding of how to build individual and team skill progression, game simulations, and preparation for upcoming competition into training sessions. In implementing the plan, the participants highlighted the need to be organised and to be seen to be organised by

players, which required good management skills and practice. Quotes typical of these views were:

> Using their skills to advantage by working on things that would mean that we would beat other teams. I think I had constructive training sessions where it was not just sit in the car and think about what I'm going to do. There was a real plan in this, in what I'm after and so I'm going to do these drills this week and next week that will develop this and so on it goes. [Coach 3]

> We were prepared. If we went in and we played a poor game, we'd investigate all the reasons why, we worked on them, and we played better the next game. If we played well against someone we tried to carry that into the next game and we were well prepared for any contingencies. Basically just getting it done at training and being as well prepared and then so the games were like the stage event. All the work was done beforehand. [Coach 2]

> Probably preparation, the coach has to be prepared in their own mind for what they wanted to do and how and why can be able to prepare the athlete to be ready for anything that is put before them. [Coach 15]

> I think you've got to be organised, I think that is very much the key to it. Mind you, you've got to be seen to be organised. So that all players in the group feel that you know what you were doing and they feel that there is a purpose not only in what you're doing but in what they're doing. [Coach 2]

> I have no doubt that there are coaches who are knowledgeable about the game are exceptionally well planned and prepared to provide constant accurate and supportive feedback. ... I think certainly if they are not well organised and have not done their preparation they are not well organised, so the organization has got to be sound. [Coach 1]

Probably preparation, a coach has to be prepared in their own mind for what they want to do and how and why and be able to prepare the athlete to be ready for anything that's put before them. [Coach 15]

Planning for fun was an integral part of the program. Fun was described by fourteen of the coaches as providing experiences where athletes could enjoy putting their skills into practice and demonstrating their competence. It was also seen as a tool for preventing boredom, maintaining balance in a training session, and helping athletes to relax when performing. The participants were aware that if they wanted athletes to return, they need to enjoy the experience. They expressed this in the following ways:

Ah, I guess a bit of laughter and fun. I think by enjoying it with players instead of constantly analyzing them. I think as a coach you have to go with the flow and even though you're trying to do something serious, if something funny or odd happens you have to sort of take that as part of the game and I don't think we do enough of that. I think that coaches get a little too serious with the game and start analyzing so much so you not saying that it's just a game and it's fun. We want people to relax and play, for good reasons not just the end result, which is kind of the process that's at least as important if not more. [Coach 14]

Just by keeping it fun as well as still making sure that we had the skills. He was an excellent early development coach for skill level. [Coach 12]

Probably the very first two things that I say to them when I meet them is that every time we meet, we have got to have fun and when you are in the centre you can do what you like, you have a full license to hit the ball, slog it, anything you like, any skill that you want in fact if you don't perform the skills I'll be bitterly disappointed because I know you have got them and you will never know good you are. [Coach 19]

The enjoyment I have always wanted to get has been an intense enjoyment for the players as well. It's always been, "look, you will love [sport] more when you can play better". That's what I've always tried to do because if you can get on the court and do that one thing, and it's working, it's fun. [Coach 2]

It can get a bit monotonous, if you're doing something repeatedly, it is good to throw in a bit of fun with that and you do that at all skill levels, it just advances with a fun part to it, from advanced to elite, the skills are obviously a bit tougher, the games are a little bit tougher that you are trying to achieve, so make it fun. [Coach 18]

I think you enjoy the game a lot more if you have a lot of skills. So you have to be really disciplined to a point, once you've got those skills you can then have a little more fun and goof around, loosen up your game. [Coach 15]

A big believer in that the athletes have to enjoy the sport if they don't they are not going to hang around. [Coach 16]

The learning environment. The learning environment encompassed the following two components: (a) the teaching process, and (b) clarification of the learning environment and consistency of behaviour within the learning environment. The important components of the teaching process were how skills were taught, how information was communicated, and how innovative coaches were in delivering material. In describing the teaching process, 14 of the coaches drew attention to the importance of explaining to athletes "how" to perform the skill. They also emphasised attention to detail when teaching new skills, correcting technique, and running drills. The ability to break skills down and rebuild them was viewed by the coaches as an essential coaching skill. Typical comments were:

They know exactly what we want from them and we have actually itemized what makes these perfect players, so if they want to they can go back and check these

and we can alter them at any stage, at meetings or whatever, we can actually alter
these but it is not that I'm crazy on being perfect, there is a degree of satisfaction
in all this, I want to probably get the most out of what I have got as players and a
like to think I'm moving things along and just going forward in giving them
something to think about. I think if they understand that too then that is important
to the rapport building. [Coach 19]

I think you've got to have a fair attention to detail and I think, generally, that's
something we've tried to push through Australian [sport] and through the [sport]
programs. [Coach 2]

Provide them with an environment where they are explained the relevance of the
skill to the sport not just what they are doing. Try and teach them about what's
going on and how they could perhaps coach it to someone else rather that just
correcting their technical fault. [Coach 4]

Communication was described by the coaches as an integral part of the teaching
process. It should be athlete-focused, and, to be effective, required awareness of how
communication, both verbal and non-verbal, affects each athlete. The coaches cited
the need to listen and be adaptable in approach.

Communication. Communication has got to be No 1. You have to be able to get
on with that person. If you don't it is pushing uphill. [Coach 13]

So you've got to be able to adapt your language or the tone of your voice to what
is happening with the kid. [Coach 14]

I would much prefer to do it individually, not that you get around to everyone
every time, you obviously pick out the ones that you see that are not right or their
personality is a bit flat today and you just pull them aside and just have a talk.
[Coach 8]

I think it is important as a coach that you listen to the players feedback as well as to your own so that you have the two-way communication happening. [Coach 17]

People tend to see things and learn more from what they see and I'm not sure what the percentage is that must be up around 80-85 percent in what they see rather than what they hear and it applies to players, it also applies to coaches so we need to have much more practical communication. [Coach 9]

Well, it all revolves round communication. It is complete, it is the whole process. The process is I am teaching them, therefore I must have the skills not only the information to teach them but the ability to impart that, then I have got to create in them the ability to retain information, that is the real art of teaching, it is then to retain information. [Coach 7]

Eight coaches discussed the need to be innovative in designing the learning environment. They needed to think creatively, be adaptable, and continually seek out new ways of doing things. This is reflected in the following comments:

Just trying a few different things. Thinking of something different to have a go at and being a little innovative. That would be why we were successful when I first came back to [sport]. [Coach 3]

My personal strengths are I am a very creative thinker, which helps to create some really good training sessions. [Coach 7]

I think one of my strengths is being willing to adapt and a big part of my coaching is developing what we already know into a better way of doing it, so I have no problem with change. [Coach 20]

Creating an environment where athletes understand coach expectations and athlete boundaries was identified by all the coaches as being critical to the success of the program. The coaches achieved this through clarifying the rules of the coach-athlete

relationship early in the program, clarifying the focus of training, and consistency of coaching behaviour. Some statements typical of this view were:

I think there is a certain security in knowing how the coach will react, again it comes back to being consistent, and letting the players know what is expected of them, what is the standard, defining the standard that is required of them in all aspects of the game making it quite clear and being consistent is very important. [Coach 9]

So, yeah, just the hard work, most kids like good hard work, they like boundaries. They like having consistent rules they accept. [Coach 14]

I guess they will play well if the coach directs them properly, you have to direct them well and teach them well and make sure they know what you want them to do and have a go at it and they respect you if you practice what you preach in your behaviour as a coach. [Coach 5]

I think I am consistent, from a technical viewpoint I do not move north and south pole a whole lot. [Coach 20]

Understanding gender differences. All the coaches were conscious of athlete individual differences and the need to adapt their coaching style. Gender issues were considered one of the major issues to contend with as a coach. The coaches were concerned with psychological differences between genders in contrast to physiological differences. The coaches cited females as typically having lower self-esteem and requiring more confidence building than males. In contrast, males were sometimes over confident and needed to be brought back to reality. Peer relationships and the coach-athlete relationship were viewed by coaches as being more important for female athletes than for male athletes. The coaches placed importance on the coach tuning into the emotional level of the athlete. The coaches recognised and

accepted the differences between genders, and adapted their coaching accordingly, as the following statements illustrate:

> I think that psychologically it is very different dealing with girls. For a start I think they generally have a lower self-esteem so I think a lot more confidence building is associated with trying to get them to a level where they think that they can perform well. I think that the guys, it is generally the other way. They think that they usually are a lot better than maybe they are. That's just in general, that doesn't apply to everybody. [Coach 2]

> Ah, yes, females tend to get a lot more affected by the way they look and, um, their body types and the believed stereotypes of athletes having to be a certain shape and that affects girls a lot more than it affects a boy. Um, boys just tend to, you know, what their given then they're given with. That's in my experience anyway, I know there are people who won't like that but in [sport] that's not an issue with them and it doesn't get in their way [Coach 4]

> Yes, basically the areas that we find challenging with female athletes is basically just typical teenager female behaviour where you find most females have got to have friend to latch onto and you might have different individuals who go from one friend to another and one particular athlete will get hurt because she thought she was a friend and now she is not talking to her. We find that a lot with young females whereas with the males, there is just as smooth consistent transition, where everyone seems to get on well, even when they are in the same event, there is this huge rivalry when they are on the [sport] track, they almost want to kill each other when they go on, but when they are off, they are the best of mates again. [Coach 6]

> I nearly switched from girls to boys because I got sick of the girls having to have coach approval all the time. Where as boys you tell them to do something and

they go and do it. You do not have to watch your words as much with boys, where as if you said the same thing to the girls they would take it personally. [Coach 16]

Sport pedagogical knowledge provided the platform for change to take place. Planning and organization provided scaffolding to support and encourage learning. Through planning and organization, the coach could see how and when to introduce different training components. It allowed for both effective and efficient use of time. The learning environment related to how the coach delivered their knowledge. The teaching process represented the reconfiguration of sport discipline knowledge into a form that athletes understood and could apply in their practice. An integral part of establishing the learning environment was clarifying the coach-athlete relationship, expectations, and the goals of the program. Coaches were aware that consistency of personal behavioural patterns was essential for maintaining a co-operative learning environment. Gender differences were acknowledged by the coaches as having a influence on how they dealt with athletes.

