February 29, 1980 the Missouri Association for Health, Physical Education, Recreation and Dance became incorporated as an association.

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NOTE: The Missouri Journal of Health, Physical Education, Recreation and Dance began using volume numbers with the 1991 issue, which was designated volume 1. Earlier issues do not bear a volume number.
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Youth Sport Specialization: Concerns and Considerations

William Russell

Youth sport participation has increased dramatically in the last two decades. However, more youth are now limiting participation to one sport to maximize their future athletic success. There are numerous concerns regarding early sport specialization including burnout, increased stress, social isolation, lower motor skill development, overuse injuries, and dropout. Research supports that early sport sampling (multiple-sport participation) has more benefits over early specialization, yet more than ever, parents and coaches are pressuring youth athletes to specialize early and engage in year-round intensive training. Physical educators and HPER practitioners are in a unique role to effectively communicate healthy, accurate messages regarding developmental sport tracks that can most effectively nurture developing athletes while leading to positive physical and psychological outcomes. The focus of this paper is to provide an overview and greater understanding to help practitioners and parents make informed decisions regarding youth sport specialization.

American society has always had a fascination with organized sports, and it may be argued that our culture, more so than others, is obsessed with sports because many of the purported values (e.g. competition, success through hard work, overcoming obstacles) are so aligned with our American value system. While many individuals cannot relate firsthand to experiences of professional or collegiate athletes, most individuals can relate to the childhood experience of organized youth sports. This is because for many individuals, their formal introduction to sports was through youth sports. In fact, it may be argued that in terms of overall reach, youth sports have a greater impact, through greater numbers of participants, than any other level of sport (high school, college, professional, elite) and research indicates that the majority of young people in most Western countries participate in organized sports at some stage of their lives (Telama, Yang, Hirvensalo, & Raitakari, 2006).
Yet while youth sport participation has increased in recent decades, more youth are now limiting their participation to a single sport in order to maximize future athletic success, and parents often advocate an early start to their child’s sport experience (Carson, Landers, & Tjeerdsma-Blankenship, 2010). A recent study examining various youth sport issues revealed that a key concern among young athletes was pressure they felt from parents, coaches, and peers to specialize in a single sport, often at an early age (Gould, Carson, Fifer, Lauer, & Benham, 2009). Many of us are able to think of notable examples of successful elite athletes who have reached the pinnacle of their sport by specializing in that sport at an early age. For example, Lindsey Vonn (Olympic downhill skiing medalist) began her competitive career at age two. Michael Phelps began swimming at age seven and was an Olympic swimmer by age 15. In addition, most people are familiar with the success story of Tiger Woods (golf) through early specialization in that sport. However, for all the notable success stories of athletes who specialized in one chosen sport, there are just as many notable examples of successful athletes who were multi-sport athletes when they were young. For example, a young LeBron James not only played basketball, but was a very accomplished football player. Kobe Bryant (basketball) and Swiss tennis player Roger Federer were talented soccer athletes growing up and credit much of their success in their primary sport to participation in multiple sports.

Before expanding on the specialization debate, it is important to provide working definitions from the literature on some key terms. First, youth sport specialization is typically defined as intense, year-round training in one sport to the exclusion of other sports and non-sport activities (Wiersma, 2000). By contrast, the term diversification (or sampling) is often given to youth athletes who are involved in multiple sports, especially during their middle childhood years (ages 6-12; Côté, 1999). The distinction between specialization and diversification is not only in the absolute number of sports youth participate in, but also on the emphasis, or motivation of the sport participation, with specialized settings often being more serious and work-like settings. I will come back to this point later.

Rationale for Specialization and Sampling

Imagine for a moment that you were a parent of an eight-year old daughter who was very talented at math. Because she was so talented, you were advised by others to remove her from every other academic content area and have her focus all her time, energy, and study on the single topic of math. Would you be inclined to believe this was truly a good idea? Or would you argue that the only way for a child to have a well-rounded education was to have exposure to other subject areas like English, art, science, history, foreign languages, and so on? Most people laugh at the ridiculousness of this scenario – however, this is exactly the logic of adults who advocate for early youth sport specialization. Ericsson, Krampe, and
Tesch-Römer (1993) indicated that early specialization through *deliberate practice* (described as effortful practice lacking enjoyable qualities and performed specifically to improve one’s performance levels) was important in developing skill expertise and that to become an expert, beginning early in that skill was necessary. Much support for early specialization comes from the **10-year rule** (Simon & Chase, 1973) and the **power law of practice** (Newell & Rosenbloom, 1981).

