

The Early Specialization Debate & Teaching Games for Understanding

Dr. Stuart Currie

University of Tennessee at Martin



Presentation Purpose

- 1. Research investigating early age single sport specialization versus multiple-sport participation will be discussed as it pertains to the US Youth Soccer Player Development Model
- 2. A game-based, TGFU, play approach to training and player development will be examined as advocated by US Youth Soccer

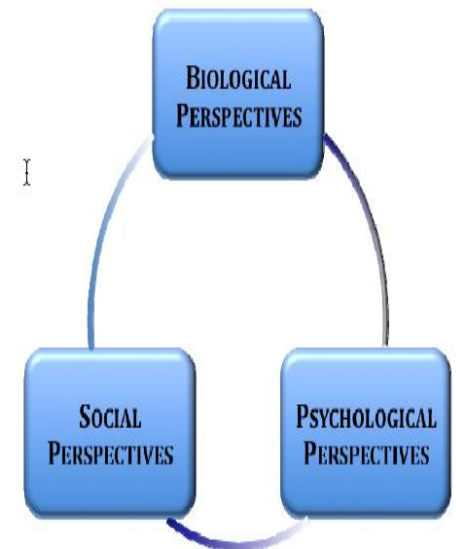


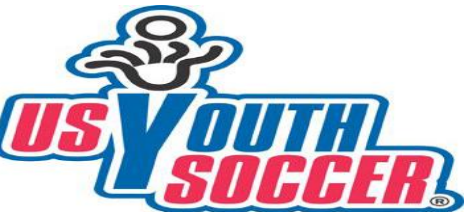
Pathway to Sport Expertise

- Youth development policies & practices based upon scientific evidence
 - (Ford, Yates, & Williams, 2010)
- 10 years to become an expert chess player, Grand Master
 - (Simon & Chase, 1973)
- Requires Deliberate practice (DP), 10,000 hours, over 3000 citations on Google Scholar, to improve musical performance
 - (Ericsson, Krampe, & Tesch-Romer, 1993)
- Dan McGlaughlin, testing the 10,000 hour rule as he strives to qualify for the PGA tour

Pathway to Sport Expertise

- Interaction between factors/constraints:
- Biological (genetics, neurological adaptations)
- Psychological (motivation, emotional control)
- Sociological (luck, socioeconomic status, geographic location)
 - (Singer & Janelle, 1999)





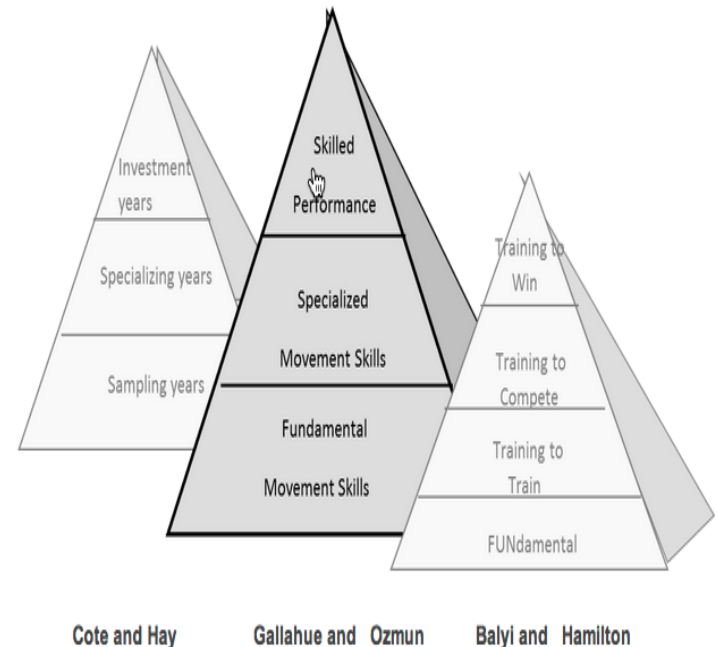
Player Development Model

- Soccer is a long-term development and late specialization sport
- A multi-sport experience provides a solid base to long-term development as a soccer player
- Concentrating on one sport is inappropriate in terms of physical and game-sense development
- When working with pre-pubescent aged players, the mandate should be one of global, all-encompassing development rather than specialization in one sport



