

Sports Coaching

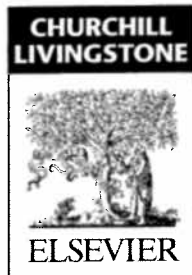
Professionalisation and Practice

Edited by

Prof. John Lyle EdD and
Dr Chris Cushion PhD

Foreword by

Prof. Patrick Duffy PhD



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Athlete development and coaching

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Jean Côté, Mark Bruner, Karl Erickson,
Leisha Strachan and Jessica Fraser-Thomas

Introduction

There is growing concern about the healthy development of today's children, adolescents, and young adults. Researchers and policy makers alike have expressed distress and alarm around issues such as the growing epidemic of childhood obesity (Tremblay et al 2002), increases in adolescents' problem behaviours (Igra & Irwin Jr 1996), and young adults' failure to develop initiative and become productive members of society (Larson 2000). While acknowledging these challenges, researchers in developmental psychology have proposed that young people's strengths need to be fostered appropriately for optimal development to occur (Peterson 2004). Given that young people spend almost half their waking hours in leisure (Larson & Verma 1999), organised leisure activities have been suggested as an effective vehicle to promote positive development (Larson 2000). In particular, sport has consistently been found to be the most popular and time-consuming organised leisure activity in which young people participate (e.g. Eccles & Barber 1999, Hansen & Larson 2007).

However, not all children, adolescents, and young adults have positive experiences in sport programs. While an extensive body of literature associates sport involvement with positive experiences and outcomes, a considerable body of literature also associates sport involvement with negative experiences and outcomes. Specifically, sport has been linked to increased self-esteem, confidence, citizenship, academic achievement, and decreased delinquency (e.g. Mahoney 2000, Broh 2002) as well as increased aggression, alcohol consumption, stress,

dropout, burnout, and low morality reasoning and self-esteem (e.g. Shields & Bredemeier 1995, Gould et al 1996, Eccles & Barber 1999). Further, negative experiences in sport such as lack of playing time, negative coach experiences, and pressure to win have consistently been associated with dropout in youth sport settings (Weiss & Williams 2004).

Researchers in both sport and developmental psychology emphasise the coaches' critical role in promoting athletes' healthy development through sport. For example, the essential role of coaches, as well as parents, sport programmers, and policy makers is highlighted by Fraser-Thomas et al (2005). These authors argue that delivering positive developmental experiences and outcomes is dependent on conducting programs in appropriate settings that consider developmental stage, and aim to develop personal attributes. Similarly, researchers in developmental psychology (e.g. Lerner et al 2000, Benson et al 2006) consistently highlight supportive relationships, relationships with adults, appropriate role models, and connections with community members as elements of youth activity contexts that facilitate positive development. Moreover, Peterson (2004) points out that while youth development programs such as sports have the potential to 'build a better kid' (p 9), it is the personal characteristics of group leaders that are critical for the success of all youth development programs.

However, clear guidelines for coaches aiming to optimise athletes' development through sport have been lacking (Petitpas et al 2005). Youth sport coaches have been left largely on their own to develop their coaching styles (Gilbert & Trudel 2004), while more expert coaches have received little formal

training related to athlete development (Erickson et al 2007). Coaches clearly have the powerful and unique potential to influence athletes' development (Poczwadowski et al 2006), but significantly more understanding of appropriate athlete-centred coaching is necessary to ensure that coaches are positively influencing athletes' development.

The purpose of this chapter therefore, is to discuss and highlight coaches' roles in the development of athletes of different ages and competitive levels in sport. The positive youth development literature suggests that the base of healthy development in sport lies in favourable relationships between participants and coaches, with coaches supporting and promoting healthy growth and excellence. In this context, coaching excellence should be defined by the highly variable roles that coaches assume and should reflect the quality of the constant personal exchanges and interactions between athletes and their coaches in training and competition settings. Consequently, research that focuses on what coaches do and think is valuable and important; however, this descriptive work is often not carried out against the backdrop of athlete outcomes. There are already several reviews of research on the impact of the coaching process (Côté et al 1995, Abraham & Collins 1998, Lyle 2002, Potrac et al 2002, Cushion et al 2003) and the aim of this chapter is *not* to repeat the work covered in these. Instead we focus on research that links athletes' outcomes and coaches' practices, using athlete age and competitive level as a framework. Specifically this chapter: (a) summarises coaching frameworks related to athlete development, (b) proposes a modified coaching model centred around athletes' development, (c) proposes a typology of coaches based on athletes' age, competitive levels, and developmental needs, (d) discusses research on athletes' developmental needs within each coaching typology, and (e) outlines practical implications for coaches within each typology, in order to foster athletes' development.

Coaching frameworks related to athletes' development

Empirical research has led to the conceptualisation of various frameworks that focus on the outcomes of coach and athlete interactions in sport (e.g. Chelladurai 1984, Smoll & Smith 1989, Côté et al 1995). The Multidimensional Model of Leadership (Chelladurai 1984) has generated a large number of

studies on coaching effectiveness and athletes' outcomes. The central component of the Multidimensional Model of Leadership features three states of coaches' behaviours: (a) actual behaviours, (b) athletes' preferred behaviours, and (c) required behaviours. Three 'antecedent' variables labelled as the characteristics of the coach, athletes, and situation influence these coaching behaviours. The model suggests that performance and satisfaction are positively related to the degree of congruence among the three states of coach behaviours. To test the model, Chelladurai and Saleh (1980) developed the Leadership Scale for Sport (LSS). The LSS has been used extensively to assess the influence of selected variables such as gender, age, or personality on perceived and/or preferred coach behaviours, and the congruence between perceived and preferred leadership in relation to athletes' performance and/or satisfaction (Chelladurai & Reimer 1998). It is important to note that the LSS is a psychometric instrument that assesses a limited scope of coaching behaviours. Furthermore, the relationships specified in the multidimensional model have primarily focused on adult competitive sports. For detailed reviews of the studies conducted using the Multidimensional Model of Leadership and the LSS see Chelladurai (2007) and Chelladurai and Reimer (1998).

Smoll and Smith (1989) proposed the mediational model of leadership to investigate coaching behaviours and athletes' outcomes, based on findings gathered with the Coaching Behaviour Assessment System (CBAS) (Smith et al 1977). A distinguishing feature of the CBAS is its focus on youth sport coaches. Further, in addition to the coach, athlete, and situational factors, the model specifies that coach behaviours are influenced by players' perceptions and recall, coaches' perceptions of players' attitudes, and players' evaluative reactions. Smoll and Smith suggest a series of coach, athlete, and situational variables such as coaches' goals/motives, athletes' levels of self-esteem, and the level of competition are likely to affect coaches' and players' behaviours. Although, specific coaching behaviours have been linked to positive and negative outcomes in young athletes, the specific context of the studies conducted with the mediational model of leadership is limited to the youth sport environment. For a thorough review of the literature using the CBAS see Smith and Smoll (2007).