First, the **10-year rule** refers to the idea that approximately ten years (or 10,000 accumulated hours) of deliberate practice are needed to attain an expert skill status. This was first seen in chess, where experts were found to possess superior information-processing skills compared to less-elite players, but support for the 10-year rule has also been found in music, academics, and sports. Ericsson and colleagues (1993) also found that the earlier regular deliberate practice begins the better, because accumulation of such training needs to occur gradually over time. When young athletes begin deliberate practice, initial durations must be limited because increasing intensity or duration of deliberate practice too quickly leads to overtraining and burnout. Thus, optimal long-term deliberate practice is characterized by slow, steady progressions in practice amounts and intensity which allows for adaptations to increased sport demands. Application of this rationale to youth sport would mean that if an athlete began a routine of deliberate practice at age six and became elite in that sport by 16, another child might have an advantage (theoretically) by beginning intensive training in that sport at five years of age. In addition to the 10-year rule, the **power law of practice** is the idea that there is a relationship between accumulated practice in a given sport and learning rate. Specifically, this means that the relative rate of learning and skill development is initially rapid for beginners but this rate of learning and improvement slows down, becoming more difficult as one improves in that skill over time. For example, the more time a tennis player invests in deliberate practice (i.e. drills, rote practice), the better the athlete would become in terms of tennis skills (and potential achievement), but the more difficult it would become to make further improvements over time, as that player’s overall skill level improved.

In contrast to specialization and the concept of *deliberate practice* is the concept of **deliberate play and sampling**. Côté (1999) coined the term deliberate play to define a form of sporting activity that involves early developmental activities that are intrinsically motivating, provide immediate gratification, and are specifically designed to maximize enjoyment. Activities such as driveway basketball, backyard football, and sandlot baseball with friends are examples of such settings. The structure of these settings tends to be informal and adult presence is not necessary. They also often contain an imaginative component, as youth often pretend they are their favorite athletes (“You be Kobe and I’ll be LeBron”). More importantly however, researchers (e.g. Pellegrini & Smith, 1998) have noted that learning and motor skill development does, in fact, take place
with deliberate play. Another reason why deliberate play is important is because research (Baker & Côté, 2006) has shown that considering only deliberate practice in young athletes’ development does not sufficiently characterize other developmental, motivational, or social factors. One model, the Developmental Model of Sports Participation (DMSP; Côté, 1999; Côté, Baker, & Abernathy, 2003) accounts for such factors and also highlights the importance of deliberate play. Specifically, the DMSP notes three possible “tracks” within youth sport participation: (1) recreational sport participation via sampling and deliberate play, (2) elite sport performance via sampling and deliberate play, and (3) elite performance via early sport specialization and high volumes of deliberate practice. The first two tracks have the same early to middle childhood (ages 6 – 12) phases which are considered the sampling years, during which there is a more primary focus on basic sport skill development and enjoyment, through integration of deliberate play activities. The sampling years are thought to be associated with enhanced intrinsic motivation for a given sport because there is not an exclusive emphasis on deliberate practice. After this period, youth athletes can choose either to stay involved at a recreational level or develop an emphasis on performance, through which athletes progress through the specializing phase – (ages 13-15) and investment phase (age 16 and after; Côté, Baker, & Abernathy, 2003). The third potential track is elite performance through early specialization, and while this track may lead to elite performance, it has also been shown to result in an increase in injuries and reduced sport enjoyment (Law, Cotê, & Ericsson, 2007).

**Concerns of Sport Specialization**

Youth sport specialization has become increasingly popular, in part because parents, coaches and athletes simply believe that more is better. Many parents who promote the early specialization mindset have examples like Tiger Woods (who began at age three) in mind, believing that early, intensive training is a necessity. There are some arguable benefits of early specialization from a motor skill acquisition perspective. There is support for deliberate practice accumulation in sport (Helsen, Starkes, & Hodges, 1998) and Ericsson et al. (1993) noted that youth who begin early deliberate practice routines have an advantage over those who do not. Specifically, the earlier a child begins specialized sport training and the more time devoted to deliberate practice, the more likely his/her performance outcomes are likely to improve, surpassing youth who do not practice for as much time. This makes logical sense. It has also been noted that specializers may have better coaching and instruction, as many talented coaches are seeking to work with youth who begin early and specialize in a given sport, and (out of necessity) develop better time management skills as youth (Gould, 2010).

However, there are numerous noted drawbacks associated with youth
sport specialization including withdrawal/burnout (Coakley, 2009; Gould, 2010), increased injury risk (Kaleth & Mikesky, 2010), and stress associated with over-involvement and expectations of parents and significant others (Wiersma, 2000). Specialization also may limit long-term motor skill development (Branta, 2010). An example of such limited development might be when a child begins early sport specialization in swimming and never develops hand-eye skills or proficiency in basic throwing or kicking skills. In fact, the American Academy of Pediatricians (AAP, 2000) has recommended that single-sport specialization be discouraged prior to adolescence (age 13) because of the aforementioned risks. Yet, research has consistently noted that the majority of young adults who report they specialized in one sport as youth indicate they began specialization prior to adolescence (Russell, 2014; Russell & Limle, 2013; Russell & Symonds, 2015).