Developmental Models

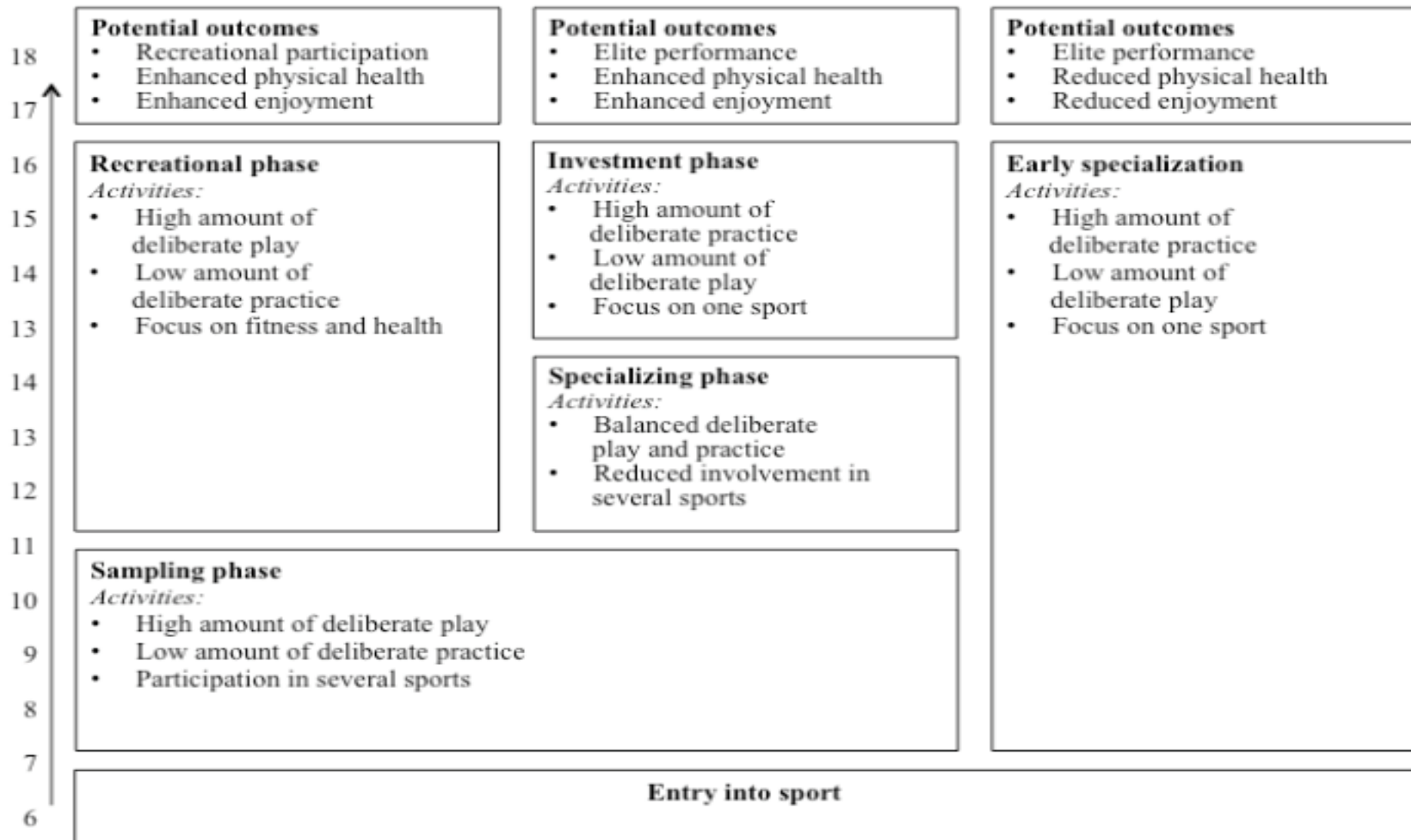
- Several models exist:
- Deliberate Practice (Ericsson et al., 1993)
- Long Term Athlete Development (Balyi & Hamilton, 2004)
- Developmental Model of Sport Participation (Cote & Fraser-Thomas, 2007)



Trainability in Childhood and Adolescence

Late Specialization Model	Age	Objective
FUNdamental Stage	Females 6-8 Males 6-9	Learn fundamental movement skills
Learning to Train Stage	Females 8-11 Males 9-12	Learn fundamental soccer skills
Training to Train Stage	Females 11-15 Males 12-16	Build the aerobic base and build strength toward the end of the phase and further develop soccer-specific skills
Training to Compete Stage	Females 15-17 Males 16-18	Optimize fitness preparation and sport, individual and position specific skills as well as performance
Training to Win Stage	Females 17+ Males 18+	Maximize fitness preparation and sport, individual and position specific skills as well as performance
Retention Stage	Competitive Retirement	Retain players for coaching, officials, administration, etc.