Contextual Knowledge

At the junior elite level of competition, the coaches proposed that contextual knowledge primarily referred to what was happening in the athlete's context and how that would drive coaching decisions. The coaches constantly evaluated the athlete's context and adapted their coaching to meet the needs of the athlete, as these quotes indicate:

So to keep the older girls enjoying the sport it has to come from within them so you have to teach them the intrinsic value of the sport or that intrinsic motivation is what's important. The way you do that is a bit more planning and realistic planning and working with them. [Coach 14]

Having an understanding of the players and what they are doing in their outside life is coming into training and affecting the training, If you can talk for like 10 minutes, like we'll just come and we'll just have a chat about our week and day and have a giggle and a laugh and like everyone knows where I am at right now. [Coach 5]

With juniors I find that they are a little unsettled in the older 16 to 18 year age group, they have come got more going on in their life, as far as school work and social life, so you have to sometimes adjust your coaching to stretch the rubber band a bit and allow them to feel their way and they can a miss training little but at seniors you expect them to be 100 percent committed regardless of what else is going on in their life. [Coach 17]

I had very few good coaches. I at least try and put myself into the situation that the kids have. I try to see what they expect from me and I try to turn around and fulfill their expectations. [Coach 7]

Showing an interest in their life outside sport really opened up another dimension with the athletes. [Coach 16]

Personal Knowledge

Personal knowledge as described by the coaches was knowledge accumulated about self overtime and through experience. According to the coaches, their self-confidence and self-awareness affected how they interacted with athletes. Developing self-confidence and self-awareness was a slow process for the coaches. It was dependent on coaches gaining a better understanding of their metacognitions and behavioural patterns. Coaches stated that with self–growth they were better situated to develop a personal coaching philosophy and a moral code of behaviour.

Self confidence and awareness. Seven coaches made the point that, like the athletes, coaches need to also develop confidence. Coaches also discussed the

importance of self-awareness. Self-awareness referred to self- knowledge which occurred over time. Self-awareness allowed coaches understand and predict their behaviour. It enabled them to establish priorities and values and better conceptualize the broader context of sport, life, success and failure. Coaches described the development of self-awareness as a slow moving ongoing process. Many of the participants spoke of copying another coach's style in the early stages of their career development, rather than trying to be themselves. Typical statements were:

A critical friend asked, "Why are you trying to be ...? you will never succeed because you are ... , you don't have his courage or the relevant make up as a person to coach like he did, you're not that sort of person, you a much more democratic in your approach and more sympathetic to people under you. [Coach 10]

The one thing that is truly hard to maintain when you are a beginner coach is to maintain your own personality and I think that something people should strive to do. I've seen people, and being guilty of this myself, trying to copy another coach's persona. [Coach 2]

Well, every coach has got to be himself, you can model yourself on other people, you can try and ferret out the ideas and the things that work for them, but ultimately you are your own person. The relationship you develop with your own players must be an honest relationship based on self knowledge of what you are capable of doing. I suppose in a way being a good coach is like being a good player of your sport, knowing your limitations, acknowledging them, it does not mean to say you accept them, but self knowledge is important. With self-knowledge, you can have confidence to deal with people. [Coach 19]

You can only move a certain distance from who you are and how you feel. I can't go too far away from that because then I am not happy with myself. [Coach 3]

One of the younger, less experienced coaches made the following comment with reference to their level of confidence, emphasizing the importance of coach self-confidence and reflecting the time component required to develop self confidence.

I'd like to improve my confidence. I guess that's a funny thing for an elite experienced coach to say. I don't like other coaches listening in when I'm coaching. I think they're listening to what I am saying and assessing me. [Coach 16]

Coach performance feedback. Coaching performance feedback, in most cases, was self determined. The coaches relied on athlete performance and whether or not the athlete returned the following season. Although the coaches were constantly providing feedback to the athletes, they received very little formal feedback themselves, as is displayed in the following statements:

Obviously the players, in a probably more valuable sense, people who have watched you give lessons, yes people who have watched you give lessons and say well that was interesting, that was good, I have not seen that before. The feedback you'd get I suppose is also in terms of the results, obviously the ball flight does not lie, in [sport] of the flight of the ball does not lie, it is programmed at the second of impact. [Coach 13]

Also feedback by just watching your own videotapes, I think that is important in watching how you react and looking at those tapes from time to time and saying yes, that was good I communicated that well, or I could have done better, etc. I certainly would welcome more opportunities for feedback. [Coach 9]

Good question, boy do we discuss that one a lot. I have an assistant coach who thinks I'm marvelous and she is a bad person to get feedback from, well a good person when I feel that I need a bit of a boost, but she never gives me the negatives so that is bad in that respect. I try and get a lot of feedback from my

players because I really respect what they have got to say because even if I'm not totally in agreement with what they are saying, if they are not happy with something, I have got to listen to that because they are the people that I am coaching. [Coach 18]

Hardly anyone gives feedback, it is very frustrating and sometimes someone would say something and you would say " ah thanks, it's very nice to have a bit of feedback" but it is very difficult to get it. [Coach 3]

Coaching philosophy. All the coaches articulated a philosophy that was humanistic in content. They stated that their job was to produce better human beings, they just happened to do it through sport. Life balance was also mentioned by three coaches. The following quotes reflect the coaches' philosophy.

Genuine regard for the athletes, genuine regard for them as people and not as athletes, because basically in all sports, netball, football, baseball, whatever, is only part of them, so actually the skills that you are helping them develop with sport are going to carry on to other facets of their life and there is a transfer of learning from sport to other more important sections of life, so small gains can lead to small gains there. [Coach 7]

The importance of strong character, the importance of simple virtues of honesty, dress, punctuality and politeness, caring, friends, sponsors, doing the right thing basically, you need to do that in life, on the course, off the course in particular, all the great champions, all great role models, when people picked them out, they are not just reflecting on the ability but something that transcends their ability. I would like all my players to be great human beings or better human beings, then certainly when I first met them. [Coach 9]

I try and teach with a philosophy that as the coach whether I am a [sport] coach or

a [sport] coach, my aim is to create exceptional people to be successful or have the

skills to be successful at whatever they choose to be. [Coach 20]

You have a huge responsibility to those kids and yourself to do the best that you

can do with that child. They won't become a child again, probably different to

other sports where the athletes are adults. But when they are children you just

have such enormous responsibility that you've got to look at the child as a whole

child and how they get on with other athletes and that [sport] may not be the only

thing that you're looking at. [Coach 14]

I think you have got to have a balance between [sport] if that is your sport, and

outside of [sport], like what you have got beyond [sport] and you have got to have

a balance of life, of friends and support as well, so that it all part of the structure,

we build it into the program. [Coach 6]

I believe in teaching them to be a person, as well as a [sport]. [Coach 4]

Moral code of behaviour. Sixteen coaches emphasised the need for coaches to

have a moral code of behaviour that encompassed honesty and fairness. The coaches

believed honesty was essential, but being honest was difficult. They expected it of

themselves and also of their athletes. It was important that the athletes had the correct

facts, so that they could act upon them. The coaches indicated that the athletes needed

to be honest about their own performance and take responsibility for it as follows:

I think the most important would be honesty and that is right through life. I think

it is hard to find people that are really honest now, and they are honest when the

crunch is down and you have to make hard decisions and you know it is going to

hurt somebody, but it is always hard to make that decision, but when you're in that

position as a coach, you have got pressures to be honest and when you're not

honest to people and you're not honest to yourself then you should get out of the

coaching game. [Coach 11]

I am a person that, "what you see is what you get", and I'm very straightforward

and the players know where they stand. I never keep any secrets, I tell them,

everything is laid out, I tell them the ways that we are going to go ahead with the

season, if someone is not performing I will tell them. [Coach 18]

If you are reasonably open and honest with your communication with them, and

because they have got the facts, they deal with them very well I think it is just

reality of most things in life. [Coach 10]

I appreciate people who do the right thing, I appreciate a good work ethic, I

appreciate the people act on what they say and do, if they don't wish to act on it

then you discuss it and come to an agreement about an action, I don't like people

not saying their mind, I encourage them to be honest. They have to be honest with

themselves, they have to be able to objectively measure their game, they have to

accept I suppose responsibility and that is the biggest thing for athletes, is to get

them to understand what accepting responsibility is for their game. [Coach 9]

A lot of honesty at senior level, they find it hard to cope with sometimes but that

is the way I am with them and some can take it better than others and I always

think about working on which is the best way to communicate what I am trying to

get through to them so that I do not destroy them, I think the players want honesty,

they want to know what they have done wrong, and at senior level they would not

be playing if they could not meet that challenge to improve so you have to keep

being honest. [Coach 17]

Fairness. Fairness, as discussed by nine coaches, referred to informing athletes

about expectations and consequences, and judging them accordingly if they

atmosphere so much more relaxed. You knew you could go out there and have a bit of the joke with the coach, but also work hard at the same time. It is easier to work hard, I find, with somebody whom you get along with at a slightly personal level as well. [Coach 4]

Knowledge won't help at all, you can have as much knowledge as you like but I think the biggest package to me is the human side of it, the rapport, whatever rapport means, it is how you feel about your group and how the group feels about you in your relationship with the group. [Coach 19]

I really want to make every one of my players feel important and needed and cared for as a player. So many clubs just don't give a damn about the people they are coaching, at all. [Coach 18]

They know they'll work hard, I won't put up with them not working hard. They know that I'll care for them, I won't lie to them which is a big thing in [sport] because there's a lot of risk-taking. It's a hard sport and it's quite dangerous some of the time if you are not properly prepared. So if I say to a kid, "I think you're ready to do it by yourself now" they actually believe me, there is a lot of credibility there. [Coach 14]

To have that ability to be able to relate to every single person and not have anyone offside because over the years I have got a few people offside. [Coach 3]

Self knowledge developed slowly over time. Like athletes the coaches needed to develop confidence through achieving success in practice. Part of understanding themselves was the establishment of a value system. This value system reflected a moral code of behaviour that assisted them in their decision making.

The Role of Coach Education Programs in the Development of Coach

Expertise

The coach accreditation system was designed to prepare and educate people to work as coaches. Most sporting bodies require coaches to have a recognised accreditation qualification. In this study the influence of the coach accreditation qualification depended on the coaches' background. The coaches felt networking with other coaches was the most valuable aspect of the coach education programs.

