

Mapping School-Based Coach Education Requirements in the United States

Obidiah Atkinson,¹ Samantha Bates,² Dawn Anderson-Butcher,² Sydney Mack,² and Jacqueline Goodway¹

¹Department of Human Sciences, College of Education and Human Ecology, The Ohio State University, Columbus, OH, USA;

²College of Social Work, The Ohio State University, Columbus, OH, USA

To date, there is a critical gap in our understanding of coach licensure and training requirements for school-based coaches across the United States. The current study categorizes the policy landscape for school-based coaches by examining public documents that outline state-specific ($N = 51$) coach training requirements. In addition, authors engaged in an in-depth curriculum and cost analysis of required coach trainings in the state of Ohio to better understand training topics, costs, time commitments, and state-specific compliance criteria guiding coach education. Findings indicated most states ($n = 49$, 96%) require training for coaches; however, governing bodies, training topics, and coach-specific training (i.e., assistant, volunteer, and middle school) varied significantly by state. Moreover, our curriculum and cost analysis revealed that licensure processes are costly and time-intensive, and training content predominantly focused on physical health and safety with less emphasis on social-emotional health and youth development. Findings have important education, practice, and policy implications for informing a national coach training agenda.

Keywords: school-based coaches, coach education, national policy, cost analysis

Sport is one of the most popular activities globally for children, adolescents, and adults (Hulteen et al., 2017). In the United States, schools have promoted sport since the late 1800s, and currently, athletics are commonplace within the educational system (Wiggins, 2013). The education-based sport model was created to extend students' overall school experiences and to benefit youth, families, and communities. Notably, youth experiencing economic, social, or structural disparities (i.e., low income, rural, etc.) rely heavily on the school-based sports system to develop their athletic abilities and potential of participating in college athletics (Côté & Fraser-Thomas, 2007). Families depend on the school-based sport system to facilitate positive developmental outcomes for their children. Indeed, involvement in youth sport can promote positive physical and mental health outcomes (Merkel, 2013; Pate et al., 2000), provide experiences for social development, leadership, and relationship development (Anderson-Butcher, 2019; Côté & Fraser-Thomas, 2007), and reduce problem behaviors when organized well (Spruit et al., 2016). In communities, sport teams and athletes also are held in high regard, and sport serves as context for school and civic pride (Coakley, 2016). School-based sport therein contributes to individual student-athlete development, increases access to organized activities during out-of-school time, encourages social connectedness, and strengthens school and community ties.

To date, the reach of the school-based sport system in the United States is far. Before the COVID-19 pandemic, the National Federation of State High School Associations (NFHS) reported that nearly eight million boys and girls participate in 83 interscholastic sports (NFHS, 2019). High rates of participation

indicate that school-based sports are attractive and bridge gaps in access, especially given the use of facilities on school property, lower costs associated with participation, and accessible timing of practices and competitions (Camiré, 2014). Due to large participation rates and contributions to development, scholars have begun to investigate key social agents influencing the context of youth sport, focusing on the role of coaches, adult program staff, and parents/caregivers (Anderson-Butcher et al., 2019; Riley et al., 2017). In particular, researchers contend that coaches play a critical role in promoting, fostering, and shaping positive, developmentally appropriate sport experiences for children and youth (Camiré, 2014; Gould et al., 2007; Jones, 2006). Moreover, because sport is highly embedded within U.S. schools, there is a keen interest in how coaches can leverage sport to teach student-athletes a broader set of educational objectives (Baghurst & Benham, 2020; Gilbert & Trudel, 2004).

Leaders in the field of youth sport have identified multiple characteristics of effective coaches that use sport to facilitate positive youth development (PYD). By in large, effective coaches engage in formal coaching education (Gould et al., 2007), develop a holistic coaching philosophy (Camiré, 2014), and voice a desire for continued learning (Pierce et al., 2018). Accessing coach education and training is another predictor of whether coaches have the skills and competencies to facilitate positive school-based sport experiences, long-term athlete development, and youth retention in sport (Balyi et al., 2013; Côté & Fraser-Thomas, 2007; Trudel et al., 2010). Studies show that when coaches integrate the instruction of sport and life skills into the youth sport environment, coaches can positively influence student-athlete efficacy, leadership behaviors, life skill development, and motivation for continued sport participation (Bean & Forneris, 2017; Beni et al., 2017). However, Bean and Forneris (2017) found coaches often lacked the skills necessary to integrate life skills into their coaching practices explicitly.

Evidence-based education and informal and mediated learning activities also help coaches improve youth development (Driska,

Bates <https://orcid.org/0000-0002-0915-5709>

Anderson-Butcher <https://orcid.org/0000-0001-7231-8323>

Mack <https://orcid.org/0000-0003-4681-0378>

Goodway <https://orcid.org/0000-0002-2199-2577>

Atkinson (atkinson.228@osu.edu) is corresponding author, <https://orcid.org/0000-0003-1923-8476>

2018; Harvey et al., 2020; Martel, 2015; Stoszowski & Collins, 2016). For example, Driska (2018) found that USA Swimming's revised online Foundations of Coaching program demonstrated how the intentionality of course design and pedagogy positively influenced coaches' learning and adoption of developmentally appropriate training practices. Furthermore, integrating the American Development Model into USA Hockey's coach education program has shown to improve player development and retention (Martel, 2015). Since integrating sport science and child development best practices into coach trainings, USA Hockey has reported a 10% increase in retention rates and improvements in physical literacy, sport skills, fitness levels, and tactical awareness among athletes. Beyond formal trainings, coaches report preferences to informal learning activities and peer interactions to help them learn new skills (Harvey et al., 2020; Stoszowski & Collins, 2016). Although the transferability of knowledge gained through informal learning activities is relatively understudied, mentoring, peer learning communities, and supervision practices may help coaches acquire new skills and competencies (Stoszowski & Collins, 2016). Unfortunately, no centralized governing body oversees coach training within the United States, assesses the quality of approved training requirements, facilitates access to peer learning communities, nor sets supervision standards to enhance coach education (Fawver et al., 2020; Van Mullem & Mathias, 2021). These gaps illuminate opportunities to improve the youth sport environment and more systematically prepare coaches to support student-athlete skill development (McCallister et al., 2000).

Existing coach education systems in the United States are often complex and guided by multiple entities, whereas other countries have centralized governing bodies overseeing coach education. Coach education in the United States is guided by sport governing bodies (e.g., United States Soccer Federation), sport-specific coaching associations (e.g., The National Association of Basketball Coaches), state high school activities associations (e.g., Ohio High School Athletic Association), and higher education institutions (Gano-Overway & Dieffenbach, 2019). Because of variations in oversight, coach training requirements differ in cost, curricular content, and compliance criterion (e.g., annually and bi-annually). This means coach training and licensure processes vary significantly across the United States based on where coaches live. In addition, the United States lacks clear benchmarks and contextualized trainings across developmental age groups and levels of competition. Understanding our current system of coach training in the United States can shed light on ways to strengthen coach education and ensure all youth have access to effective coaches.