Table 8: Trainability in childhood and adolescence (Hamilton)

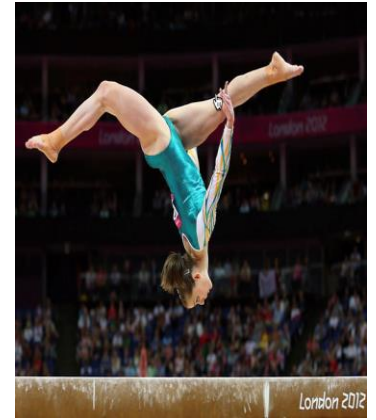


(Cote & Thomas, 2007)



Specialization Sports

- Sports can be classified as either early specialization or late specialization
 - (Balyi and Hamilton 1999)
- Early specialization sports (diving, figure skating, table tennis, & gymnastics)
- Pathway involves early sport-specific training (by ages 5 to 7) for future excellence
- Complex movement and sport skills should be acquired before the onset of the adolescent growth spurt (or peak height velocity, or PHV)
 - (Balyi et al., 2005)



Late Specialization Sports

- Team sports, soccer, racket sports, combative sports, and gliding sports
- Development of fundamental motor and technical/tactical skills
 - (Balyi et al., 2005)
- Specialization before age ten is not recommended, contributes to early burnout, dropout and retirement from training and competition
 - (Harsanyi 1985).



Early Specialization Versus Multiple-Sport Participation

- One of the most relevant & controversial debates in youth sport
 - (Baker et al., 2009)
- Contributing factors:
- Sport systems of Eastern Europe
- Getting ahead, Tiger Woods
- Pursuit of scholarships
- Pursuit of professional contract
 - (Malina, 2010)



Early Specialization

Versus Multiple-Sport Participation

- What do we know about early sport specialization? Not much!
 - (Baker et al., 2009)
- Four specific parameters:
 - 1. Early start age in sport, as young as 5
 - 2. Early involvement in one competitive sport
 - 3. High intensity training & deliberate intense practice
 - 4. Early involvement in competitive sport
- (Baker et al., 2009)



Early Specialization Pathway

Deliberate Practice (DP)

- Earlier one starts, quicker one will achieve success
- DP: Performance driven, low in inherent enjoyment, effortful structured activity
- Coaching feedback, error detection & correction, 10,000 hours
 - (Ericsson, Krampe , & Tesch-Romer, 1993)
- Relationship was found between amount of DP and achievement of expertise in a variety of sports
 - (Helson et al., 2000)



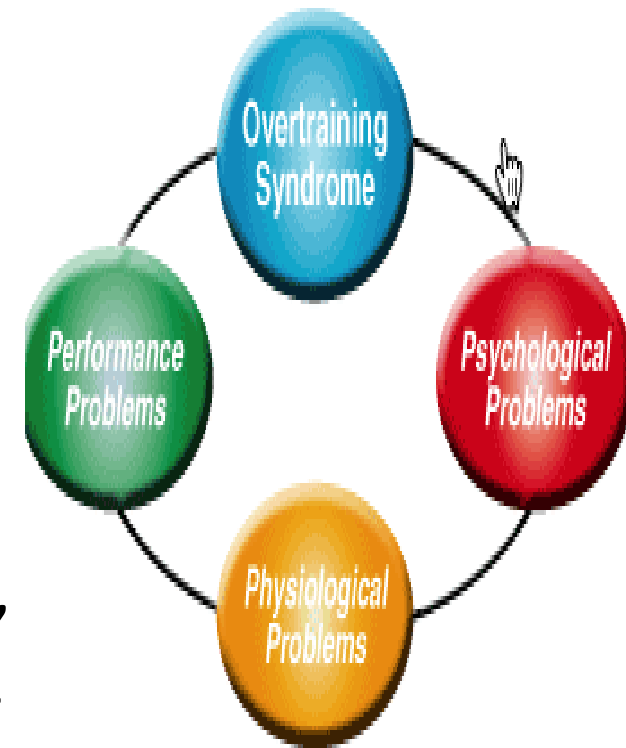
Summary of studies examining quantities of cumulative deliberate practice in sport.