Influence of Coaching Qualifications

Coaching qualifications had their greatest influence on coaches with minimal background in coaching or education. The coach accreditation process assisted three coaches with the transition from athlete to coach. As this quote indicates:

Yes, it is probably something that I took for granted before I became a full-time [sport] coach. As a player, I thought that I knew as much as I needed to, and it was probably a big kick in the guts really, but when you go off and do your coaching qualifications that is when you realize you're not the be all and end all just because you are a professional, and I found that my coaching qualifications stood me in very good stead, and I wouldn't probably be a good coach as what I am without having to do that qualification. And being a woman coach, I am one of the very few full-time coaches and probably I would say in the State as a [sport] coach. [Coach 13]

Coach accreditation provided a structure that encouraged four of the coaches to learn. Typical statements were:

Yes, they have been effective, because if we didn't have coaching qualifications, I probably never would have studied. I have learnt a great deal by having to put that time aside, whereas I never would have had the time or energy to put that time aside. [Coach 11]

The actual qualifications as a coach haven't, we don't use them as such, as in getting anywhere, we did all these coaching courses to learn more, to understand. Because we were starting to get athletes who were elite we felt, well really we need to learn a little bit more about what we are doing here. [Coach 6]

Other coaches viewed it more as a resource, from which they extracted different components of knowledge and integrated it into their coaching. Typical comments were:

Well first and foremost, with the courses I did myself we had very good coaches present papers to us, secondly and more importantly there were people who are doing the course along with me who were experienced coaches to learn from. Thirdly and more importantly, the course required me to undertake specific tasks which I had to do and it really forced me into other areas. But the coaching courses don't provide answers to everyone I don't think, they just help you formulate more questions than you had previously. So as coaching experience, the coaching accreditation courses should develop the coaches to question themselves and the sporting authority to look for other ways and other means and so forth. [Coach 7]

I found them quite beneficial as a resource but I found the courses did not talk about what to take into account the things that I think are most important in coaching which I have already probably articulated, how to develop a trust and a relationship between people and coaching and how you can try and get them working towards the goals that the team wants to achieve. [Coach 12]

Networking

According to all the coaches, the most beneficial outcome from the coach accreditation and coach education programs was the opportunity to meet and converse with other coaches. It was an opportunity to learn from each other, not necessarily

only coaches from within their own sport. Some coaches revealed that it was a relief to speak to coaches from other sports and discover that they were affected by similar issues.

> I'm not sure the qualifications help you so much but the mixing with coaches and the fact that you go to these things and you spend a few days and move out again. You are all the time learning and picking up bits and pieces from other people. I think it is the network of the coaching scene who you meet that is more important than the actual information that is given often. [Coach 19]

> I think if anything in all the courses that I have done it is meeting other coaches and having sit down discussions, it is all great being in the classroom and discussing theory but until you exchange what you are actually doing with your athletes across the board with all sports you can't see how the principles apply. [Coach 5]

> Time to be able to mix with a lot of other coaches in different sports, of all kinds not just [sport] coaches. A lot of things that I have learnt over the years, a lot of the inspirations have not been from [sport] coaches it has been from outside of the sport, people that you meet, coaches that you meet. [Coach 8]

Recommendations for Change

Four coaches suggested that the length and structure of the coaching courses required redesigning. Two coaches voiced their concern about the coaching accreditation program, specifically to lack of resources spent on the education program for novice coaches. Six coaches discussed building support or mentoring into the coaching accreditation program as methods to improve the transfer of information to coaches. Statements reflecting these views were:

> As I have probably explained to you in terms of the way I coach the [sport], the information with which you coach and what you tell the athlete is such a small

part of the overall process, in a 32 hour course you cannot giving get that much information in that time, let alone all the other things that impact on why you coach, how you deal with a group, I mean it takes a while in fact to learn the different disciplines, I don't think a 32 hour course even comes close. [Coach 20]

I think what they need to do with level 3 is to break it down into two lots maybe a year apart, yes well everybody can get two weeks off work or whatever, but the year before you do your assessment, you do some education and it is purely teaching it doesn't matter what you say, if it is wrong they could say perhaps you could look at this way. So it is purely educating people and it is brainstorming with each other in the education course and then a year down the track, because I want to know who can pass, who has reached that standard, then do your assessment like, throw questions of us and we have to think on our feet etc., and then you will be educating people and will be assessing whether they are up to the standard or not. [Coach 18]

I was the State director for coaching for two years and all we looked at was the level 3 coaches and there were about 10 of those in the State but where the numbers were was the people coming is to do their level 1 and get better acquainted and that sort of thing and nobody came anywhere near them. They didn't get any support, you hope that some will stay in some do, but the majority don't. [Coach 10]

I reckon a mentor should be somebody who is an assistant, if only I'd had someone like that through out my coaching career. I have developed critical friends and mentors in the last ten years, I wish I had done it 30 years ago, I reckon that system can work. [Coach 10]

I would like to have more interaction with the trainees in a way that we could share the information that we utilize in this program more easily and across the board. [Coach 9]

I would have, ah, a greater emphasis on dealing with athletes because apart from doing these things at university I also learnt a lot as I went along and I think that coaches know those sort of things and can pass them onto their athletes. I also think that more time needs to be spent on teaching things correctly, not just steps on how to teach something, but steps on how to teach it. [Coach 4]

Level 2 coaches need someone to work with or somebody helping them. You haven't got to many people that have the knowledge and ability to be that sort of person. We have tried to introduce the idea of using a video. [Coach 3]

I think there needs to be a lot more mentor coaching, one on one, and you have to find someone, and you have to find someone you want to coach like. [Coach 14]

The benefits of the coach accreditation program were very specific to the background and experience of the coaches. Because the accreditation process varied between sport organisations, it is difficult to make comparisons or general comments about the accreditation process. All coaches emphasised the importance of networking with other coaches and having opportunities to share and compare information. Recommendations for improving the coach accreditation system included placing more emphasis on lower level accreditation programs, increasing the time component, and building opportunities for experience into the course structure. A number of coaches recommended mentoring as a valuable tool for improvement. As noted, many coaches were exposed to some form mentoring process as part of their own development.

Summary

In previous research, coach demographics have been used to differentiate between levels of expertise. This study supported the "years of experience" as a reflection of expertise, however it is recognized that the quality of experience influences the degree of expertise.

Pathways into coaching varied but there was much commonality in the coaches' experiences. All coaches had previous athletic experience and many experienced mentoring during their development. All the coaches enjoyed their athletic experience and wanted to remain within the sport culture and contribute back to the sport.

Developing expertise for these coaches was a slow process. Coaches reported feeling confident and developing self-awareness was related to experience. This was reinforced by coaches with less than 10 years experience who cited developing confidence as a major goal. Although the less experienced coaches highlighted confidence as an area they would like to further develop they were still perceived by competent colleagues as "successful". In addition, having a range of coaching experience in the sample provided insight into that aspect of coach development. As successful experienced coaches they were able to clearly define their role, provide insight into how they perform that role, and expound on the knowledge base that underpins the coaching process. In discussing the knowledge base it was evident that each type of knowledge had a different rate of maturation and that knowledge development was dependent on successful outcomes and mentoring.

The value of the accreditation process was difficult to evaluate due to diversity of education programs delivered by different sport organisations. There was consensus by the coaches that the accreditation system would be enhanced with an

applied learning component that was relevant to the individuals' context and

supported by mentoring.

CHAPTER 5: DISCUSSION

Introduction

This thesis explored the development and application of expertise of coaches of junior elite-level athletes. The study's main conclusions are that: (a) expert coaches are positively affected by their own athletic history and either want to contribute back to the sport, or maintain their involvement in sport, (b) there are four knowledge bases that underpin the coaching process and each of these knowledge bases matures at a different rate, (c) as coaching expertise develops, knowledge becomes more integrated and is accessed according to the context, (d) the ability to access and organise appropriate knowledge is enhanced by mentoring and networking, and assisted by discipline related academic qualifications, (f) mental models represent the cognitive component of the coaching process; when expert coaches develop mental models they access knowledge to assist in solving the problem and knowledge to help conceptualise and deliver the solution, (g) the coach's capacity to develop mental models is influenced by their ability to articulate their role, and (i) the value of coach education is related to career outcomes.

This chapter explores the themes emerging from the study and relates them to previous research and theoretical perspectives on coach expertise under the following headings: (a) the decision to coach, (b) unpacking expertise, and (c) coach education. The chapter then discusses methodological issues and limitations associated with the study, direction for further research, and implications for practice.

The theory drawn from this study is derived purely from the perspective of the participant coaches. Care should be taken when generalising the findings; however, the findings do support elements of current theories and research, models of coaching, expertise, and leadership.

Relationship of Conclusions to Theory and Research

Understanding how elite coaches' function, how they develop expertise, and what assists them in achieving expertise have continually challenged researchers. Much of the literature on expert coaches is anecdotal, and there is very limited research that has investigated how expertise evolves in successful coaches. The two main models used to explore coach leadership, the MML (Chelladurai, 1980; Chelladurai & Carron, 1978) and the MM (Smith, Smoll, & Hunt, 1977; Smoll & Smith 1989), were based on results derived mainly from an athlete perspective, and/or observation of coach behaviour. Research based on these models was designed to identify specific coaching behaviours and investigate their relationship to athlete and situational variables. Neither model has been successful in developing a unified theory explaining the coaching process. Horn (2002) noted that there are measurement issues associated with instruments used to measure components of the MML and MM. These instruments, the LSS (Chelladurai & Saleh, 1978) and the CBAS (Smith, Smoll, & Hunt, 1977), have produced some interesting results, but they do have limitations. There may be other coaching dimensions still to be captured by these instruments. Research (e.g., Côté, Salmela, & Russell, 1995a; Côté et al., 1995b; Salmela, 1995) exploring expert coaches, using in-depth questioning, has captured rich information about the coaching process. It is noteworthy that, during the early phase of the present research, the coaches rarely used the term "leadership", choosing to use their own reference points and terminology. A grounded theory approach enabled the development of an alternative discourse and provided greater richness and clearer theme development. Results emerging from this thesis further highlight that qualitative research methods using in-depth questioning of coach expertise and elite performance provides a greater understanding of the coaching process

(e.g., Côté et al.1995; Kellett, 1999; Salmela, 1995) which has not been adequately handled by the MML or MM.

The Decision to Coach

Previous research on the transition from athlete to coach is limited. It indicated that the transition almost always takes place at the conclusion of an athletic career. In a Canadian context, Salmela (1996) described the coaches he studied as athletes that did not necessarily achieve the level of success to which they aspired; however, it was their leadership and passion that separated them from others. Within an Australian context, the transition into coaching is more diverse than that experienced in a North American context (e.g., Salmela, 1995). The coaches in the present study all had an athletic background, but pathways into coaching varied. The majority made the transition into coaching at the end of their athletic career, several were recruited as juniors, and a small number were player-coaches. The recruitment of juniors may reflect the Australian club sport system. Junior athletes have the opportunity to compete for the same club for many years, where their progress can be monitored and assessed for coaching potential. If this is the case, future research needs to investigate the reasons for selecting these athletes to coach, sometimes at an early age.

For several coaches in the present study, family participation in sport was influential in their decision to coach. This is supported by Bloom (1985), who discussed the importance of family in the development of expertise. This in itself may provide a tool for talent identification of potential coaches. Potential for long-term commitment to sport may also be strongly influenced by the situational context and family commitment to the sport.

In contrast to Salmela's (1995) findings, which alluded to coaches gaining personal satisfaction through achieving results with their athletes that were unattainable through their own performance level, the majority of coaches in the Australian context decided to coach to contribute back to the sport and stay involved. They enjoyed teaching and seeing others achieve, and celebrated success with the athletes. For some of these coaches, being a coach allowed them to remain within the sport culture that supported them as an athlete. A small number of coaches observed a need in their sport for committed and expert coaches and believed they were in a position to help affect change.

