

## 12 Children's talent development in sport

### Effectiveness or efficiency?

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#### Introduction

The documentary *Lost Adventures in Childhood* (Harper, 2009) takes a critical look at the current state of growing up in the world today. Interviews with leaders in the fields of child and evolutionary psychology, youth sport consulting, play studies, and journalism paint a grim picture of hyper-parenting and over-scheduled, over-stressed children who are severely lacking opportunities to develop creativity, freedom, and trust. We are introduced to a Canadian father who keeps tabs on his two school-age daughters by receiving their exact GPS coordinates, updated every two minutes, via the girls' cell phones. We are taken to a summer camp in the United States where a photographer takes 700–800 pictures of the campers each day to post on the camp's website for parents to see; the camp director then spends three to four hours each day fielding phone calls from parents concerned that their child looks upset or disengaged in a photo. We follow a family as they cart their two young daughters from one sport commitment to another; one of the daughters remarks about the difficulty of doing her homework in the car because of car sickness. These scenarios are in sharp contrast to images often conjured up when considering the childhoods of previous generations: children of all ages playing throughout the neighbourhood from sunrise to sunset, independent of adult supervision.

In the early 1990s, members of the International Council of Sport Science and Physical Education's Committee on Sport and Leisure proposed the daunting task of producing a book on the trends of youth sport throughout the world. The resulting book, *Worldwide Trends in Youth Sport* (DeKnop *et al.*, 1996), provides a window into the state of youth sport in twenty countries representing five continents. Upon review of the twenty national case studies, the editors present common trends (pp. 276–279) which will be paraphrased here. Sport is the most common leisure-time activity among youth worldwide. Despite the fact that the most common motives for participation are enjoyment and social connections, youth sport is becoming more institutionalized, specialized, and expensive. Adults are exerting too much influence, treating the young athletes as miniature versions of adults, having them play by rules and on surfaces designed for adult athletes. Children are joining organized sport at younger and younger ages, and are being pushed to specialize earlier in one or two sports. As the playfulness of youth sport is being replaced by



seriousness, the spontaneity of sport is disappearing. Finally, it is noted that there are two distinct groups of children: those who engage in frequent, intense training and those who engage in little or no physical activity. These trends sound eerily similar to the scenarios outlined in *Lost Adventures in Childhood* and suggest an overall strategy for youth sport participation that focuses on the effective development of talent to the exclusion of the 'less talented.'

This chapter will present and discuss evidence that suggests it is important to reverse current trends in youth sport and talent development. The concepts of effective versus efficient youth sport programs will first be introduced to highlight the different foci that youth sport programs can take for the development of talent. Evidence for the value of efficient youth sport programs, that is, for those that focus on inclusion rather than exclusion of children, will be presented under the following three headings: 1) evidence against early specialization and athletes' selection, 2) the importance of playfulness and spontaneity, and 3) support for developmentally appropriate rules and outcomes. Building on these concepts the chapter will conclude by proposing four guidelines for youth sport aimed at improving the experiences of youth sport participants. The age group upon which this chapter is focused is youth sport participants aged 6 through 12.

### Effective and efficient youth sport programs

In a review of the motor learning literature, Wulf and Shea (2002) distinguished between learning *effectiveness* and learning *efficiency*, both being important concepts in the study of complex motor skills and the development of talent in sport. These two concepts can be used to describe youth sport programs that have different foci to achieve the same goal of developing talent. *Effectiveness* focuses on performance and the acquisition of motor skills independent of the cost that may be involved, while *efficiency* focuses on enhancing participation and development and limiting the psycho-social (i.e. dropout) and physical (i.e. injury) costs associated with training and talent selection. The trends in youth sport summarized by DeKnop *et al.* (1996) and popularized in documentaries such as *Lost Adventures in Childhood* (Harper, 2009) indicate that youth sport programs around the world are aiming at being more *effective* in developing talent in sport, often at the exclusion of a majority of youth. Table 12.1 outlines the main differences in focus for effective and efficient youth sport programs.