The Coaching Model (CM) (Côté et al 1995) provides another useful model to conceptualise the variables that should be considered in designing an

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optimal learning environment for athlete development. The CM identifies the conceptual and operational knowledge of coaching and was developed around the following six components: (a) competition, (b) training, (c) organisation, (d) coach's personal characteristics, (e) athletes' characteristics, and (f) contextual factors. The CM can be divided into two levels of variables: those that *represent* actual coaching behaviours and that have a direct influence on athletes' development (i.e. competition, training, and organisation) and those that *affect* coaching behaviours (i.e. coach's personal characteristics, athletes' characteristics, and contextual factors). The CM has been used as a conceptual framework for several studies conducted with coaches and athletes (e.g. Côté & Salmela 1996, Gilbert & Trudel 2000, Côté & Sedgwick 2003). Furthermore, the Coaching Behaviour Scale for Sport (CBS-S) (Côté et al 1999) was developed from items based around the behavioural components of the CM. The CBS-S is an evaluative instrument of coaches' work, beneficial both for research and intervention with coaches at the competitive level (Mallett & Côté 2006).

The theoretical frameworks proposed by Chelladurai (1984), Smoll and Smith (1989), and Côté and colleagues (1995) share common variables. The three models propose that the athletes' characteristics, the coach's characteristics, and the context are determinants of coach-athlete interactions. The way coach-athlete interactions are conceptualised in each model is, however, different, and characterises diverse methodological approaches. Each model described above can, however, be incorporated into a more comprehensive framework that highlights the centrality of athletes' personal characteristics and the centrality of athletes' desired outcomes that result from the interaction of coaches and athletes in sport settings.

The Coaching Model revisited

More recently, Côté and colleagues (Côté 2006, Côté & Gilbert 2007) systematically defined the main components and variables of the CM by providing a thorough description of the six main components of the model (competition, training, organisation, coach's personal characteristics, athletes' characteristics, and contextual factors). Using a cognitive approach, these components and their specific relationships were organised to explain how coaches work towards their

objective of 'developing athletes'. Generally, the coaches evaluated their personal characteristics (i.e., what they could and could not do), the athletes' and/or team's characteristics, and additional contextual influences, in order to have an estimation of athletes' potential. This estimation, or 'mental model', was then used as a basis to define which coaching knowledge and behaviours were important for use in competition, training, and organisation. The notion of mental models was used to link coaches' knowledge to their actual behaviours, and interactions with athletes.

One component of the CM that has yet to be described is the actual objective of coaches, defined generally as 'developing athletes' (Côté et al 1995). The positive youth development literature provides different frameworks that could be used for conceptualising the development of athletes from a coaching perspective. In particular, the 5Cs – Competence, Confidence, Connection, Character, and Caring/Compassion (Lerner et al 2000) – can be hypothesised as desirable outcomes that should emerge from the interactions of coaches and athletes in a sporting environment. A general definition of the 5Cs according to Jelici and colleagues (Jelici et al 2007) is provided in Table 5.1. In this chapter, discussion of the 5Cs will centre on a collapsed framework of 4Cs (Competence, Confidence, Connection, Character/Caring) and hereon it will be referred to as the 4Cs. This step was taken in response to the integration of caring and compassion within the character development literature in sport (Hellison 1995, Shields & Bredemeier 1995) and the general relatedness of these three constructs (i.e., character, caring, and compassion). A brief overview of each of the 4Cs may be informative at this point to offer theoretical and empirical support for the inclusion of each one as a developmental outcome and as a focus for coaches.

Competence

Self-determination theory (Deci & Ryan 1985) asserts that humans have a basic psychological need for competence, which can be defined as individuals' perceptions of their abilities in specific domains (e.g. academic, athletic, physical, social) (Weiss & Ebbeck 1996). Social contexts that support the satisfaction of competence are proposed to facilitate growth and intrinsically motivated behaviour, while those that hinder competence are associated with poorer motivation, performance, and well-being (Deci & Ryan

Table 5.1 'Working definitions' of the 5Cs of positive youth development

| C | Definition |
|----------------------|---|
| Competence | A positive view of one's actions in domain-specific areas including social, cognitive, academic, and vocational. Social competence pertains to interpersonal skills (e.g., conflict resolution). Cognitive competence pertains to cognitive abilities (e.g., decision making). Academic competence includes school grades, attendance, and test scores. Vocational competence involves work habits and career choice explorations |
| Confidence | An internal sense of overall positive self-worth and self-efficacy; one's global self-regard, as opposed to domain-specific beliefs |
| Connection | Positive bonds with people and institutions that are reflected in bidirectional exchanges between the individual and peers, family, school, and community, in which both parties contribute to the relationship |
| Character | Respect for societal and cultural rules, possession of standards for correct behaviours, a sense of right and wrong (morality), and integrity |
| Caring or compassion | A sense of empathy and sympathy for others |

2000). Within the youth sport and developmental psychology literature, higher perceptions of competence are associated with a number of salient outcomes including: (a) greater intrinsic motivation, (b) higher levels of achievement, (c) more positive achievement-related cognitions (e.g. self-esteem) and behaviours (e.g., effort, persistence), (d) higher levels of positive affect (e.g. happiness), and (e) lower levels of negative affect (e.g. anxiety) (see Weiss & Ebbeck 1996, Weiss & Ferrer-Caja 2002 for reviews).

Confidence

Confidence can be defined as the degree of certainty individuals possess about their ability to be successful (Feltz & Chase 1998). This construct can be viewed in relation to a particular context (i.e. task self-efficacy) (Maddux 1995) or it can be viewed more generally to encompass a number of domains (Horn 2004). According to Jelici et al's (2007) broader conceptualisation, confidence represents an individual's global self-worth. In the developmental psychology literature, low levels of self-worth among children and adolescents have been associated with depression, suicide ideations, eating disorders, antisocial behaviours, delinquency, and teen pregnancy (see reviews by Mecca et al 1989, Harter 1999). Within the sport domain, confidence has been identified as being fragile and critical to the cognitions, affect, and behaviours of athletes (see Vealey & Chase 2008 for a review).

Connection

Humans hold a 'pervasive drive' to form and maintain lasting, positive interpersonal relationships which originates from an innate, fundamental need for belonging (Baumeister & Leary 1995). Self-determination theory identifies this psychological need as relatedness, the need to feel connected and cared for, and the need to be close to others and one's community (Deci & Ryan 1985). Within the sport psychology literature, there is a growing body of research that supports the importance of connections that young people have with significant others (e.g. peers, coaches) in contributing to well-being (see Jowett & Poczwadowski 2007, Smith 2007 for reviews).

Character/caring

Sport has long been celebrated as an activity that builds character. However, sport has also been the subject of much criticism, often being viewed as a pursuit that undermines character (Weiss & Smith 2002b). The distinct, opposing views of character development in sport have led to a considerable amount of research (see Weiss et al 2007 for a review). In the sport literature, character development is often discussed in terms of moral development and sportspersonship. The final C of caring/compassion is commonly viewed as a goal of moral development. Past work highlighting the potential impact of sport in fostering moral development, has

led to the implementation of a number of initiatives and interventions such as Personal-Social Responsibility (Hellison 1995).

