

Active Schools

A Guiding Framework for Active Schools

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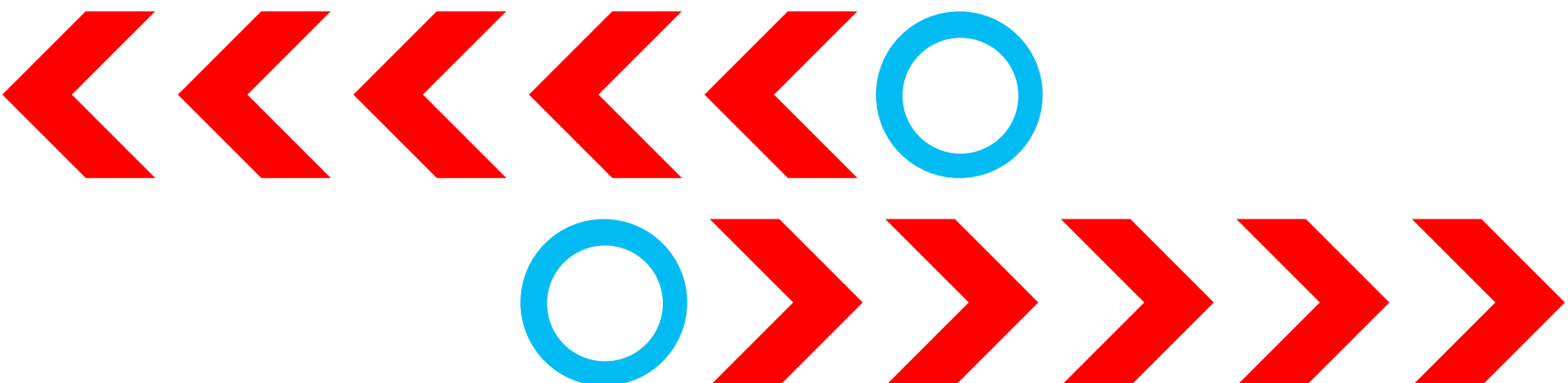
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The Value of Movement in Schools

A Win-Win for Students and Educators

At Active Schools, we know that physical activity is an essential component of healthy living and we want all children to reap the benefits. We believe that PK-12 schools are an ideal (and necessary) setting for children to participate in regular physical activity because schools are equipped with resources to encourage and support movement and have almost daily access to children. As with education more broadly, **we believe that physical activity is a right, not a privilege.** ALL children deserve to learn, grow, and thrive in Active Schools.

The Benefits of Physical Activity

Research has clearly documented the extensive benefits of physical activity for individuals of all ages (Piercy & Troiano, 2018). The reality is, if physical activity were a pill, it would be one of the most effective medicines ever created (Pederson & Saltin, 2015). Unfortunately, less than one quarter of youth ages 6 to 17 participate in the nationally recommended 60 minutes of physical activity per day (CDC, 2020; US Department of Health and Human Service, 2018). **We need to do more to get kids active.**

For school-aged youth, the health benefits of physical activity are vast and include improved blood lipid profiles, reduced blood pressure, reduced risk of overweight/obesity, and improved bone mineral density. Even modest increases in physical activity can result in meaningful improvements in health (Janssen & LeBlanc, 2010). There is also growing evidence that physical activity can improve cognitive functioning and reduce depression (Biddle et al., 2019; Donnelly et al., 2016; Lees & Hopkins, 2013). If schools are committed to the overall health and wellbeing of students, **physical activity is an essential ingredient in a healthy school environment.**

Furthermore, integrating physical activity into the school day can facilitate greater attention, on-task behavior, and academic performance (CDC, 2010; de Greeff 2018; Rasberry et al., 2011). These benefits are intricately connected to the mission and day-to-day functioning of schools. We know that both students and teachers benefit when students are ready and eager to learn. Getting children moving during the day is **an evidence-based best practice that schools should be using to promote positive academic outcomes.**



Schools: A Necessary Setting for Intervention

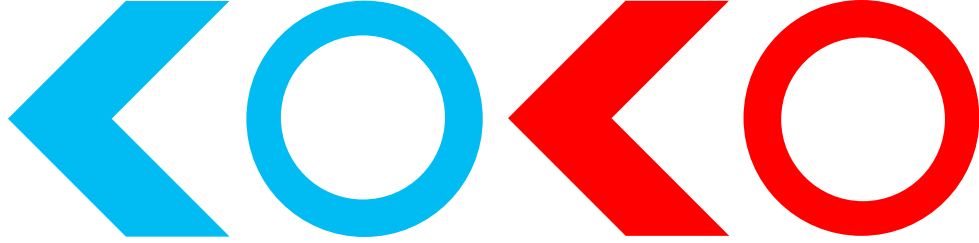


Whole School, Whole Community, Whole Child Model (ASCD & CDC; Lewallen, 2015)

According to the National Center for Education Statistics (NCES), approximately 49 million students attend PK-12 public schools in the United States and 5 million attend private schools. Schools are typically in session for 180 days per year with school days lasting six to seven hours per day (NCES, 2020). Children spend a substantial amount of time in school, making it the best environment for reaching all children.

Unfortunately, recent estimates suggest that 63% of time in schools is spent sedentary (Egan et al., 2019). Not only are students not participating in the moderate to vigorous intensities of physical activity that result in the greatest health benefits (US Department of Health and Human Services, 2018), but they are not even participating in light physical activity for nearly two-thirds of the school day. Considering the potential negative health outcomes of sedentarism (Barnett et al., 2018), these findings are concerning.

The Whole School, Whole Community, Whole Child (WSCC) model, developed by ASCD and the Centers for Disease Control and Prevention (CDC), recognizes the need for a coordinated approach to student wellness (Lewallen, 2015). The model includes 10 component areas that work together to promote a healthy, safe, engaging, supportive, and challenging learning environment for all students. As one might anticipate, physical education and physical activity are one of the 10 essential components of WSCC. **Schools that are committed to educating the whole child must also be committed to physical activity promotion.**



Physical Activity: A Right, Not A Privilege

The benefits of physical activity are clear.

Schools have a responsibility to ensure that every student has access to healthy amounts of physical activity on a daily basis.

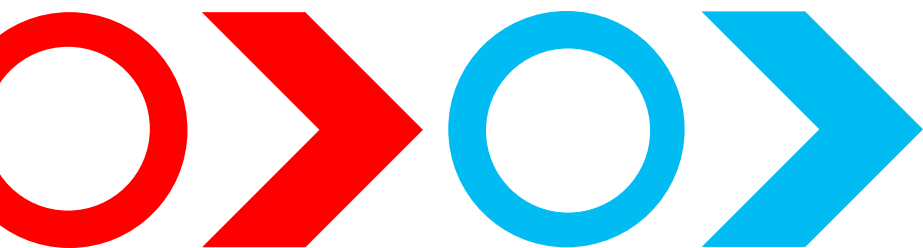
Physical activity is not a reward for students when they complete their work.

It is not a time-filler during a longer-than-expected transition time.

It is not a form of enrichment that some students receive when they've mastered other content areas.

Physical activity is an essential right for all students regardless of gender, ethnicity, ability, socioeconomic status, religion, sexual orientation, or any other personal characteristic.

It is a societal obligation that schools do everything in their power to provide equitable physical activity experiences for ALL students.



A Multicomponent Approach

Comprehensive School Physical Activity Programs (CSPAP)

It is important to recognize that youth physical activity behavior does not occur in a silo. Rather, it is influenced by a variety of factors internal and external to each child. If schools wish to cultivate an active school culture (defined further below), they must understand the many sources of influence on behavior and intervene accordingly.

Social Ecological Systems

A social ecological systems perspective acknowledges that individual health behaviors are influenced by intrapersonal, social, and environmental factors at different levels within a system or community (Bronfenbrenner, 1992; McLeroy et al., 1988). For example, a child's knowledge, skills, and dispositions related to physical activity will likely contribute to their decision to engage (or not) in physical activity. Likewise, social networks including relationships with peers, teachers, and family members will exert influence over the decisions children make about physical activity, with different individuals exerting different influences over progressive stages of development. Factors within an organization, such as a school, or even within the community surrounding a school, can impact a child's physical activity behaviors.

Imagine a school with state-of-the-art facilities and a schedule that intentionally integrates breaks for physical activity, situated within a local community that has a network of bike paths and parks. An environment like this would be conducive to physical activity, whereas a lack of school facilities and limited options for outdoor recreation would pose challenges for youth to be physically active. Other factors such as public policies and cultural norms and values must also be considered when thinking about what tends to promote or hinder physical activity behavior. There is an ongoing interplay between such factors that make understanding and promoting physical activity highly complex.

The CSPAP Framework

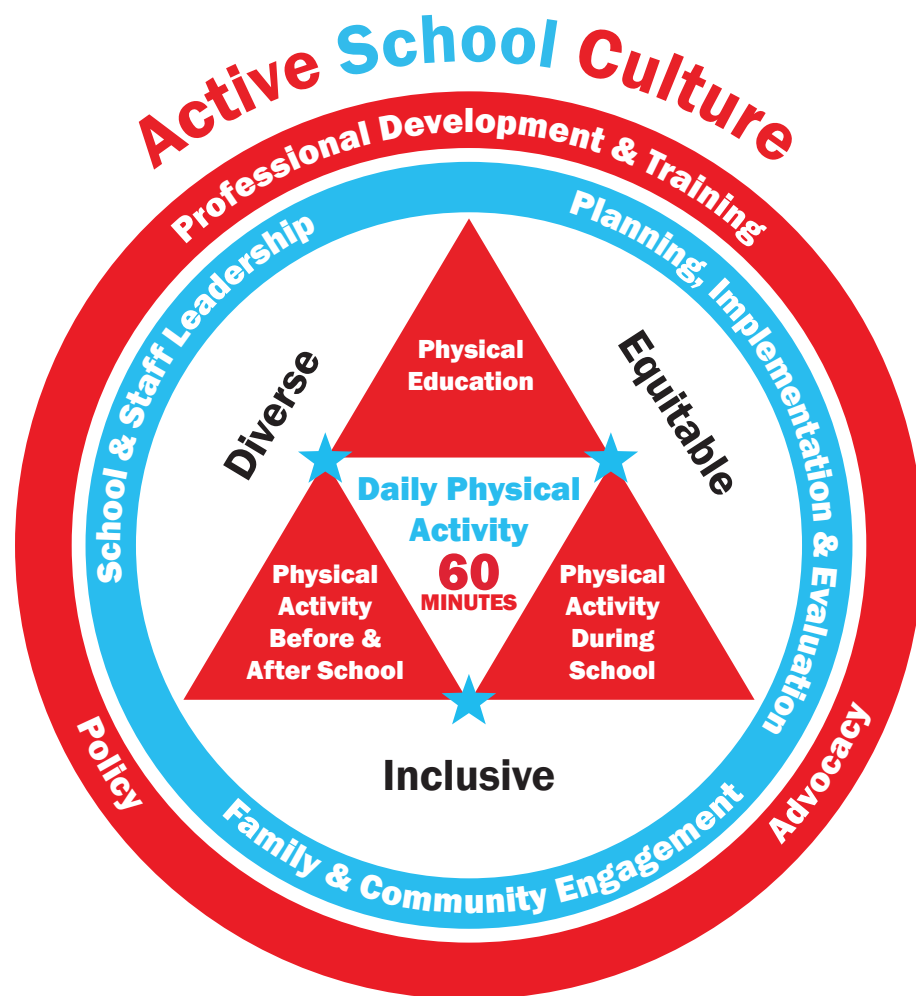
A comprehensive school physical activity program (CSPAP) is a multi-component approach to physical activity promotion that can be situated within a social ecological systems perspective (Carson et al., 2014). The model includes opportunities for physical activity before, during, and after the school day, with quality physical education serving as the foundation through which children develop the knowledge, skills, and dispositions for a lifetime of physical activity (SHAPE America, 2015). Staff involvement and family and community engagement serve as necessary support systems to bolster physical education and ensure sufficient opportunities for physical activity are offered for every child to meet national physical activity guidelines (Webster et al., 2020). Carson and colleagues (2014) position the five components of CSPAP within larger spheres of influence such as school leadership and culture, thus acknowledging the broader ecological systems that influence physical activity behavior.