*Effective* youth sport programs focus on a competence model (i.e. skill acquisition) illustrated as a pyramid in which only a few can make it to the top (see Figure 12.1). This model is a reality of adult competitive sports that is characterized by a limited number of available spots in professional leagues or Olympic teams. This model suggests that earlier and increased training during childhood provides an advantage to children by allowing them to be chosen for 'select' teams, eventually increasing their chance to climb to the top of the pyramid in adult sports. Effective youth sport programs largely down-play the psycho-social (i.e. dropout, burnout, lack of enjoyment) and physical (i.e. injuries) costs associated with an increased amount of training and selection of 'talented' children. The application of a



Table 12.1 Effective and efficient youth sport programs for talent development

	<i>Primary Focus</i>	<i>Secondary Focus</i>	<i>Success</i>	<i>Strategies</i>	<i>Outcomes</i>
Effective Youth Sport Program for Talent Development	Performance	Participation and personal development	Winning and increased performance	Develop skills and performance in selected children	Performance-based
Efficient Youth Sport Program for Talent Development	Participation and personal development	Performance	Minimizing permanent sport dropout	Keep all children in sport Find ways to integrate everyone	Positive developmental experiences

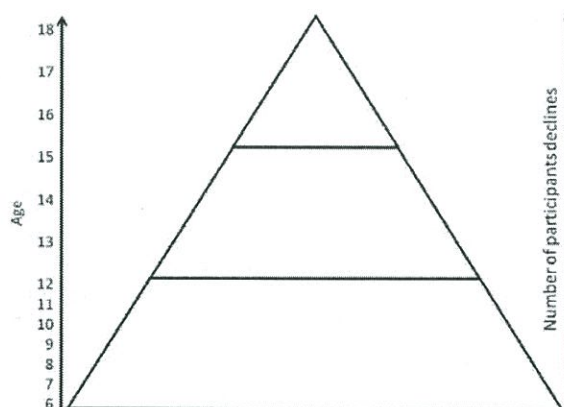


Figure 12.1 Model of an effective youth sport program for talent development

pyramid approach to youth sport programs may arguably be effective for the development of talent in sports with a large base of participants; however, it is often detrimental to the children that are progressively excluded from these programs (Fraser-Thomas and Côté, 2009). Furthermore, the identification of 'talented athletes' in selected youth sport programs is unreliable; especially when detection of talent is attempted during the prepubertal or pubertal periods of growth (see Régnier *et al.*, 1993 for a review). Yet, despite the evidence against the reliability of talent identification, and the fact that adult expert performance in sports is difficult to predict from characteristics of sport performance in childhood, the quality of effective youth sport programs continues to be measured by the performance of a few athletes who reach the top of the pyramid, while little attention is paid to young people who fail to reach an elite level of performance. For instance, Pearson *et al.* (2006) report that professional sports clubs in England continue to invest substantial resources into attempts to identify talented athletes at a young age.

On the other hand, *efficient* youth sport programs focus on including all children in sport by focusing primarily on participation and personal development (see Figure 12.2). Côté (2009) recently proposed the *coefficient of efficiency* as a measure of the internal quality of a sport program for children (ages 6–13). The *coefficient of efficiency* can be used as a measure of the quality of a childhood sport program by accounting for the dropout rate in sport from childhood to adolescence, instead of focusing on performance indicators linked to only a selected number of children. The *coefficient of efficiency* is the equivalent of an input–output ratio expressed as a percentage of the actual number of children that participate in a specific sport program at a given time (e.g. age 10) over the number of the same children that still participate in sport at a later time (e.g. age 13). A *coefficient of efficiency* of less than 100 percent from childhood sport participation to adolescence sport participation would indicate that certain children drop out of sport and are no longer available to train for elite performance in sport. Considering that performance in a given sport in childhood is a poor predictor of adult performance (Régner *et al.*, 1993), it is important that sport programs in childhood focus on *retaining* athletes by focusing on levels of efficiency. Sport programs with a strict emphasis on early selection, skill acquisition, and training during childhood run the risk of reducing their *coefficient of efficiency* and therefore eliminating someone who, through growth, maturation, and training, later develops into an elite-level athlete. The underpinning principle of highly *efficient* sport programs for childhood is to provide space, playing and training opportunities, and equipment for a large number of children across various sports. This enables elite sport coaches to choose and select the best athletes from a large pool of motivated adolescents (Côté, 2009) by keeping children within the ‘participation’ pyramid of Figure 12.2.