Evolution of Training Requirements in the United States for School-Based Coaches

School-based sport participation increased considerably in the 20th century (Wiggins, 2013). Increased participation among student-athletes led educational groups to be concerned about the preparedness of school-based coaches (Noble & Corbin, 1978; Noble & Sigle, 1980). In 1954, to ensure that coaches met the educational goals of school sport, the National Education Association recommended that all school-based coaches obtain a coaching license if they were not already a licensed teacher. In response, the American Alliance for Health Physical Education Recreation and Dance, currently known as the Society for Health and Physical Education, established a coaching certification task force. The task force proposed a minimum set of training requirements for coaches who were not licensed teachers, pushing states to make policy

changes in their training oversight systems. As most school-based coaches across the country were licensed teachers at the time, only a few states acted by requiring trainings for school-based coaches (Noble & Sigle, 1980; Sabock & Chandler-Garvin, 1986). However, in the past two decades, the number of school-based coaches who are licensed teachers has decreased substantially (Burgeson et al., 2001). For example, in Ohio, current data suggest upwards of 70% of school-based coaches are not licensed teachers (Anderson-Butcher et al., 2020), suggesting that more rigorous education of coaches is important.

As the number of licensed teachers coaching school sport continued to decline across the country, State Activity Associations and Departments of Education began requiring coach trainings to safeguard student-athletes and school sport. To highlight changes in state policies, the National Coaching Report (NASPE, 2008) reviewed the ongoing transformations of training requirements for school-based coaches. The authors of this report found that most states allowed nonlicensed teachers to coach, yet exemptions to the coach licensure process did exist for those who were licensed teachers, irrespective of subject area. When the report was published in 2008, most school-based coaches were required to complete the NFHS' Fundamentals of Coaching (FoC), First Aid (FA), Cardiopulmonary Resuscitation (CPR), sport rules, and sport knowledge trainings. The National Coaching Report (NASPE, 2008) also set forth recommendations for governing bodies to increase communication and support to school-based coaches and refine coach training to be more accessible, affordable, and appropriate for adult learners.

While efforts to train more school-based coaches have been successful, the effectiveness and efficacy of these policy changes are less understood (Vargas-Tonsing, 2007). Scholars have noted no universal requirements exist for all school-based coaches in the United States (Collins & Medbery, 2008; Strand et al., 2019). In addition, limited research has examined how variations in state-specific policies and licensure processes affect school-based coaches. State-specific factors of interest include the oversight of training, coach training requirements, and differences in training by coaching role (i.e., head coach vs. assistant coach). Currently, no studies have analyzed how different states establish, enact, and administer coach training requirements and how these policies guide the coach licensure process (i.e., costs and time) within specific states. To readdress these gaps and understand the policies and processes guiding coach education and training in the United States, the aims of this study were twofold. The primary aim of this study was to categorize the coach licensure process and training requirements across all 50 states and the District of Columbia (DC). In addition, we engaged in an in-depth curriculum and cost analysis using public data from Ohio to understand the coach licensure process and state-specific training requirements.

Methods

Mapping of Training Requirements Across the United States

Public documents outlining coach training requirements were retrieved from the websites of State Activities Associations and Departments of Education for each of the 50 states and the DC ($N = 51$). One member of the research team coded each state's school coaching training requirements concerning the factors initially outlined in the National Coaching Report conducted by NASPE (2008). The five main sections that were charted included

(a) the establishment and governance of requirements, (b) state-specific training requirements, (c) the mode of delivery for trainings, (d) variations in training requirements based on coaching role, and (e) the logistics of training requirements. To validate that the information on the website was the most current guidance at a state level, a researcher contacted the individual responsible for overseeing coach trainings at each state and the DC via email and asked to verify the content of their respective state's training requirements and processes. In total, 49 of the 51 individuals (96%) confirmed content in the five main sections.

Curriculum and Cost Analysis

Two research team members led our curriculum and cost analysis that sought to explore coach training requirements and the licensure process (i.e., costs, time commitments, and renewal periods) in the state of Ohio. Authors chose Ohio because we had a vested interest in understanding our local and specific context, and Ohio's requirements reflected categories generalizable across many states and the DC (i.e., all Ohio coaches are required to do the same training and costs were in the moderate range). Please note not all states utilize the same credentialing language nor processes as Ohio. Some states in the United States refer to their coaching credentials as certifications or only require coaches to submit evidence of completed trainings within specific time periods. States often vary in relation to their requirements. For instance, Ohio allows coaches to obtain a 3-, 4-, or 5-year license that varies in cost and by role (i.e., educator vs. community member), a policy that is not standardized across other states.

To begin the curriculum and costs analysis, our team identified training requirements for first-year coaches on the Ohio Department of Education (DoE) website. Researchers recorded information including the cost of each training, compliance criteria related to each training (i.e., required annually or every 2 years), and Ohio's overall licensure requirements (i.e., complete all trainings and apply or reapply for licensure every 3, 4, or 5 years). To summarize this information, two research team members mapped the training requirements, costs, compliance criteria, and licensure requirements over a 6-year period to distill processes relevant to maintaining an Ohio coaching license. Then, to understand curricular content within each required training, one member of the research team completed all five of the trainings required of first-year Ohio coaches. Through this process, the researcher documented the total time each training took to complete. The time to complete each training was measured at two intervals—low engagement (i.e., clicking through content and answering test questions) to high engagement (i.e., listening to all content, reading the information, and answering test questions). In addition, the researcher took detailed notes on the topics, modules, videos, and test questions, stated learning objectives, practice examples, and policies in each training. After reviewing the detailed notes and creating an extensive list of 52 curricular content areas (i.e., unit of analysis) embedded in the trainings, three members of the research team engaged in a thematic content analysis. Content analyses are largely used for documentation and to “distill words into fewer content-related categories” (Elo & Kyngäs, 2008, p. 108). The thematic content analysis process involved grouping and regrouping initial units into themes that two peer coders then vetted. Peer coders disagreed on less than 10% of the mapping of initial units into broader themes and worked together to reach a final consensus. After two iterations of reshaping and validating our findings, we agreed the curricular content embedded in Ohio's

required coach trainings represented five broad themes. Our team synthesized findings by creating a summary table that described the percent of the curricular content within each theme (i.e., theme housed percentage of curricular content) and mapped content across required trainings.

Results

Results are organized into two sections. First, we present the outputs identified by mapping coach training requirements across all 50 states and the DC. Second, we present our findings from our in-depth curriculum and cost analysis of Ohio.

Mapping Across All 50 States and the DC

Table 1 shows the policy landscape across all 50 states and the DC, demonstrating the notable differences and variability by state. Table 1 also overviews the following for each state: (a) oversight entities (i.e., State Activities Associations, DoE, multiple governing bodies, or school district); (b) state-specific training requirements (i.e., FoC, FA); (c) the mode of delivery for trainings (i.e., online, in-person, and both); (d) the training requirements based on the coaching role (whether states have specific trainings for assistant, volunteer, and middle school coaches); and (e) the logistics of training requirements (i.e., expectations for completion, time frames for required health training renewal, and incentives). Broadly, the mapping processes indicated great variability across states for school-based coaches to obtain a coaching licensure.