The concept of a CSPAP gives structure to the physical education and physical activity component of the WSCC model (Dauenhauer & Stoepker, 2022). While not every school requires the same number or type of physical activity opportunities to serve the needs of its children, it is important for every school to recognize and cull the resources that will enable each child to reap the benefits of a physically active lifestyle. Therefore, the CDC (2019) considers the components of a CSPAP, and their potential synergies, to be the national framework for school-based physical education and physical activity, and numerous public health organizations, including the Institute of Medicine (2013) and the National Physical Activity Alliance (2016), support this position.



Health promotion efforts need to situate individual behavior within broader ecological systems that account for individual, interpersonal, organizational, community, and public policy spheres of influence

(Bronfenbrenner, 1992; Hu et al., 2021; McLeroy et al., 1988).



The larger goal of a CSPAP is to create an active school culture, which goes beyond simply having a conducive physical environment with a few supportive adults and some opportunities for physical activity. As defined by Active Schools, an **active school culture** consists of **deliberate, systematic, and sustained efforts among teachers, administrators, school staff, parents, community members, and students to fully integrate physical activity into the essential fabric of a school community**. It involves a team approach with clear goals and objectives that are regularly evaluated along with ongoing professional development for adults who are responsible for facilitating physical activity opportunities to ensure they are equitable and contribute to a lifelong desire to be physically active. Furthermore, an active school culture involves a shared understanding and value for the overall wellbeing of students that is derived from regular participation in physical activity.

Cultivating an Active School Culture

A Look at the Evidence Base

Extensive research on school-based physical activity promotion has been conducted over the past few decades. Although the evidence does not always offer consistent support for the effectiveness of interventions (Dobbins et al., 2021; Love et al., 2019; Russ et al., 2015), many systematic reviews support a multicomponent approach to school-based physical activity aligned with the CSPAP framework (Demetriou & Honer., 2012; Erwin et al., 2013; Kriemler et al., 2011; Pulling Kuhn et al., 2021).

An emerging body of evidence suggests that the effectiveness of interventions is intricately tied to the extent of implementation within schools (Naylor et al., 2015; Wolfenden et al., 2017), meaning that **commitment, buy-in, and adoption by the entire school community is key**. Owen and colleagues (2016) reviewed the positive effects that physical activity interventions can have on school engagement among youth, particularly adolescents, in relation to dimensions such as time-on-task, lesson enjoyment, and self-regulated learning. The authors notably concluded that “the health benefits of physical activity are well established; however, our results suggest that the benefits extend further than health and into education” (p. 141).

Other researchers (Morton et al., 2016) directly acknowledge the importance of the broader school environment and call for the “creation of a ‘culture’ of physical activity within the school...” (p. 153) that recognizes “... how features of the school’s physical, social, and policy environment interact and influence each other to shape physical activity behaviors” (p. 155). This is in close alignment with the social ecological systems approach introduced previously and the notion of an all-encompassing culture surrounding CSPAP implementation (Carson et al., 2014).

We believe that an active school culture consists of nine essential elements:

1. Diverse, Equitable, and Inclusive Opportunities for Physical Activity
2. Physical Education
3. Physical Activity During School
4. Physical Activity Before and After School
5. School and Staff Leadership
6. Planning, Implementation, & Evaluation
7. Family & Community Engagement
8. Policy & Advocacy
9. Professional Development & Training



These elements are mutually reinforcing and together represent a school community that truly values physical activity for the physical, social, emotional, and cognitive benefits it provides. Each element has a body of literature to support its inclusion in our conceptualization of an active school culture. That literature is synthesized on the following pages with emphasis placed on higher tiers of evidence such as systematic reviews, meta-analyses, and national guidance documents. Schools can use these elements as a foundation for evidence-based practice.

Diverse, Equitable, & Inclusive Opportunities for Physical Activity

According to the Physical Activity Guidelines for Americans (USDHHS, 2018), children and adolescents should participate in 60 minutes of moderate to vigorous physical activity (i.e., a brisk walk or above) on a daily basis that includes aerobic, muscle-strengthening, and bone-strengthening activities. The guidelines emphasize that children and adolescents are developmentally different from adults and the activities they participate in need to be age-appropriate. For example, children typically improve muscle strength by lifting or moving their own body weight rather than engaging in formal weight training programs. Likewise, both children and adolescents tend to participate in more intermittent movement marked by brief periods of vigorous activity followed by periods of rest or lower intensity activity. Children and adolescents can meet the physical activity guidelines by accumulating activity over time each day in both structured and unstructured settings (USDHHS, 2018).

Unfortunately, data indicate there are disparities in the rates at which different segments of the population accumulate 60 minutes of physical activity each day. According to the National Survey of Children's Health (NSCH; 2019-2020), only 26% of children ages 6-11 and 15% of adolescents ages 12 to 17 meet this guideline. Additionally, girls tend to be less active than boys, especially during adolescence, and physical activity levels vary by race/ethnicity, household income, and ability status (NSCH, 2019-2020).

Research also suggests there are social determinants of health such as socioeconomic status and the built environment that contribute to health disparities in society, and in physical activity rates specifically (Ball et al., 2015; Braveman & Gottlieb, 2014). Healthy People 2030 (Office of Disease Prevention and Health Promotion, n.d.) has identified health equity as one of its overarching goals and schools are a critical setting for addressing health disparities (Huang et al., 2013). The Institute of Medicine (2013) states:

Federal, state, district, and local education administrators should ensure that programs and policies at all levels address existing disparities in physical activity and that all students at all schools have equal access to appropriate facilities and opportunities for physical activity and quality physical education.

Schools need to be cognizant of disparities as they consider the types of physical activity opportunities they offer to students. Using inclusive strategies and approaching physical activity promotion from a social justice perspective are two ways to address such disparities.

Inclusion

The Individuals with Disabilities Education Act (IDEA, 2004) is a law that ensures children with disabilities have access to free public education with special services designed to meet their unique needs in an inclusive environment. The law states:

Disability is a natural part of the human experience and in no way diminishes the right of individuals to participate in or contribute to society. Improving educational results for children with disabilities is an essential element of our national policy of ensuring equality of opportunity, full participation, independent living, and economic self-sufficiency for individuals with disabilities.

Lieberman & Block (2017) identify four main strategies for inclusion in physical activity settings:

1. Universal design for learning
2. Differentiating instruction
3. Peer tutoring
4. Training para-educators

Universal design has received considerable attention in the field of physical education (Lieberman et al., 2021). It started as seven design principles for the physical environment to improve access for individuals with disabilities. Later, it was modified for general education settings and included three guidelines for learning: (a) provide multiple means of engagement, (b) provide multiple means of representation, and (c) provide multiple means of action and expression (CAST, 2018).

In physical education settings, universal design for learning principles prompt educators to carefully consider the attributes/capabilities of students and modify activities for maximal participation and success. For example, equipment can be modified to maximize success, such as using a beach ball or volleyball trainer instead of a regulation volleyball. Likewise, rules of games can be modified to slow down the pace of the game or to ensure that all team members are involved. Lastly, instruction can be modified to effectively communicate information in a variety of ways, such as through visuals, demonstrations, multimedia, or group discussions. The idea is to match modifications to the needs of students (Lieberman et al., 2008).

When considering the types of physical activity opportunities offered to students within and beyond physical education, program facilitators need to be flexible with the types of activities they offer and use the principles of universal design to maximize inclusion for youth of all ability levels.



Social Justice

Pantic and Florian (2015) extend the notion of inclusion beyond ability/disability toward an approach that “attends to individual differences between learners while actively avoiding the marginalization of some learners and/or the continued exclusion of particular groups, for example, ethnic minority students, those from culturally diverse backgrounds, non-native language speakers, students with additional needs, and those from lower socio-economic backgrounds who may be disadvantaged by poverty” (p. 334).

This approach speaks to a broader conceptualization of inclusion for social justice. Scholars have advocated for a more humanizing and culturally responsive physical education in schools that views diversity as an asset, seeks to overcome stereotypes, and empowers students through voice and autonomy (Culp, 2021; Harrison & Clark, 2016). According to Lynch and colleagues (2020), a socially just physical educator:

1. Takes the time to know their students
2. Encourages students to take ownership of their own learning
3. Allows students to co-create expectations and hold each other accountable
4. Practices democratic principles by holding time/space for student feedback
5. Shifts from an authoritative figure to a facilitator

These strategies apply beyond physical education to any physical activity program that occurs in an active school before, during, or after the school day. The A-Z of Social Justice in Physical Education (Landi et al., 2020; Lynch et al., 2020) provides an extensive list of strategies that can be used to approach physical education (and physical activity promotion) from a social justice perspective.

Schools must consider physical activity to be a right, not a privilege. They must acknowledge the disparities that exist in society around access to physical activity and view schools as an important part of the solution. They must take tangible steps to include individuals of all backgrounds, abilities, and identities in a variety of physical activity opportunities and empower students to lead healthy and active lifestyles through early positive experiences.

The overarching goal is to get all students to achieve 60 minutes per day of moderate to vigorous physical activity (USDHHS, 2018). Tools such as the Physical Activity Program Opportunities Index (Lounsberry & McKenzie, 2014) can be used to estimate how many minutes of physical activity are being offered on a daily basis, and which students are participating. This can help schools ensure that sufficient opportunities are provided and that offerings are equitable and inclusive.



Physical Education

Physical education is defined by SHAPE America (2015) as an “academic subject” that “provides students with a planned, sequential, K-12 standards-based program of curricula and instruction designed to develop motor skills, knowledge and behaviors for active living, physical fitness, sportsmanship, self-efficacy and emotional intelligence” (p. 3). Experts and professional organizations agree that quality physical education serves as the foundation of a CSPAP (Bryant et al., 2021; CDC, 2014; Graber et al., 2020; IOM, 2013; Michael et al., 2021; SHAPE America, 2015; Webster et al., 2020). It is presented as the first of three opportunities for school-based physical activity within this document to highlight its unique, elevated status within an active school.