The role mentors played in the formative stage of coach development was important to the coaches in the present study in achieving early success. The significance of mentoring in the development of coach expertise has also been alluded to in the literature (Bloom, 1985; Bloom, Durand-Bush, Schinke, & Salmela, 1998). The role of the mentor differed according to the needs of the coaches in the study. All coaches believed that mentors contributed to their success in the early stages of development. Bloom et al. (1998) also found that mentors were particularly important during the early and middle stages of the coach expertise development. Several researchers (e.g., Ericcson, Krampe, & Tesch-Romer, 1993; McCullick et al., 1998) highlighted that expertise is gained through purposeful practice and many years' experience. Mentors are in the position to structure deliberate practice for the developing coach and to provide feedback on its implementation. This could facilitate the acquisition of expertise in developing coaches. The important role mentors play in expertise development suggests strongly that learning is not a simple acquisition model, for development to occur social mediation by significant others within the community of practice is required (Sfard,

1998). Through mentoring the developing coach becomes part of a community, learns the language of the community and acts according to the particular norms. While the new coach has potential to reform the current practice of coaching, the experienced coach is the preserver of continuity. In the mentor-mentee relationship both participants learn from each other. Research needs to be carried out to examine how the mentor scaffolds learning what type of mentor is valuable during the different stages of development. This is also reflected in the expertise literature (Bloom, 1995), which indicates that mentor requirements changed as expertise developed, and in most cases this required a change of mentor. If mentors play such a strategic part in the evolution of expert coaches, there are implications for the structure of coach education programs. Mentoring should be considered as a formalized component of coach education programs.

As noted earlier, coaches in Australia are not required to have an academic qualification, but a large number of coaches in the present study indicated that their academic qualification assisted in their coaching success. This implied that, in the early stages of coaching, these coaches were able to establish strategies or platforms that helped them organise and transmit knowledge. In all cases where it was referred to, the academic qualification had a strong relationship to coaching, either through a sport science or education discipline major. Because these coaches were able to apply pedagogical principles or have good sport science discipline knowledge, they may have experienced more success than their counterparts, which motivated them to continue to pursue a coaching career. Future research needs to investigate whether coaches with such qualifications undertook the qualification with other goals in mind and only discovered after they had completed it, and when they had found themselves in the coaching context, that their academic knowledge was relevant.

Unpacking Expertise

Understanding expertise and how it manifests itself in different contexts is

challenge and a conundrum. What makes expertise difficult to unpack is the changing

nature of the context, yet the crux of expertise is the ability of the expert to be adaptable

to the context that is influenced by factors such as the situation (i.e., game or practice),

athlete needs, and in the case of the professional sport coach, the requirements of owners

and shareholders. In this study, through exploration of the coaches' careers, and

identification and interpretation of their current practice, it was possible to speculate how

this group of coaches developed expertise, accessed information, and applied it in

practice.

The theory generated from this study has provided a rich insight into the interplay

between the coaches' cognitive processes, knowledge acquisition, and expertise

application in the field. It is in no way complete, but it does provide a platform for further

investigation. The research literature to date has explored different components of the

coaching process, using a variety of methodologies and a range of foci. It is only recently

that the coach, as a major actor or stakeholder in the process, has been valued as an

informant. The majority of coach-informed research on coach expertise has used

qualitative research methods. Qualitative research methods have enabled researchers to

explore more of the how and why of certain coaching behaviours from a coaching

perspective. There is a broad base of information available on coaching, but little

information exploring knowledge acquisition and problem solving skills of expert

coaches. There is no viable framework for mapping the process of conversion of

cognition to practice. Côté et al. (1995) partially explored this with the development of

the coaching model, which examined the cognitive process. Although Côté et al. (1995)

has provided insight into the problem solving process; questions remain as to how the coach communicates that information back to the athlete.

Mental Models

The coaching process, as gleaned from the coaches in this study, resembles components of the Côté et al. coaching model (CM; 1995). The Côté et al. CM is based on the theory of mental models. Mental models are internal representations of how the coach plans to solve a problem to achieve the goal of developing the athlete. The coaches in the present research expanded the concept of mental models from internal representations of the problem to include strategies or methods of communicating the solution or plan. Sometimes this was linguistically mediated and at other times it included a planning and implementation stage. For example, when the coaches evaluated a problem, such as technique assessment of a new athlete, they formed a mental model of what needed to be done. Based on a number of variables, they accessed different elements of knowledge, and organised the knowledge, or called upon stored mental models used in a similar context, and reconfigured them to create a new mental model to solve the current problem. Coaches then formalized a communication strategy that allowed them to implement the plan. This is supported by Lawler's (1979, 1984, 1985) micro-views. Lawler proposed that knowledge encoded in a mental model may be represented as *data* and *methods* that operate on it. Hence coaches were accessing information to help solve the problem, while also accessing information and assembling
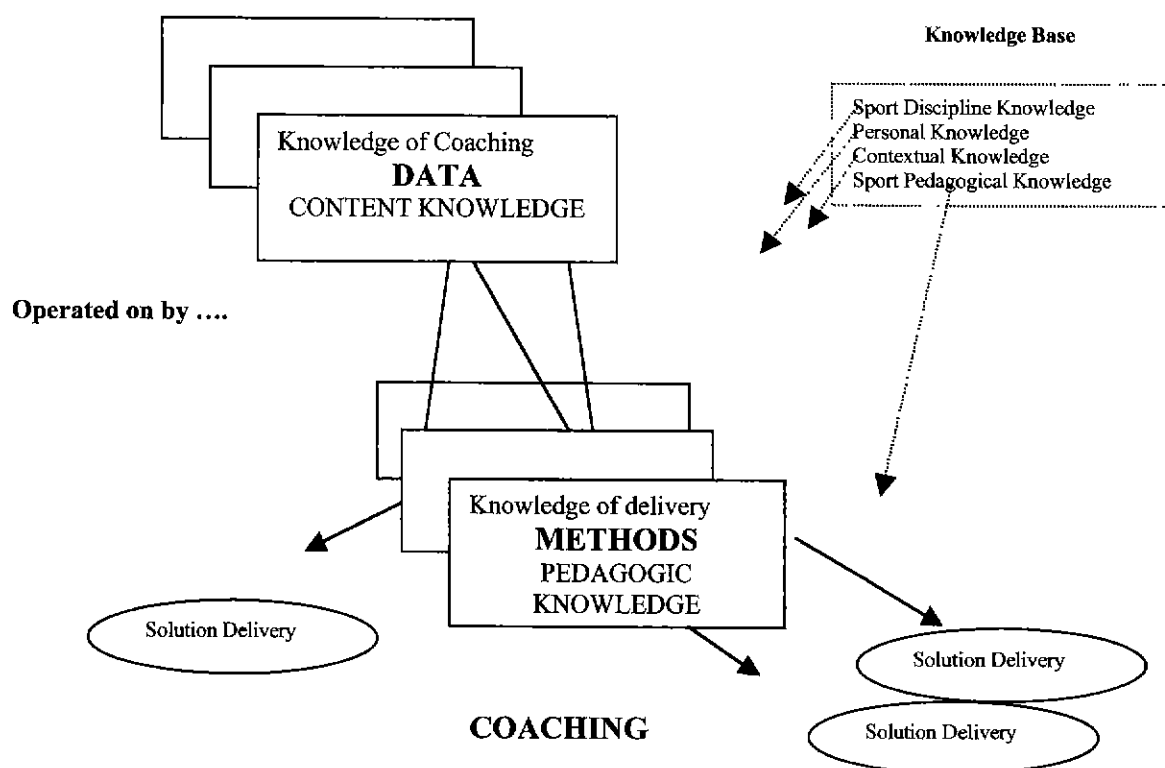
Figure 5. A mental model representation adapted from Nicholson (2001). The content knowledge is operated on by the pedagogical knowledge which enables the coach to communicate the solution to the athlete.

it to help in the delivery of the solution. A schematic of this model is displayed in Figure

5. In the case of expert coaches, they may have a number of mental models representing

content and data. Novice coaches, however, may have playing experience and reasonable

content knowledge, but may be limited in the number of methods they can access and

reconfigure in creating a new mental model.

It is speculated that the development of mental models becomes more refined with

expertise. Yet the development of expertise is an ill-defined pathway. The expert

coaches in this study disclosed how they engaged in problem solving, and factors that

influenced the process. One of the major factors influencing the problem-solving process

was coach role clarification. In this study, the coaches, all of whom were coaching junior elite athletes, cited their role as building athlete confidence. This influenced how the coaches evaluated and created a plan of action for their athletes. Evaluation skills required coaches to synthesis information and develop a solution. The coaches evaluated athletes' physiological and technical performance, athlete motivation, and the sociological context. The coaches were acutely aware that before they could affect change they had to build up the athletes' confidence. Developing athlete confidence has previously been acknowledged in the research to be an important part of the coach's role (Gould et al., 1989; Sedgwick, Côté, & Dowd, 1997; Weinberg et al., 1992; Weinberg & Jackson, 1990). Sedgwick et al. went so far as to expand on strategies, such as establishing goals, providing feedback, and maintaining a professional relationship as the most important aspects of confidence building. It would seem that the combination of evaluation skills and strategies for building confidence are two powerful skill sets for expert coaches.

The connection between coach role definition and knowledge required is alluded to by Kellett (1999), who indicated that, at the professional level, the coaches she studied believed that their role is not about individual skill development; athletes should be technically proficient at the professional level of competition. Hence, the coaching process is not only what knowledge the coach possesses, but, more importantly, how that knowledge is organised, so that it is relevant to the context, and easily accessible. This will be influenced by how the coach perceives their role. For example, a coach working with junior development athletes may focus on the developmental needs of the athlete, for example, technical skill expertise; whereas the professional coach may focus on different game requirements, whilst also having to consider contextual issues beyond the

needs of the athlete. Thus, clarifying the coach's role could assist in determining what knowledge needs to be accessed and organised for coaching at different performance levels within varied contexts.

Knowledge Bases

Identification of the knowledge base that underpins any profession has been instrumental in establishing and bringing status to that profession. A theoretical underpinning dictates the direction of education and assists with the identification of talent within the profession. In this research, four knowledge bases were identified as important for developing coaching expertise. It is important to note that, although these knowledge bases were identified as independent, they are intrinsically inter-linked, hence it could be dangerous to view them as isolated entities. Unfortunately, teaching knowledge out of context is an established educational practice, where specific knowledge categories, structures, or domains are delivered in isolation and independent of context. Until recently many coach education programs (e.g., National Coaching Accreditation Scheme, NCAS; National Coaching Certification Program, NCCP) have been typified by this approach. For example, in the NCAS, sport specific information, coaching principles, and coaching practice requirements have been covered independently of each other. Although knowledge bases have been identified in this thesis, the coaches placed emphasis on using knowledge as an integrated body when trying to problem-solve.