By integrating the 4Cs into the CM, the model is strengthened by providing concrete outcomes that coaches should aim to develop in their athletes. This integration re-affirms the three key variables that must be considered in any kind of coaching environment: the coach's personal characteristics, the athletes' personal characteristics, and other contextual factors. In particular, individuals who are initiated into coaching come from different backgrounds, experiences, and knowledge (i.e. the coach's personal characteristics). Second, coaches work with athletes who vary in terms of age, developmental level, and goals (i.e. the athletes' personal characteristics). Finally, coaches work in various types of contexts with varying resources, equipment, and facilities (i.e. contextual factors). As in the original model, one can see that any changes in one of these three key variables may affect the learning environment and the interactions that a particular coach may have with his or her athletes, thus affecting athletes' development in training, competition, and organisation settings. Although the coach's personal characteristics and the contextual factors are important in affecting coaching, any coaching system should start by examining the varying developmental needs of athletes of different ages and competitive levels. Figure 5.1 is an adaptation of the original CM emphasising the athletes' personal characteristics as the foundation of coaching effectiveness and highlighting the specific developmental outcomes (i.e. the 4Cs) that should be facilitated through an athlete's sport involvement. In the section that follows, a typology of coaches, which is built on athletes' developmental needs at various ages and competitive levels, is proposed.

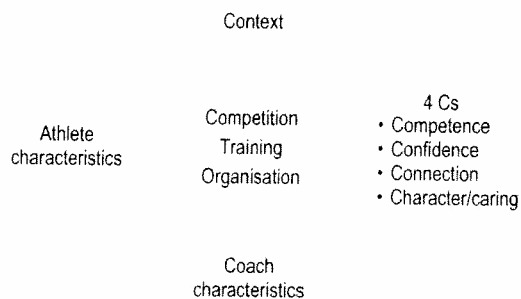


Figure 5.1 • An adaptation of the original CM

A recent review of the sport psychology literature (Alfermann & Stambulova 2007) identified a number of models of athlete development in sport. One of the models, the Developmental Model of Sport Participation (DMSP), highlights the importance of developmentally appropriate training patterns and social influences (Côté 1999, Côté et al 2003, Côté et al 2007a, Côté & Fraser-Thomas 2007). The DMSP proposes three possible sport participation trajectories: (a) recreational participation through sampling; (b) elite performance through sampling; and (c) elite performance through early specialisation. The different stages within each trajectory are based on changes in the type and amount of involvement in sport activities and also highlight the changing roles of social influences (i.e., parents, coaches, peers) at each stage of development. In particular the DMSP differentiates the amounts of two types of sport activities – deliberate play and deliberate practice. Côté (1999) defined 'deliberate play' as sporting activities that are intrinsically motivating, provide immediate gratification, and are specifically designed to maximise enjoyment. Deliberate play activities such as street hockey or backyard soccer are regulated by rules modified according to the needs of the participants and typically monitored by the participants themselves. In contrast, Ericsson et al (1993) defined deliberate practice activities as structured activities typical of organised sport, with the goal of improving performance and often strictly monitored by the coach.

The DMSP proposes that recreational participation and elite performance through sampling have the same activity and training foundation from ages 6 to 12 (i.e. sampling years). After the sampling years, sport participants can either choose to stay involved in sport at a recreational level (i.e. recreational years, ages 13+) or embark on a path that focuses primarily on performance (i.e. specialising years, ages 13–15; investment years, ages 16+). While these two distinct trajectories have different outcomes in terms of performance, the aim of each path should be to yield similar personal developmental outcomes in young athletes (i.e. 4Cs) through appropriate, research-based coaching strategies.

Côté et al (2007b) proposed a typology of four different categories of coaches based on developmentally appropriate sport contexts as outlined by the DMSP: (a) participation coaches for children (sampling years); (b) participation coaches for adolescents (recreational years); (c) performance coaches for young adolescents (specialising years); and (d) performance coaches for older adolescents and adults (investment years). Each of the four categories of coaches according to this typology is elaborated upon in the sections that follow. In particular, the athletes' developmental needs in the areas of competence, confidence, connection, and character/caring are discussed, and implications for coaches are explored.

Four categories of coaching: athletes' developmental needs and implications for coaches

Participation coaches for children

Sampling years

The sampling years of the DMSP (ages 6–12), encompassing middle to late childhood, provide the foundation for both the recreational participation and elite performance through sampling trajectories. Characterised by participation in or 'sampling' of a number of different sports as opposed to specialising in one sport year-round, the sampling years usually involve high amounts of deliberate play and lower amounts of deliberate practice.

Competence

For children to develop physical competence during the sampling years, it is important that they engage in a variety of fundamental physical and cognitive skills associated with later sporting ability (Martindale et al 2005). These fundamental skills are not sport-specific and are not usually developed through deliberate practice in any single sport, as deliberate practice is typically characterised by a relatively limited range of required movements and decisions (Côté 2007). In judging their own physical competence, Harter (1999) noted that children tend to start with an overall sense of physical competence based on concrete and observable skills and abilities, generally taking an all-or-none evaluative approach (i.e. either 'good' or 'bad'). In later childhood,

young athletes progress to a more differentiated perception of competence.

Thus, in order to develop feelings of physical competence, children in the sampling years need to be developing fundamental skills, and having concrete mastery experiences with tangible outcomes (Chase 1998). The direct promotion of deliberate play may be an effective way for coaches to address these developmental needs in sport. High amounts of deliberate play can provide children with the diversity and freedom to try new and alternative approaches necessary for fundamental skill development (Wiersma 2000, Côté 2007), while the child-centred nature of deliberate play (i.e., modified rules, focus on enjoyment) allows children many opportunities to experience success.

Recent work in the field of talent development has suggested that competence at very young ages is most often not predictive of future ability (Martindale et al 2005). In Bloom's (1985) landmark study of talent development, very few elite-level performers reported a similar elite level of performance in relation to their peers at age 11 or 12. Kaplan (1996) echoed this sentiment, noting that performance in childhood is an unreliable predictor of future performance. As such, an inclusive focus as opposed to a focus on selection of only the most physically competent top performers appears the most appropriate developmental approach during the sampling years (Martindale et al 2007).

It is important to note that substantial changes in children's sources of information used to judge physical or athletic competence occur during the sampling years (Horn & Weiss 1991, Weiss et al 1997). In particular, children first become capable of peer comparison during this stage. Further, while children initially take adult feedback as an independent source of information, adult feedback is gradually integrated with feedback from other sources during this time (i.e. peer comparison), such that it is no longer automatically taken at face value (Horn 2004). Use of performance outcomes as a source of competence information also develops from middle to late childhood. It is only in later childhood when young people develop the ability to integrate a number of different sources of personal competence information that they are able to separate their own competence from team performance (Horn 2004). Therefore, as children develop, they need individualised competence information from adults that is positive, but that is also realistic in relation to what they can observe through peer comparison.

Past research by Smith, Smoll and colleagues (see Smith & Smoll 2007 for a review) has examined coaches for their provision of individualised competence information. Their work found strong support for the positive influence of coach supportiveness and instructiveness and for the negative effects of punitive coach behaviour. These findings were further validated through intervention studies implementing a coach training program (Coach Effectiveness Training: CET) (Smith et al 1979, Smith & Smoll 2002). Coaches trained to be more supportive and to provide more technical instruction with limited use of punishment were consistently found to produce more positive outcomes related to perceived competence and confidence in their athletes (i.e. lower competitive anxiety, higher self-esteem) than untrained coaches (Smith & Smoll 2007).