Source	Skill/Sport Examined	Groups (<i>n</i>)	Hours of Deliberate Practice \pm SD	Reporting Period	Methodological Notations*	Statistical Notations
Duffy et al. (2004)	Darts	Professional – men (12) Amateur – men (12) Professional – women (6) Amateur – women (6)	12,839 \pm 7780 3270 \pm 2916 6491 \pm 3299 1612 \pm 1430	15 years into career	DP is solitary practice and practice with a partner combined	Professional players reported more DP than amateurs. No gender differences
Ford and Williams (2008)	Soccer	Soccer (NR)	4645 \pm 2146	Career up to signing pro contract	All soccer activity considered DP	No between group comparison
Helsen et al. (1998)	Soccer	International (17) National (21) Provincial (35)	9332 \pm NR 7449 \pm NR 5079 \pm NR	18 years into career	All sport-specific training considered DP	Significant differences between skill groups
	Field Hockey	International (16) National (18) Provincial (17)	10,237 \pm NR 9147 \pm NR 6048 \pm NR	18 years into career	All sport-specific training considered DP	Significant differences between skill groups

Adopted from Joseph Baker & Bradley Young (2014) 20 years later: deliberate practice and the development of expertise in sport, *International Review of Sport and Exercise Psychology*, 7:1, 135-157

Early Age Single Sport Specialization Can Be Problematic

- If specialization occurs at the developmental inappropriate age, benefits, improved skills, are outweighed
- Physical, psychological, and social disadvantages
- Overuse & stress injuries: Tendinitis, stress fractures, Osgood-Schlatter & Sever's disease



• (Fraser-Thomas et al, 2005)

Early Age Single Sport Specialization Can Be Problematic

- Limit overall motor skill development, lifetime physical activity
 - (Branta, 2010)
- Stifle sociological and psychological development, social isolation
 - (Weirisma, 2000)
- Child stardom to adolescent mediocrity
 - (Hill, 1988)
- Sport dropout, lack of enjoyment was the most important reason for playing a different sport or withdrawal
 - (Butcher et al., 2002)



Sports Specialization

- Study investigating training of young athletes revealed:
 - Coaches were the most powerful influence to specialize in a single sport
 - (Hill & Simmons , 1989)
- Soccer players peak in their mid-to-late twenties for field players and perhaps the early thirties for goalkeepers



Multi-Sport Participation Deliberate Play (DPY)

- Early specialization is not an essential component of elite development
 - (Baker, 2003; Baker et al., 2009; Cote et al., 2007)
- Elite athletes participate in a variety of sports prior to specialization
- Study of Australian expert team athletes practiced and experienced a range of activities, more than 8, through their development
 - (Baker et al., 2003)



Sampling Years

(Cote & Fraser-Thomas, 2007)

- Ages 6-12, participate in a large number of sports
- DPY (Cote, 1999) unstructured, street soccer, influences intrinsic motivation
 - Cote & Hay, 2002
- Increased sport enthusiasm, greater skill development opportunities
 - (Baker & Young, 2014)
- Specializing phase, late or delayed specialization, 13-15, in the specialized sport
 - (Cote et al., 2007)
- The ‘street soccer’ environment requires players to think for themselves which allows the chance for anticipation players to evolve
 - (US Youth Soccer)



Research Findings

- Research supports early sampling and DPY as a means to top-level soccer performance
 - (Zibung & Conzelman, 2012)
- A higher level of competition is achieved when participating in three sports during the specializing years
 - (Bridge & Toms, 2012)
- What do we know about early sport specialization? Not much!
 - (Baker et al., 2009)
- Research also indicates that sport sampling has no positive effect on later performance in soccer
 - (Ford et al., 2012)



Early Engagement Pathway

- How does it differ to the early diversification pathway?
- High amounts of soccer-specific play activity, not multiple sports, early childhood, 5-12
- How does it differ to the early specialization pathway?
- Relatively low in DP and competition in the primary sport
 - (Ford et al., 2012)

Early Engagement Pathway

- Study of English football players, still-elite, ex-elite, & recreation players
- Still-elite players had twice as many average hours in soccer play compared with ex-elite
- Compared with less-successful soccer players, time spent in soccer play contributed to success, as long as the majority of time was not spent in soccer play
 - (Ford et al., 2009)

Early Engagement Pathway

- Elite Brazilian players followed the early engagement pathway
- Spent a high amount of time in soccer-specific play and Futsal during childhood, fun, superior decision making skills
- More optimal strategy, engage in soccer- specific play to avoid documented concerns related to early specialization, burnout
 - (Ford et al., 2012)

Transfer Paradigm

- Transfer is more likely if sports, games, share similar structural and perceptual demand
 - (Smeeton et al., 2004)
- “Transfer-appropriate processing theory”
 - (Lee, 1988)
- Similar cognitive processing demands of training task and transfer task is required, practice environment-game environment
- Skilled soccer players and hockey players recognized attacking game play across respective sport
 - (Smeeton et al., 2004)

John Allpress

FA National Player Development Coach (7-16)