The coaches' descriptions of knowledge required for coaching lead to the identification of four knowledge bases. These were: (a) sport-specific discipline knowledge, (b) sport pedagogical knowledge, (c) personal knowledge, and (d) contextual knowledge. Sport discipline knowledge, as described by the coaches, referred to the

necessity to have a good grounding in the fundamental mechanics of the sport, as well as tactical and strategic knowledge, and knowledge of the interplay between sport science and the sport. Sport pedagogical knowledge refers to the planning, organisation, and teaching process. Personal knowledge is grounded in coaches' self-confidence, self-awareness, values, and philosophy. Contextual knowledge describes coaches' ability to make decisions based on the broader context. The role of the coach changes according to the dimensions of the context.

Sport discipline knowledge. Sport discipline knowledge, as a coaching requirement, has been alluded to in the popular press, as well as being supported by research (e.g., Douge & Hastie, 1993; Woodman, 1993). Expertise literature across a number of professions (e.g., teaching, sport psychology) has supported the need for strong grounding in discipline knowledge (Berliner, 1988; Morris & Summers, 1992). The coaches in the present research placed emphasis on a thorough grounding in the fundamental skills and technique of the sport, as they were often required to go back to basics in establishing and maintaining good technique in their athletes. The coaches also indicated that knowledge related to the tactics and strategies of sport was essential.

Coaches in this research integrated sport science knowledge into their own training, and believed that they had to be continually "on top" of what was happening in the field. The sport science knowledge also helped the coaches communicate with sport scientists who were working with their teams. Gould et al. (1990) supported this response and indicated that, second to international coaching experience, elite coaches were constantly seeking sport science knowledge to enhance their coaching. However, Douge and Hastie (1993) commented that sport science, as a core component in most

coach education courses, comes at the expense of the pedagogical process that is undervalued and left to chance.

Sport discipline knowledge seems to be the major foundation stone in developing expertise. In this study, a clear understanding of the coaching role helped the coaches identify, access, and organise specific elements and components of sport discipline knowledge. It is not clear however, whether coach role clarification is a direct result of being an expert, in which case, the coaches' ability to identify and use appropriate knowledge is restricted by their stage of development.

Sport pedagogical knowledge. Sport pedagogical knowledge referred to the art and science of teaching in a sport situation. In the act of coaching, coaches are called upon to teach. As many of the coaches in the study had a teaching background, it could be assumed that they had a theoretical understanding of pedagogy and experience in adapting and transforming knowledge, so that athletes could decode information and apply it in practice. Shulman (1986, 1987) proposed a similar construct in teaching, called pedagogical content knowledge, as distinct from pedagogical knowledge. In the teaching context, Shulman described pedagogical content knowledge as ways of representing and formulating the discipline knowledge to make it comprehensible for others. What the coaches reported may yet be better represented as "sport pedagogical content knowledge".

The coaches described two stages in the pedagogical process: (a) planning and organisation, and (b) the creation of a learning environment. Planning and organisation was the first step of conceptual development, where the coaches transformed the mental picture into an operational plan. This represented the start of the communication process. It allowed coaches to translate cognitions and organise them. The coaches developed both

short- and long-term plans, and ensured the plan and its implementation were well organised. Planning has assumed a place in coach education programs (e.g., NCAS) and has been acknowledged in the research (Woodman, 1993) as necessary for competition preparation, but there has been little investigation as to what the planning process entails and what are its main objectives. Planning is well supported in the research as an indicator of teacher and coach expertise (Cater, Sabers, Cusing, Pinnegar, & Berliner, 1987; Griffey & Housner, 1991; Jones, Housner, & Kornspan, 1995). Research (Jones et al., 1995), investigating differences between novice and expert coaches, identified the expert coaches' ability to set, achieve, and assess objectives in a more focused manner as a skill that differentiated them from novices. At the professional coaching level, Kellett (1999) found that planning was flexible and was designed to facilitate a supportive environment and empower others. In the present research, the coaches, who were coaching at the junior elite level of competition, did not discuss the role of empowerment in relation to planning. There was a sense that good planning and organisation reflected on their personal credibility. It is possible that the planning focus and control change as coaches develop; the novice coach may be using planning and organisation to organise themselves, as compared to the expert coach, whose focus is to plan and organise based on athletes' needs, or the professional coach who uses planning to guide and empower athletes and other staff. The driver for planning was once again connected to the coaches' perception of their role, which at the junior elite level was to develop confidence in their athletes. Aligned with developing confidence was the emphasis coaches in this thesis placed on planning for fun. The coaches were able to articulate clearly what fun was and its effect on participation and performance.

Fun manifested itself in several forms. The coaches were very aware that if they wanted athletes to maintain involvement in the sport, it was necessary to build in fun. Fun, as described by the coaches in this thesis, was a process whereby they emphasised skill development and designed opportunities for athletes to use the skills and achieve success, which in turn increased athlete confidence. One of the important by-products of building fun into the program was enhanced performance; if athletes are enjoying the process they are more likely to relax when performing.

The second stage of the pedagogical process is the creation of a learning environment. The learning environment described what informed and underpinned good communication. Communication reflected both verbal and non-verbal communication. The coaches in this research made the point that athletes use a number of indicators in the environment to interpret the context. According to the coaches, the athletes read body language, listened to verbal communication, and evaluated coach behaviour. The danger of assuming that communication is represented by one form of delivery was also recognised by Culver, Trudel, Cumyn, Laraocque, and Herbert (2001), who warned against reducing communication to a single theory, and described communication as a dynamic, multi-dimensional process that is context specific.

In the present research, the coaches had established communication protocols for working with athletes. The coaches understood the importance of being consistent in their own behaviour, as athletes should not have the added burden of interpreting coach behaviour, and altering their behaviour to meet the coach's needs. d'Arripe –Longueville et al. (1998), in a study investigating coach-athlete interaction in judo at the French national level, found that when athletes were responsible for maintaining the status quo in the learning climate the athletes were forced into a situation where they were required to

develop coping skills in order to survive. It was not made clear whether this was the intention of the coaches, or whether it was a prevailing culture that continued to survive, because of successful team results. This does, however, relate back to issues of fun. If athletes are concerned about how the coach is going to react due to past inconsistent behaviour, it is difficult for the athlete to relax and perform. Elite hockey athletes stated that consistent coaching behaviour was very important and provided a stable team environment (Cross, 1995). Serpa's (2002) model of coaches' anxiogenic behaviours strongly supports the notion that coach behaviour does influence whether athletes display tension or adaptation. If the coaching behaviour is consistent with athlete expectations, then the athlete adapts to that environment. This in turn affects learning, performance, and motivation.

Clarification of expectations and roles is alluded to in the research (Chelladurai, 1989, 1993). The coaches in this thesis, in creating a learning environment, clarified all coach and player roles and expectations. This was also supported by Salmela (1995) in his research on elite level coaches. Clarification of roles and expectations helped in the establishment of a secure environment for the athletes. The coaches in this research emphasised the importance of athletes having a clear understanding of their role, the coach's role, behavioural expectations, and consequences of non-adherence.

The teaching process, as described by the coaches in this thesis, targeted what should be communicated to the athletes and how to maintain athlete interest in training. The coaches all professed the importance of making learning relevant to the athlete. When teaching skills, the coaches made sure athletes not only knew what the skill was and how to perform it, they also understood its relevance, hence the *why* and *when* of the skill. The coaches in this study maintained athlete interest through adaptable and

innovative practice. Salmela (1996) in his study of expert coaches also attributed successful teaching to a flexible and creative outlook.

Expertise is difficult to unpack, hence the picture gleaned from these expert coaches is only part of the whole process. The coaches in the present research may be unable to access all of their embedded knowledge. For example, motor learning has had a long history of influencing pedagogy in physical education and coaching, yet these coaches made no reference to motor learning knowledge. It is hard to imagine how the coaches would conduct practice without understanding motor learning. There may be a limit to how much tacit or implicit knowledge can be divulged. The researcher may only be able to access a surface layer of knowledge or information that is relevant to the present context.

Teaching for meaning suggests that coaches know about the learner and the skill and where both fit in the broader context. Coaches in this research emphasised the need to understand the athlete and discussed gender differences in detail. The research to date has been equivocal about whether gender is a significant variable in the coach-athlete relationship (Bolkiah & Terry, 2001; Chelladurai & Arnott, 1985; Chelladurai & Saleh, 1978; Erle, 1981; Massimo, 1980; Sherman et al., 2000; Terry, 1984; Terry & Howe, 1984). The coaches in this research indicated strongly that there were differences between genders and they accommodated them in their coaching by adapting their practice. The variations cited by these coaches related to psychological differences in self-esteem and self-confidence, rather than to physiological or physical differences. Coaches worked on confidence building with female athletes, whereas with male athletes the issue was one of over confidence. Coaches working with male athletes tried to help them establish a realistic view of themselves. The adjustments these coaches made in

their practice to meet athletes' needs was not unlike adaptive-reactive theory (Osborn & Hunt, 1975), where leaders are constantly adapting to the individual needs of the subordinate and the situation.

Personal knowledge. Personal knowledge describes the coaches' self-confidence and self-awareness, values, and coaching philosophy, which-in-turn influences the development of the coach-athlete relationship. The coaches discussed the need to know yourself and be yourself so that as a coach you have the confidence to deal with other people and establish relationships. The importance of personal knowledge has been touched upon in the physical education literature but not mentioned in the coaching literature. Fernández-Balboa (1997), argued that physical education teacher preparation should focus on the development of personal knowledge. It is not possible for teachers to educate others until they understand themselves. The same could be said for coaches.

Self-confidence and self-awareness are words rarely used to describe the coach. Gould et al. (1989) listed *acting confident* as a strategy cited by coaches as necessary to enhance athletes' self efficacy. Weiss, Barber, Sisley, and Ebbeck (1991) revealed that novice coaches who were taking part in a coaching internship, developed confidence due to the social support systems built into the program. Although the coaches in the present study cited building athlete confidence as their major goal, it seems as if this is just as important for the coach as it is for the athlete. Experience was cited as necessary for developing personal self-confidence and self-awareness. Coaches with less than 10 years experience cited confidence as the area they need to develop. In this thesis the development of self-confidence and self-awareness was built upon successful coaching experiences where the main knowledge bases accessed were sport discipline knowledge and sport pedagogical knowledge. As success was achieved using these knowledge

bases, self-confidence had a base from which to grow. Achieving self-confidence and self-awareness was a breakthrough in the coaches' development and enabled them to move towards a more athlete-focused philosophy. In the study by Weiss et al. (1991), novice coaches developed confidence due to the built-in social support within an internship program although this level of social support may be limited in real life coaching. The majority of coaches in this study did have access to mentoring during some stage of their career. Whether it was social support or knowledge development, it may have assisted the coaches in developing self-confidence and self-awareness. The personal knowledge components of self-confidence and self-awareness deserve more examination because of their influence on coach behaviour and the coach-athlete relationship. Given how much the quality of the coach-athlete relationship underpins much of the coaching process, there is value in a greater understanding of how self-confidence and self-awareness evolve and whether it can be enhanced through coach education and training.