Confidence

Children's confidence, equated with a global sense of self-esteem or self-worth, and associated with feelings of competence, begins as a behavioural pattern during the sampling years (Harter 1990). Specifically, children thought to exhibit high self-confidence express a behaviour pattern characterised by curiosity, initiative, and independence, as well as a capacity for flexibility in response to environmental change. Thus, children in the sampling years need to be encouraged to demonstrate curiosity, initiative, and independence. The intrinsic motivation associated with deliberate play is characterised by and encourages this behavioural pattern (Ryan & Deci 2000). As such, deliberate play is a potentially fruitful means by which to develop children's confidence.

Judgements of self-worth may also be significantly influenced by goal orientations in sport (Duda 1993), given the increasing awareness of peer comparison that children develop during the sampling years. Children employing an ego-orientation, with a focus on evaluating competence in relation to the performance of others, may be at an increased risk for damage to self-confidence, especially in the presence of more skilled peers. In contrast, the confidence of children with a task-orientation, whereby competence is evaluated according to self-referenced improvement and effort, may be more resilient to fluctuations in relative performance. This resilient confidence may, in turn, encourage persistence in skill learning efforts and increased perceptions of competence (Harwood et al 2008).

Given the positive influence of a task goal-orientation on confidence and competence in childhood, the promotion of such an orientation in children's sport contexts is of utmost importance. In particular, the development of a task orientation in individuals has been linked to a perceived mastery motivational climate as created by the coach (Harwood et al 2008). A mastery climate is one in which improvement, effort, and learning are valued and rewarded (Ames 1992). A performance climate, on the other hand, is one in which evaluation is relative to others and defeating others is of primary importance. Treasure (2001) suggests that a mastery-oriented motivational climate can be created in children's sport, in accordance with Epstein's (1989) TARGET model: *Tasks* that are diverse and appropriately challenging, *Authority* that is flexible and allows for children's input, *Recognition* that is private and personal, *Groupings* that are varied and heterogeneous in ability, *Evaluation* that is self-referenced and considers fun, effort, and participation, and *Timing* that provides an appropriate pace of instruction and adequate time for tasks.

Connection

Positive peer relationships and friendships have been identified as a key reason why many children participate in sport (Scanlan et al 1993, Weiss 1993). These early peer relationships and friendships also play a critical role in the development of vital social skills, such as intersubjectivity or shared understanding (Goncu 1993). During the sampling years, children tend to define friendship quality according to characteristics related to loyalty, mutual liking, and helping or taking care of each other (Newcomb & Bagwell 1995). However, Zarbatany and colleagues (1992) noted that children's friendship expectations differ by context. Within the sport context, Weiss, Smith, and Theeboom (1996) found that loyalty and prosocial behaviour were rated as most important by children under 12.

Thus, to promote the development of positive peer connections, children in the sampling years need the time and opportunity to develop friendships. In developing these friendships, children need encouragement to demonstrate loyalty and prosocial helping behaviours. The child-driven nature of deliberate play (Côté 1999) can provide opportunities for both positive peer interaction and the demonstration of prosocial behaviours by encouraging cooperation and recognition of the needs and abilities of others.

In addition to connections with peers, connections with adults are also important during the sampling years. Parents are typically the individuals of most influence in children's lives (Siegler et al 2003). With regard to sport participation, parents in the sampling years '...have a greater and more lasting effect on children's sport involvement than in other periods of development' (Wylleman et al 2007 p 239). As such, the positive participation and supportive involvement of parents in their children's sport experiences should be encouraged. Further, this may help to ensure consistency of developmental messages across contexts, what Benson and colleagues (2006) refer to as developmental redundancy.

Finally, while parents tend to be most influential in children's lives overall, coaches are the primary adults in the sport setting and their connections with young athletes should not be overlooked. Positive relationships with coaches are predictive of children's enjoyment of their sport participation (Scanlan et al 1993), while negative feedback and lack of interaction have been linked to non-enjoyment (McCarthy & Jones 2007). As such, active coaches who promote positive relationships with their young athletes are essential to developing healthy coach connections (Smith & Smoll 2007).

Character/caring

It has been argued that sport participation can lead to both positive and negative character development (Shields & Bredemeier 1995), a consideration of utmost importance for children in the sampling years who are still developing their moral reasoning skills and abilities. Siegler and colleagues (2003) suggest that the primary environmental influence on the development of prosocial behaviour in children is socialisation through interactions with significant adults. This socialization takes three general forms: (a) modelling and communication of values; (b) opportunities for prosocial activities; and (c) discipline style (i.e. reasoning and drawing attention to consequences of behaviour for others). In the sport context, Shields and Bredemeier (1995) posit that compassion, a key component of moral character, is manifested through the psychological competencies of role taking, perspective taking, and empathy. Similar to the socialisation of prosocial behaviour, Shields and Bredemeier argue that leaders in sport settings (i.e. coaches) can promote the development of these competencies through

their interaction style and the appropriate structuring of activities. Thus, in order to develop character and caring, children in the sampling years need positive role models, interactions with adults that promote moral reasoning, and opportunities to demonstrate character and caring.

Deliberate play may again provide a fertile context to demonstrate character and caring. The intrinsically motivating structure and emphasis on fun typical of deliberate play (Côté 1999) may promote a more adaptive and ethical view of competition, whereby focus is placed on the process of competing to the best of one's abilities rather than on the outcome of competition (Hochstetler 2003). Sport is inherently competitive; however, competition during childhood should not lead to negative character development (e.g. Eccles & Barber 1999) unless the outcome is over-emphasized and instrumental antisocial behaviours are subsequently more likely to be justified.

The development of character and caring in children may also be facilitated by goal orientation and climate. By defining success as competing to the best of one's own abilities, opponents may be more likely to be seen as fellow competitors, necessary for the game or competition to occur (Harwood et al 2008). In contrast, an increase in ego-orientation may promote the view of opposition as enemy, standing in the way of the desired outcome. With this ego-oriented perspective, one may therefore feel more justified in demonstrating unsportsmanlike behaviour, or injurious acts towards the opposition in order to win (Harwood et al 2008).

Implications

Below are five strategies emerging from the literature that highlight how coaches can facilitate the 4Cs in athletes during the sampling years, through appropriate competition, training, and organisational strategies. First, coaches can best encourage children's development by structuring competition and training to include high amounts of deliberate play. Second, coaches should promote a mastery-oriented motivational climate through the use of Epstein's (1989) TARGET activity guidelines (discussed earlier). Third, in implementing these strategies, coaches should seek to interact with their athletes in a supportive and instructive manner, while limiting punitive interactions. Fourth, with regard to organisation, coaches should include parents in positive

and supportive roles. Finally, coaches should adopt an inclusive developmental focus, as opposed to an exclusive team selection policy based on current performances, to provide all children with opportunities to develop the 4Cs.