Table 2 summarizes the five main sections across all 50 states and the DC. Results demonstrate that multiple governing bodies oversee school-based sport and coach training requirements. However, there are adjustments to the coaching licensure process in almost two thirds of states ($n = 33$, 65%), such as allowing certified teachers to bypass any training requirements or restrictions placed on those who are noncertified teachers. For about a third of states ($n = 20$, 39%), this process exists for all certified teachers regardless of subject area, whereas in five states (10%) exemptions are solely for certified physical education teachers. In addition to these bypasses, some states allow for the coaching licensure process to be replaced with a college degree such as a minor in coaching or the completion of courses in college on coach-related topics ($n = 4$, 8%). Less frequently are emergency exemptions ($n = 2$, 4%), which allow for up to a 1-year delay on the completion of the coaching licensure, and in two states ($n = 2$, 4%) the school districts decide if there are any adjustments or exemptions to the licensure process. Moreover, some states ($n = 9$, 18%) enact practice limitations for coaches who are not certified teachers such as restricting what sports they can coach or requiring additional coursework before completing the coach licensure process.

Findings in Table 2 also show that most states require multiple trainings, primarily online ($n = 35$, 68%) on health-related aspects, while only requiring one pedagogy-related training ($n = 45$, 88%). Results indicate that variability exists for these trainings based on the coaching role, whether an assistant, volunteer, or middle school coach. In most states ($n = 43$, 84%), assistant coaches are required to complete the same process and trainings as the head coach. Over two thirds of states ($n = 35$, 68%) have the same coaching licensure process for volunteer coaches as the head coaches. In the states that did not have the same coaching licensure process as the head coach for assistant and volunteer coaches, often these coaches only had to

Table 1 Policy Landscape by State/DC

State	Est./Gov.	Required trainings								Delivery	Asst. Coach	Vol. Coach	MS Coach	Time	Health Req.	Ince.
		FoC	FA	CPR	CT	SCA	HIA	SR	SK							
AL	SAA	✓	✓	✓	✓	✓	✓	✓		Online			Yes	Prior	1 year	
AK	SAA	✓	✓	✓	✓	✓		✓		Online		Yes		Prior	3 years	
AZ	DoE/SAA	✓	✓	✓	✓				✓	Online				2 months	DNS	
AR	DoE/SAA	✓	✓	✓	✓	✓	✓	✓	✓	Both			Yes	Prior	3 years	
CA	DoE/SAA	✓	✓	✓	✓	✓	✓			Both				Prior	2 years	
CO	SAA	✓	✓	✓	✓			✓	✓	Both				Prior	1 year	Yes
CT	DoE		✓	✓	✓			✓		In-person			Yes	Prior	3 years	DNS
DE	DoE/SAA		✓	✓	✓			✓		Online		Yes	Yes	Prior	2 years	
DC	DoE/SAA		✓	✓	✓	✓	✓	✓		Online				Prior	2 years	
FL	DoE/SD		✓	✓	✓	✓	✓			SD	SD	SD	SD	SD	SD	SD
GA	SAA		✓	✓	✓			✓		In-person	DNS	DNS		Prior	DNS	
HI	SAA	✓			✓	✓	✓			Online				2 years	1 year	
ID	SAA	✓	✓	✓	✓	✓		✓		Online	Yes	Yes		Prior	2 years	Yes
IL	SAA		✓	✓	✓			✓		Both				1 year	DNS	
IN	SAA	✓	✓	✓	✓	✓	✓	✓	✓	Online				Prior	2 years	
IA	Other		✓	✓	✓			✓		Both			Yes	Prior	DNS	
KS	SAA	✓	✓	✓	✓	✓	✓			Both		Yes	Yes	1 year	2 years	Yes
KY	DoE/SAA	✓	✓	✓	✓	✓		✓		Online				Prior	2 years	SD
LA	SAA	✓	✓	✓	✓			✓		Online	DNS	DNS		Prior	3 years	
ME	Other	✓	✓	✓	✓	✓	✓			Online				1 year	DNS	
MD	DoE/SAA	✓	✓	✓	✓	✓		✓	✓	Online	SD	SD		SD	2 years	SD
MA	SAA	✓	✓	✓	✓	✓		✓	✓	In-person			Yes	2 years	1 year	
MI	SAA		✓	✓	✓	✓		✓	✓	In-person	Yes	Yes		Prior	DNS	SD
MN	DoE				✓	✓				Both				Prior	3 years	
MS	SAA	✓	✓	✓	✓			✓		Online			Yes	Prior	2 years	Yes
MO	SAA	✓	✓	✓	✓			✓		Online		DNS		Prior	2 years	
MT	SAA	✓			✓			✓		Online				Prior	1 year	
NE	DoE/SAA	✓			✓	✓	✓			Online		Yes		3 years	DNS	
NV	SAA	✓	✓	✓	✓					Online				Prior	DNS	
NH	SAA	✓	✓	✓	✓		✓		✓	In-person		Yes		1 year	3 years	
NJ	DoE	✓	✓	✓	✓		✓			Online				3 months	1 year	
NM	DoE/SAA	✓	✓	✓	✓					Online	DNS	DNS	Yes	DNS	DNS	
NY	DoE		✓	✓	✓			✓	✓	Both			Yes	Prior	2 years	Yes
NC	DoE/SD	✓	✓	✓	✓				✓	Online				Prior	2 years	
ND	SAA	✓	✓	✓	✓					Online				DNS	2 years	
OH	DoE/SAA	✓	✓	✓	✓	✓		✓		Online			Yes	Prior	1 year	
OK	DoE/SAA	✓	✓	✓	✓	✓	✓		✓	Online			Yes	Prior	1 year	
OR	SAA	✓	✓	✓	✓		✓			Online				Prior	1 year	

(continued)

Table 1 (continued)

State	Est./Gov.	Required trainings								Delivery	Asst. Coach	Vol. Coach	MS Coach	Time	Health Req.	Ince.
		FoC	FA	CPR	CT	SCA	HIA	SR	SK							
PA	SD	✓	✓	✓	✓	✓				Both			Yes	2 years	1 year	
RI	DoE/SAA	✓	✓	✓	✓	✓		✓		Online				Prior	1 year	
SC	SAA	✓	✓	✓	✓	✓	✓			Online	Yes	Yes	Yes	Prior	2 years	Yes
SD	SAA	✓	✓	✓	✓	✓				Online				Prior	2 years	Yes
TN	SAA	✓	✓	✓	✓	✓				Online			Yes	Prior	3 years	
TX	DoE/SAA	✓	✓	✓	✓	✓		✓	✓	Both			Yes	1 month	2 years	Yes
UT	DoE/SAA	✓	✓	✓	✓			✓	✓	Online				Prior	1 year	
VT	Other	✓	✓	✓	✓	✓				Online				1 year	DNS	
VA	DoE/SAA	✓	✓	✓	✓	✓	✓			Online				2 years	2 years	
WA	DoE/SAA	✓	✓	✓	✓	✓		✓		Online			Yes	3 years	1 year	
WV	SAA		✓	✓	✓	✓	✓	✓		In-person			Yes	Prior	1 year	
WI	SAA	✓	✓	✓	✓	✓		✓		Online		Yes	Yes	1 year	2 years	
WY	Other		✓	✓	✓				✓	Both		DNS		Prior	DNS	Yes

Note. Est./Gov. = establishment/governance of training requirements; SAA = State Activities Association; DoE = State Department of Education; SD = school district; FoC = NFHS Fundamentals of Coaching; FA = First Aid training; CPR = Cardiopulmonary Resuscitation training; CT = concussion training; SCA = Sudden Cardiac Arrest training; HIA = Heat Illness/Acclimation training; SR = sport rules training; SK = sport knowledge training; Asst. coach = assistant coach; Vol. coach = volunteer coach; MS coach = middle school coach; Time = duration to complete coach licensure; Health Req. = time to renew trainings in health-related aspects; Ince. = incentives for completion of coach licensure; Yes = indicates differences in state-specific training required for coaching role, a coaching licensure exists for middle school coaches, and that incentives exist for the completion of coach licensure; DNS = does not specify information.