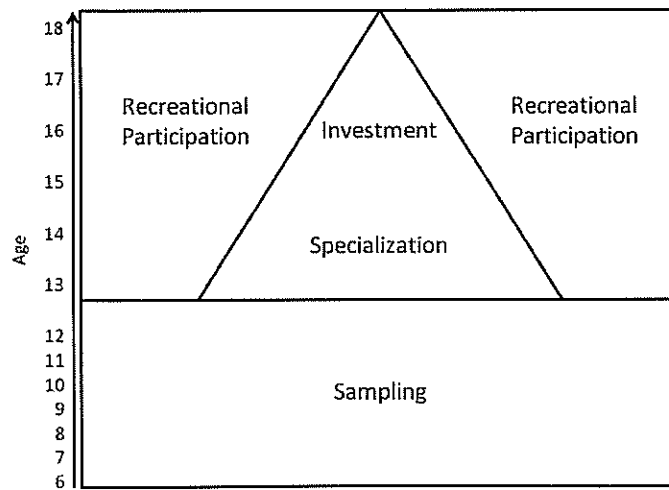


Figure 12.2 Model of an efficient youth sport program for talent development



### Developmental model of sport participation

The Developmental Model of Sport Participation (DMSP) contains trajectories of sport participation that focus on the efficiency of youth sport programs by emphasizing the importance of developmentally appropriate training patterns and social influences during childhood (Côté, 1999; Côté *et al.*, 2003; Côté *et al.*, 2007; Côté and Fraser-Thomas, 2007; Côté and Hay, 2002). The main goal of the DMSP is the inclusion of all children in sport by offering programs with equal opportunities and resources between the ages of 6 and 12. The sampling years of the DMSP provide a context of childhood sport participation that is characterized by a high amount of deliberate play and involvement in more than one sport through seasonal sport participation. The most important aspects of *deliberate play* and *sampling* are the potential contributions of these activities to motivate children to remain involved in sport and deliberately choose a recreational or elite pathway at approximately age 13 (Côté *et al.*, 2009).

In line with DeKnop *et al.*'s (1996) assertion that enjoyment is one of the primary motives for youth sport participation, *deliberate play* is a form of activity in sport which is intrinsically motivating, voluntary, and provides immediate gratification and enjoyment (Côté, 1999). Deliberate play may be initiated and monitored by adults or by the children themselves. Prime examples of deliberate play are backyard cricket and street football. Rules of the standardized sport are adapted to fit the situational factors, including the number of participants, their abilities, and the environment available. Deliberate play should not be confused with *deliberate practice* (Ericsson *et al.*, 1993), which is conducted with a specific outcome of improving skills and performance, is not necessarily enjoyable, and most often requires the supervision of adults.

*Sampling* refers to participating in a variety of activities for the purpose of enjoyment (Côté, 1999). Like deliberate play, sampling should be voluntary and intrinsically motivating. Sampling can be done among a variety of sports and with sports in addition to other extra-curricular activities. Sampling can even take place within a particular sport; for example, playing different positions or playing the sport in different contexts such as playing on an organized volleyball team and also playing volleyball on the beach, in the pool, or in the backyard with friends.