A large body of research has shown the benefits of quality physical education in terms of: (a) providing regular, healthful physical activity (Lonsdale et al., 2013), (b) improving physical fitness (Erffle & Gamble, 2015; Fairclough & Stratton, 2005; McKenzie et al., 1996; Starc & Strel, 2012), (c) increasing cognitive function (Donnelly et al., 2016; Fisher et al., 2011; García-Hermoso et al., 2021), (d) enhancing academic performance (Carlson et al., 2008; Coe et al., 2006; Donnelly et al., 2016), (e) developing motor skills (Ericsson, 2011; Ericsson & Karlsson, 2014; Francesco & Greco, 2017), and (f) developing a sense of personal and social responsibility (Opstoel et al., 2020; Pascual et al., 2011; Pozo et al., 2018).

SHAPE America (2015) released a guidance document titled *The Essential Components of Physical Education*, delineating the characteristics of quality physical education and identifying it as a necessary part of a well-rounded education. The essential components encompass four fundamental areas:

1. Policy and environment
2. Curriculum
3. Appropriate instruction
4. Student assessment

Effective practices within each of these areas support the delivery of quality of physical education, and by extension, promote physical activity participation among students in PK-12 schools. In 2021, *Research Quarterly for Exercise and Sport* dedicated a special issue to reviewing the evidence connected to each component (see Castelli, 2021). This evidence, in addition to SHAPE America's specific recommendations, are summarized on the following pages.



Policy and Environment

Student physical activity levels can vary extensively due to environmental conditions and school policies, especially physical education policy (Lounsbery et al., 2013). In an effort to provide an environment that enables all students in PK-12 schools to receive physical education with clear outcomes, SHAPE America (2014a) has recommended specific physical education policies.

According to SHAPE America, every student should attend daily physical education classes totaling 150 and 225 minutes per week in elementary and secondary schools, respectively. School districts and schools should require the full inclusion of all students in physical education; the exemption of students from physical education class time or credit requirements should not be allowed. Moreover, students should not be permitted to substitute other activities for physical education class time or credit requirements. For example, participating in interscholastic sports cannot replace required physical education credit (SHAPE America, 2015).

There is also a policy recommendation to prohibit the use of physical activity as a form of punishment, even though using exercise for behavior management in physical education has frequently been observed among physical education teachers and coaches (Burak et al., 2013). Accordingly, physical education classes for all grade levels should be taught by a state-licensed or state-certified teacher who is endorsed to teach physical education. The state should also require those licensed or certified teachers to renew and maintain their physical education teacher licensure or certification through continuing professional development (SHAPE America, 2015).

According to the 2016 Shape of the Nation report (SHAPE America, 2016), an ongoing challenge in the field of physical education is the diversity of state education legislative and regulatory activity and its resulting variation in policies and implementation. Moreover, most research regarding policy in the field over the last 20 years has been focused on minutes of physical education, while policy research has not directly addressed learning activities and/or outcomes in physical education and the effects of policy exemptions and class size (Burson et al., 2021).

Although some progress has been made in building standards, assessment, and accountability into physical education, supportive policies at the state level have not followed suit (Dauenhauer et al., 2019). In an effort to support all students to obtain a quality physical education experience, appropriate policy and environmental conditions should be established in schools (SHAPE America, 2015).



Curriculum

Over the years, a large body of research has highlighted the benefits that can be derived from improving the school physical education curriculum (Dowda et al., 2005; Ericsson & Karlsson, 2014; Hastie et al., 2013; Hastie & Wallhead, 2016; Kahn et al., 2002). First and foremost, a physical education curriculum should provide every student with the opportunity to learn; no student should be excluded or isolated from physical education classes (SHAPE America, 2014a). In addition, the educational focus of the physical education curriculum should be student learning. In other words, an effective physical education curriculum encompasses meaningful and relevant content in a range of physical activities, which are articulated across all age groups and school levels (SHAPE America, 2015).

A recent systematic review by Pfladderer & Brusseau (2021) highlighted the benefits of and associations between physical education curricula models and student outcomes, including measures of physical activity and fitness, psychosocial variables, classroom behavior, and knowledge. However, specific student outcomes related to the national standards were relatively underrepresented in previous studies regarding physical education curricular models. Similarly, Hastie (2017) noted a lack of research related to the achievement of national standards in physical education, with an estimation that less than half of students in the United States are achieving outcomes associated with physical literacy. Nevertheless, SHAPE America (2015) has emphasized that a quality physical education curriculum is based on national and state standards and their accompanying grade-level outcomes, which can serve as curricular guideposts for student learning (SHAPE America, 2014b).



In conformity with national and state standards, appropriate sequencing of learning activities is a crucial aspect of a quality physical education curriculum and ensures that motor skills, health-related fitness, and physical activities are developmentally appropriate. Organizational arrangements, including block scheduling and learning communities, are also necessary to facilitate active engagement and provide sufficient time and support to achieve meaningful outcomes within a written and sequential curriculum (SHAPE America, 2015).

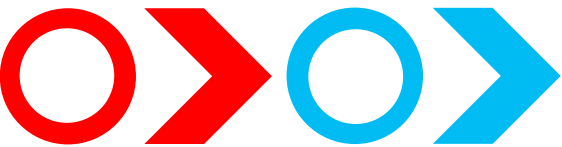
Appropriate Instruction

A quality physical education program cannot be implemented without appropriate instruction. Even when an excellent physical education curriculum is established in a school, it is impossible to elicit high levels of learning among students without appropriate instruction. A recent systematic review by Nesbitt et al. (2021) identified research studies examining appropriate instruction in K–12 physical education from 2000 to 2020 and provided evidence of the benefits of appropriate and practical instructional practices in accordance with four themes that impacted student learning outcomes: (a) student engagement and participation, (b) motivation, (c) student learning, and (d) physical activity and fitness.

A physical education teacher's instruction should always target the full inclusion of all students, including students with special needs or disabilities, and should offer maximum opportunities to practice skills. Thus, ensuring adequate and proper resources, equipment, and space is also an essential responsibility of physical education teachers. As noted in the curriculum section above, physical education teachers should clearly understand the diverse developmental levels that students in all grade levels will exhibit because teaching motor skills requires teachers to make careful instructional decisions due to potential safety concerns (SHAPE America, 2015).

In order to perform appropriate and meaningful instruction, well-designed lesson plans are indispensable to facilitating student learning. As a physical education class is more than just teaching fitness and exercise, lesson plans should embrace cognitive and affective learning outcomes in accordance with the national physical education standards consisting of five core areas: motor skills, knowledge, health-related fitness, personal and social behavior, and values. Consequently, a teacher's instruction should create an environment that helps students meet these five areas of the national standards (SHAPE America, 2015).

The goal of physical education is to develop physically literate individuals who have the knowledge, skills, and confidence to enjoy day-to-day physical activity throughout their lifetimes, so the role of physical education teachers is to positively impact students and provide them with a favorable perception of physical activity. Physical activity should not be assigned as or withheld as punishment, and out-of-school physical education assignments should contribute to students' daily physical activity (SHAPE America, 2015).



Student Assessment

As one of the essential components of physical education, student assessment should be conducted to gather evidence of student achievement and make inferences about student progress. Through student assessment, physical education teachers can identify whether students are meeting grade-level outcomes and can pinpoint those who are struggling or excelling in their programs. Consequently, teachers can appropriately support both lower- and higher-performing students, and by extension, more students will be able to achieve grade-level outcomes in physical education classes (SHAPE America, 2015).

SHAPE America (2014b, 2015) encourages physical education teachers to conduct standards-aligned assessments within a standards-based physical education program. Student assessment in physical education should address the psychomotor, cognitive, and affective domains. Accordingly, national standards and grade-level outcomes embrace these three domains and can act as an excellent guideline for assessment in physical education.

Student assessment can be used to review teachers' instruction by checking that every student is on the right track according to the unit's or lesson's learning objectives. For example, if the performance of many students does not meet the teacher's expectations, the instruction method and even the curriculum can be revised (Dauenhauer et al., 2018; Dyson, 2014). Student assessment provides vitally important feedback on teachers' instruction; therefore, quality assessment is tied to quality teaching. The use of appropriate assessments should be completed to achieve quality physical education with its associated benefits (SHAPE America, 2015). However, research studies regarding student assessment in physical education are yet limited; a narrow view of teacher assessment practices has been provided through the descriptive nature of most current research studies in the past 20 years, even though several studies provide valuable evidence related to effective assessment, specifically within the elementary physical education (Killian & Mays Woods, 2021).



Physical Activity During the School Day

Students spend a majority of their waking hours in school settings, therefore, finding ways for students to be active throughout the school day, in addition to during physical education, is an important strategy for an active school. Physical activity during the school day includes recess (or active breaks for secondary school students), dedicated classroom physical activity time, and other opportunities across the school day. These physical activity opportunities can supplement time spent in other active pursuits and should provide approximately half of students' daily moderate to vigorous physical activity time (i.e., 30 minutes; IOM, 2013). Unfortunately, research suggests that many children and adolescents do not participate in sufficient amounts of physical activity during the school day, with adolescents and female students obtaining less activity than their younger, male counterparts (Grao-Cruces et al., 2020).



Recess

According to the CDC and SHAPE America (2017), recess is defined as “a regularly scheduled period within the school day for physical activity and play that is monitored by trained staff or volunteers” (p. 2). Although not always referred to as ‘recess’ in secondary schools, breaks from academic work that are physically active should also be provided in middle and high schools. Given that the number of school districts that require or recommend recess may be declining over time (Beighle, 2012), schools at all levels should adopt policies that align with national recommendations for recess offerings so that all students have access to regular recess throughout the school day (IOM, 2013).

The CDC and SHAPE America (2017, p. 3) offer the following guidance for recess:

- At least 20 minutes of recess daily at the elementary level, ideally before school lunch
- Daily physical activity opportunities for secondary students during the school day outside of physical education and classroom physical activity
- Not replacing physical education time with recess time
- Not excluding students for academic or disciplinary reasons or using physical activity during recess as punishment
- Providing safe and adequate spaces, facilities, equipment, and supplies
- Providing ongoing professional development for recess supervisors

Although relatively little is known about the activity levels of students at recess (Beighle et al., 2020), there is some evidence to suggest that students can accumulate up to 40% of their total daily physical activity during recess (Beighle, 2012). Beyond physical activity accumulation, the benefits of recess include improved social development, improved cognitive processing, and increased attention in the classroom (Beighle, 2012; CDC & SHAPE America, 2017; Ramstetter et al., 2010). Further, there are many evidence-based strategies that can be implemented to increase physical activity during recess such as having activity zones, active supervision, and providing equipment (Beighle, 2012; Ramstetter et al., 2010; Ridgers et al., 2012; Suga et al., 2021).