Table 2 Synthesis of Training Requirements and Related Contextual Factors

Training requirements and contextual factors	<i>n</i>	% of states/DC
Governance and establishment of licensure		
State Activities Association	24	47
Department of Education	4	8
Multiple governing bodies	18	35
Other governing body	5	10
Adjustments to licensure process		
Adjustments/restrictions present	33	65
Adjustments/restrictions not present	18	35
Training requirements		
Health-related aspects		
First Aid	47	92
Cardiopulmonary Resuscitation	47	92
Concussion training	51	100
Sudden Cardiac Arrest	29	57
Heat Illness/Acclimatization	17	33
Pedagogy-related aspects of training		
Fundamentals of Coaching	39	76
Alternative course	9	18
None/school district	3	6
Additional trainings		
Sport rules	28	55
Sport knowledge	14	29
Additional trainings	6	12
Legislative		
Background check/fingerprinting	26	51
Child abuse recognition	8	16
Sportspersonship/character education	4	8
Mode of delivery for trainings		
Online	33	65
In-person	6	12
Both online and in-person/school district	12	24
Training requirements based on coaching role		
High school assistant coach	43	84
High school volunteer coach	35	68
Middle school coach	19	37
Logistics of training requirements		
Timeframe for completion		
Prior to coaching start date	32	63
Additional time provided	15	30
Did not specify/school district	4	8
Renewal procedures		
Health-related aspects	39	76
Pedagogy-related aspects	20	39
Did not specify/school district	11	22
Incentives		
Incentives provided	9	18
Did not specify/incentives not provided	42	82

complete the health and safety-related trainings. As it relates to completion time for coaches, approximately two thirds ($n = 32$, 63%) of states require coaches to complete their training requirements before starting their coaching role and emphasize the renewal of training on health-related aspects yet rarely provide incentives for completion. Findings synthesize the current U.S. policy landscape regarding coach training with more details on coaching licensure processes distilled in our curriculum and cost analysis.

Curriculum and Cost Analysis of Coach Education in Ohio

To obtain a 3-, 4-, or 5-year coaching license in Ohio, coaches were required to complete the following trainings in their first year through online or in-person vendors: (a) NFHS FoC (online only), (b) FA, (c) CPR/Automated External Defibrillator, (d) Concussion training, and (e) Sudden Cardiac Arrest (SCA). Table 3 overviews the time, costs, and renewal processes for Ohio coaches over a 6-year period. Our analysis revealed that first-year Ohio coaches engage in 13–17 hr of training to obtain a license. In subsequent years, coaches complete anywhere from 30 min to 7 hr of training annually to comply with state laws. The variation in time commitment is associated with coach licensure type. For instance, coaches in their second year regardless of the coaching licensure type must complete 30–45 min, whereas by the end of Year 4, coaches with a 3-year coaching license would have completed an additional 2 hr of trainings as compared with those with the other coaching licenses. By the end of 6 years, coaches spend 10–17 hr completing trainings

to maintain their coaching license that supplement the 13–17 hr of training required in their first year. In terms of costs, coaches applying for a 3-year license spend \$248 in their first year and \$183–\$273 on annual training or renewal costs to stay compliant with Ohio laws for 6 years. Coaches holding a 4-year license spend approximately \$263 to obtain a license and \$138–\$238 on annual training or renewal costs. Coaches holding a 5-year license spend \$278 to obtain a license in the first year and spend \$213–\$303 on annual training or renewal costs over a 6-year period. Because of the policy structure in Ohio, yearly costs and training times varied by licensure level (3-, 4-, or 5-year licenses). For example, in Ohio, the SCA training is a free training required annually for all coaches, whereas CPR and FA trainings have costs and are required every 2 years. Further, a coach with a 3-year license would need to reapply for a new license sooner and pay associated costs to the DoE before a coach with a 5-year license.

Table 4 summarizes findings from our curriculum and cost analysis of Ohio's five required coach trainings. Training content focused on five key themes, including (a) physical health and safety; (b) social-emotional learning (SEL) and PYD; (c) coaching philosophy, roles, and responsibilities; (d) sport rules and regulations; and (e) general training and performance knowledge. Within these five themes, a total of 52 curricular content areas are summarized. We found most of the content embedded in the trainings focused on physical health and safety ($n = 28$, 54%), with a majority housed in the FA training. Trainings also housed content focused on SEL and PYD ($n = 10$, 19%). We found the FoC training housed all the SEL and PYD content, which aligns with the pedagogical nature of the training. Trainings also housed curricular

Table 3 Mapping of Cost, Time, and Renewal Process Across 6 Years

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Req. trainings all licenses						
NFHS FoC	✓					
First Aid	✓		✓		✓	
CPR/AED	✓		✓		✓	
Concussion training	✓			✓		
SCA	✓	✓	✓	✓	✓	✓
Three-year license (\$45)						
Application	✓			✓		
BCI/FBI	✓					✓
Total annual cost	\$248	\$0	\$45–\$90	\$45	\$45–\$90	\$48
Annual time to complete	13–17 hr	30–45 min	3.5–5.25 hr	1.75–3.75 hr	3.5–5.25 hr	1–1.75 hr
Four-year license (\$60)						
Application	✓				✓	
BCI/FBI	✓					✓
Total annual cost	\$263	\$0	\$45–\$90	\$0	\$45–\$150	\$48
Annual time to complete	13–17 hr	30–45 min	3.5–5.25 hr	1.25–1.75 hr	4–7.25 hr	1–1.75 hr
Five-year license (\$75)						
Application	✓					✓
BCI/FBI	✓					✓
Total annual cost	\$278	\$0	\$45–\$90	\$0	\$45–\$90	\$123
Annual time to complete	13–17 hr	30–45 min	3.5–5.25 hr	1.25–1.75 hr	3.5–5.25 hr	1.5–3.75 hr

Note. NFHS FoC = National Federation of State High School Associations Fundamentals of Coaching; CPR/AED = Cardiopulmonary Resuscitation training/Automated External Defibrillator; SCA = Sudden Cardiac Arrest training; Application = licensure application; BCI/FBI = Bureau of Criminal Investigation/Federal Bureau of Investigation.