Recreational years

Adolescent participants electing not to pursue an elite developmental trajectory but remaining involved in sport seek a context that promotes fun, challenge and enjoyment (Côté et al 2007a). To this end, participation coaches for adolescents must be cognisant of the specific developmental and contextual needs of their athletes. This may be particularly relevant for participation coaches, as their young athletes are in a critical period of growth and development, and engaging in a number of activities to build their personal identity (Wagner 1996). As such, the 4Cs framework (Jelicic et al 2007) can once again serve to help coaches identify adolescent's developmental needs.

Competence

An adolescent's perceived abilities or competence have been found to be associated with a number of positive outcomes in several domains including sport (see Weiss & Ebbeck 1996, Weiss & Ferrer-Caja 2002 for reviews). As a child moves into adolescence, he or she begins to integrate competence information from various sources, with a greater emphasis on information from peers and coaches (Horn & Weiss 1991, Weiss et al 1997). Young adolescents' perceptions of competence develop as a function of two separate but interrelated factors: cognitive maturation and social-cultural environment. The contextual setting of sport can be critical to an adolescent's cognitive maturation. This is exemplified particularly by adolescents' differentiation of self-competence into several sub-domains. Specifically, teenagers begin to compartmentalise themselves as being 'different' people in the different domains. This ability to develop higher-order abstractions about self permits adolescents to evaluate themselves as having differing levels of ability in different contexts. For example, athletes may feel competent in one sport (e.g. basketball) yet not in another (e.g. soccer) or view themselves as being

competent in one skill (e.g. jump shot) but not in another (e.g. lay-up). However, this developmental process is not seamless, and frequently involves adolescents reconciling 'cognitive confusion' of one self (Harter 1999). It is during these trying times that young athletes look to their social-cultural environment, specifically the feedback of significant others such as coaches and peers, to resolve conflicting information about the self.

Confidence

Another related developmental construct of self is confidence. Jelicic and colleagues (2007) operationalise confidence as a global construct such as self-worth. As previously outlined, low levels of self-worth among adolescents have been linked to a number of negative outcomes such as depression, delinquency, and antisocial behaviours (see reviews by Mecca et al 1989, Harter 1999). Based upon studies in school settings, physical appearance and social acceptance are primary personal antecedents of global self-confidence at this age (Harter 1999). As such, it is critically important that adolescents' sport environments foster a culture of social acceptance of all teammates, and intolerance of negative comments directed toward a young athlete's physical appearance.

Connection

During adolescence, positive ties with peers become increasingly important as young people develop personal identity and a sense of self (Harter 1999, McLellan & Pugh 1999). In a sport setting, peers are particularly important given their direct involvement in most young athlete's day-to-day experiences. Quite surprisingly, research investigating the developmental significance of peer connections and relationships in sport is relatively underdeveloped (Weiss & Stuntz 2006, Smith 2007). As such, considerable theoretically driven research is needed to understand the role of peer relationships (i.e. peer acceptance, friendship) on a young athlete's development (Weiss & Stuntz 2006).

Alongside the salient role of peers, adolescents' connections with their families and schools are important. Adolescents' perceptions of family closeness or cohesion have been found to be positively associated with a number of health-promoting behaviours (e.g. decreased alcohol usage) (Bray et al 2001), and negatively associated with adolescent problem behaviours (e.g. delinquency, aggression)

(Barber & Buehler 1996). Further adolescents' school cohesion, operationalised as the level of mutual support, belonging, and connectedness of the school, has been found to offer a protective, moderating effect for adolescents experiencing low family and peer support (Botcheva et al 2002). However, similar to the lack of research on peers in sports, additional research is necessary to further explore the role of family and school connections on the development of the young athlete.

Over the last decade, the athlete-coach relationship has received a considerable amount of attention in the literature. Several conceptual models have been proposed (e.g., LaVoi 2004, Jowett 2005) highlighting the importance of the connections between the coach and athlete (see Jowett & Poczwardowski 2007 for a review). LaVoi's (2004) conceptual framework of coach-athlete relationships proposes how feelings of belonging and close, inter-dependent relationships with coaches and teammates lead to athletes' healthy psychological development. Jowett's (2005) integrated model of coach-athlete relations also includes the psychological construct of closeness. Jowett (2007) describes closeness as the affective component of the coach-athlete relationship that is reflected in mutual feelings of trust and respect. While there is a need for significantly more research on connections in adolescent sport context, it is clear that the supportive, dynamic, and diverse connections of athletes with their peers, coaches, families, and wider communities are an essential component of adolescents' healthy development in their sport environment.

Character/caring

Research on adolescents has shown that experiences in sport can promote prosocial behaviour and reduce antisocial behaviours (e.g. aggression, lack of responsibility) (Weiss et al 2007). Two primary theoretical perspectives dominate the field: (a) social learning theory (Bandura 1986) and (b) structural development approaches (Weiss et al 2007). In brief, social learning theory suggests that moral development is learned through individuals' interactions with socialising agents such as adults and peers. Specifically, appropriate behaviours that conform to societal norms and regulations occur as a result of modelling and reinforcement from significant others (e.g. adults, peers). Social learning theory identifies self-regulation skills as being critical in displaying moral behaviour. These self-regulating skills include

monitoring, judgement, evaluation, strong beliefs in one's capabilities to achieve personal control, and self-regulatory efficacy to adhere to moral standards (Weiss et al 2007).

Structural developmental theories focus on how individuals reason or judge values and behaviour (Weiss et al 2007). Shields and Bredemeier (1995) proposed a conceptual model that outlines factors that may explain variations in moral thoughts and behaviours in physical activity and sport settings. Within the model, Shields and Bredemeier identify several important contextual factors that coaches can modify to play a vital role in shaping young athletes' moral thoughts and behaviours. Two salient contextual factors include moral atmosphere and motivational climate. A considerable amount of research has investigated the influence that moral atmosphere, conceptualised as team norms, can have on adolescent athletes' beliefs about appropriate and inappropriate behaviour (e.g., Smith 1974, Stephens et al 1997, Stephens 2000). As previously discussed, motivational climate typically identifies what is recognised, rewarded and emphasised within the context of the team environment (Ames 1992). A mastery-oriented climate generally emphasises effort, improvement, and personal mastery, while a performance-oriented climate focuses more on peer comparison and final outcome. Several studies with youth soccer teams (e.g. Ommundsen et al 2003, Miller et al 2005) have found support for participants' perceptions of a more mastery-oriented motivational climate being associated with higher levels of moral-reasoning and a more performance-oriented climate being associated with lower level of moral reasoning (e.g. greater perceived legitimacy of aggression and injurious acts).