Given that girls and older students are usually less active at recess (Ridgers et al., 2012), schools should consider specific interventions to improve the recess environment that may encourage these students to be more active (Suga et al., 2021; Parrish et al., 2020; Yildirim et al., 2014). Additionally, there appears to be a lack of recess offerings in middle and high school (Beighle et al., 2020); therefore, providing such opportunities through scheduled active breaks (like a recess) would likely yield the same benefits experienced by elementary school students.

Physical Activity in the Classroom

Another important aspect of physical activity during the school day is encouraging classroom teachers to integrate physical activity into their classroom routines. While numerous terms and concepts are used to describe physical activity in the classroom (e.g., brain boosts, movement integration, activity breaks, etc.), the goal is the same: to replace otherwise sedentary time with physical activity (Beighle et al., 2020).

Teachers often cite lack of time as a barrier to integrating movement into their classrooms (McMullen et al., 2014; McMullen et al., 2016). Therefore, in order to not take away from curricular time, schools are encouraged to support their teachers so that they can learn to incorporate physical activity into existing aspects of classroom life, such as academic lessons, transitions, breaks, and the arrangement of classroom materials and space. For instance, there is evidence to suggest that changes in curriculum to include physical activity can result in positive effects (Dobbins et al., 2013). Students and teachers also tend to enjoy physically active academic lessons (e.g., McMullen et al., 2016; Dyrstad et al., 2018), which offer a promising way to increase daily physical activity levels in children (Webster et al., 2015). Moon & Webster (2019) suggest a progression for classroom movement integration that ranges from beginning strategies like teacher-directed transitions all the way up to interdisciplinary integration connecting physical education content with other subject areas. Regardless of the type of classroom physical activity being implemented, resources should be easy to use, align with teaching goals (e.g., the curriculum), and require little equipment (Dugger et al., 2020; McMullen et al., 2014; 2016; Webster et al., 2020). Given that movement integration can take numerous forms (Moon & Webster, 2019), this is a promising strategy that can be used by classroom teachers to provide additional movement opportunities throughout the school day (Institute of Medicine, 2013; Beighle et al., 2020).

While school-university partnerships could be helpful in supporting classroom movement integration (Institute of Medicine, 2013; Webster et al., 2015), sustainability and fidelity may be increased if schools initiate movement integration efforts themselves (Vazou et al., 2020). It is important that schools consider their own unique conditions and the demands placed on teachers while pursuing efforts to routinely include physical activity in the classroom during the school day (Webster et al., 2015). Further, schools and districts should consider adopting policies and accountability measures that encourage (or require) classroom teachers to incorporate physical activity throughout the school day (Dyrstad et al., 2018; Holt, Bartee, and Heelan, 2013). When creating such policies, teachers and administrators should both be involved in the process (Dyrstad et al., 2018), in part to ensure that institutional (e.g., administrative support, resources) and intrapersonal (e.g., teacher confidence, ease of implementation) factors are being considered (Michael et al., 2019).

Other Opportunities for Physical Activity During the School Day

While recess and classroom-based physical activity are the two most common and well-researched strategies for implementing physical activity during the school day, there are also other strategies that show promise. One example is providing lunchtime intramurals where students can sign-up to participate in recreational and/or competitive activities that meet their needs and interests (RMC Health, n.d.). These offerings should consider both traditional (e.g., basketball, volleyball), and non-traditional (e.g., yoga, orienteering) activities to appeal to more students (Burns et al., 2021). While not extensively researched, schools could also consider using flexible seating in the classroom, designing sensory hallway activities, and having open gyms during the school day for students who need to expel some energy in a positive way.

Physical Activity Before & After School

One of the perceived limitations of physical activity during the school day is that it takes time away from other academic endeavors. We know that integrating movement into the school day has a neutral or positive impact on a variety of academic behaviors and outcomes (CDC, 2010; Donnelly & Lambourne, 2011; Rasberry et al., 2011; Singh et al., 2019), so this is a false perception. However, the times immediately before and after the school day can be an attractive setting for physical activity programming because it does not even have the perception of interfering with academic learning time. Furthermore, with recommendations that schools should provide at least half of students' daily physical activity (IOM, 2013), additional opportunities beyond the school day are likely needed to achieve this outcome.

These segments of the day are sometimes referred to as 'out-of-school-time' and can include opportunities for physical activity such as before or after school programs or clubs, youth sports such as intramurals or interscholastic sports, and active transportation to and from school (Dauenhauer et al., 2020, 2022). Research suggests that structured settings outside of the school day can facilitate more physical activity and less sedentary time than other less structured environments (i.e., unplanned or unsupervised out-of-school-time on weekdays, weekends, or summer days; Tassitano et al., 2020).

Before and After School Programs & Clubs

Before and after school programs and specialized clubs that occur outside of the school day (~7:00 - 8:30am and ~3:00 - 5:30pm) can offer meaningful opportunities for physical activity. Before school programs could include structured programming with a specific curriculum and planned activities, or less structured activities like a mileage club. Likewise, after school programs could simply offer childcare services for parents or consist of more specialized enrichment activities that extend learning. One of the benefits of before and after school programs is that they offer a safe supervised place for children to gather and interact with friends outside of the school day (Dauenhauer et al., 2022).

Reviews of research that have been conducted over the past two decades suggest more work is needed to fully understand the most effective strategies for promoting physical activity within before and after school programs (Atkins et al., 2011; Beets et al., 2009; Mears & Jago, 2015; Pate & O'Neill, 2009; Woodforde et al., 2021). However, current evidence suggests that children can obtain an average of 23.5 minutes of moderate to vigorous physical activity within after school settings (Tassitano et al., 2020) and likely spend less time in sedentary behavior compared with other environments (Arundell et al., 2016). There are advantages to hosting after school programs on school campuses as opposed to other community settings and it is suggested that programs should be offered at least two days per week with activities designed to match the interests of specific groups (Demetriou et al., 2017).

The National Afterschool Association (2018) has published Healthy Eating and Physical Activity Standards that offer guidelines for physical activity time, limits on screen time, and strategies for the facilitation of physical activity in after school programs. Those who provide before and after school programs in schools should be aware of these standards and ensure their policies and practices are aligned.

Weaver, Beets, et al., 2016; Weaver, Moore et al., 2016.

Youth Sports

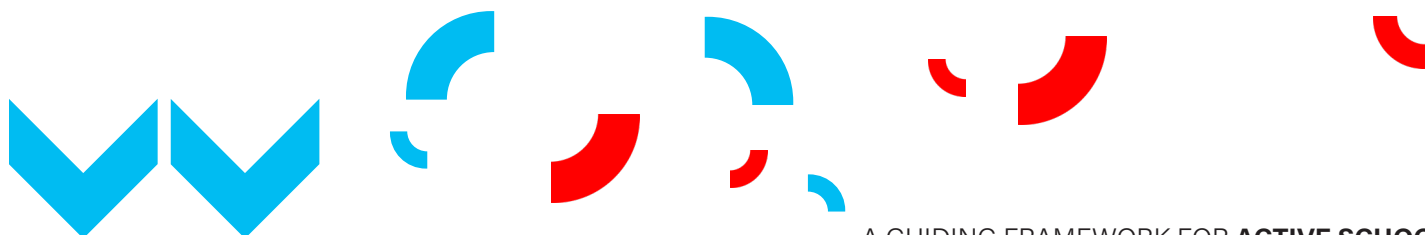
Interscholastic sports, intramural sports, and community or club sports can all be organized under the umbrella of ‘youth sports’. Interscholastic and club sports tend to be more competitive where participation may be at least partially determined by skill level, whereas intramural and community sports tend to be more recreational and open to all ability levels. Both types of sports have benefits for the youth who participate in them.

Children and adolescents who participate in sports tend to be more active than non-participants and the association appears to extend beyond childhood into adulthood (Lee et al., 2018). There are numerous psychological and social health benefits of participation in youth sport including higher self esteem, better social skills, fewer depressive symptoms, and higher confidence (Eime et al., 2013). These social benefits are connected more consistently with team sports than individual sports and are more likely to be obtained when youth sports programs are designed intentionally to promote positive social development (Anderson-Butcher, 2019; Eime, 2013). As with other forms of physical activity, cognitive benefits can be obtained from youth sport participation and schools can at a minimum be confident that offering such sporting opportunities to students will not be harmful to academic performance (CDC, 2010; Rasberry et al., 2011; Trudeau & Shepard, 2008). Intramural sports, especially when offered within a climate of inclusion rather than elitism, have been shown to be a meaningful source of physical activity for adolescents (Morton et al., 2016).



The Aspen Institute’s Sport for All, Play for Life Playbook (Project Play, 2013, 2022), which has been endorsed by more than 70 organizations, offers a comprehensive guide for how youth sports can be embedded into communities around the country to promote health, wellbeing, and physical literacy. Of note, the Aspen Institute recommends that schools open up their facilities to community sporting groups during non-school hours using shared-use agreements.

In 2019, the US Department of Health and Human Services published a National Youth Sports Strategy that reinforces and extends many of the strategies outlined in the Aspen Institute’s Playbook. For example, they recommend sport sampling as opposed to early specialization, fun sporting opportunities at different levels of competition to meet the needs of youth of varying ability levels, and the intentional integration of social-emotional competencies such as teamwork, emotional control, and work ethic (USDHHS, 2019).



Active Transportation

Active school transport, also referred to as ‘active commuting’, includes walking, biking, and any other non-passive means of getting to and from school. Active transportation is consistently associated with increased physical activity rates in youth (Faulkner et al., 2009; Lee et al., 2009), with averages of 17 minutes per day of moderate to vigorous physical activity for children in primary schools and 13 minutes per day for adolescents in high schools (Martin et al., 2017). There is also evidence to suggest that cycling to/from school may have unique cardiovascular benefits for youth (Larouche et al., 2014).



Some of the most important factors connected to active school transportation behaviors include distances between home and school, walkability of the surrounding neighborhood, parent characteristics, and perceived safety (Davison et al., 2008; D’Haese et al., 2015; Pont et al., 2009). In fact, parent perceptions of the active commuting environment may be more important than objectively measured characteristics of the environment (Davison et al., 2008); therefore, many researchers point to parent education and involvement as key strategies for promoting active transportation (Chillon et al., 2011; Davison et al., 2008; Pont et al., 2009; Weigand, 2008).

Safe Routes to School and the Walking School Bus are two public health initiatives that have demonstrated success in promoting active transportation to/from school (Chillon et al., 2011; McDonald et al., 2014). The Safe Routes to School program emphasizes the six E’s of engagement, equity, engineering, encouragement, education, and evaluation to promote active transportation (Safe Routes Partnership, n.d.). The Walking School Bus addresses safety concerns by having one or more adults walk to school with children along a designated route. Evidence from 801 schools across four states indicated a 31% increase in the proportion of children walking or biking to school after five years of Safe Routes to School implementation (McDonald et al., 2014).



The Walking School Bus addresses safety concerns by having one or more adults walk to school with children along a designated route.