Values of honesty and fairness were important for the coaches in this study. Values are rarely spoken about in the context of coaching. Athletes value honesty in a coach, especially with reference to athlete performance and decisions made about selection and during competition (Cross, 1995). The coaches in this research discussed the importance of a moral code of behaviour, but also commented on how hard it was to maintain and live by the moral code. It would seem that self-confidence and self-awareness have a role to play in coaches being able to practice this behaviour. Locke (1991) identified honesty and self-confidence as core leadership traits. Describing honesty and self-confidence as traits, indicates that this is perceived to be habitual or permanent behaviour. The coaches in this study suggested that it is a developmental

process, rather than a permanent trait. If it is a developmental process, then there is potential for these skills to be developed through coach education and mentoring processes. This can only be confirmed through longitudinal and cross-sectional research on coaches.

Eminent coaches have long been recognised in the literature (e.g., Kellett, 1999; Walton, 1992) and popular press (e.g., Alves & Davies, 2002; Jackson, 1995) as having an athlete-focused coaching philosophy. The athlete-focused, or humanistic philosophy is concerned for the person first, and, as discussed by all the coaches in this thesis, sport is but a tool for developing the person. Questions arise as to whether the development of a humanistic philosophy is part of the coach developmental process, or whether these coaches reach levels of expertise because they have always worked from a humanistic perspective. Berliner (1989), in researching teacher expertise, supports a developmental model that shifts from context-free teaching to context-driven teaching. Thus teachers become more student-centred in their teaching as they develop expertise. Salmela (1995) also noted that coaches became more athlete-centred as they developed expertise. A humanistic philosophy represented a shift toward context-driven coaching. All the coaches in this study acknowledged that a primary context driver was the athlete needs.

It is evident that the coaches' confidence, self-awareness, values and philosophy are interlinked and interdependent. The growth of self-confidence and self-awareness is slow and built on experience and success. The development of these components of personal knowledge paved the way for establishing genuine relationships with athletes. As pointed out by the coaches in this thesis, relationships required an investment in time. Although time is a limited commodity coaches stressed the importance of making time to establish a caring relationship, and somehow all coaches found time for this to happen.

The importance of making time to establish relationships has been previously emphasised by athletes and coaches as a key priority in achieving success (Cross, 1995; Strean, 1995).

Contextual knowledge. In this study, contextual knowledge was defined by the coaches as comprehending the complexity of the environment, and their ability to understand their role within that environment. When the coaches in this study were evaluating their athletes, they assessed context in relation to athlete needs. The context was evaluated according to physiological, psychological, sociological, and sport-specific needs. Berliner (1989) described context driven teaching as demonstrating expertise. Jambor and Zhang (1997), in their research using the RLSS, also found support for differences in leadership behaviour across levels of coaching, therefore coaches were adapting their coaching to the context. Based on the literature and evidence from this thesis, the complexity of the environment shapes and defines the role of the coach (Kellett, 1999).

As cited earlier, coaches in this research were working with junior athletes, and described their role as developing athlete confidence. They were aware of their responsibility for preparing these athletes for their future career. In contrast, coaches of professional Australian Rules football players reported that they had a broader context to contend with, and athlete development was not one of their roles, but they were required to create and facilitate a learning environment to develop the team (Kellett, 1999). Therefore understanding the complexity of the context and being able to work successfully within that context is a strong indication of expertise. The complexity of the context is pivotal in defining the role of the coach; for example the coach working with junior elite athletes may concentrate solely on the needs of the athlete because the

context dictates skill development, the professional coach may be working in a much broader context and answerable to the athlete and a number of other stakeholders. In most cases expertise has been associated with coaches who work with elite athletes. If expertise is context specific then it becomes a more adaptable concept and available to coaches working in different coaching streams. If these coaches are viewed as experts and valued for the role they perform it might encourage them to stay where they are experts and can be of most value to those they coach.

Summary

In attempting to understand and deconstruct expertise, this study has focused attention on how coaches cognitively and conceptually perform their role. In performing their coaching role, there were still questions relating to when and how coaches clarify their role. Based on the current research, role clarification played an important part in establishing coaching priorities.

Underpinning the coaching process were the four knowledge bases which differed in their rate of maturity. Depending on the coach's background and experience, different knowledge bases dominated their coaching. Sport discipline knowledge and sport pedagogical knowledge provided grounding for the coaches. Using one or both of these knowledge bases, the coaches in this study achieved success. With success, coaches had a fertile base for the growth of personal knowledge. The development of personal knowledge allowed coaches to confidently shift towards an athlete-focused approach. Within the knowledge bases, there was also a hierarchy. Contextual knowledge became the driver for program development, yet it was the last knowledge base to be mastered.

In establishing the main goal, developing athlete confidence, the coaches in this study evaluated the athlete and developed a mental model that accessed components of

knowledge necessary for problem-solving and communication delivery. The coaches in this research have provided insight into how they establish program direction, access information and organise knowledge, and use it to problem solve and communicate.

Coach Education

In the current study, the majority of coaches questioned the value of education programs beyond being a resource and an opportunity to communicate with other coaches. These coaches navigated their own pathway, seeking knowledge from a variety of sources, networking with other coaches, and searching for support and advice from mentors. The ability to develop expertise independently and network successfully may be hallmarks of expert coaches. Regardless of what education program was developed, these coaches may find more value in controlling their own learning.

In Australia, the National Coach Accreditation Scheme (NCAS) was introduced in 1980 (Australian Sports Commission, 2001). The Australian Sports Commission intends the NCAS to be an education program designed to ensure that all sporting participants have access to experienced coaches. To maintain accreditation, coaches are expected to continually update their practical and theoretical knowledge. As coaches move up through the accreditation system, it is expected that they will develop a deeper understanding of the coaching process and how it relates to their specific sport, and generate greater insights into coaching in general (Dickson, 2001a). In the present research, 19 out of 20 coaches had an NCAS accreditation level. Of the 19 coaches, four coaches were positively influenced through participation in the accreditation process. Of these four coaches, two were inspired to engage in further learning; neither of these coaches had an academic background. The other two coaches worked in sports with professional career pathways and valued their training and education. The majority of

coaches in this research were exposed to the three tier hierarchical accreditation system, where there is little flexibility in structure or course content. The NCAS system is under review in Australia, and several sport associations are piloting a flatter, more flexible, context-specific accreditation system (L. Bee, personal communication, August 1, 2003).

Although coaches understood the necessity of obtaining a coach accreditation level, in most cases it was not valued highly. The coaches in this research perceived gaining accreditation as the equivalent of a license for coaching. National sporting associations require at least a Level 2 accreditation to coach at national level. It has been alluded to in previous research that coaches primarily obtained accreditation as a necessary prerequisite to obtaining a coaching position (Dickson, 2001b).

In the present study, the coaches proposed that the major benefit of coach education, whether it was experienced through accreditation or professional development, was the opportunity to congregate with other coaches, exchange information, and establish networks. In the majority of cases, this was considered to be more valuable than the course content. Coaches were more interested in "bodies *with* knowledge" as compared to "bodies *of* knowledge". It was noted by several coaches that exchanges with coaches from other sports, not just their own sport, were very valuable. Gould et al. (1990) cited similar results in an American context. Coaches in their study, working at national level, ranked formal coaching classes as least important, but close to half the coaches said talking to other coaches and attending competitions contributed to their coaching knowledge. Coach knowledge exchange and the development of networks are not listed within the NCAS global vision (Australian Coaching Council, 1999, p. 3). Dickson (2001a), in his recommendations for making the NCAS more effective, suggested the facilitation of coaching contacts and the exchange of coaching ideas and

knowledge. The reflections of the expert coaches in the present study suggest that the coach education programs should consider coach knowledge exchange and networking as one of their specific aims. It is currently a serendipitous outcome of the coach education program, yet it is valued highly, and it would provide a platform that could be developed for communicating information.

Providing value is inherently linked to the credibility of the coach education programs and other professional development programs offered around the world. It is worth exploring how value manifested itself through the coaches' eyes. Of importance to the coaches in this research was the relevance of education to their context. Coach education programs only contribute to the development of expertise when coaches can apply the knowledge to their own coaching situation or context. Expert coaches may be more effectively serviced by professional development programs tailored to their needs, or a course structure designed to cater for specific contexts. The NCAS pilot programs may address these issues. In Canada, the National Coaching Certification Program (NCCP) is in the midst of transition, and those who are redesigning it have developed a competency-based system that is structured into streams and contexts, instead of accreditation levels. The streams represent the level the coach is working at, for example, community sport, competition level, or instruction. The context reflects the performance level of the athletes with whom the coach is working, such as beginner, intermediate, or advanced. The Canadian NCCP combines both the needs of the sport and the participant's context. To gain certification, the program participants will be required to demonstrate the anticipated outcomes of the training deemed relevant to their context (Demers, 2003). The United Kingdom is also introducing a new course structure that is contextually driven. The five level framework is coach and participant focused, it

provides opportunities for vertical and horizontal progression as compared to the previous linear model of coach education, and is flexible to meet the needs of the sport (Sports Coach UK, 2003). Both coach education structures would be worth monitoring to determine how effective they are in addressing some of the issues discussed by the coaches in this study, particularly the integration of coach discipline knowledge and the application of that knowledge within the coach's context.

The value of education was also reflected by the status of the organisation that recognises the accreditation. Many of the coaches in this research placed a higher value on their academic qualification, a qualification underpinned by a theoretical body of knowledge (e.g., teaching, exercise science), linked with established pathways, and recognised by the wider community, than they placed on their formal coach education. The two coaches undertaking accreditation courses linked to professional career pathways did value their coach education, however, questions arise as to whether it was the course content or the course accreditation outcome that provided value. The selection criteria and requirements for accreditation in these sports are much more rigorous than for other sports (Alan Pearce, personal communication, August 1, 2003).

