PRACTICE Makes PERFECT
And Other Curricular Myths in the Sports Specialization Debate

The Promises & Pitfalls of Sport Specialization in Youth Sport.

By Jody Brylinsky

The common debate regarding the utility of sport specialization begins with the notion that early talent identification, mixed with early sport-specific training will result in improved long-term sport performance. This assumption is based on the notion that "practice makes perfect" and that the more practice an athlete can get, the greater the likelihood of developing elite performance at the earliest possible time.

The counter-argument advises against early specialization to avoid athlete burnout, overuse injuries, and possible misidentification of actual talent. The assumption is that athletes who play multiple sports are safe from the noted pitfalls found in early specialization simply because they are exposed to different sport contexts.

This article presents a different focus on the specialization debate, one that changes the focus to the quality of sport instruction regardless of the level of specialization in training. It suggests that many of the negative consequences of early sport specialization may be avoided with appropriate coaching and sport skill instruction.

Rather than debating whether athletes should be engaged in early sport specialization or not, the focus should be on the quality of the training and sport skill instruction that the athlete receives, regardless of the training context.

Using the analogy of looking at the "ecology" of an organism, we know that the tallest trees grow from the hardiest seeds, in the richest soil, in the most direct sunlight, with protection from harmful animals, and when given the maximum amount of time to mature before being harvested.

Similarly, we know that elite athletes come from good genes, and a common idea about how best to develop elite performance is to identify talent early, create a specialized environment, and watch talent grow.

But I believe that the issue of training mode and instruction should be viewed from a more multifaceted, interdependent perspective. It is not the specialization or diverse sport-training experience that is critical, but the type of training and instruction provided in any training context. In his popular book, Outliers, Gladwell identified a complex set of interrelated events that lead to extraordinary success as someone is gaining a cumulative advantage - "one initial advantage that leads to other additional opportunities that make the initial genetic difference a bit bigger, and more powerful, resulting in a clear separation as an outlier." Sport skill instruction and sport training that focus on long-term athlete development provide the cumulative advantage to nurture talent, regardless of the training context in which it is offered.

The following 4 training myths should be challenged in order to provide the right environment for developing talent in young athletes in specialized or diverse sport experiences.

Myth #1
The first myth says that only youth sport specialization leads to the quantity of practice necessary to develop elite sport performance. The "10 year-rule of necessary preparation" by Simon and Chase or the "10,000 hour-rule" by Ericsson became the mantras supporting early sport specialization. Coupled with the highly publicized success of professional athletes such as Tiger Woods and the Williams sisters, parents and coaches discouraged multiple-sport participation for youths in order to accumulate enough hours in one sport to reach expert status as soon as
The real issue here is the need for accumulating exposure to training that will develop relevant sport skills.

However, Ericsson, Krampe, and Tesch-Romer also asserted that training quality was equal to quantity in importance and introduced the notion of deliberate practice—practicing a well-defined task with an appropriate difficulty level for the particular individual, getting informative feedback, and having opportunities for repetition and corrections of error.

Simply exposing young athletes to hours and hours of practice, without also stressing an appropriate instructional and training context, will not lead to the desired effects. Also critical is meticulous practice planning that includes drills that simulate performance requirements and provides precise assessment and correction of both technical and tactical skills.

The training must also include a continuous level of training adaptation and a purposeful focus on the most essential component skills for expert performance. So while sport specialization seems to provide the necessary quantity of practice, current research accurately acknowledges that the training content is a more important factor.

It should be noted that multiple-sport participants can also receive the necessary exposure to instruction and training to achieve expert sport performance. Many sports, especially those at the youth level, rely on basic motor skills, generalized physical training, and common tactical strategies to build the necessary cumulative sport experience.

A diversified approach to early athletic opportunities allows athletes to develop general capabilities, reducing the amount of sport-specific training necessary later in life, as adolescents or young adult athletes. The developmental model of sport participation developed by Cote and Fraser-Thomas suggests that for at least adult-peaks sports, athletes can accumulate the necessary hours of sport training from total involvement, even in other sports. Therefore, the important issue is to develop a long-term plan that challenges the athlete to improve on the important physical and cognitive skills necessary for sport success, while balancing the psychosocial costs associated with this level of commitment. The inefficiency of many sport-training sessions is of much more concern than whether the training is specialized or applied to multiple sport contexts.

The balance between training and recovery provides the adaptation necessary in Ericsson's theory of deliberate practice. While multiple-sport participation is presumed to inherently provide a variation in training, this may not always be the case. Many sports require the same physiological demands and use similar training routines. Ideally athletes involved in successive and diverse sports, similar to athletes in year-round singular-sport training, would be able to monitor and adjust training loads between sports or training sessions.

Myth #2

The second myth claims that elite performance is the result of deliberate practice on specialized skills. The deliberate practice framework described above suggests that sport specialization is necessary if young athletes do not want to be left behind in the race to the top. Certainly sports in which elite competition must be reached before puberty (e.g., women's figure skating and gymnastics) provide little time to explore sport options; however, for the vast majority of sports (i.e., hockey, softball, volleyball) optimal performance is still possible with a diversified sport introduction and more time for informal play.