School & Staff Leadership >>

A successful active school culture is established and maintained with the thoughtful planning and execution of passionate and committed school leaders. A culture of physical activity is unlikely to be sustained if only one or two caring adults are involved. Instead, it takes a broader team devoted to the cause. Strong school and staff leadership can be accomplished by creating an active school committee, enabling staff to promote physical activity among students, and prioritizing staff wellness.

Establishing an Active School Committee

A team of invested school community members should be carefully established to build and carry out an active school culture. The individuals who form the active school committee (ASC) should have a passion for youth physical activity and be comprised of a diverse set of stakeholders.

The leader of the committee, known as the active school champion or physical activity leader, is oftentimes a physical education teacher within the school due to their inherent expertise in youth physical activity promotion, access to necessary resources, and knowledge of their school and community (CDC, 2013; Carson et al., 2020; Carson et al., 2014). The active school champion's role consists of the selection and coordination of the ASC, leading ASC meetings, working with school staff members, facilitating connections to the community, and managing the active school policies, events, resources, and funds (CDC, 2013). Due to the expansive duties associated with this leadership role, the active school champion should be provided with formal physical activity leadership professional development and appropriate compensation for their time and effort (Carson et al., 2014). It should be noted that while the physical education teacher is the ideal active school champion, administrators should be aware of the potential for workload and role conflict barriers and address these issues as needed (Carson et al., 2020).

While a qualified active school champion is essential to the establishment of an active school culture, a supportive administrator is critical to its success. This influential leader could be a school principal, district superintendent, school health advisor, physical education coordinator, or other school administrator and must be willing to prioritize students' physical activity, serve as a role model for students and staff, offer support for physical activity events, and help to build a community culture that values physical activity within the school (Carson et al., 2020; Carson et al., 2014). Webster and colleagues (2020) synthesized three major themes for successful administrator leadership of school-based health initiatives: (a) collaboration, which includes building relationships with community stakeholders and being directly involved with school staff implementation efforts, (b) advocacy, which involves personally valuing physical activity and being aware of policies that influence physical activity behavior, and (c) support, which consists of providing funding, resources, and professional development for school staff. Administrators should also make efforts to align staff wellness programming with their annual and overall goals to help create a culture of wellness within the organization (Naylor et al., 2006).



Once the active school champion and supportive school administrator are identified, the ASC should continue to be formed through identifying a diverse set of multidisciplinary, local stakeholders who both value and can uniquely contribute to an active school culture (CDC, 2013; Carson et al., 2014). The ASC may be a subcommittee of the school's wellness or other health committee and should develop, implement, and evaluate the active school programs put into place. Other tasks may include physical activity policy development, budgeting, and other advisory roles related to physical activity within the school (CDC, 2013). Members of the committee may include school teachers, students, parents, healthcare professionals, and other school and community members. The following table provides a list of potential members of the committee and their possible roles:

Stakeholders	Committee Role
School Administrators School Board Members	<ul style="list-style-type: none"> ▶ Gain staff support ▶ Allocate time, funds, staff to develop and implement programming ▶ Serve as role models ▶ Offer professional development for teachers around school physical activity implementation
School Teachers and Staff	<ul style="list-style-type: none"> ▶ Integrate physical activity in lessons ▶ Promote an active school culture ▶ Lead and support before, during, and after-school physical activity programs
Students	<ul style="list-style-type: none"> ▶ Suggest activities ▶ Promote physical activity in school
Parents/Parent Groups Community Residents Community Leaders	<ul style="list-style-type: none"> ▶ Serve as role models and encourage physical activity ▶ Conduct fundraisers to support physical activity programming ▶ Encourage administrators to support physical activity in schools ▶ Volunteer time to lead before, during, and after school physical activity programs
Healthcare Providers Health Departments	<ul style="list-style-type: none"> ▶ Fund physical activity initiatives ▶ Provide credibility to outreach campaigns ▶ Educate key stakeholders and gain support ▶ Provide local data on childhood physical activity
Universities and Colleges	<ul style="list-style-type: none"> ▶ Offer professional development and continuing education opportunities ▶ Provide technical support to schools ▶ Engage in student service-learning projects ▶ Assist with grant writing, development, and evaluation of programs
Local Businesses	<ul style="list-style-type: none"> ▶ Donate equipment and supplies ▶ Fund physical activity initiatives ▶ Assist with fundraising
Local Media	<ul style="list-style-type: none"> ▶ Highlight school's successes ▶ Inform public about benefits of an active school/youth physical activity

Adapted from Comprehensive School Physical Activity Programs: A Guide for Schools (CDC, 2013, p. 19-20)

With the leadership and support of an active school champion, supportive administrator, and active school committee, schools will have the opportunity to build and sustain a successful active school culture.

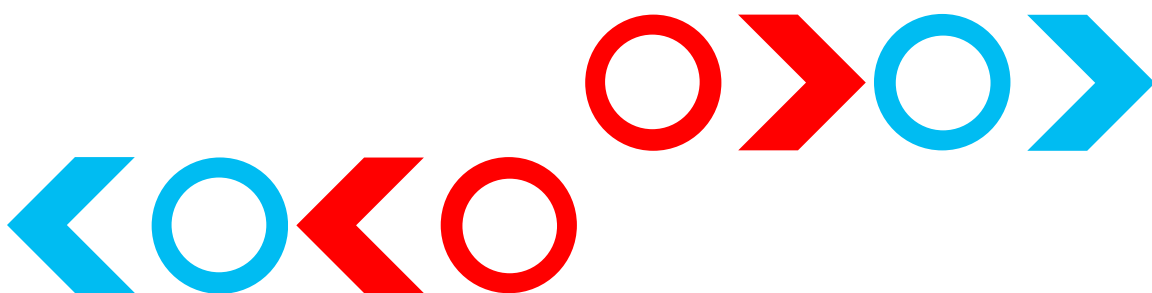
Staff Leadership & Promotion of Physical Activity

Strong staff leadership is an essential ingredient of a successful and sustainable CSPAP (Chen & Gu, 2018). While an active school champion, supportive school administrator, and an active school committee are essential, support *for* and *from* ALL school staff is beneficial to creating an active school culture. It is helpful to have school staff and teachers who are highly motivated and advocate for physical education and physical activity in order to create an active school culture (Chen & Gu, 2018; Gorely et al., 2009; Stoeper, et al., 2021). School staff and teachers also have an influential role to play through their day-to-day interactions with students. Research shows that teachers' current physical activity behavior as well as their early experiences with physical education are associated with their promotion of physical activity in schools (Pulling-Kuhn et al., 2021; Webster et al., 2015).



There is a misconception that allocating school time to physical activity integration within the curriculum or physical activity breaks will take away from academic achievement. However, studies show that there is a neutral or positive effect on student achievement (CDC, 2010; Watson et al., 2017). School staff are in a unique position to promote and make a positive difference in school-age children's physical activity behaviors (Russ et al., 2015; Webster et al., 2020). While teachers and school staff may understand, value, and be willing to promote youth physical activity efforts, they must receive training and support (Carson et al., 2020; van Sluijs et al., 2007; Zarrett et al., 2012). Training staff on effective strategies and the delivery of physical activity while respecting autonomy to decide when and how they would use the strategies has proven promising (Gorely et al., 2009). For example, classroom teachers can establish active routines such as starting the day with movement (i.e. stretching or breathing exercises, dance video, activity popsicle sticks, student choice of movement, etc.), using active transitions between subjects (i.e. skip to the water fountain, crabwalk to the reading corner, tip toe to sharpen your pencil, etc.), arranging the classroom in a way that allows for and promotes movement, and planning academic lessons that integrate movement opportunities for students (Beighle, et al., 2020; CDC, 2018).

Other strategies that have been successful include providing school staff with written materials and physical activity curriculums, training workshops, on-going consultation, physical activity bins, and school newsletter inserts for families (Carson et al., 2020; Naylor et al., 2006; Ward et al., 2006; Zarrett et al., 2012). Furthermore, school staff often cite lack of time as a barrier for integrating physical activity into the school day (Webster et al., 2020). Therefore, understanding and support from school leaders is key to the success of staff behaviors and their effective promotion of physical activity.



Staff Wellness Programs

According to Galemore (2000), “school districts lag behind other major employers in the provision of worksite wellness for their employees” (p. 42). However, school districts are in a unique situation to support their employees’ wellness and health since school employees spend a significant amount of their day in school buildings. Additionally, it is important to note that wellness is multidimensional, it includes physical and emotional wellbeing, social, environmental, career and financial health, as well as mental and spiritual health (National Association of Chronic Disease Directors [NACDD], 2018). Therefore, schools and organizations should provide staff with numerous and diverse opportunities to participate in staff wellness programming.

Strategies for effective staff wellness programming in schools include offering self-care and self-management support such as personalized goal setting, wellness screening with follow up support, and counseling (Webster et al., 2020). The program should offer incentives, make the program accessible, and offer mixed program engagement modalities. Chen and Gu (2018) assert that CSPAP would function better and have increased success if “schools can be viewed as a holistic system” (p. 203). This in turn, will help create an active school culture and empower school staff to lead healthy and active lifestyles (Adams et al., 2022; Hunt et al., 2015). Moreover, simple strategies such as providing weekly tips on establishing healthy habits (i.e., take a short walk after eating lunch or how to increase daily intake of fruits and vegetables) can be effective ways to promote staff wellness among employees (Adams et al., 2022). It is important to remember that school teachers and staff serve as influential role models for students, so having healthy active adults in the school building can trickle down and impact student behavior (CDC, 2013; Langley & Kulinna, 2018; Pulling-Kuhn et al., 2021; Webster et al., 2015).