Coaching as a profession still lacks a theoretical underpinning (Broom, 1990; Douge & Hastie, 1993; Gould et al., 1990). Yet the coaches in this research were clearly able to articulate what knowledge and theory was relevant for coaching within their context. Research on discipline knowledge of coaching is limited, although it has progressed through a number of developmental stages. For example, there has been correlation research investigating the relationship between leadership behaviour and athlete satisfaction and performance, (e.g., Chelladuria et al., 1988; Horne & Carron, 1985; Weiss & Friedrichs, 1986), observational research recording what coaches do

during practice and competition (e.g., Horn, 1985; Smith, Smoll, & Curtis, 1978; Smith & Smoll, 1990; Tharp & Gallimore, 1976), and qualitative research, interviewing coaches to develop a deeper understanding of coach expertise and the coaching process from the coach's perspective (e.g., Côté et al.,1995a; Kellett, 1999; Salmela, 1995, 1996). Gould et al. (1990) strongly suggested the need to understand elite coaches, their educational backgrounds, and their perceived educational needs. One of the first stages of developing a theoretical knowledge base for a profession is developing an understanding of best practice. Research investigating the coaching process is still in its infancy, and limited to select coaching populations. Examining best practice across contexts would be a sensible first step in understanding expertise within and between categories (e.g., community, instructional, developmental, and high performance coaches). It is important that expertise is viewed as a flexible construct. Gould et al. (1990) emphasised the need to identify and profile different populations of coaches, and design training programs appropriate to their needs. The knowledge base and experience required to coach a community level team may tap into the same knowledge base as coaches working at the developmental or high-performance level, but these coaches may access and organise their knowledge differently, creating alternative mental models that are context driven.

There have been limited attempts to develop a global definition of what coaching represents (e.g., Côté et al., 1995; Launder, 1994; Saury & Durand, 1998; Woodman, 1994). Coaches in this study defined their primary role as developing athlete confidence. It is probable that the role of the coach is a fuzzy concept that is context driven, hence changes to suit the situation. Until this is explored and expertise is unpacked, it will be difficult to determine what knowledge underpins coaching and therefore what coach education programs should target in course structure and content.

Coaches in this research all acknowledged the role that mentoring played in assisting them develop and organise their knowledge base. These relationships were not formalized, and for most of the coaches were established in the early stages of their coaching careers. There are many issues still to be pursued in research relating to the mentor-mentee relationship. Research investigating the impact of the mentor relationship in coaching is limited (e.g., Gould et al., 1990; Salmela, 1995; Weiss et al., 1991). To date, none of the coaching research has clarified what the relationship represents. Research in education (Bullard & Felder, 2003; Perry, 2000) describes the role of the mentor as encouraging personal reflection, providing feedback, and helping the mentee to resolve the issue themselves. The mentoring relationship, as described by coaches in this study and previous studies (Gould et al., 1990), closely parallels the coach-athlete relationship, where the master or expert coach evaluates the coach's performance, asks questions, and provides guidance. If the terminology and the type of relationship that are most appropriate are articulated and clarified, then education programs could be expanded to train people to perform these roles. If, as Abernethy (1993) suggested, unpacking expertise is difficult, then questions arise as to what constitutes a good mentor-mentee relationship. An expert coach, working in a different context, may no longer be able to decouple their knowledge to be of value to the mentee. In business, Jaques and Clement (1994) recommended that the mentor should be once-removed or at most twice-removed in terms of capability and experience to be able to assist their subordinates in reaching their full potential. It also means that the mentor is not so far removed that they lose touch with the subordinates' needs.

Methodological Issues

This thesis applied a grounded theory approach to the study of coach expertise. There are observations relating to the aspects of the research method that should be considered. Limitations relating to the study will be addressed first, followed by observations on the method.

Limitations

The study as designed was limited to one developmental stratum of the coaching population. In this study, all coaches were classified either by coaching directors working within the sport organisation, or by peers, as being expert coaches of junior elite athletes. Although narrowly focused, the depth of information gleaned from the participants provides a platform for investigating and comparing other strata of the coaching population.

Using a grounded theory method may have appeared to be a limitation, but this method enabled the researcher to capture the richness of the coaches' knowledge and experience and examine its relationship to expertise and the application of expertise. Grounded theory allowed the researcher to develop an understanding of the field and develop theory based on the views, attitudes, and definitions of the coaches. The advantage of grounded theory is that it allows for the identification of common themes and the development of theory associated with expert coaches. Early research (e.g., Walton, 1992; Wooden, 1988) investigating coach expertise used a profiling or case study technique that individualised expertise making it difficult to identify whether expertise was embedded within individual traits or part of a developmental process. Tangential discussions arising from the interviews with coaches in the present research

provided valuable information that lead to further investigation. This would have been difficult to achieve with quantitative research methods.

The three categories under investigation, (a) factors influencing the choice of coaching as career pathway, (b) the coaches' perceptions of effective coaching behaviour and the knowledge base underpinning the coaching process, and (c) the role that the coach accreditation or education program played in the coaches' development, were definitely limitations, but they did provide a conceptual boundary for the study. These categories were developed as issues associated with coaching expertise unfolded. The coaches forged their own pathway in addressing the three categories, which in turn, led to the further development and enhancement of the structured interview guide and the creation of rich themes relating to coach expertise.

Sample size. In grounded theory, the sample size is determined by data saturation as opposed to a preset sample size. In this study, the researcher also attempted to maintain a gender balance and a balance between the representation of team and individual sports. This meant that data was collected beyond saturation on all issues. The results suggest that the balance was not a differentiating issue and that, if the study was repeated, the sample size should be determined by data saturation.

Population. The coaches in the present thesis were differentiated by age, gender, type of sport coached, coaching qualifications, tertiary qualifications, and experience. It is not surprising that the most significant factors influencing the study were coaching knowledge and experience. Years of coaching experience paralleled the age of the coaches, a demographic not recorded as several coaches were not prepared to have that data published. Although experience is referred to numerically, the coaches in this research were adamant that it was the quality of the experience and how one developed

over this time that was important and not the length of the experience. Within the expertise category, experience and knowledge accumulation varied widely. As the coaches discussed stages in their own history of coach development and reflected on their present status, they provided insight into the relationship between experience, knowledge accumulation, knowledge maturity, and knowledge organisation. As all coaches in the study were expert coaches of junior elite athletes, it would now be interesting to compare this group with novice performance coaches, professional coaches, or coaches working with community or recreational groups. It would not be surprising if context specific experience did influence expertise development at all coaching levels, noting that experience alone does not represent expertise.

Method. The use of a grounded theory method provided an opportunity to examine "coach expertise" from the coaches' perspective. Studies using this method are limited, but have proven effective in ascertaining not only the fundamentals of coach expertise development and segments of the coaching process, but have also captured the essence of how coaches organise their knowledge and use it in the coaching situation. A grounded theory method allowed for a rich approach in collecting and analyzing data, which in turn gave a deeper understanding of how coaches developed and used expertise in practice. Many of the results supported, and are consistent with, previous findings relating to the coaching process and leadership in sport. Thus, it is proposed that the grounded theory approach was effective in this research context.

Interview. The interview guide worked as a tool for probing answers from the coaches, at the same time providing flexibility for in-depth exploration of issues arising from the interview. The researcher's background as a high performance coach enabled

them to establish rapport with the coaches early in the process and the interviews proceeded well.

Direction for Future Research

This study has raised many issues that require further investigation. This section briefly discusses a range of research questions that may help clarify coaching expertise and the coaching process, and provide direction for future research.

Talent Identification

A high percentage of coaches from this study were identified as having coaching potential while still competing as junior athletes and were encouraged to coach. This form of talent identification for coaches is not documented in the literature, yet for the coaches in this study it was a formative step in their coaching career. Further research should investigate what indicators club officials or other coaching staff are using to predict whether a person has coaching potential. If this is a valid form of talent identification for coaches, then the process needs to be investigated, documented, and formalised.

Academic Qualifications

This research and previous research (Gould et al. 1990) has highlighted that a high percentage of expert coaches have academic qualifications in a discipline area related to coaching. The influence of academic qualifications needs to be examined to determine whether: (a) entry into the course reflect the coaches' ability to maintain focus and deal with complexity, (b) the course content had a direct relationship to coaching, (c) specific components of the course influenced the development of expertise, for example, the practicum experience, in which students gain experience under the guidance of an expert working in the field, and are provided with constructive feedback to help them

develop confidence, (d) coaches selected entry into a specific course based on its relevance to coaching, or (e) coaches with academic qualifications undertook formal study with other goals in mind only to discover, after having completed it, when they found themselves in the coaching context, that their academic qualifications were relevant. Based on this research it may then be possible to determine whether the qualification "fast tracked" expertise development. This has implications for the content and delivery of coach education courses.

Mentoring

Mentoring is poorly defined in the coaching literature; future research should attempt to clarify what mentoring means in the sport coaching context. There is confusion as to whether it represents a reflective or a coaching process. If the learning model for coaches is more reflective of a socially mediated model as compared to a skill acquisition model then the mentoring role is significant. A clear understanding of the mentoring process paves the way for development of informed and structured mentoring programs. Future research should explore the mentor- mentee relationship, with a focus on how the relationship changes as the coach moves through different developmental stages. This may assist in developing an understanding of what type of mentor is appropriate during the different stages of development.

Expertise

The research to date has only provided patches of information on what expertise represents in the coaching context. This is partially due to the difficulty of unearthing tacit or implicit knowledge. It would seem that there is a limit to coaches' ability to provide a blueprint describing the pathway from novice to expert coach. If this is the

case, more cross-sectional research investigating coaches at different developmental levels of expertise is required to provide a better picture of the developmental process. This, however, is limited by the assumption that all coaches are heading down the same pathway. Research investigating what expertise represents for different coaching streams (community, development, elite, professional) is a necessary first step in exploring expertise development.

Mental Models

Mental models are a relatively new concept in sport psychology. This study speculated that mental models combine both content and delivery information. The organisation of mental models and the link between cognition and implementation deserved more attention in the research. This includes understanding how coaches access and organise information and what drives the process at different stages of coach development.

Role Clarification

The role of the coach is explicitly connected to how coaches orientate their thinking. It provides a framework for problem solving, planning, and identifying the relevant context. It is still unclear whether this is part of the developmental process, hence, as coaches develop expertise they are better able to articulate their role. Further research should explore this connection. If role clarification is part of a developmental process, can this process be fast tracked by placing emphasis on role clarification during the early stages of coach education?

Coach Self-Confidence and Self-Awareness

Research investigating athlete self-confidence is vast (Feltz, 1992; Morris, 1995), but there is very little attention paid to coach self-confidence. Self-confidence is viewed

as a trait associated with good leadership skills (Locke, 1991). The coaches proposed that self-confidence develops over time and is one of the major indicators of expertise. Self-awareness was a term coaches made reference to in terms of what they had learnt about themselves over time and the ability to establish priorities and cope with difficult situations. Coaches described this as an ongoing process. Further research is required to investigate the development of coach self-confidence and self-awareness, and the relationship between coach self-confidence and other coach, athlete, and situational variables.