- "Games and game-like practice, coupled with individual challenges and questioning techniques that encourage reflective processes and promote tactical understanding also help to develop decisive decision making and help players to recognize where their football skills apply in context"



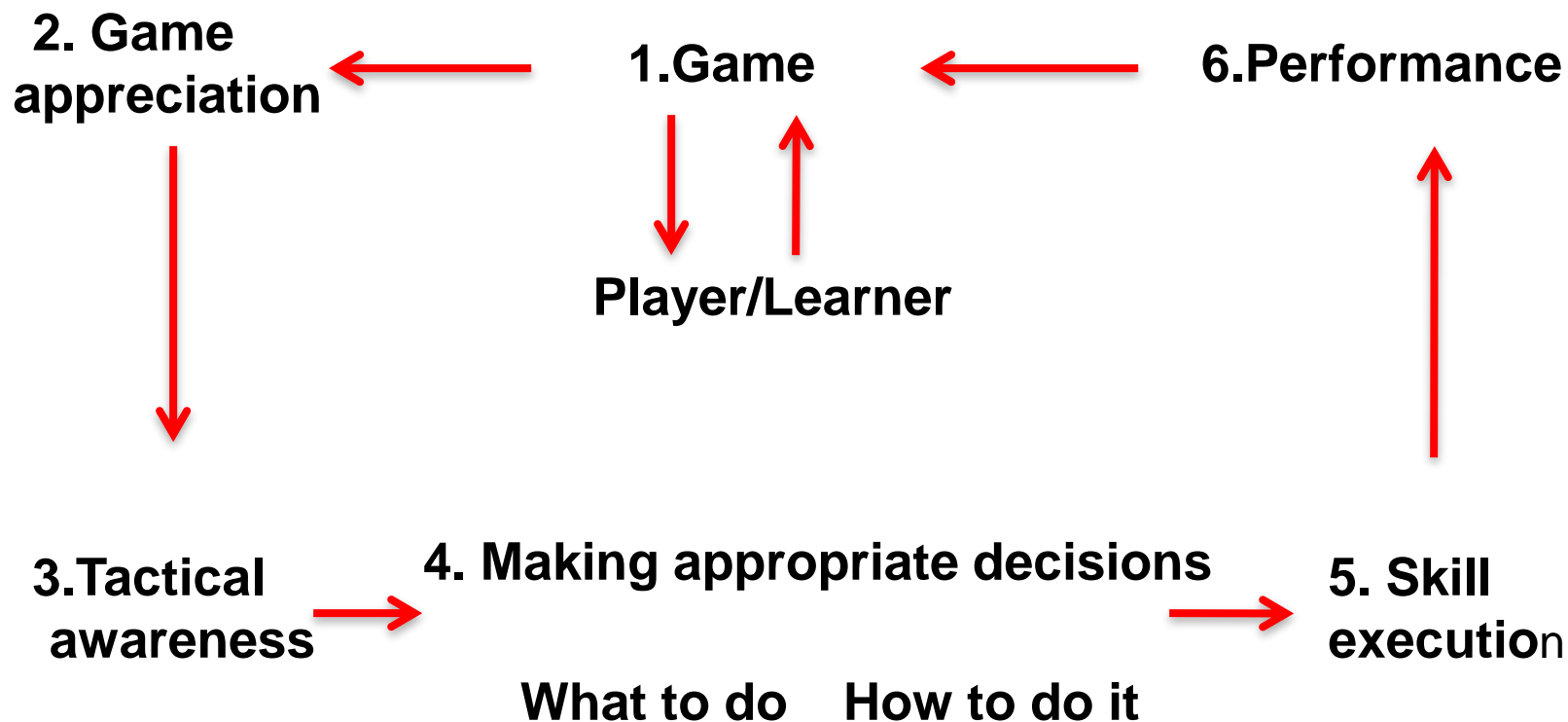
TGFU

- A game-based approach to training and player development is applied by US Youth Soccer in the U.S. Soccer National Youth License course
- TGFU develops soccer literacy, critical thinking, problem solving , and decision making
- “ Know what to do and when to do it are as valuable as knowing how to do it
 - (Bunker & Thorpe, 1982)
- Coach is the facilitator of learning, the game becomes the teacher, produces intrinsic player motivation



TGFU MODEL

Original Teaching Games for Understanding Model (Bunker & Thorpe, 1982)



Moving Forward

- Additional research investigating early specialization, diversification, and early engagement as it applies specifically to US Youth Soccer development is warranted
- Thank you for your time and attention
- scurrie1@utm.edu