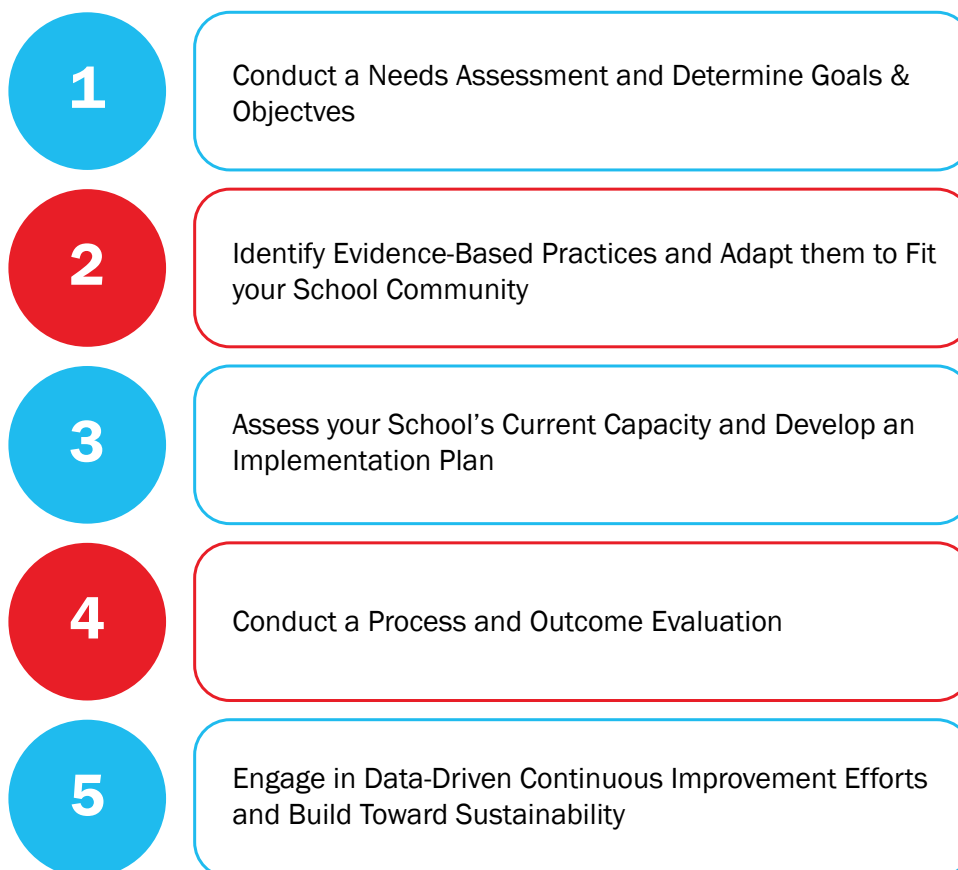


Planning, Implementation, & Evaluation

Integrating physical activity into schools needs to be a systematic process. Thoughtful planning, implementation, and evaluation helps schools carefully identify realistic goals, effectively implement programs, and make data-informed decisions that contribute to continuous improvement and sustainability.

Research suggests that systematic planning, implementation, and evaluation are essential to achieving positive health outcomes for youth and are directly related to the overall effectiveness of physical activity interventions in schools (Cassar et al., 2019; Kennedy et al., 2021; Naylor et al., 2015). National policies and guidance documents specifically require elements of strategic planning, implementation, and evaluation. For example, the Local School Wellness Policy under the Healthy Hunger-Free Kids Act of 2010 requires specific goals related to nutrition, physical activity, and other school-based activities that promote student wellness. The law further requires that schools regularly assess and report to the public on policy compliance. The Institute of Medicine similarly recommends that schools specify objectives for moderate to vigorous physical activity within all segments of the school day, including physical education, recess, classroom time, transport to/from school, and before & after school programs (IOM, 2013). Additionally, the National Afterschool Alliance recommends that out-of-school time programs set clear, measurable, and achievable goals with a detailed plan of action related to healthy eating and physical activity (NAA, 2018). These recommendations are all in line with the process for developing, implementing, and evaluating a CSPAP promoted by the CDC (2013).

Numerous models for planning, implementation, and evaluation exist in the literature. Cassar and colleagues (2019) identified 14 different implementation models used in school-based physical activity research, with some of the most common models being RE-AIM, Diffusion of Innovations, and the Precede-Proceed model. The authors recommend an expanded application of implementation models in schools to maximize intervention success. Meyers and colleagues (2012a, 2012b) synthesized 25 different implementation frameworks and consolidated them into one Quality Implementation Framework and Tool. The framework was designed to be used within a broader system of planning, evaluation, and accountability like the one developed by the RAND Corporation called Getting to Outcomes® (Chinman et al., 2004, 2008, 2017; Wandersman et al., 2000). The Active Schools approach to strategic planning, implementation, and evaluation is aligned with these frameworks/processes and is summarized in the figure below.



Active Schools tools and resources, such as the School Implementation Guide, Menus of Evidence-Based Practice, and Evaluation Handbook offer specific guidance for schools related to the five steps above. In this section, we briefly overview each step and provide a rationale for its inclusion.

Step 1:

Conduct a Needs Assessment and Determine Goals & Objectives

Conducting a needs assessment allows an active school committee to identify areas of strength and needed improvement. The results can be used to inform the planning and evaluation process. Elliott and colleagues (2020) recommend approaches to needs assessment, such as appreciative inquiry and asset mapping, that place an emphasis on existing strengths and resources rather than just gaps or weaknesses, and suggest that schools try to work toward their strengths. The purpose of conducting a needs assessment is to prioritize areas for action and to set a baseline for measuring longer term outcomes. Needs assessments can include existing data that a school already has access to or the collection of new quantitative or qualitative data (Chinman et al., 2004; Elliott et al., 2020). There are a variety of tools that can be used to conduct a needs assessment, some of which are presented in the Active Schools Evaluation Handbook (Active Schools, 2022a).

Goals are statements that define the direction and focus of a program or initiative. They get everyone on the same page and ensure that efforts are aligned with a common purpose. Goal setting is frequently used in behavior change interventions with consistent success (McEwan et al., 2016) and has been a strategy used in many school-based physical activity interventions over the years (e.g., Burns et al., 2017; Dishman et al., 2004; Weaver et al., 2018). While goals tend to be broader statements aligned with a long term vision, objectives are more specific statements directly tied to tangible outcomes. The acronym ‘SMART’ is used to guide the writing of objectives- (S) specific, (M) measurable, (A) achievable, (R) relevant, (T) time-bound. Almost every guidance document associated with planning for physical activity in schools includes identifying specific goals and objectives (CDC, 2013; Healthy Hunger-Free Kids Act of 2010; IOM, 2013; NAA, 2018). The School Implementation Guide includes practical tools for goal setting and objective writing (Active Schools, 2022).



Step 2:

Identify Evidence-Based Practices and Adapt them to Fit your School Community

Evidence-based practice is a common buzzword in education, and rightfully so. We want to make sure that the policies and practices that are implemented in schools are effective and grounded in research. Evidence-based practice lies at the intersection of (a) the best available research evidence, (b) the characteristics, needs, values, and preferences of a community, and (c) the availability of resources within a community (Brownson et al., 2009; Jacobs et al., 2012). Rather than drawing on the findings of one individual study, larger syntheses of research such as systematic reviews and meta-analyses are used to determine what works. That is why many of the references within this Guiding Framework are systematic reviews. But we can't just look at the research and try to replicate it without considering the needs, values, and preferences of the school community. Every community is unique, and what works for one school may not work for another. Likewise, each school community has a unique set of resources at their disposal, including financial, environmental, and human resources. To truly implement evidence-based practice for the promotion of physical activity in schools, all three factors must contribute to the decision-making process (Brownson et al., 2009; Jacobs et al., 2012).

The practices outlined in the School Implementation Guide (Active Schools, 2022b) and Menu of Evidence-Based Practice (Active Schools, 2022c) are based on the best available research evidence to date. Members of an active school committee need to critically analyze the practices presented and consider the extent to which they apply (or not) to their specific school context. They need to consider the assets and resources at their disposal (see Step 1 in this section) and adapt the practices so they are aligned with the needs and desires of the school community. Schools also need to regularly evaluate the impact of their efforts so they have local evidence of effectiveness (see Step 4). This information can be used to drive continuous improvement and sustainability efforts (see Step 5). All of these steps are what truly define evidence-based practice in school-based physical activity promotion.

Step 3:

Assess your School's Current Capacity and Develop an Implementation Plan

It is important to acknowledge that teachers, administrators, and school staff have many responsibilities and do not possess an infinite amount of time and energy. Likewise, school budgets are often stretched thin and educators need to be creative with the resources at their disposal. Conducting an assessment of a school's organizational capacity and readiness for change can be a beneficial step in determining the feasibility of different interventions (see Active Schools Evaluation Handbook). It may also be necessary to communicate the need for and benefit of an intervention within the school community ahead of time to gain buy-in and counterbalance any potential resistance to change (Meyers et al., 2012b). Schools should consider financial (e.g., budgets, grants), environmental (e.g., facilities, equipment), and human (e.g., school staff, partnerships) capacity prior to developing an implementation plan (Chinman et al., 2004).

Step 3 cont.:

According to the Quality Implementation Framework and Tool (Meyers et al., 2012a, 2012b), developing an implementation plan consists of three steps: (a) list the tasks required for implementation, (b) establish a timeline for implementation, and (c) assign implementation tasks to specific stakeholders. The plan should be a written document that is accessible to the public (Healthy and Hunger Free Kids Act, 2010). One of the best ways to capitalize on existing strengths and resources is to view the planning process through a lens of expansion, extension, and enhancement (Beets et al., 2016). For expansion, think about how new opportunities for physical activity could be added before, during, or after the school day that replace other sedentary activities. This could mean starting the day with active announcements instead of seated announcements. For extension, consider lengthening the time that is currently allocated for physical activity opportunities, such as extending recess from 20 to 30 minutes per day. For enhancement, consider how existing physical activity opportunities could be modified to maximize the amount of physical activity time; for example, making simple adjustments to physical education so that management time and wait time are limited and moderate to vigorous physical activity time is maximized (Beets et al., 2016). Prior to implementation, it is important to ensure that all individuals involved in the delivery of physical activity programming receive ample training and technical assistance (Meyers et al., 2012b). The School Implementation Guide (Active Schools, 2022) has tools and resources to assist with the implementation planning process.

Step 4: Conduct Process and Outcome Evaluation

Evaluation can be challenging, but it is an essential ingredient of a high functioning active school. A process evaluation allows planners an opportunity to determine the extent to which tasks and interventions are being implemented the way they were intended (fidelity). It can include measuring things like participation (reach), participant satisfaction (responsiveness), frequency/duration of opportunities (dosage), and even expenses (budget; Chinman et al., 2004; Meyers et al., 2012a, 2012b). A process evaluation can also help identify effective practices that were previously unknown along with common facilitators and barriers to implementation. An outcome evaluation, on the other hand, is connected directly to the goals and objectives determined in step one of this section. It uses quantitative and/or qualitative data to measure the extent to which desired outcomes were achieved within the target population. For active schools, the primary outcome of interest is physical activity, of course, but there are many other outcomes associated with physical activity that may be of interest to schools, such as physical fitness, motor skills, social and emotional wellbeing, and even academic performance.

Evaluation is such an important component of an active school culture that a stand-alone evaluation handbook was developed (Active Schools, 2022a). The handbook includes an introduction to the different types of evaluation, general methods for collecting data, and sample tools for collecting a wide variety of process and outcome data. It concludes with a description of how to use data effectively post-evaluation (see Step 5 below).

Step 5:

Engage in Data-Driven Continuous Improvement Efforts and Build Toward Sustainability

The results of process and outcome evaluation should offer valuable insights into how effective a program or initiative was and what potential it has for continuance. It can be time consuming, but it is essential to take time after data are collected to organize, analyze, and critically reflect on the findings. Data-driven decision making is widely acknowledged as best practice in education (Marsh et al., 2006; Hamilton et al., 2009; Mandinach, 2012), and using data to drive continuous improvement efforts in school physical activity promotion is no different (Dauenhauer et al., 2018). Evaluation data should be used to identify what worked well and what didn't work well, facilitators and barriers to implementation, and even possible inequities in outcomes between sub-groups within a population. As detailed in the Evaluation Handbook (Active Schools, 2022a), data can be used to drive instructional decisions, curricular decisions, program improvement, and advocacy efforts.