In fact, research is now suggesting that there are tremendous benefits to deliberate play—activities regulated by age-adaptive rules controlled by children to maximize enjoyment. In deliberate play, children use experimentation of movements without worrying about performance outcomes, fostering an implicit approach to instruction. Implicit instruction, or guided-learning, can result in increased retention of new skills, reduced occurrence of reinvestment in complex skills, a heightened sense of competence, and a greater resistance to stress.

Fortunately children will allocate concentration and effort in the pursuit of deliberate play, providing a natural source of implicit instruction, if given the freedom to do so. Coaches should plan for informal training situations that encourage improvisation and role playing rather than pure repetition. Additionally, coaches should use fun analogies in conveying instruction and feedback to allow for
chunking (recoding of information for more efficient storage and recall) of motor and perceptual information, as well as to increase enjoyment. However, counting on diverse sport opportunities to naturally provide "deliberate play" or "implicit instruction" would be a mistake.

Just changing the sport context does not create these useful instructional techniques. So, while both deliberate play and implicit instruction contribute to the skill development process, they must both be purposely planned in skill instruction. Diverse sport experiences will not necessarily produce these learning environments any more than sport specialization prohibits them.

**Myth #3**

The third myth maintains that specialization allows the coach to plan what to do. Regardless of the training context—specialized sport or diverse sport opportunities—the most critical element influencing athlete outcomes is the planning capabilities of the coach.

Practices that provide either frequent periods of inactivity or endless, and usually meaningless, repetitions of sport skills do not enhance athlete development. Coaches must plan for maximum use of practice time through continuous action-based instruction, deliberate play (if appropriate), or highly structured inactive time, with a selection of drills that match the performance demands of the sport.

Coaches should consider the pace of instruction that best allows athletes to engage in the cognitive processes of planning and reviewing the movement skills at an appropriate level of physical training. Whether to provide random, blocked, or a series of practice trials; when to provide demonstration of skills; and what form of feedback to give must all be considered when either sport specialization or diverse sport-training models are planned. It would be a mistake to assume that diverse sport opportunities will provide more problem-solving experiences for athletes than specialized single-sport training. Highly qualified coaches will be able to provide an abundance of meaningful practice drills that maximize active participatory-learning in either context. Unqualified coaches, even in a diverse sport environment, may have limited ability to develop an interactive practice or facilitate athlete-led error detection and correction.

Effective planning in both the specialized and multisport training model should focus athletes' attention on what they need to do better and what is limiting their performance. Too many specialized sport practices are misspent in rote repetition and place too few cognitive demands on athletes in order to over-learn successful skills. Instead, training for automatically should focus on reducing the attention on skills and on developing the essential multitasking skills that elite athletes will need.

Strategies include the use of dual-task practice activities - using a demanding secondary task concurrently with the practice of primary sport skills - or decision criteria similar to competition, such as calling out balls and strikes during batting practice. Planning should promote the development of self-regulation, decision making, feelings of competence, and connectedness by giving athletes, even at a young age, ownership of the design and flow of practice.

**Myth #4**

The fourth myth contends that sport specialization is the only sport form that promotes the individual coach-athlete relationships necessary to maximize athlete learning and commitment. Research continues to show the advantages of having access to expert coaches.

Not only are expert coaches highly capable in designing deliberate practice and play, but they do so in an environment of emotional warmth while communicating expectations for high standards. This is not the mindless overuse of praise, but rather deliberate personalized instruction and positive discipline. The most noted expert coach, the late John Wooden, used stern, brief dialogues in practice, never used physical punishment, and used every communication to teach.

Research in early education (but applicable to all grades) indicates that good teachers personalize the material, providing direct personal responses to student-initiated statements or actions.

Contrary to reports of the regimented, carefully planned, practice activities of coaches such as Wooden, many expert teachers are observed to possess a knack for flexibility in how learning activities progress in the classroom.

The best teachers are those who demonstrate a high degree of emotional support, classroom organization, and instructional support, and engage in reciprocal interactions in facilitating student activity. The use of high-quality feedback, where there is a back-and-forth exchange between the athlete and coach in order to gain a deeper understanding, leads to better student performance.

Coaches can provide this interaction by showing an interest in the early success of their athletes through consistent positive reinforcement, clear monitoring of progress, and eventually a greater emphasis on self-reinforcement as the athlete develops. Coaches also need to spend time planning and locating the physical and social resources that athletes will need to overcome the effort and motivational constraints of deliberate practice.

**CONCLUSION**

The debate regarding the push for sport specialization or diverse multiple-sport training experiences for young athletes is important because it leads us to ask critical questions about the nature of the design, intensity, and consequences of purposeful sport training.

The lessons to be learned, however, lie in what the dialogue tells us about the need to focus on quality training and instruction in either sport setting. In both contexts, coaches and parents need to follow evidence-based guidelines for designing practices and to implement those practices with sound standards-based coaching behaviors.

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