Table 4 Curricular Categories and Content Topics

Curricular category	Content topics	Training housing curricular topic
Physical health and safety (54%)	Heat-related illnesses and cold-related emergencies	FoC, FA, SCA
	Sport safety to minimize risk and prevent injuries	FoC, FA, SCA
	Emergency action plan	FoC, FA, SCA
	Concussion	FoC, FA, CT
	General illness	FoC, FA
	Hydration planning	FoC, FA
	Nutrition planning	FoC, FA
	RICE method of treatment	FoC, FA
	CPR and AED	FA, CPR
	Allergic reactions and anaphylaxis	FA
	Blood-borne pathogens and infectious diseases	FA
	Breathing emergencies including asthma and choking	FA
	Burns and special situations	FA
	Controlling external bleeding	FA
	Diabetes, hypoglycemia, and hyperglycemia	FA
	How to do several types of splints	FA
	Infectious mononucleosis (mono)	FA
	Open and closed wounds	FA
	Recognizing sudden illness	FA
	Seizures	FA
	Shock	FA
	Sickle cell trait	FA
	Skin conditions and infections	FA
	Spinal injuries	FA
	Strokes	FA
	The recovery position and moving the athlete or adult	FA
	Types of injuries—including head, neck, and back injuries	FA
	Sudden Cardiac Arrest	SCA
Social–emotional learning and positive youth development (19%)	Communication: conversations, listening, and feedback	FoC
	Goal setting and implementation (SMART, etc.)	FoC
	Managerial, technical, tactical, and interpersonal skills	FoC
	Mental health problems—anxiety disorders, etc.	FoC
	Types of learning—definitions, stages, and styles	FoC
	Confidence and concentration	FoC
	Growth and development of adolescents	FoC
	How can coaches use teachable moments?	FoC
	Outcome, performance, and process goals	FoC
Coaching philosophy, roles, and responsibilities (13%)	Task-involved vs. ego-involved students	FoC
	Year-round roles of a coach (management, role model, legal, EMS, etc.)	FoC, FA, SCA, CPR, CT
	Managerial, technical, tactical, and interpersonal skills	FoC
	Expected outcomes of sport participation	FoC
	History, mission, and purpose of athletics	FoC
	Student-centered coaching philosophy	FoC
	The place of winning	FoC
	Five-step tactical interviewing process and evaluation plan	FoC
	Performance-enhancing supplements	FoC, FA
Sport rules and regulations (8%)	Lightning	FoC, FA
	Eligibility rules	FoC
	OHSAA bylaws and general sport regulations	FoC

(continued)

Table 4 (continued)

Curricular category	Content topics	Training housing curricular topic
General training and performance knowledge (6%)	Physical conditioning for athletes	FoC, FA, CT
	Training principles (specificity, reversibility, periodization, and individualization) and planning a practice	FoC
	Ideal performance state	FoC

Note. FoC = NFHS Fundamentals of Coaching; NFHS = National Federation of State High School Associations; FA = First Aid training; CPR = Cardiopulmonary Resuscitation training; CT = Concussion training; EMS = Emergency Medical Services; SCA = Sudden Cardiac Arrest training; OHSAA = Ohio High School Athletic Association; RICE = rest, ice, compression, and elevation; AED = automated external defibrillator.

content that focused on the history and meaning of athletics, as well as general coaching roles and responsibilities ($n = 7$, 13%); sport rules and regulations such as eligibility and state bylaws ($n = 4$, 8%); and general training and performance knowledge including physical conditioning and performance, as well as general techniques to plan a practice ($n = 3$, 6%). In total, we found that 25% ($n = 13$) of the content in the five state-mandated trainings was redundant, as evidenced by the inclusion of a topic in two or more of the trainings.

Discussion

When exploring the governance of training requirements across the 50 states and DC, findings demonstrate all states require some type of training for head coaches at the high school level. These requirements are established mainly by the State Activities Association or State Department of Education, with the State Activities Association most frequently governing the specific requirements. Our findings point to how State Department of Education oversight could be an important factor because of their governance and accountability structure, power and oversight of local schools, greater budgets, and capacity to oversee and govern high numbers of individuals. A centralized governing body in the United States could strengthen coach education by ensuring trainings that include evidence-based and high-quality content. This change could allow for streamlined coach licensure processes that mitigate barriers to entry while also formalizing a coach ethics and accountability system. Currently, the relationship between who establishes and governs the coach licensure process is interesting and complex for most states, and further research examining the quality, ethics, and accountability structures embedded within individual states is needed.

Another aspect that is lacking in the literature and warrants increased attention is who establishes and governs middle school sports and their coaches. Our results demonstrate significance variance to the responsibility and policies around middle school coaches. In some states, this process is governed at the school district level or with individual schools, whereas others may use a local or regional athletic conference. The result is often a lack of statewide oversight with limited established requirements or a licensure process for these coaches. Most states require assistant coaches at the high school level to complete the same coach licensure process as head coaches. We support this requirement as assistant coaches have as much engagement with student-athletes as head coaches. This also holds true for volunteer coaches, who often have the same requirements as well, which we also support. This should be the case for middle school coaches as well. The middle school years are a critical window of development and vulnerability for student-athletes as it is during this time frame that many athletes drop out of sport (O'Sullivan, 2015). In addition,

middle school athletes have unique developmental needs as they are often in the middle of puberty (Goodway et al., 2020). As a result, we support the notion that specific trainings should be required for all school-based coaches.

As noted earlier, there is no centralized governing body in the United States that oversees youth sport and quality coach training (Fawver et al., 2020; Van Mullem & Mathias, 2021), yet oversight on the training of teachers does exist in education. Teacher training is seen as a rigorous and an extensive process, with teachers especially competent in areas related to developmental psychology and instruction. Thus, frequently school-based coaches who are licensed teachers are seen as advantageous due to their education, preparation, and role within school settings (Camiré, 2014; Trudel et al., 2010). This outlook is often shared by those that mandate the policies since licensed teachers in approximately two thirds of states can receive adjustments or bypasses to the coach licensure process. However, coaching is sufficiently different than teaching and requires its own quality, evidence-based training. We believe that all school-based coaches should be required to complete the coach licensure regardless of teacher licensure status. Coach trainings add valuable contextualized knowledge and skills in areas such as development of social and motor skills, sport pedagogy, and communication in the coach-athlete relationship that will improve their coaching practice, leading to better sport experiences for student-athletes (Trudel et al., 2010; Vargas-Tonsing, 2007).

The licensure process for teachers covers a wide range of topics that prepare teachers for all aspects of teaching. Yet, for school-based coaches, a prioritization of physical health and safety-related trainings exists. These findings are not surprising. A recent study reported that 33% of youth seek medical attention for sport-related injuries annually (Emery & Pasanen, 2019). The heavy emphasis on physical health and safety trainings in coach licensure process demonstrates an effort to safeguard sport from physical injuries. Most states have provided adequate oversight for this area with almost all requiring trainings on FA, CPR, and Concussion training with more increasingly adding on SCA and Heat Illness/Acclimatization trainings to the coach licensure process. Ongoing professional development was shown to be important as well, where often mandates for health-related trainings varied from annually to every 3 years. Our in-depth analysis of one state reinforced this notion and showed that most ongoing training requirements focused on physical health and safety and required FA, CPR, Concussion training, and SCA trainings. Through the numerous health and safety trainings in coach licensure process, we agree that State Activities Associations and Departments of Education have made tremendous strides to increase most school-based coaches' knowledge and awareness on student-athletes' physical health and safety.

In addition to physical health and safety-related trainings, almost all states require a pedagogy-related training. Most states use NFHS' FoC, which usually is completed in one sitting. Beyond

physical health and safety-related and pedagogy-related topics, some states require additional education such as trainings on rules and knowledge of the sport, sportsmanship/character, or drug/steroid prevention. These trainings are often completed in the first year and are not required to be renewed. Therefore, coaches do not engage in subsequent education and continuous professional development on nonphysical health and safety-related topics. This was the case for our selected state as well for our in-depth analysis. Previous research has shown that the one-and-done approach is not enough and supports the need for ongoing, continuous professional development (Cushion et al., 2003; Vargas-Tonsing, 2007). We should have ongoing coach education that is theoretically aligned, content-driven, engaging, applicable, and sustained (Driska, 2018; Trudel et al., 2010) in all areas and do not support the current one-and-done approach to training school-based coaches.