When a program is shown to have successful outcomes, it is important to make sure the program or initiative is sustainable over time. Some keys to sustainability include (a) careful documentation of implementation procedures, (b) integration with existing programs, (c) ongoing training for program providers, (d) strong leadership, and (e) funding (Chinman et al., 2004; Herlitz et al., 2020; Webster et al., 2020). A thorough evaluation should offer sufficient data to document effective procedures and provide outcome data of value to educational decision makers and potential funders. Data are essential to writing effective grant proposals and soliciting support from administrators and other community stakeholders. When programs and practices are adaptable, they can be more easily integrated into the culture of a school, and full integration leads to sustainability. One of the biggest challenges comes when staff turnover occurs because implementation knowledge goes with outgoing employees. That is why it is so important to carefully document procedures, provide ongoing training, and maintain strong leadership (Chinman et al., 2004; Herlitz et al., 2020).



Family & Community Engagement

➤➤ Schools, families, and the community at large have a unique opportunity to work together and positively influence children's physical activity and health behaviors. From a social ecological perspective, students' experiences outside of school are key to influencing behavior (Carson et al., 2014; Hu et al., 2021), and opportunities to engage in physical activity should not stop when children leave school (Cipriani et al., 2012; Rink et al., 2010).

Unfortunately, the evidence of effectiveness of family and community engagement efforts in school-based physical activity and health promotion is limited at this time (Brown et al., 2016; McMullen et al., 2020; Welk & Lee, 2020). One systematic review found consistent evidence that family and community involvement within a multi-component approach results in increased physical activity, but that finding was limited to adolescents (van Sluijs et al., 2007). Another review found a correlation between the number of community engagement strategies used in interventions and the number of positive health outcomes, but the community engagement strategies were often initiated by research teams rather than schools (Krishnaswami et al., 2012).

Although more research is needed on the topic, there are some promising strategies informed by existing evidence. Systematically engaging parents, providing a variety of opportunities for families and community members to participate in school-based physical activity events, including a diverse group of stakeholders on wellness committees (or an active school committee), and partnering with local universities and government organizations are effective strategies that schools have implemented (Brown et al., 2016; Krishnaswami et al., 2012; McMullen et al., 2020; O'Mara-Eves et al., 2013; Russ et al., 2015; van Sluijs et al., 2007).



Family Engagement

In 2012, the CDC published a comprehensive guidance document titled *Parent Engagement: Strategies for Involving Parents in School Health* (CDC, 2012). The strategies suggested within the document were based upon a review of research and national recommendations. They fell into three themes: (a) make a positive connection with parents, (b) provide a variety of opportunities for parents to engage with the school, and (c) sustain parent engagement by addressing common barriers. Later, the CDC built on this framework and developed a *Parents for Healthy Schools* guide that offers even more specific strategies to engage parents in the promotion of health in schools, including specific materials for physical education and physical activity (CDC, 2019). Many of the strategies outlined in the sections below complement and reinforce the strategies presented by the CDC.

School-based physical activity programs that include meaningful community partnerships are more effective in producing positive physical and health related outcomes (Krishnaswami et al., 2012). Schools should be accommodating to family time constraints and employ a variety of opportunities for parents to engage in school events (Brown et al., 2016). Events such as “Family Wellness Nights”, walking school buses, volunteer opportunities during field day, etc. have been effective ways for families and community members to spend time together participating in health-enhancing activities (Brown et al., 2016; Russ et al., 2015; Welk & Lee, 2020). Moreover, focusing on “fun” rather than “good for health”, and providing education and resources about child physical activity behavior have shown to be effective strategies to engage families and change physical activity behaviors (Brown et al., 2016).



Active School Events & Activities

Schools can be a safe and welcoming environment ideal for promoting physical activity for the whole community. For example, schools can implement monthly family nights where families can be active together within the school space. Parents often feel guilty for not attending school events and will sometimes disengage if schools do not take an active role with consistent communication to disseminate information (Castelli et al., 2014). Communicating with families through newsletters, emails, bulletin boards, fliers, etc., are some ways schools can keep families informed and engaged (Brown et al., 2016; Russ et al., 2015). Creating volunteer opportunities and providing physical activity homework have also been shown to be effective strategies for increasing parental involvement and physical activity among adolescents (Brown et al., 2016; Russ et al., 2015; van Sluijs et al., 2007). When parents volunteer at their child's school, the likelihood that their child will meet the national physical activity guidelines increases (Ornelas et al., 2007).

Family and Community Members on Active Schools Teams

An active school committee should include members of the community and parents. Including a diverse group of education and health professionals in addition to family and community members gives voice and further engages families in promoting lifelong health and wellbeing in their communities (CDC, 2013). Studies suggest including physical education teachers, other teachers, staff, parents, students, health department representatives, health care providers, and administrators on School Wellness committees (like an active school committee) so children see that all the adults in their school and community are supporting healthy and active living (Gorely et al., 2009; Hannon et al., 2019; McEvoy et al., 2016; Olvera et al., 2021; Webster et al., 2020).

Partnering with Community Organizations

Connecting with a variety of community organizations can also be an effective strategy for increasing physical activity participation in school-age children (van Sluijs et al., 2011). For example, partnering with university faculty can provide school staff with effective strategies and resources for promoting physical activity throughout the school day and can be helpful with evaluation efforts (Webster et al., 2015). Cohen and colleagues (2015) suggest improving school-community links by inviting local sporting organizations to assist with school sport programs (i.e., local sport clubs, YMCA, local Parks and Recreation department, dance and Karate studios). Partnering with community organizations that share the school's vision for an active school has the potential to increase sustainability and community engagement (Brown et al., 2016; Krishnaswami et al., 2012; McMullen et al., 2020; O'Mara-Eves et al., 2013).

Schools can also develop shared-use agreements that allow community members to use school facilities and vice versa (McMullen et al., 2020; Project Play, 2013, 2022). Schools can invite community organizations to active school events and develop mutually-beneficial partnerships (Krishnaswami et al., 2012; McMullen et al., 2020). For example, a local bowling alley could set up a bowling station during monthly "Family Wellness Nights" or a local Yoga studio could show participants flexibility and balance routines geared towards the whole family.



Tailoring Engagement Strategies to the Unique Characteristics of the School Community

Ward et al. (2006) suggests, based on previous literature, that implementation of new school programs should avoid implementing one-size-fits-all programming and instead consider cultural and parental factors as well as socio-environmental factors when designing after school or community-based initiatives to promote physical activity. Tailoring family and community engagement strategies to the unique characteristics of a school community is frequently described as an effective strategy in the literature (Brown et al., 2016; Krishnaswami et al., 2012; Olvera et al., 2021; Taverno Ross et al., 2012; van Sluijs et al., 2007). For example, in the Hispanic community, family is central and has a strong influence in physical activity behaviors among its members (Olvera et al., 2021), therefore, an intervention within this community should consider familial factors. A common family physical activity among Hispanic families is walking (Olvera et al., 2021) and schools targeting increased participation from their Hispanic community can include events where walking is supported and encouraged.

Goal-setting (i.e., family calendar with “where”, “when”, “how”, and “what” physical activity would take place) and reinforcement activities (i.e., weekly telephone calls) have been proven to be effective strategies in changing physical activity behavior and increase motivation among families as well (Brown et al., 2016). Therefore, schools should combine strategies that can be tailored according to their unique school culture and community characteristics when implementing physical activity programs that are targeted towards family and community engagement (Brown et al., 2016; Krishnaswami et al., 2012; Olvera et al., 2021; O’Mara-Eves et al., 2013; Taverno Ross et al., 2012; van Sluijs et al., 2007).



Policy & Advocacy

➤➤ Many of the elements of an active school culture could be more effectively implemented if supported by robust policy. Unfortunately, many states and districts lack optimal policies that specifically relate to physical education and physical activity in schools. The good news is that depending on the starting point, schools can take various steps in the right direction towards optimal policy implementation related to active school elements (SHAPE America, 2012).

Policy

Physical activity and physical education should be considered in all school-level policy decisions and schools and districts can consider already established national-level policies in their decision-making process (Institute of Medicine, 2013; Moore et al., 2020). Policy related to school physical education and physical activity can effectively increase physical activity opportunities for youth (Woods et al., 2021; Chriqui et al., 2013; Slater et al., 2012; Stone et al., 2012). Such policies should be developed comprehensively to consider implementation at all levels, including, state, district, school, and classroom (Lee et al., 2007; Siedentop, 2009).

Additionally, federal legislation is needed to provide guidelines and financial support for states to improve the quantity and quality of physical activity in school programs (Siedentop, 2009). Policy should prohibit exemptions and substitutions for physical education (Lee et al., 2007). Policy is only effective when it is well implemented, which includes progress monitoring

and accountability for implementation (SHAPE America, 2012; Siedentop, 2009), therefore schools need to consider these elements in their policy planning. Lastly, a “one-size-fits-all” approach to policy implementation is not the most effective; therefore, policies should be developed and evaluated at the local level (Woods et al., 2021). Schools can also consider consulting policy guides developed by organizations such as the World Health Organization (WHO) that have developed checklists and tools for the development and implementation of policy related to physical activity (WHO, 2010).



Advocacy

Schools can work with national and state-level parent-teacher and professional organizations (Institute of Medicine, 2013), as well as community partners (Moore et al., 2020) to mobilize and create engagement around policies related to physical education and physical activity. Several organizations have ready-made advocacy resources for schools to use in their advocacy efforts. For example, SHAPE America has an entire “Advocacy” page on their website (<https://www.shapeamerica.org/advocacy/>) that includes a Legislative Action Center, blogs, webinars, and more. Schools can start there to find out who to contact in their state to initiate advocacy projects and initiatives. Advocacy efforts should focus on ensuring that schools are not simply replacing one physical activity opportunity for another (e.g., recess for physical education), which can be done through advocacy by educating policy and decision-makers about the unique benefits of each physical activity opportunity (Slater et al., 2012).

Professional Development & Training

>> To effectively develop and maintain an active school culture, teachers and school staff involved with physical activity programming must be trained and continue to engage in quality professional development opportunities over time. Professional development is needed so that the coordinators and facilitators of school physical activity have the knowledge and skills to implement evidence-based practices and positively contribute to a lifetime of physical activity.

Quality Professional Development

Professional development refers to a variety of educational experiences related to an educator's work and is designed to improve teaching practice and student outcomes (Guskey, 2000). Guskey (2000) indicates four elements of effective professional development, including a clear emphasis on learning and on learners, a focus on individual and organizational change, small changes guided by a larger vision, and ongoing professional development that is intentionally embedded into teacher practice. Additionally, effective professional development recognizes that learning is a social process, treats teachers as active learners, and includes opportunities for collaboration within learning communities (Parker & Patton, 2017; Patton & Parker, 2015).