Along with the identified contextual factors, Shields and Bredemeier's (1995) model suggests a number of individual factors such as moral reasoning, achievement goal-orientation, moral identity, and self-regulation skills as essential for understanding moral development in sport. The early work of Bredemeier and Shields (1984, 1986) on moral reasoning in sport led to the introduction of several key concepts such as game reasoning or bracketing one's morals in a sport setting (e.g. legitimising aggression in pursuit of winning). Individuals' achievement goal orientations (i.e. task versus ego) (Duda 1993) have also been linked to moral attitudes, intentions, and behaviours. Research examining the linkages between goal orientations and sportsperson-like attitudes have consistently found that young athletes

(high school, college), who are higher on task-orientation report higher sportsperson-like attitudes. In contrast, athletes higher on ego-orientation report greater approval of unsportsperson-like play (e.g. Lemyre et al 2001, Kavussanu & Ntoumanis 2003). A promising implication for coaches from this area of research has been the recommendation to implement social goals (e.g. bring honour to the group, be a productive member of society, be a good person) along with task and ego goals (e.g. Urdan & Maehr 1995, Jarvian & Nicholls 1996, Wentzel 1998). It has been suggested that this integrated goal perspective may be particularly important for recreational adolescent athletes, and an area in need of further research (Weiss et al 2007). Furthermore, empirical evidence has begun to demonstrate how an adolescent's moral identity (i.e. a person's use of moral beliefs to define the self) (Damon 1984, 2004) and self-regulatory skills may influence a young athlete's moral thoughts and actions (e.g. Aquino & Reed 2003, Bandura et al 2003).

Collectively the research on contextual and individual factors has increased the awareness of character development in sport. Stemming from this research, a number of theoretically driven interventions have been developed to promote moral development in sport. Among these interventions, the Personal-Social Responsibility Model (Harrison 1995) may be particularly useful for coaches of adolescent recreational athletes. The model outlines five levels of personal-social responsibility: (a) respecting the rights and feelings of others; (b) being self-motivated; (c) being self-directed; (d) caring about others and working together for the group's welfare; and (e) applying these and other responsibilities to domains outside the gym. While the model was originally developed to target underserved youth, the five levels of responsibility specified in the model warrant consideration in all adolescent sport environments, with the goal of developing character and caring in sport and other life contexts.

Implications

Participation coaches for adolescents should be viewed as being instrumental gatekeepers in the development of young athletes' 4Cs. First, within competition and training settings, coaches should create a social context that supports athletes' competence and confidence development. In particular, coaches should foster an environment of social acceptance of all teammates and provide appropriate

feedback to support young athletes. Second, coaches should place an emphasis on personal growth rather than athletic excellence in competition and training, through the creation of a mastery rather than performance-oriented motivational climate. Third, to strengthen coach-athlete relations, coaches should foster close, interdependent relationships by demonstrating trust and respect for their young athletes. Fourth, in line with the social learning theory, coaches should model appropriate moral behaviour for youth and demonstrate self-regulatory skills during challenging situations in competition.

Fifth, from an organisational perspective, coaches should provide opportunities for teammates to develop strong connections within and outside of sport. Sixth, coaches should promote an environment rich in character development and social responsibility. For example, coaches can facilitate the goal-setting process among athletes, through continued encouragement and monitoring of social goals along with task (process) and ego (performance) goals. The social goals may be set in practice after engaging in coach-athlete discussions of potential moral dilemmas that may arise in competition; such discussions should foster moral development and enhance youth's self-regulatory efficacy. Finally, coaches should consider adopting a moral development framework such as Harrison's (1995) Personal-Social Responsibility Model to promote athletes' development of personal responsibility within the sporting context and beyond the sport context, as contributing members of society.

Performance coaches for young adolescents

Specialising years

Young adolescents who have decided to focus on attaining high levels of performance have different motives for participation to their recreational peers. While non-elite youth athletes participate in sport for fun, to develop skills, and to make friends (Gould et al 1985, Coetzee & Viljoen 2002), young elite athletes participate in sport to increase competence, fitness, and for challenge (Klint & Weiss 1986). Further, although enjoyment is still an important aspect of participation for elite adolescent athletes, the acquisition of sport-specific skills becomes increasingly important (Côté et al 2007a). As such, it is suggested that specialising adolescent athletes have specific developmental needs that differ from

those of recreational adolescent athletes. As an increased number of young athletes are specialising in sport (Gould & Carson 2004), further comprehension of what constitutes a healthy training and competition environment for this group of athletes is of critical importance. In the sections that follow, research related to adolescent performance athletes' developmental needs according to the 4Cs framework is reviewed.

Competence

Within elite youth sport programs, competence is a key developmental focus. During the specialising years, young performance athletes spend a considerable amount of time in deliberate practice activities, as their training shifts to include approximately equal amounts of deliberate practice and deliberate play (e.g. Côté et al 2007a, Côté & Fraser-Thomas 2007). Deliberate practice is comprised of activities that are repetitive, well-defined, at a level of difficulty that is appropriate for the individual, and provide opportunities for feedback, proper error detection, and correction (Ericsson et al 1993, Ericsson 2003). More specifically, deliberate practice activities require concerted effort with the goal of improving performance, and are not always inherently enjoyable. Ericsson et al (1993) suggest that in order to become an expert (i.e. develop very high levels of competence), an individual must spend ten years or 10 000 hours in deliberate practice activities. There has been much research support for the deliberate practice framework in the sport domain (e.g. Helsen et al 1998, Hodge & Deakin 1998). As such, the more time an individual spends in deliberate practice activities throughout his or her development in sport, the higher his or her skill level is likely to be, and thus inevitably, the more likely athletes are to experience athletic competence (Harter 1999).

Psychological skills also play an important role in facilitating competence development during the specialising years. Even at a young age, athletes can experience the benefits of psychological skills training (i.e. goal setting, imagery, arousal regulation; Munroe-Chandler & Hall 2007). In fact, the earlier athletes can learn to put psychological skills into practice, the more effective they will be at using these skills to enhance performance and competence.

As previously discussed, adolescence is a critical period of transition, which must also be considered in adolescent performance athletes' development.

While more deliberate practice will ultimately lead to an increased skill level, there have also been negative outcomes linked to increased training for young athletes. For example, in some cases the hours spent in sport-specific training have been found to be not enjoyable for young athletes (Law et al 2007). Further, injuries appear more prevalent in young performance athletes than their less-competitive peers (Micheli et al 2000, Law et al 2007). Finally, burnout has been associated with intense youth sport participation (e.g. Coakley 1992, Gould et al 1996). Three dimensions have been found to impact young athletes: reduced accomplishment, physical/emotional exhaustion, and sport devaluation (Raedeke 1997). This research highlights the importance of appropriate sport environments to alleviate potential negative outcomes (Raedeke & Smith 2004).

Confidence

Adolescents' confidence is associated with self-perceptions related to athletic competence, physical appearance, and overall self-worth (Harter 1999). As such, performance athletes must develop and experience confidence, not only in specific sport skills, but also in other domains such as social skills. While there is a reduction of time spent in other sport and non-sport activities (Baker et al 2003) and a marked decrease in deliberate play activities during the specialising years, the important role of deliberate play activities in performance athletes' sport of specialisation, and in other sport activities should not be undermined. Deliberate play is important in the growth of sport-specific skills (Côté 1999) and offers additional benefits related to talent development including increased creativity, enjoyment, and emotional regulation (Strachan et al 2008). Deliberate play activities, through their loosely structured nature, also offer an ideal platform for performance adolescent athletes to develop confidence in their social skills such as communication and leadership (Fraser-Thomas et al 2005).