The foundational stage of the DMSP, the *sampling years* (ages 6–12) is characterized by a high amount of deliberate play, a low amount of deliberate practice, and participation in a variety of different sports for the sake of enjoyment. At the age of 12 or 13, youth sport participants who have experienced the sampling years typically take a decision about whether to make a greater commitment to one sport or to continue to participate in sports at a recreational level. Those athletes wishing to continue at the recreational level of sport enter into the *recreational years*, which can last throughout adulthood. In addition to the continuation of high amounts of deliberate play and low amounts of deliberate practice, participation in the recreational years may also be motivated by the health benefits of the activity. Youth who wish to reach a higher performance level will move from the sampling years into the *specializing years* (ages 13–15) and then into the *investment years*



(ages 15 and up). During the specializing years, athletes will likely focus on fewer sports and although deliberate play will still be important, they will experience an increase in deliberate practice. The investment years see athletes narrow their focus onto one sport, while further increasing deliberate practice and decreasing deliberate play. It is important to note that while the performance outcomes of these two trajectories differ, both have the probable outcomes of enhanced physical health and enhanced enjoyment of the activity. The ultimate goal of the sampling years (ages 6–12) is to increase the *coefficient of efficiency* of youth sport programs by delaying selection of talent until early adolescence, thereby avoiding the exclusion of children from certain sport programs and the resulting loss of potential talent.

An alternative to the sampling years is early specialization in one sport, characterized by a high level of training in one sport during childhood, a low amount of deliberate play, and a high amount of deliberate practice. Reflecting on the scenarios from the television documentary described at the beginning of this chapter (Harper, 2009) and DeKnop *et al.*'s (1996) conclusions, there are consistent and observable trends towards early specialization programs that can be characterized as 'effective programs' designed to develop talent in sport. Yet, although early specialization programs may be effective in developing elite performance in adulthood for a very small number of children, the negative outcomes from this approach must be a cause for concern.

### Evidence against early specialization and team selection

As DeKnop *et al.* (1996) reported, children around the world are being pushed to specialize in one or two sports at an earlier age. Wiersma (2000) explains, however, that there are negative physical, sociological, and psychological outcomes associated with early specialization. Wiersma suggests that early *specializers* focus on a limited pattern of skills (i.e. soccer players who never use their hands), limiting their overall motor skill development and decreasing their likelihood of participating in different types of activities later in life. Wiersma also reports that while sport provides the opportunity for sociological and psychological growth (i.e. cooperation and close peer relationships), those who specialize early spend a significant amount of their time in training and, as a result, may miss out on those benefits.

Another negative effect of early specialization is dropout. Fraser-Thomas *et al.* (2008) conducted retrospective quantitative interviews with fifty adolescent swimmers, twenty-five of whom were currently engaged in swimming and twenty-five who had recently dropped out of the sport. A distinct pattern of early specialization was found among the dropout group, despite the fact that there was no significant difference between the groups in the age when swimmers began competitive swimming. Specifically, when compared to the engaged group, dropout swimmers had participated in fewer extra-curricular activities, engaged in less unstructured swimming, and started dry land training and attending training camps earlier. Wall and Côté (2007) found similar results when conducting retrospective



interviews with high-level male youth ice hockey players. The participants in this study included an active group (boys who were currently playing) and a dropout group (boys who had recently stopped participating in the sport). Results indicated similarities between the two groups in terms of participation in other activities and the amount of time on the ice in practices and games. However, members of the dropout group began off-ice training at an earlier age and spent significantly more time in off-ice training at ages 12 and 13 than the active group. This finding provides further evidence against early specialization.

With the above information in mind, it is important to understand that youth sport dropout is not always negative and can be expected as a natural result of sampling. For example, early research on youth sport dropout (e.g. Orlick, 1974) failed to follow up with dropouts after they left the sport in question, causing concern about the seemingly large number of young athletes leaving the sport. Subsequent researchers (e.g. Klint and Weiss, 1986; Lindner *et al.*, 1991; Weiss and Petlichkoff, 1989), however, recognized the importance of classifying dropouts in terms of reasons for leaving the sport and their ensuing relationship with sports (e.g. an athlete may drop out of one sport to try a new sport or concentrate on fewer sports). For example, Klint and Weiss (1986) classified dropouts into three groups:

- 1 *volunteer dropout* (enjoyed the sport but wanted to try a different sport or activity);
- 2 *resistant dropout* (wanted to participate but was unhappy in the situation);
- 3 *reluctant dropout* (forced out of the sport due to injury or financial reasons).