According to Dauenhauer et al. (2022), quality professional development for physical education and physical activity professionals includes four main characteristics: it (a) provides opportunities for active engagement, (b) is facilitated with care, (c) fosters communities of continued learning, and (d) focuses on student outcomes. Schools should carefully consider the types of professional development and training they offer to teachers and staff to ensure they align with these four characteristics.



Professional Development for School Physical Activity Promotion

A special issue of the *Journal of Teaching in Physical Education* included a compilation of empirical studies on the implementation of CSPAP in schools (Castelli et al., 2014). There were many implications for professional development from the early research that was conducted, including that physical education teachers need to develop a broader skill set aligned with systems change to be able to lead and coordinate CSPAP, facilitators of before, during, and after school programs need physical activity-specific training to effectively integrate physical activity into their programs and classrooms, and teacher/administrator preparation programs need to address schoolwide physical activity and health promotion on a larger scale (Karp et al., 2014).



Building on this work, one of the largest evaluations of CSPAP-related professional development to date studied the implementation of a comprehensive training program over a three-year time period across 24 states (Carson et al., 2020). The authors found that key facilitators of effective professional development were free registration/participation for teachers, continuing education credits, and meaningful networking opportunities. Not surprisingly, one of the biggest barriers was a perceived increase in teacher workload. Research on CSPAP-related professional development is still in its infancy, but it appears that in-depth workshops paired with ongoing support can have a positive effect on teacher's job commitment, physical activity opportunities for students, and some aspects of physical activity behavior (Carson et al., 2014; Centeio et al., 2014; Kuhn et al., 2020).

Though full implementation of all five components of CSPAP in a school is often considered the ultimate goal, it is not always realistic for many schools and their contexts (van der Mars & Lorenz, 2020; Webster et al., 2020). It is likely difficult to implement before and after school programs, during school physical activity, staff wellness, and community engagement in addition to quality physical education all at once if these components are not already in place. Thus, providing professional development to support staff to implement one or two areas of CSPAP at a time, in addition to establishing a quality physical education program, can be a good strategy. Centeio and colleagues (2014) discuss the importance of customizing CSPAPs to fit the needs of the school and suggest that CSPAP implementation can sometimes appear overwhelming as teachers and physical activity leaders may feel they need to have all five components met. Lowering the barrier to entry for implementing physical activity initiatives by providing training that is tailored toward individual components of a CSPAP can be helpful.

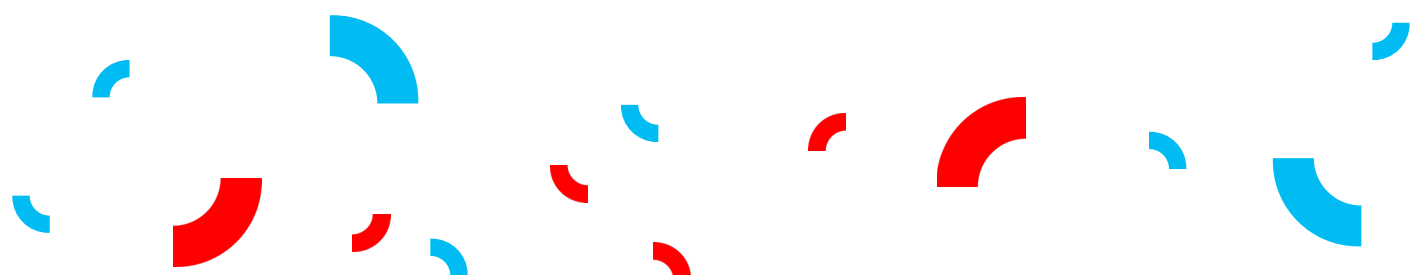
Training & Skills

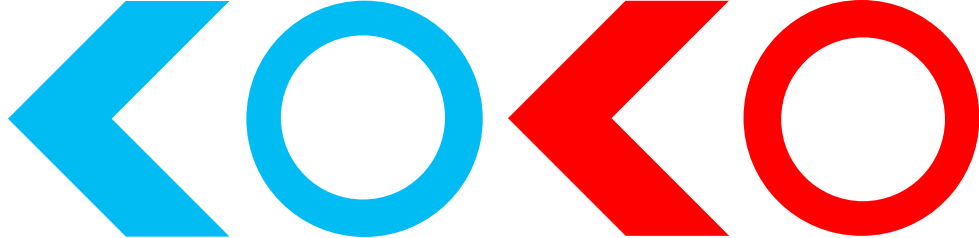
Having a trained active school champion or physical activity leader (PAL) on school campuses is a promising strategy for implementing CSPAP and developing an active school culture (Beighle et al., 2009; Carson, 2012, 2013; Castelli & Beighle, 2007). Stoecker & Dauenhauer (2021) suggest that a successful champion/PAL should be able to (a) advocate for physical education and physical activity, (b) train school staff on the importance of health and physical activity, (c) be one of the primary organizers of schoolwide physical activity and health events, and (d) understand each component of CSPAP (p. 24). Likewise, Carson and colleagues (2020) highlight knowledge of organizational structures within the school community and general leadership skills such as planning, communication, collaboration, and delegation. These are the knowledge and skills that anyone involved in leading an active school should have, whether they are physical education teachers, classroom teachers, administrators, school staff, or volunteers.

Professional development and trainings are also needed for other teachers, school staff, and volunteers who may be facilitating physical activity programs before, during, or after school. A substantial amount of research has examined the effects of training after school program providers to promote physical activity, with results indicating that staff behaviors can be improved and physical activity levels of youth can be increased (Beets et al., 2014, 2015, 2017; Hughley et al., 2014; Weaver et al., 2014, 2015). Weaver and colleagues (2012, 2014) refer to the 5 M's of training related to a clearly defined Mission, Motivating activities, Managing the environment, Monitoring youth behaviors, and Maximizing physical activity by implementing all strategies simultaneously. Classroom teachers can also benefit from ongoing professional development related to movement integration. Addressing known barriers to implementation such as limited space, time, and fear of losing control of the class, in addition to modeling effective classroom movement integration techniques have been promising strategies for training classroom teachers (O'Hara Tompkins et al., 2019; Sobolewski et al., 2021). Experts suggest that professional development is needed most for teachers who are not considered innovators or early adopters (Webster, Mindrila et al., 2020)

Many organizations around the country offer professional development, training, and resources related to CSPAP that are complementary to Active Schools' vision. For example, SHAPE America and the CDC both have dedicated websites with resources and professional development opportunities related to CSPAP. Likewise, Springboard to Active Schools offers recorded webinars and user-friendly materials that active school champions can use to learn how to promote physical activity in their school communities. The Online Physical Education Network (OPEN) is another free resource for quality physical education and physical activity professional development and materials (Stoecker & Dauenhauer, 2021). The national Active Schools movement partners with these organizations, has a shared vision for physical activity in schools, and also offers its own professional development opportunities for schools.

In response to calls on physical education teacher education programs to take a more deliberate role in public health promotion (Webster, Webster et al., 2015), several pre-service teacher education programs are also integrating elements of CSPAP into their undergraduate curricula and some graduate programs offer ongoing training for in-service teachers interested in promoting physical activity in schools. A special issue of *JOPERD* (Carson et al., 2017; Castelli et al., 2017) introduced 12 pioneering physical education teacher education programs around the country that include CSPAP-related learning experiences. Many teacher education programs are also preparing classroom teachers for movement integration through physical activity-related course content and service-learning experiences (Michael et al., 2018, 2019; Webster et al., 2013, 2019). Schools should seek to hire new teachers with strong physical activity-related skill sets and encourage their staff to pursue ongoing professional development to maximize the number of trained educators on school campuses.

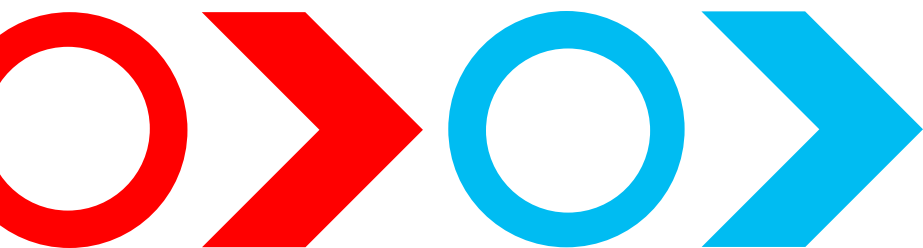




A Call to Action

Active Schools is calling on school leaders, educators, and caring adults around the country to join the movement. There is sufficient evidence to show that physical activity is beneficial for children of all ages and that schools are a key environment for the promotion of physical activity. This guiding framework, including the nine essential elements, offers a roadmap for school communities that wish to develop a sustainable active school culture.

In addition to this document, Active Schools has developed a School Implementation Guide, Menus of Evidence-Based Practice, and an Evaluation Handbook to further assist schools in the promotion of physical activity. The strategies outlined in these resources are based upon the research cited within this document. Administrators, teachers, school staff, families, and community members are encouraged to use these resources to identify practical, research-based strategies for school physical activity promotion. Additionally, Active Schools is committed to supporting schools with special campaigns, ongoing professional development, and networking opportunities. If you are not already registered as an active school champion, visit <https://www.activeschoolsus.org/> and begin the journey today!



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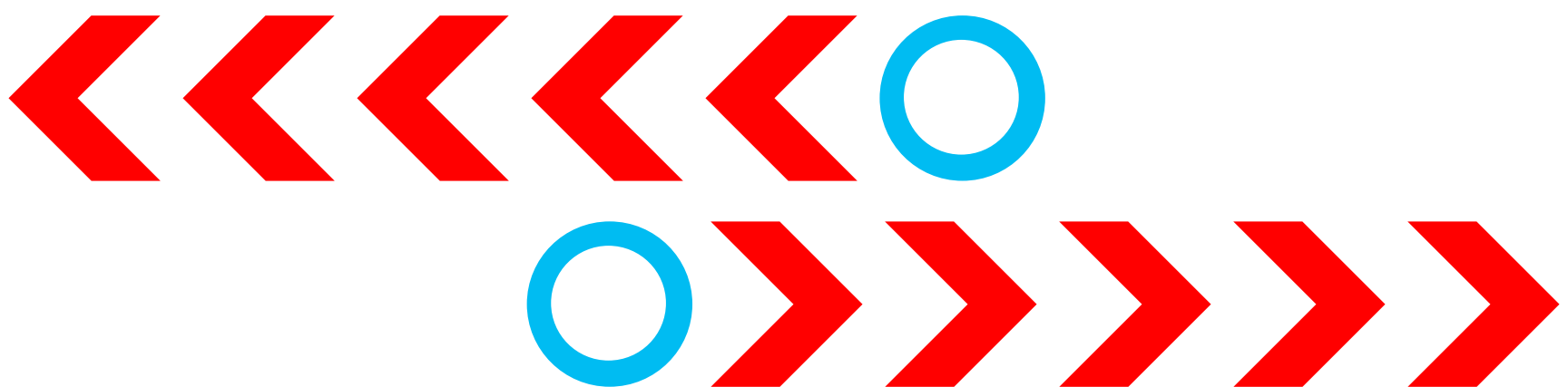
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