It is of significant concern in the current environment that only half of the states require a background check and fingerprinting, with even less requiring training on child abuse and neglect. There has been an increased awareness of maltreatment such as sexual and psychological abuse in youth sport, by in large through the highly publicized cases of Penn State football, USA Gymnastics, and more recently Sport Canada. Previous research has demonstrated that risk factors experienced by athletes can make them vulnerable to sexual and psychological abuse regardless of age, gender, and/or competition level (Kerr et al., 2014, 2019). As Kerr et al. (2019) suggest, we must take a system-wide approach to this issue and look beyond solely the aberrant behavior of the perpetrator. Background checks, fingerprinting, and trainings on abuse prevention are required for teachers, and all other school personnel yet much variability exists on these requirements for school-based coaches on a state level. This uncertainty may lead to a potential lapse in responsibility to ensure that all individuals have met these requirements. We believe that every state should mandate and govern background checks, fingerprinting, and additional training for all coaches to better limit the risk factors associated with athlete maltreatment and abuse in youth sport.

The mapping of the licensure process across all 50 states and DC shows barriers and issues with coach training policies. Most states require training to be completed entirely before their coaching start date, while only a few states allow for coaches to complete training after, providing 2 or less years. Our findings also demonstrate that approximately only one fifth of states provide trainings to be completed in-person or online. Over the last 10 years, online coach trainings provided by sport governing bodies and sport-specific coaching associations have become more popular. As more states transition to online formats and outsource trainings, we must acknowledge the complexity of learning and how the design and delivery of coach education impacts how coaches learn (Stodter & Cushion, 2017). Moreover, extensive variability exists in the cost of required trainings. State mapping showed that FoC ranged from \$35 to \$140 and FA and CPR trainings from \$35 to \$90. The cost of these trainings raises issues of social injustice, where individuals from more low-income communities may not have the financial capacity to afford a coaching licensure.

Our curriculum and cost analysis shed light on state-specific factors influencing school-based coaches in the United States. First, our analysis highlighted how Ohio made renewal processes less cumbersome for coach educators over a 6-year coaching career by allowing them to obtain a 5-year license. In contrast, community-based coaches in Ohio must reapply and document compliance with state laws more frequently. Community-based coaches in Ohio also were required to engage in the same trainings as coach-

educators and were not required to engage in additional trainings based on their roles. One takeaway from this finding is many states may not train coach educators and community-based coaches differently but rather monitor their training compliance at different intervals. We argue these policies may help ensure community-based coaches are prepared to respond to safety and health issues. However, findings also are concerning given community-based coaches are likely less familiar with the goals of education-based athletics, effective pedagogical practices, and educational ethics (i.e., mandated reporting) that is commonplace to certified educators.

We also identified state-specific factors that may influence entry into coaching and coach retention. Our analysis indicated Ohio coaches can spend up to 34 hr and \$550 completing required trainings across a 6-year career, with 13–17 of these hours (\$263) required during the first year, which is a considerable financial and time investment. We propose that states should look to subsidize these costs in some capacity to ease the financial burden. Additionally, 25% of training content was redundant, and SEL and PYD concepts were only taught once and not reinforced in trainings throughout coaches' careers. Our findings point toward opportunities to improve coach education by ensuring curricular content is not redundant unless intentionally reinforcing specific learning objectives. Further, we argue states need to set standards that ensure coaches access to evidence-based SEL and PYD content annually to achieve the goals of education-based athletes. Finally, states need to examine whether coaches are spending an extraneous amount of time checking training boxes rather than learning transferable skills and competencies, and whether costs are deterring coaches from working in schools. We encourage scholars to continue to conduct similar analyses of state-specific policies to improve licensure processes, while also recognizing the potential benefits of national coach education standards to ensure all youth have access to quality coaches.

To summarize, our calls for the evolution of U.S. coach preparation, development, and training are similar to others (Fawver et al., 2020; Van Mullem & Mathias, 2021). There are apparent issues in the coach licensure process that may present significant barriers to entry for new coaches and/or coaches in low socioeconomic areas. Furthermore, training for school-based coaches often emphasizes health and safety yet lacks application activities and content that align with the reality of coaching (Jones, 2006; Trudel et al., 2010). Trainings on topics outside of physical health and safety are often only required once and do not build upon coaching competencies. There is a lack of consistency in coaches' ongoing professional development outside of the physical health and safety recertifications. Some trainings have become redundant, where content has become stale with the same topics being covered over and over each year. We highlight recommendations to the coach licensure process and future required trainings for school-based coaches below.

Limitations and Future Directions

There are some limitations to note. We examined only public documents and public information on the State Activities Association or DoE websites to map the coach licensure process. Although we verified these public documents with the individuals responsible for overseeing the coach licensure process in each state and the DC, we were unable at times to identify all state requirements resulting in the tag "does not specify." Also, our mapping of training requirements in the coach licensure process is cross-

sectional and represents one snapshot in time. Since our research team collected these data, the requirements may have changed in some states. Our categorizations also are broad and may fail to capture specificities such as nuances in online and in-person training options by state. Additionally, our curriculum and cost analysis only focused on one state, representing one snapshot of how state-specific policies and processes are enacted. No doubt other states have different contextual and policy constraints that guide training requirements for school-based coaches and those should be explored and better understood.

Next, we recommend the next steps for state governing bodies of school sports and researchers to better improve the coach licensure process for school-based coaches. Currently, policies around the coach licensure process set forth by state governing bodies emphasize physical health and safety; however, the lack of mandates and government of background checks, fingerprinting, and trainings on child abuse and neglect is of significant concern. Every state must provide oversight and prioritize the limitation of risk factors associated with athlete maltreatment and abuse in school sports. In addition, there is value in the State Activities Associations to look to extend their oversight to middle school sports and their coaches if they have not already done so. The middle school years are a crucial and complex developmental window, and, therefore, middle school coaches need to be trained on youth's unique developmental characteristics and how best to work with these students. State Activities Associations need to go beyond the current one-and-done approach to require and provide support for ongoing, continuous coach education in all content areas. Since effective coaching practices require valuable contextualized knowledge and skills, every school-based coach should complete all the trainings associated with the coaching licensure process. Limiting barriers associated with the coach licensure process such as cost, time commitments, and content redundancy of trainings with help from the State Department of Education could perhaps assist with the recruitment of coaches and perhaps reengage licensed teachers who have a background in education working with students.