Regardless of the classification system used, it is essential to understand that dropout is neither always positive nor always negative; rather, it is important to look at the specific reasons for dropout and the behaviour that follows in terms of participation in sport or other activities. A cause for concern with youth sport programs that focus on early selection of the 'most talented athletes' and de-selection of the 'less talented' children is the unreliability of the process.

There are a number of problems with traditional methods of talent identification (Pearson *et al.*, 2006; Vaeyens *et al.*, 2008). For example, characteristics that distinguish success as an adult athlete (i.e. size or speed) may not become apparent until later adolescence. At the same time, there is no guarantee that a young athlete who possesses a desired attribute will still possess that attribute as an adult athlete. Pearson *et al.* (2006) also note that talent is dynamic and multifaceted; the characteristics of talent may be different across age groups and attempts to measure these characteristics will often overlook one or more important factors. Finally, there is the major concern that youth begin maturing at different times and rates; late-maturing athletes could be summarily dismissed through traditional talent identification methods (Pearson *et al.*, 2006). Related to this is the fact that many youth sports teams are restricted to a one-year age range. The *relative age effect*, which means that players born earlier in the cut-off year – thus being relatively older than their peers – are overrepresented, has been shown to be present in a



number of sports (see Cobley *et al.*, 2009; Musch and Grondin, 2001 for reviews). A recent study by Sherar *et al.* (2007) looked at both the physical maturity and the birth date of male youth ice hockey players. They followed a group of 281 players aged 14–15 years through a selection camp for a provincial hockey team. The relative-age effect was shown to be present because the percentage of athletes born in the first six months of the year increased with each selection process, culminating in 77.5 percent of the selected team being born in the first six months of the year. Additionally, when compared to the players who were cut and to a control group of their peers, the selected players were taller, heavier, and more mature (Sherar *et al.*, 2007). While it is easy to make the case that the selected players were the best to represent the province at the time, the real cause for concern is the impact on the late-maturing or relatively younger players and the future success of the sport. Anthropometric data were collected from the players and there was no significant difference in the predicted stature of the selected and not selected players. In other words, though the selected players were bigger and stronger than the players who were not selected, it is likely that those differences would have disappeared by adulthood. Sherar *et al.* (2007) explain that the impact on the late-maturing or relatively younger players who were not selected is that they miss out on increased exposure to scouts, high-level coaching and the high-level competition itself (including experience dealing with the added pressures of elite sport). They also explain that although research has not yet tracked the progress of these late-maturing or relatively younger athletes, it is likely that many may leave hockey for other sports to which they may be selected for the next level, or perhaps they may leave sport completely. While this study looked specifically at male ice hockey players, this scenario is played out in many other sports, to the detriment of late-maturing and relatively younger athletes (Cobley *et al.*, 2009).

Lastly, in addition to the negative consequences of early specialization and the general failure of early talent identification, there is support for sampling. For example, research on the development histories of elite athletes provides further support for sampling and against early specialization (Côté *et al.*, 2007). In addition, Linver *et al.* (2009) recently looked at patterns of participation among adolescents aged 10–18 years. They found that youth who participated in sports as well as other activities had the highest levels of positive outcomes, followed by youth who participated in sports alone and lastly by youth who participated in little or no activity. This is further evidence against early specialization.

### Importance of playfulness and spontaneity

It has been argued that childhood has moved indoors and the culture of play now revolves around images presented on television (Kalliala, 2006). Children are inundated with television images and presented with a view into so many aspects of adulthood that their childhood curiosity erodes. This is in addition to the fact that the actual time in front of the television is obviously time *not* outside playing. Changes in parenting are also contributing to changes in childhood play culture. There is a growing prominence of *uncertain parenting* (Kalliala, 2006). Whereas



children knew where they stood with more authoritarian parenting styles common in the past, parents today are often more permissive and uncertain. These parents may wish to give their children more freedom, but they feel they cannot do that because of perceived dangers. They tend to outsource more parenting responsibilities to professionals or specialists (Kalliala, 2006).