Exploring the Context

The coach's ability to deal with the complexity of the context bears a direct relationship with their level of expertise. Research has explored the complexity of the professional and elite performance level of competition, but this is still to be explored at the community and performance levels of coaching. Further research should investigate the contextual needs of expert coaches within the different coaching streams. This may assist in developing course material relevant to the coaches' contextual needs.

Implications for Practice

The insights gleaned from this study have several implications for practice. It is important to remember that the coaches in this study were expert coaches working with junior-elite athletes, so information is specific to that context. While the data cannot be generalised, it does provide a springboard for conceptualising the coaching process. The implications for practice relate to talent recognition, coach education course content and delivery, expertise clarification, valuing sport pedagogy, emphasizing the soft skills of coaching, and mentoring.

Talent Recognition

Most expert coaches in this study were identified by club management or other coaching staff as having coaching potential, when they were still junior athletes. Sports associations would benefit from formalizing a talent identification program and nurturing junior coaches by providing mentoring and a safe environment for the coach and their athletes to develop.

Course Content and Delivery

The identification of four knowledge bases has implications for what course content should be included in coaching courses, and how that knowledge should be delivered. The knowledge bases need to be integrated, and coaches should have an opportunity, where practical, to contextualise it within their own practice. If, as suggested by the coaches in the present study, some knowledge bases take longer to mature than others, this could be achieved through careful design of delivery. For example, if sport discipline knowledge and sport pedagogy need to be mastered before personal knowledge can find a footing, then this could be built into the course delivery structure. The integration of knowledge would require vertical and horizontal links between the various knowledge bases.

Expertise Clarification

Expertise is specific to the complexity of the coaching context. One of the problems with clarifying expertise is the assumption that only those who coach elite athletes are expert coaches. If expertise relates to context then it could be speculated that expertise is possible within all coaching streams, but the requirements differ according to the context. It will also affect the way a coach organises and cues knowledge. Thus, it is possible to have an expert community coach and an expert professional coach. Although

each of these coaches is an expert, they differ in their contextual requirements. Recognising and sharing expertise within the sport may also encourage coaches to remain within the stream, rather than feeling that they have to change coaching streams in order to be recognised as an expert coach. Recognition of streamed expertise will also assist course designers in developing appropriate course material and practical experiences for these coaches.

Networking

Coach education courses were not valued as important, unless attached to a professional coaching career, where the career outcome and not necessarily the course content was valued. Of value was the opportunity for coaches to network. As coach education programs serendipitously provide a platform for networking to occur; it would be opportune for coaching organisations to capitalise on the benefits of networking, and own it as a specific aim within their global vision.

Soft-Skills of Coaching

Soft-skills refer to the people skills used by coaches. The expert coaches in the study placed much emphasis on developing coach-athlete relationships, and moving beyond sport in their conceptualisation of a philosophy. The re-conceptualisation of soft-skills as important coaching skills in affecting athlete change means that these skills would need to be delivered and reinforced through each coach education stream and through each stage of development. More emphasis on the soft-skills of coaching might also help the novice or competent coach reframe their coaching role, so that they move towards an athlete focus in practice.

Formalised Mentoring

Mentoring plays a significant role in coach development. One of the problems facing sporting organisations is coaxing people into the mentoring role and establishing successful mentor-mentee partnerships. The term mentoring still requires clarification, and until this occurs it is difficult to explain what role the mentor is expected to perform. As coaches move through different developmental stages they require different types of mentors. This is a time-consuming exercise for management. Although this area still requires research, where possible, sport organisations should continue to establish these vital partnerships.

Sport Pedagogy

Many of the coaches in this study had academic qualifications in disciplines where pedagogy was one of the main learning platforms. This enabled the coaches to achieve success early in their coaching career, because they were able to plan, organise, and manage people. Pedagogical content worthy of inclusion in coach education programs are planning and organisation, the teaching process, and information about how to create a learning environment (consistent behaviour, role clarification).

Concluding Remarks

This research embarked on a journey to investigate how coaches developed expertise, and how expertise manifested itself within the coaching context. The conclusions drawn from the research support the premise that expertise is a developmental process.

Developing expertise takes time, requires deliberate practice, the acquisition of knowledge specific to coaching, and is context specific. The process of developing expertise, however, is not purely a knowledge acquisition model, learning is also socially

mediated by mentors and networking. How the coach defines their role influences how they coach, however, the question remains, does the coach have to be an expert to understand and define their role? In the coaching context, expertise is demonstrated by how the coach problem solves, creates solutions and communicates them to athlete. This research supports the concept of mental models as the conceptual framework used for problem solving. When coaching is driven by the athlete context the coach-athlete relationship is strengthened, but this is also dependent on the development of the coach's personal knowledge.

Many coach education programs have relied on transmission models of delivery based on the assumption that learning occurs through knowledge acquisition. If expertise development is also dependent on social mediation then mentoring and networking should be considered as important components of coach education programs.

There may never be one unified, homogeneous theory of coaching that explains the entire field. This research provided an in-depth snapshot of a small group of coaches working with a similar athletic cohort. The benefits gained from this study included insights into learning, the development of expertise, and problem solving. The research has generated new questions and provided direction and focus for future research.

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LIST OF APPENDICES

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Appendix A

Coach Demographics

- Please circle your age bracket (voluntary)

20 – 25   26-30   31-35   36-40   41-45   46-50

51- 55   56-60   61-65   65+

- How many years have you worked as a coach? _____

- Did you compete as an athlete? _____

- As an athlete in which sport/sports did you participate? _____

    o How many years did you compete as an athlete? _____

- What sport or sports do you coach? _____

- What performance level are you coaching?

Club   —

Elite development   —

State   —

National   —

International   —

- How many athletes do you coach?   _____

- Which gender do you coach?

Males only   —

Females only   —

Both genders   __   Please provide gender breakdown _____

- What coaching accreditation qualifications have you achieved?

Appendix B

Interview schedule

A. Coaching History and Influences

1. Tell me why you decided to coach.

2. How has your career developed?

3. Where did you learn most of your coaching behaviours?

4. Who had the biggest influence on your coaching?

5. What did you admire in those coaches?

6. What behaviours did these coaches use that influenced how the athletes enjoyed themselves or performed well?

7. If you were to isolate the best coaches in your sport, would you describe what makes them good from your eyes?

B. Effective Coaching Behaviours

8. What do you think are the most important coaching factors that affect an athlete?

9. You are a successful coach; why do you think athletes choose to work with you?

10. What are your strengths as a coach?

11. What would you like to improve in your coaching?

12. Have you noticed any gender, age and maturity differences in athletes that affect athlete satisfaction?

C. Coach Training and Accreditation

13. What is your coach accreditation level?

14. How has your coaching accreditation level helped you as a coach?

15. What was beneficial about the coach accreditation program?

16. How would you restructure the accreditation program?

Appendix C

Dear   ,

My name is Julia Walsh and as I am Ph.D Student at Victoria University of Technology within the School of Human Movement, Recreation and Performance. I am conducting research with a focus on understanding how coaches develop expertise and apply it in the field. The coaches targeted for this research are elite coaches working with junior elite athletes.

I would like to recruit coaches for this study from your sport. As part of the research design, I am aiming to have an equal number of team and individual sports represented while also maintaining a gender balance. The selection criteria are the coach must be actively working with junior elite athletes and they must be recognised within the organisation as an expert elite coach.

The research involves an interview with the coach lasting between two to three hours. The coach may be contacted after the interview to clarify components of the interview transcript. Time and place of the interview will be arranged to suit the coach.

If you know of any coaches who fit the criteria and might be interested in this research could you please give them the attached form and the reply paid envelope to return to me.

If you or the coaches require any further information please contact me on the following number: 9244 6100 or on my email address, jwalsh@deakin.edu.au.

Thank you for your assistance

Julia Walsh

Coach Details

Name…………………………………………………………..

Sport Coached………………………………………………

Level Coached………………………………………………

Contact Details

Address………………………………………………………..

……………………………………………………………………..

Phone Number (w)…………………………………………

(h)…………………………………………

(m)…………………………………………

Best time to make contact……………………………….

Appendix D

Dear

Thank you for returning the information form and displaying your interest in this research. My name is Julia Walsh and as I am Ph.D Student at Victoria University of Technology in the School of Human Movement, Recreation and Performance. I am conducting research with a focus on understanding how coaches develop expertise and apply it in the field. The coaches targeted for this research are elite coaches working with junior elite athletes.

Your sport association nominated you as elite coach who might be interested in this study. This research attempts to understand coaching from a coaches' perspective. There is very little research that has asked the coach about what the coaching process entails. This research attempts to explore: (a) reasons why people pursue a coaching career, (b) the knowledge base required to coach effectively, and (d) the role of coach education programs in coach development.

The research involves a face-to-face interview lasting between two to three hours, and it will be audio-taped. You may be contacted after the interview to clarify components of the interview transcript. Time and place of the interview will be arranged to suit you. All information is confidential, and you can cease the interview at any time if you wish to do so.

If you require any further information please contact me on the following number: 9244 6100 or on my email address, jwalsh@deakin.edu.au.

Thank you for your assistance

Julia Walsh

Please return if interested in participating in the research

I .... am interested in participating in the research investigating coach expertise conducted by Julia Walsh from Victoria University of Technology. I understand that I am free to withdraw from the research at any time.

Signed .... Date ....

Coach Details

Name...

Sport Coached...

Level Coached..

Contact Details

Address..

....

Phone Number (w)..

(h)..

(m)..

Best time to make contact................................

Appendix E
Victoria University

Consent Form for Participants Involved in Study

CERTIFICATION BY PARTICIPANTS

I, _____
Please print your name
certify that I have the legal ability to give valid consent and that I am voluntarily giving
my consent to participate in the study entitled: "Development and application of expertise
in elite-level coaches" being conducted at Victoria University by Julia Walsh.

I certify that the objectives of the study, together with any risks to me associated with the
procedures listed there under to be carried out in the study, have been fully explained to
me by Julia Walsh and that I freely consent to participation involving the use of me in
these procedures.

Procedures:

1. **I am being asked to answer questions at an interview inquiring about my coaching history, my thoughts, experience and feelings about the coaching process, and the influence coach education on my development.**

2. **My consent is completely voluntary and I may withdraw my participation in this study at any time.**

3. **All information provided is strictly confidential and will not be released to anyone not involved in data collection and analysis.**

I certify that I have had the opportunity to have any questions answered and that I
understand that I can withdraw from this experiment at any time and that this withdrawal
will not jeopardize me in any way.

I have been informed that the confidentiality of the information I provide will be
safeguarded.

Signature of the participant_____ Date_____

Witness other than the experimenter _____ Date_____

Any queries or complaints about your participation in this project may be directed to the researcher, or to the Secretary, Human Research Ethics Committee, Victoria University, PO Box 14428 MMC, Melbourne, 3000 (telephone no: 03 9688 4710)