The Evidence for Sampling over Specialization

Contrary to the popular belief that “more is better, from an earlier beginning”, research provides an overwhelming picture that diversification (early sampling) actually is more effective in maximizing youth athletes’ potential over specialization, and that early specialization is not essential to later success (Côté, 1999). Motor learning research indicates that cross-training and diversification lead to greater skill transfer across sports as youth mature (Schmidt & Wrisberg, 2000) and recent research (Bridge & Toms, 2013) has noted that youth who competed in three sports between the ages of 11 and 15 were more likely to compete at the national level in their sport between the ages of 16 and 18. Also, when researchers examined European soccer players who were on their national teams, they found that these elite athletes were significantly less likely to have specialized in soccer until after the age of 15 (Ward, Hodges, Starkes, & Williams, 2007), and Danish researchers found that elite athletes competing in objectively measured sports (e.g. timed events such as swimming, or distance events such as long jump) specialized at a later age and engaged in less deliberate practice volumes in their early childhood sport development (Moesch, Elbe, Hauge, & Wikman, 2010). Finally, a consistent (and disturbing) finding is that young adults who report specializing in one sport as a child are less likely to report actively participating (even at a recreational level) in organized sports as young adults (Russell, 2014; Russell & Limle, 2013; Russell & Symonds, 2015). A bottom-line conclusion from this area is that youth who begin their competitive sport careers early often end their sport careers earlier.

Conclusions and Recommendations

In forming conclusions within this area, it should be noted that who made the decision it is to specialize in one sport matters: youth sport
specialization might not be detrimental per se, but only when the athlete’s sense of self-determination is compromised. If the young athlete is passionate about the sport and intrinsically motivated to specialize, most would agree that this situation would be different than having early, rigorous single-sport development mandated on that youth by adults. However, with that caveat noted, several conclusions can be offered from this area. First, early sampling does not appear to hinder elite sport participation in sports where peak performance is reached after adolescence and maturation. According to the DMSP, most athletes reach the investment phase around age 16, when they become more serious about intensive “investment” in their chosen sport. Notable exceptions appear to be in sports such as gymnastics and figure skating, where peak performance must often be reached prior to adolescence. Second, early sampling is linked to longer, more positive (i.e. enjoyable) sport involvement, in part due to greater specialization risks like injuries, burnout, and dropout. Third, greater amounts of deliberate play during early sport participation (sampling) years appear to build a foundation of intrinsic motivation. Such motivation is important as it helps youth become more self-directed when training becomes more difficult as they progress within their sport. Finally, late adolescents (age 16+) have developed the physical, social, emotional, and motor skills needed to invest in more specialized training in a given sport. By this age, it is more likely that they can comprehend the physical and psychological costs/benefits of intensive single-sport training and can make independent, autonomous decisions about their sport.

With these conclusions in mind and based on research findings, the following are some recommendations for practitioners, parents, and coaches in youth sports:

1. Adults should encourage youth to sample a range of different sports (especially in early to middle childhood) so they can discover what they enjoy in terms of sport participation.
2. While often less obvious, practitioners and parents must carefully observe and evaluate youth sport programs less on sport skill development (although this is important) and more on how effectively they enhance youths’ positive self-esteem, sport self-efficacy, and general sense of competence.
3. Because deliberate play is important in fostering intrinsic motivation, youth sport coaches should plan practices and training regimens so that more informal, deliberate play activities occur. Such activities can be easily and effectively integrated into formal practices and can be as simple as “play-type” drills, where young athletes are still developing skills, but in more enjoyable activities that are less likely to be viewed as “the drudgery of training” or “work”.
4. Risk factors such as anxiety, overuse injuries, boredom, burnout, and dropout can be lessened by emphasizing rest and recovery
in between practice; the necessity of off-seasons where athletes take time away from their sport; and discouraging single-sport specialization until approximately age 15, when youth are more likely to handle the physical and psychological factors associated with more intensive training in sport.

5. Finally, practitioners should emphasize enjoyment and develop youths’ sense of passion for sport involvement. Long-term persistence is a function of one’s intrinsic motivation for that sport and if such passion for sport involvement is not nurtured early, it is not a matter of if, but when, those athletes will walk away from their sport.

References


**WILLIAM RUSSELL**, PhD, is an Associate Professor at Missouri Western State University. Russell is a past College Division Chair and served as the 2012 MOAHPERD President.
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