As worldwide youth sport becomes increasingly professionalized and institutionalized by adults, playfulness and spontaneity are being replaced by seriousness (DeKnop *et al.*, 1996). There has been a long history of study on the importance of play; Huizinga (1950) explains that play is older than culture itself. Even at its simplest, most basic level in the animal kingdom, play is much more than a physical act or reflex. Despite the fact that play has been around seemingly since the beginning of time, it is ironic that play is still very misunderstood and often dismissed as unimportant. Bjorklund and Pellegrini (2002) conclude that 'behaviours are often classified as play if they appear to have no apparent immediate benefit to the actor. Yet, perhaps paradoxically, play is typically seen as serving an important function in children's development' (p. 321). Kalliala (2006) tells us that 'children don't play in order to learn, although they learn while they are playing' (p. 20). So what do children learn and how does it pertain to youth sport? Pellegrini and Smith (1998) conducted a review of literature on the functions of physical play; an aspect of play they felt was not receiving the attention it deserved in the research community. Based on the reviewed research, they hypothesize that play can improve strength, endurance, and skill movement, as well as help reduce body fat, but the functions of play go beyond the physical. Pellegrini and Smith also propose that physical play, especially rough-and-tumble play, may contribute to social development.

Specific to youth sport is the importance of *deliberate play* in development (Côté, 1999; Côté *et al.*, 2007). As indicated earlier, examples of deliberate play are backyard cricket and street football. Deliberate play is intrinsically motivated and provides immediate feedback in the form of enjoyment. But the benefits of deliberate play stretch beyond simple fun. Deliberate play encourages children to be creative, giving them the opportunity to experiment with new skills that they might be afraid to attempt under the critical eyes of coaches or parents. In *Lost Adventures in Childhood* (Harper, 2009), we watch as a youth boys' basketball team is asked to play a game for fun. A child sport consultant who is familiar with the team notes that a number of the players who are excelling as leaders and attempting new moves are not the players who usually fill these roles in the formal sport setting; the speculation is that perhaps these players 'play it safe' in front of significant adults for fear of making a mistake. Yet once these skills are attempted and eventually mastered through deliberate play, the athlete will use those skills in their play in organized games. As one example of research linking deliberate play and elite performance, Soberlak and Côté's (2003) study of elite male ice hockey players looked at the developmental history of the participants through retrospective interviews. The results showed that each of their developments followed the DMSP's pathway to elite performance through sampling. As their participation in deliberate play decreased, their level of deliberate practice



increased as they passed through the specializing and investment years. Soberlak and Côté also make the connection between the innate enjoyments of deliberate play leading to continued participation which can transfer to an increased motivation for participation in the sport.

### Support for developmentally appropriate rules and outcomes

In a systematic review of studies of motivation behind sport participation, Weiss and Williams (2004) found three common reasons for youth to participate in sport. The first is to develop and demonstrate physical competence, which includes learning and mastering skills, attaining goals, and physical health. The second reason is social acceptance and approval, which includes feeling part of a group and making friends. The third reason for participating in sport is to enjoy experiences, simply to have fun. In other words, youth join sports to learn skills, be good at something, be with and make new friends, be a part of a group, and generally have fun. Notice that competitive outcomes such as winning or beating opponents are not on this list. This research suggests that adults who organize youth sport ought to recognize and respect the motivations of their young athletes when developing sport programs.