In addition, researchers should look to explore which governing body oversees the coaching licensure process in each state. Whether the State Department of Education, State Activities Association, and/or another governing body, an increased understanding of this relationship between who establishes and governs the coach licensure process in each state is crucial and could allow for a greater awareness of the decisions being made regarding coaching licensures. With an increased awareness of youths' mental health, a greater emphasis has been placed on social-emotional health and PYD (Vella, 2019). *LiFEsports* at The Ohio State University as part of The State of Play Central Ohio led by The Aspen Institute and The Columbus Foundation found that only 29% of Ohio coaches felt confident in their ability to address athletes' mental health concerns, while fewer coaches (24%) felt confident in identifying off the field stressors among athletes (Anderson-Butcher et al., 2020, 2021; The Aspen Institute, 2021). To address this need, *LiFEsports* in partnership with the Ohio High School Athletic Association has designed and administered "Coach Beyond," a series of eight coach education sessions centered on positive athlete development topics such as trainings on improving mental strategies for athletic performance and supporting student-athlete mental health. It would be worthwhile for future research to examine the relationship between mental health-related trainings for school-based coaches on student-athlete outcomes. Last, our analysis of the processes in Ohio shed light to the

intricacies of how state policies are enacted on the ground level. Our results demonstrated gaps and redundancies in curricular content, time, and financial costs. Replication of this analysis with other state governing bodies that oversee school sports would be interesting.

School sport is a part of U.S. culture, and school-based coaches are critical to supporting positive youth sport experiences. Research has demonstrated the importance of training toward increasing coaching effectiveness, yet most coaches lack the appropriate training for school sport. The coaching licensure policies and processes vary greatly, and most trainings emphasize physical health and safety. Youth sport leaders can utilize our findings to inform a national youth sport training agenda that aims to improve the quality of coach education and training. Increases in support with decreases in training redundancy and costs lead to higher coach retention and less onboarding costs. National leaders can leverage our results to address coaching shortages across the country by aligning the coach licensure process across states, revamping, and strengthening curricular content, and reducing barriers to entry. Together, these collective efforts can improve experiences for student-athletes participating in sport and support schools in hiring highly qualified and well-prepared coaches.

Author Biographies

Mr. Obidiah Atkinson is a Doctoral Candidate, Department of Human Sciences, College of Education and Human Ecology, Columbus, OH, United States. Mr. Obi Atkinson's research interests focus on the variables and social agents that influence sport performance and participation for youth. This includes the examination of youth's sport trajectories and the identification of contextual factors, interactions, and personal characteristics that create positive conditions for youth sport performance and participation.

Dr. Samantha Bates is Assistant Professor, College of Social Work, The Ohio State University, Columbus, OH, United States. Dr. Samantha Bates' research interests focus on equity-minded positive youth development and seeks to draw attention to patterns of inequity in youth outcomes. This includes exploring how to leverage sport as a context for social-emotional learning, identifying evidence-based and culturally responsive mental health interventions, and examining how adults in youth-serving organizations become race-conscious and aware of the social and historical context of exclusionary practices in education.

Dr. Dawn Anderson-Butcher is a Professor, College of Social Work, The Ohio State University, Columbus, OH, United States. Dr. Anderson-Butcher's research interests focus on positive youth development in various social settings, such as schools, afterschool programs, and youth sport. Her secondary research interests include exploring how school-family-community partnerships maximize school- and community-based resources for learning and healthy development, especially in communities serving vulnerable children and families.

Ms. Sydney Mack is a Doctoral Student, College of Social Work, The Ohio State University, Columbus, OH, United States. Ms. Sydney Mack's research interests focus on interventions and strategies to promote overall health, well-being, and development of athletes. This includes the identifying evidence-based and culturally responsive mental health interventions and examining how coaches and other athletic staff members can utilize specific strategies to create positive sport environments for athletes at all levels of competition.

Dr. Jacqueline Goodway is a Professor, Department of Human Sciences, College of Education and Human Ecology, Columbus, OH, United States. Dr. Jackie Goodway's research interests focus on issues

associated with the promotion of motor skill development and physical activity in young children who are at-risk and/or, are economically disadvantaged. To date, her work has shown that young children who are disadvantaged demonstrate substantial delays in fundamental motor skill development and the communities in which they live have significant barriers to timely motor development and physical activity.