Connection

Past research suggests that connections may be fostered through the appropriate modeling and mentoring of coaches (Sedgwick et al 1997). In particular, high-quality coach-athlete relationships may lead to less antisocial behaviour and more prosocial behaviour due to the important roles coaches play in modelling and supporting athletes (Rutten et al 2007). While a limited body of research has

explored the role of sport peers in contributing to adolescent athletes' development, perceptions of peer acceptance and the development of close friendships are critically important to youth of this age. Specifically, friendship quality in sport is a key factor in the development of close connections for youth (Weiss & Smith 2002a). Further, positive peer relationships in youth sport are closely connected to the youth's motivation for continued sport engagement (Patrick et al 1999, Allen 2003). As such, more time spent in elite sport may allow for the growth of close friendships and relationships which may in turn lead to athletes' persistence in their chosen sport.

Character/caring

Adolescents' participation in high-performance sports may also facilitate character development. Character attributes such as sportpersonship, positive values, resilience, optimism, and a good work ethic have been noted to be fostered through sport participation (Gould et al 2002, Fraser-Thomas et al 2005). In retrospective interviews with Olympic champions, Gould and colleagues (2002) found that these elite athletes were typified by these characteristics and highlighted the important role that coaches played in the emergence of these traits. Further, caring may be viewed as a byproduct of character development. Caring in youth sport may be observed through athlete interactions such as displays of empathy in both training and competitive situations (Côté 2002, Fraser-Thomas et al 2005). As empathy may be more easily facilitated in deliberate play situations (Strachan et al 2008), the presence of play in competitive youth sport programs has the potential to enable the development of caring; however, more research is needed to examine how caring is fostered in high-performance youth sport.

Implications

Performance coaches for young adolescents have unique considerations to ponder in the delivery of high-performance programs. First, with regard to training, coaches should increase quantities of deliberate practice activities in order to develop competence. In particular, coaches need to be knowledgeable and have the ability to give technical corrections and feedback (Smoll & Smith 2002). Further, coaches must work to develop not only athletes' physical skills but also cognitive skills (e.g. decision-making, memory) (Gallagher et al 2002). However,

coaches must not forget that deliberate practice activities should be balanced with deliberate play activities, even for athletes of this age and level (Côté et al 2007b). Specifically, an infusion of opportunities for deliberate play enables athletes continued motivation for sport through enjoyment. Finally, while adolescent performance coaches should encourage specialisation in order to build skills, they should also allow athletes to 'sample' effectively within their sport by encouraging them to attempt other roles and positions, and thus allowing them more diversity and growth in their sport experience and skill development.

Second, through training and competition, coaches should facilitate athletes' competence development in other areas (i.e. psychological and social). This can be achieved by training athletes' psychological skills (e.g. imagery, goal setting) as well as through the introduction of diverse peer groups (i.e. various age and cultural groups). Further, coaches can provide opportunities for recognition through sport travel and participation in appropriate competitions (Côté et al 2007b). Third, adolescent-performance coaches must develop character and connections in training and competition settings, by demonstrating leadership, modelling appropriate behaviours, interacting closely with athletes, and fostering safe peer-peer interactions. For example, coaches should encourage athletes to display sportpersonship and show empathy to their teammates and other competitors.

Finally, from an organisational perspective there are a number of initiatives that adolescent-performance coaches can undertake to develop the 4Cs in their athletes. For example, to facilitate connections, character, and caring in high-performance youth sport, coaches should deliver social events and create team or club unifiers (e.g. team colors, track-suits), establish athlete mentor programs within clubs, link elite sport programs to other contexts (e.g. school, community) and facilitate positive growth opportunities (e.g. volunteerism, civic responsibility). These types of connections may empower athletes to contribute to the development of not only their athletic clubs, but also the communities in which they live.

Investment years

During the investment years, athletes (approximately ages 16+) usually commit to only one sport

activity and engage primarily in deliberate practice. Athletes in the investment years are often motivated by extrinsic factors such as winning, being chosen for an international team, or establishing a sport career. Ideally, this type of motivation should be self-determined and integrated in the athlete's whole life (Deci & Ryan 2000). The DMSP suggests that elite athletes that have the resources, ability, and desire for competitive performance at the national or international level increase their deliberate practice hours and decrease their deliberate play hours even further during the investment years (Côté et al 2007a). Elite-level athletes in the investment years need quality structured training in large quantities, however this type of training should be conducted in an environment that is conducive to the development of the 4Cs.

Competence

Competence in elite sport necessitates the integration of several skills including motor, perceptual, cognitive, and psychological. Larson (2000) points to the acquisition of initiative as the essential ingredient in the development of competence or efficacy in any domain. The initiative perspective highlights three features of competent behaviours: (a) intrinsic motivation; (b) the ability to mobilise one's attention on a deliberate course of action; and (c) the ability to devote cumulative effort for a long period of time (Larson 2000). This framework is similar to Ericsson et al's (1993) notion of expertise through deliberate practice, which explicitly links the amount and type of training performed to the level of competence attained in a specific domain. According to Ericsson et al (1993) deliberate practice activities that require effort and attention do not lead to immediate social or financial rewards and are performed for the purpose of performance enhancement rather than enjoyment. The ability to accumulate the quantity and quality of training required for competent performance in sport during the investment years is directly linked to accessibility of essential resources such as training facilities and coaches (Ericsson 2003).

The development of a competent elite-level athlete is, however, much more than developing motor, perceptual, cognitive, and psychological skills. Walton (1992) revealed that great coaches of elite athletes do not simply master the teaching of their sport, but are also champions of wisdom and understanding. The coaches examined by Walton not only produced

excellent athletes, but also educated and contributed to the human competence of these athletes. For instance, all of the coaches were committed to the athletes' integrity, values, and personal growth, and were profound thinkers who saw themselves as educators of social values, not just trainers of physical skills. This commitment to holistic athlete development has recently been encouraged by coaching researchers (e.g. Bergmann Drewe 2000, Jones 2006).

Confidence

Confidence refers to an internal sense of positive self-worth and self-efficacy (Jelicic et al 2007) and is essential for athletes in the investment years striving towards elite performance (Sedgewick et al 1997). Studies of coaching behaviours in swimming (Black & Weiss 1992), figure skating (Hall & Rodgers 1989), field hockey (Grove & Hanrahan 1988), and wrestling (Gould et al 1987) have shown that confidence building is one of the most important characteristics that coaches want to hone in their athletes. Accordingly, authors agree that the relationship between coaches and athletes is an important determinant of the way in which athletes' confidence is affected by their participation in competitive sport (e.g. Côté & Salmela 1996, Hays et al 2007). Although athletes during the investment years may appear to be autonomous and independent, they still appreciate the attention they receive from their coaches about their sport and other aspects of their life. The coach-athlete relationship and effective communication with coaches influence athletes' confidence and should be at the forefront of coaching strategies in the investment years (Sedgewick et al 1997).