The National Research Council and Institute of Medicine in the United States (NRCIM, 2002) presents eight features of positive development settings for youth activities that, if they became established, could support young people's motivation to participate in sport. The eight setting features include physical and psychological safety, appropriate structure, supportive relationships, opportunities to belong, positive social norms, support for efficacy and mattering, opportunities for skill building, and integration of family, school, and community efforts. While coaches should strive to integrate strategies to promote the eight setting features in youth sport activities, many of the features occur naturally in deliberate play. For example, a group of neighbourhood children playing basketball may use a lower hoop (i.e. modification of structure) if available to them so that their shots can reach the net, therefore increasing their success (i.e. improve efficacy) and although they may keep score, their main motivation for participating in deliberate play is enjoyment, not winning.

### Guidelines for children's sport (ages 6–12 years)

- 1 *Increase the amount of deliberate play within and beyond organized sport.*  
It may sound contradictory to ask adults to get kids to participate in deliberate play, activity which should be voluntary and intrinsically motivating. However, children have been conditioned away from deliberate play activities, in many ways due to adult influence. These influences include the fear that parents have of giving their kids the freedom to play outside as well as the institutionalization of youth sport. Within organized sport, coaches, teachers, and programmers can reintroduce the concept of deliberate play through games in practices; in these games coaches can encourage players to try a



certain number of new moves or skills and the coach can act as a player and participate in the game. Coaches can also encourage their athletes to play with their teammates outside the organized sport setting. The onus is on the parents to give their children the freedom and encouragement to play outside their constant watchful eye.

2 *Do not cut players before age 13.*

Research indicates that attempts of talent identification during childhood are rarely successful. Selecting certain players because of a particular talent or physical characteristic necessarily excludes a potentially successful portion of the talent pool, likely late-maturing athletes. A particular mental or physical characteristic that a young athlete possesses at a certain age is not guaranteed to be present later in development. At the same time, the desired trait may not be of benefit at a later stage of competition.

3 *Encourage sampling during childhood.*

It is essential that youth sport coaches and programmers understand and appreciate the positive influence of sampling in young athletes. For example, it must be clear that instructing a young athlete to participate in baseball and soccer to improve their hockey ability is not sampling. Sampling is not simply playing different sports to gain a wider skill set or to benefit one particular sport. Rather, an integral factor of sampling is that the athlete tries different sports for fun; the positive and enjoyable experiences in different sport settings, around a new group of peers and adult leaders, contribute to benefits far beyond the physical. Coaches must resist the urge to require athletes to play particular other sports as an attempt to write the recipe for elite performance; worse yet, they must not pressure young athletes to choose one sport or participate in significant off-season training before the age of 13.

4 *Emphasize developmentally appropriate outcomes.*

Youth are motivated to participate in sport by learning and mastering new skills, being a part of a social group, and having fun. These motivations must be reflected in the goals of any youth sport program. By avoiding highly competitive outcomes and by employing modified age-appropriate rules, sport programmers, coaches, and parents can provide the positive sport experience that children need in order to increase their motivation for continued participation.

## Conclusion

Drawing on the existing evidence about the psycho-social factors known to be important in youth learning of motor skills, this chapter proposed that sampling and deliberate play activities during childhood and a 'no selection' policy are the most efficient strategies to maximizing youth participation in sport during childhood and limit dropout. Despite the evidence to promote efficiency in children's sport programs, the majority of youth sport programs around the world continue to measure their success using performance measures of a few athletes. Current trends in sport programming are moving towards institutionalization, elitism,



early selection, and early specialization (Hecimovich, 2004; Hill, 1988; Hill and Hansen, 1988) and the exclusion of the 'less talented.' Many sport programs are requiring higher levels of investment from earlier ages and discouraging children from participating in a diversity of activities (Gould and Carson, 2004). However, there is clear evidence suggesting that sport programs such as these may not be providing optimal environments for youth's lifelong involvement in sport and elite performance. By considering factors other than performance and skill acquisition, the DMSP allows researchers to address questions of *efficiency* and *effectiveness*. A youth sport framework that focuses on efficiency should consider the various pathways that children follow in sport. Concerted effort is required from physical education teachers, coaches, and parents to ensure youth learn skills during childhood that will allow them to continue their participation and personal development in sport at either an elite or recreational level.

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