References

- Anderson-Butcher, D. (2019). Youth sport as a vehicle for social development. *Kinesiology Review*, 8(3), 180–187. <https://doi.org/10.1123/kr.2019-0029>
- Anderson-Butcher, D., Amorose, A., Bates, S., Newman, T., Okamoto, K., & Volek, A. (2019). Exploring the influence of program staff and parental support on changes in physical health outcomes during a sport-based positive youth development summer camp. *Journal of Coaching Behavior*, 42(4), 394–414.
- Anderson-Butcher, D., Wade-Mdivanian, R., Atkinson, O., Sheadler, T. R., & Davis, J. (2020). Youth sport coaches in Central Ohio: Current trends, behaviors, and needs. *LiFEsports*, The Ohio State University. <https://lifesports.osu.edu/cdn/Aspen-Report-FINAL.pdf>
- Anderson-Butcher, D., Wade-Mdivanian, R., Atkinson, O., Sheadler, T. R., & Davis, J. (2021). Findings from the LiFEsports coaching study: A report to the Ohio High School Athletic Association on Central Ohio coach responses. *LiFEsports*, The Ohio State University. <https://lifesports.osu.edu/what-we-do/research/current-research/>
- Baghurst, T., & Benham, R. (2020). Quality sport coaching in action: The application of the national standards for sport coaches in the inter-scholastic sport context. *Strategies*, 33(6), 21–27. <https://doi.org/10.1080/08924562.2020.1812340>
- Balyi, I., Way, R., & Higgs, C. (2013). *Long-term athlete development*. Human Kinetics.
- Bean, C., & Forneris, T. (2017). Is life skill development a by-product of sport participation? Perceptions of youth sport coaches. *Journal of Applied Sport Psychology*, 29(2), 234–250. <https://doi.org/10.1080/10413200.2016.1231723>
- Beni, S., Fletcher, T., & Ní Chróinín, D. (2017). Meaningful experiences in physical education and youth sport: A review of the literature. *Quest*, 69(3), 291–312. <https://doi.org/10.1080/00336297.2016.1224192>
- Burgeson, C.R., Weschler, H., Brenner, N.D., Young, J.C., & Spain, C.G. (2001). Physical education and activity: Results from the school health policies and programs study 2000. *Journal of School Health*, 71(7), 279–293. <https://doi.org/10.1111/j.1746-1561.2001.tb03505.x>
- Camiré, M. (2014). Youth development in North American high school sport: Review and recommendations. *Quest*, 66(4), 495–511. <https://doi.org/10.1080/00336297.2014.952448>
- Coakley, J.J. (2016). *Sports and society: Issues and controversies* (12th ed.). McGraw-Hill.
- Collins, K., & Medbery, R. (2008). Go to the source: High school athletic directors and coaching education. *Journal of Coaching Education*, 1(2), 1–18. <https://doi.org/10.1123/jce.1.2.1>
- Côté, J., & Fraser-Thomas, J.L. (2007). Youth involvement in sport. In P.R.E. Crocker (Ed.), *Introduction to sport psychology: A Canadian perspective* (pp. 266–294). Pearson Prentice Hall.
- Cushion, C., Armour, K., & Jones, R. (2003). Coach education and continuing professional development: Experience and learning to coach. *Quest*, 55(3), 215–230. <https://doi.org/10.1080/00336297.2003.10491800>
- Driska, A.P. (2018). A formative, utilization-focused evaluation of USA swimming's nationwide online coach education program. *International Sport Coaching Journal*, 5(3), 261–272. <https://doi.org/10.1123/iscj.2017-0096>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Emery, C.A., & Pasanen, K. (2019). Current trends in sport injury prevention. *Best Practice Research Clinical Rheumatology*, 33(1), 3–15. <https://doi.org/10.1016/j.berh.2019.02.009>
- Fawver, B., Beatty, G.F., Roman, J.T., & Kurtz, K. (2020). The status of youth coach training in the United States: Existing programs and room for improvement. *International Sport Coaching Journal*, 7(2), 239–251. <https://doi.org/10.1123/iscj.2019-0017>
- Gano-Overway, L.A., & Dieffenbach, K. (2019). Current practices in United States higher education coach education programs. *International Sport Coaching Journal*, 6(2), 226. <https://doi.org/10.1123/iscj.2019-0013>
- Gilbert, W., & Trudel, P. (2004). Role of the coach: How model youth team sport coaches frame their roles. *The Sport Psychologist*, 18(1), 21–43. <https://doi.org/10.1123/tsp.18.1.21>
- Goodway, J.D., Ozmun, J.C., & Gallahue, D.L. (2020). *Understanding motor development: Infants, children, adolescents, adults* (8th ed.). McGraw-Hill.
- Gould, D., Collins, K., Lauer, L., & Chung, Y. (2007). Coaching life skills through football: A study of award-winning high school coaches. *Journal of Applied Sport Psychology*, 19(1), 16–37. <https://doi.org/10.1080/10413200601113786>
- Harvey, S., Atkinson, O., & Hyndman, B. (2020). Chapter 7: An investigation into sports coaches' Twitter use. *Journal of Teaching in Physical Education*, 39(4), 481–490. <https://doi.org/10.1123/jtpe.2019-0283>
- Hulteen, R.M., Smith, J.J., Morgan, P.J., Barnett, L.M., Hallal, P.C., Colyvas, K., & Lubans, D.R. (2017). Global participation in sport and leisure-time physical activities: A systematic review and meta-analysis. *Preventive Medicine*, 95, 14–25. <https://doi.org/10.1016/j.ypmed.2016.11.027>
- Jones, R.L. (2006). *The sports coach as educator: Reconceptualising sports coaching*. Routledge.
- Kerr, G., Battaglia, A., & Stirling, A. (2019). Maltreatment in youth sport: A systemic issue. *Kinesiology Review*, 8(3), 237–243. <https://doi.org/10.1123/kr.2019-0016>
- Kerr, G., Stirling, A., & MacPherson, E. (2014). A critical examination of child protection initiatives in sport contexts. *Social Sciences*, 3(4), 742–757. <https://doi.org/10.3390/socsci3040742>
- Martel, K. (2015). USA Hockey's American Development Model: Changing the coaching and player development program. *International Sport Coaching Journal*, 2(1), 39–49. <https://doi.org/10.1123/iscj.2015-0060>
- McCallister, S.G., Blinde, E.M., & Kolenbrander, B. (2000). Problematic aspects of the role of youth sport coach. *International Sports Journal*, 4(1), 9–26.
- Merkel, D.L. (2013). Youth sport: Positive and negative impact on young athletes. *Journal of Sports Medicine*, 4, 151–160.
- National Association for Sport and Physical Education. (2008). *National coaching report*. <https://www.nfhs.org/media/102https://www.shapeamerica.org/publications/resources/teachingtools/coachtoolbox/upload>
- National Federation of State High Schools Associations [NFHS]. (2019). *2018–19 High school athletics participation survey*. https://www.nfhs.org/media/1020412/2018-19_participation_survey.pdf
- Noble, L., & Corbin, C. (1978). Professional preparation certification for coaches. *Journal of Physical Education, Recreation, and Dance*, 49(2), 69–70. <https://doi.org/10.1080/00971170.1978.10617717>
- Noble, L., & Sigle, G. (1980). Minimum requirements for interscholastic coaches. *Journal of Physical Education, Recreation, and Dance*, 51(9), 32–33.
- O'Sullivan, J. (2015). *Why kids quit sports. Changing the game project*. <http://changingthegameproject.com/why-kids-quit-sports/>

- Pate, R.R., Trost, S.G., Levin, S., & Dowda, M. (2000). Sports participation and health-related behaviors among US youth. *Archives of Pediatrics & Adolescent Medicine*, 154(9), 904–911. <https://doi.org/10.1001/archpedi.154.9.904>
- Pierce, S., Erickson, K., & Dinu, R. (2018). Teacher-coaches' perceptions of life skills transfer from high school sport to the classroom. *Journal of Applied Sport Psychology*, 31(4), 451–473. <https://doi.org/10.1080/10413200.2018.1500402>
- Riley, A., Anderson-Butcher, D., Logan, J., Newman, T.J., & Davis, J. (2017). Staff practices and social skill outcomes in a sport-based youth program. *Journal of Applied Sport Psychology*, 29(1), 59–74. <https://doi.org/10.1080/10413200.2016.1179700>
- Sabock, R.J., & Chandler-Garvin, P.B. (1986). Coaching certification in the United States requirements. *Journal of Physical Education, Recreation, and Dance*, 57(6), 57–59. <https://doi.org/10.1080/07303084.1986.10606168>
- Spruit, A., Van Vugt, E., van der Put, C., van der Stouwe, T., & Stams, G.J. (2016). Sports participation and juvenile delinquency: A meta-analytic review. *Journal of Youth and Adolescence*, 45(4), 655–671. <https://doi.org/10.1007/s10964-015-0389-7>
- Stodter, A., & Cushion, C. (2017). What works in coach learning, how, and for whom? A grounded process of soccer coaches' professional learning. *Qualitative Research in Sport, Exercise and Health*, 9(3), 321–338. <https://doi.org/10.1080/2159676X.2017.1283358>
- Stoszkowski, J., & Collins, D. (2016). Sources, topics, and use of knowledge by coaches. *Journal of Sports Sciences*, 34(9), 794–802. <https://doi.org/10.1080/02640414.2015.1072279>
- Strand, B., Lyman, K.J., David, S., Landin, K., Albrecht, J., & Deutsch, J. (2019). High school coaches' knowledge of emergency care. *Journal of Research*, 10(2), 33–39.
- The Aspen Institute. (2021). *State of play Central Ohio: Analysis and recommendations*. <https://www.aspenprojectplay.org/communities/central-ohio>
- Trudel, P., Gilbert, W., & Werthner, P. (2010). Coach education effectiveness. In J. Lyle & C. Cushion (Eds.), *Sports coaching: Professionalization and practice* (pp. 135–152). Elsevier.
- Van Mullem, P., & Mathias, K. (2021). Coach development: Practical recommendations for interscholastic sport. *International Sport Coaching Journal*, 8(1), 101–112. <https://doi.org/10.1123/iscj.2020-0007>
- Vargas-Tonsing, T. (2007). Coaches' preferences for continuing coaching education. *International Journal of Sports Science and Coaching*, 2(1), 25–35. <https://doi.org/10.1260/174795407780367186>
- Vella, S.A. (2019). Mental health and organized youth sport. *Kinesiology Review*, 8(3), 229–236. <https://doi.org/10.1123/kr.2019-0025>
- Wiggins, D.K. (2013). A worthwhile effort? History of organized youth sport in the United States. *Kinesiology Review*, 2(1), 65–75. <https://doi.org/10.1123/krj.2.1.65>