Connection

Deci and Ryan (2000) suggested that the development of highly motivated, self-determined, and invested individuals in any domain requires an environment that provides opportunities to make autonomous decisions, develop competence, and feel connected to others. Because athletes are so highly invested during this period, coaches have a crucial role in providing optimal learning and social conditions in which athletes feel supported (Kalinowski 1985, Côté et al 1995, Salmela 1996, Côté 2002). In general, coaches of athletes in the investment years have been shown to provide both physical and social resources to help athletes overcome the effort and motivational constraints associated with deliberate

practice (Salmela 1996). Jowett (2007) proposed that the quality of coach-athlete relationships in providing these resources is determined by the degree of closeness, commitment to the relationship, complementarity, and co-orientation between both parties. An effective sporting environment during the investment years will also support athletes' basic need to belong to a social group whose members are mutually supportive. To maintain a healthy perspective on sport and life, elite-level athletes in the investment years should be encouraged to constantly nourish their relationships with their coach, peers inside and outside of sport, community, and parents.

Character/caring

In the realm of elite sports, coaches have a crucial role in enabling athletes to develop their character, become a constructive and caring member of a team, and ultimately, a productive member of society. For many competitive athletes, sport stimulates a change in social values and moral reasoning patterns (Bredemeier & Shields 1996). Coaches of athletes in the investment years should not 'use language or techniques that might encourage participants to separate their sport experiences from "real life"' (Bredemeier & Shields p 396). Rather, like any other sport settings, elite sports should be seen as a medium by which social values are learned and transferred to real life situations.

Implications

To meet athletes' training needs in the investment years, coaches must construct a regime that is grounded in deliberate practice. Specifically, training should be structured purposefully to improve current performance levels and to circumvent arrested skill development (Ericsson 2003). During training, coaches should focus on structured drills and activities with well-defined learning goals, provide regular feedback for skill improvement, and create ample opportunities for repetitions. Within the deliberate practice framework, training activities should be carefully monitored by coaches, and coaches' interventions should be aimed at correcting errors and improving athletes' performances. Thus, coaches must be keenly in tune with each athlete's skill-set and, based on systematic task analyses, should be able to prescribe sport-specific drills accordingly. Since deliberate practice is physically and mentally taxing, performance coaches for late

adolescents and adults should help athletes negotiate these effort constraints by scheduling proper work-to-rest ratios and by encouraging athletes to find time for recovery (Young & Salmela 2002). Further, coaches should include supplementary training activities (e.g. weight, plyometric, aerobic training) that are aimed at improving sport-specific performance (Côté et al 2007b).

In competition, coaches of athletes in the investment years should promote situations that are likely to have a direct effect on their athletes' progress towards elite performance in their main sport and their personal development. Although competition is not the most important activity to improve performance in all sports, competitive situations are critical for the development of perceptual and decision-making skills, skill execution, and physical fitness in many sports (Baker et al 2003). Furthermore, through competitive situations that lead to winning or losing, athletes have the opportunities to develop their 4Cs by gaining social reinforcement and confidence, increasing their perceived competence, developing their character and relationships, and caring for others.

From an organisational perspective, coaches should surround each athlete with the physical and social resources they will need to overcome the effort and motivational constraints associated with deliberate practice. Coaches should recognise that their relationship with an athlete will likely change during the investment years, often becoming more collaborative, less top-down in nature, and relying on more continuous interchange of ideas between the coach and the athlete (Kalinowski 1985, Côté & Sedgwick 2003). Coaches should encourage athletes to commit fully to their one sport on a year-round basis, and the rigorous training that is demanded. However, coaches should also try to encourage athletes to stay involved in a small amount of deliberate play activities so that they are reminded of the intrinsic enjoyment that results from sport participation. Coaches could also encourage their athletes to participate in another sport in the off-season for relaxation or cross-training purposes. Finally, coaches should acknowledge and respect that their athletes are sacrificing other life opportunities for their one sport, and thus should make efforts to promote the benefits of such an investment rather than the costs associated with it.

The effectiveness of coaches during the investment years lies in their specific knowledge of the sport and the way they transmit that knowledge in training and in competition. By demonstrating enthusiasm in training and fostering a training environment that nurtures

athletes' learning and motivation, coaches create a positive training environment, as illustrated in this quote by an international level rower:

I think a coach that is willing to be in training at 5:30 in the morning and always be there is a big motivator for an athlete. It makes a big difference compared to a coach that sort of comes out maybe three or four times a week and doesn't really like coaching... I think if you see a coach that is willing to do everything that you are doing, it just makes that much more drive. I mean, you have to be down at practice because there is someone waiting for you... It's nice to have a coach that's as fully motivated as you.

(Sedgwick et al 1997)

Conclusion

This chapter highlights the coach's role in the development of athletes of different ages and competitive levels. The content of this chapter focuses on research that aligns athletes' outcomes, defined as the 4Cs, and associated recommended coaching practice. Four typologies of coaches initially suggested by Côté et al (2007b) were elaborated on: (a) participation coaches for children; (b) participation coaches for adolescents; (c) performance coaches for young adolescents; and (d) performance coaches for older adolescents and adults. These four generic types of coaches require distinct knowledge and skill sets to meet specific athletes' developmental needs. This suggests fundamental differences in the competencies that should be acquired for coaches working in different contexts (i.e., participation or performance, with young and older athletes). Therefore, coach education and training should be tailored to meet the specific experiential needs of individual coaches, given the context in which they coach.

It is also important to note that, in line with the sampling years of the DMSP (Côté & Fraser-Thomas 2007), we suggest that all children involved in sports between the ages of 6 and 12 should have coaches that focus on participation instead of performance, minimise competition and deliberate practice, and

emphasise involvement in various sports and deliberate play. This type of 'participation coach for children' builds a foundation of motivation and motor skills in children that can be translated into a sport participation or performance trajectory in the adolescent and adult years for most sports (Côté et al 2007b). In sports where peak performance occurs before maturation (e.g. women's gymnastics, figure skating) children may need to have performance coaches: however, there are costs such as dropout, burnout, and injuries associated with a performance environment in childhood (Baker & Côté 2006, Law et al 2007). Generally, problems will arise when a coach's knowledge and skills are associated with a context (e.g. a competitive performance model) that is incongruous with the contextual needs of the athletes (e.g., athletes in the recreational category). In most cases, coaching behaviours based on such incongruence will likely result in athletes' dissatisfaction, dropout, burnout, anxiety, or boredom, and a less than ideal sporting environment (Fraser-Thomas et al 2008a, 2008b).

Excellent coaches are aware of the necessity for congruence between their own knowledge and skills and a specific athlete's developmental needs including competitive level and age. A coach's behaviours in training, competition, and organisational settings should be in line with a specific athlete's competence, confidence, connection, and character needs (i.e., the 4Cs). Based on the literature on athletes' development in sport, we suggest that the 4Cs are universal needs that coaches of athletes of any competitive level or ages should strive to develop. However, a coach's ability to develop competence, confidence, connection, and character in athletes of different ages and competitive levels requires different types of knowledge, skills, and training. Each of the four typologies of coaches suggests different behaviours from coaches in training, competition, and organisation roles. In sum, this chapter underscores the importance of defining the athletes' development and coaching contexts, and the congruence between the two, in any discussion of coaching excellence.

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