Changes in national and state policies in the past two decades have had a negative impact on school health education. During this same time, significant gains have been made in our understanding of the relationship between health and academic outcomes. This article proposes three challenges that could help refocus our country’s efforts toward the positive impacts quality school health education can have on our population. Each of these challenges has corresponding recommendations to guide stakeholder efforts to help bring about these changes.

**Keywords:** child/adolescent health; logic models; program planning and evaluation; health literacy; school health; coordinated school health programs; school health

For the past couple of decades, educational and political forces of the United States have negatively affected health education. State education departments have worked to improve the quality of education with the federal No Child Left Behind Act and more recently, with the Every Student Succeeds Act (U.S. Department of Education, n.d.). These mandates often result in instructional shifts toward subjects such as English Language Arts (ELA) and math, at the expense of subjects not viewed as part of the “core” curriculum (Center on Education Policy, 2008). At the elementary level, the School Health Policy and Practices Study (SHPPS) data indicates that since 2000, instruction in health topics such as alcohol and other drug use prevention, HIV prevention, infectious disease prevention, and tobacco use prevention has decreased (Centers for Disease Control and Prevention [CDC], 2017a). School district personnel often report weakening of their health education standards to accommodate these mandates and to place a stronger focus on statewide testing requirements (personal communication, 2018). As competing interests place demands on the schools, the need to educate school officials, parents, and other stakeholders on the value of health education in terms of academic and social outcomes becomes imminent.

This is the first article in a series of three on challenges in school health education with the purpose of initiating dialog around the challenges and recommendations presented with the desire to advance the profession within the context of the Whole School, Whole Community, Whole Child (WSCCC) model as described by CDC and ASCD (CDC, 2015a). The WSCC model

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serves as a collaborative approach to health and academics that includes 10 components of the school and community (from health education to the social and emotional climate), which centers on the whole child and emphasizes the role of the community (CDC, 2015a). The WSCC model helps to show the connection between health and academics and can serve as the foundation for the development of quality school health education, especially during times of educational reform (see Figure 1).

Three challenges are outlined in this article that, if successfully addressed, could positively affect the well-being of future generations. Those three challenges include (1) make quality school health education the new norm; (2) make the case that school health education is key to improving health literacy in the United States; and (3) operationally define quality school health education and establish relevant measures to determine success.

> CHALLENGE 1: MAKE QUALITY SCHOOL HEALTH EDUCATION THE NEW NORM

Defining and describing quality school health education are critical for effective discussion regarding how to impact the well-being of future generations. If one were to ask 10 people not directly involved in school health to describe school health education, it is very likely there would be a wide variety of responses. Unfortunately, there is no published research that examines perceptions regarding what would entail quality school health education. However, these responses would likely vary and include examples such as “talking about health topics,” “learning about [specific content area],” and “developing the skills to be healthy,” among many others. How people view health education can vary greatly based on how they have experienced health education in their own past. Those who had poor quality health education in which they primarily watched content-only videos, completed healthy word crossword puzzles or had guest speakers who used fear tactics to get across their message may not see the value in school-based health education or the potential of a model such as WSCC to form educational collaborations (CDC, 2015a).

In the field, health education is defined as “any combination of planned learning experiences using evidence-based practices and/or sound theories that provide the opportunity to acquire knowledge, attitudes, and skills needed to adopt and maintain healthy behaviors.” (Joint Committee on National Health Education Standards, 2012, p. 12). In describing the components of the WSCC model, the CDC expanded this definition to include “When provided by qualified, trained teachers, health education helps students acquire the knowledge, attitudes, and skills they need for making health-promoting decisions, achieving health literacy, adopting health-enhancing behaviors, and promoting the health of others” (CDC, 2015a, para. 1). Stating that health education should help students achieve health literacy as well as to adopt health-enhancing behaviors, (CDC, 2015a) speaks to a critical understanding of the role of school health education with regard to health literacy and behavior change as potential outcomes (DeWalt & Hink, 2009).

Using a comprehensive review of the literature on health behavior change, a national panel of experts in 1995 developed the National Health Education Standards (NHES; Joint Committee on National Health Education Standards, 1995), which was then updated and revised in 2007 (Joint Committee on National Health Education Standards, 2007). The NHES includes eight standards and seven of which focus on the development of skills. Only one standard directly addresses content by providing functional knowledge to create a foundation for skill development and to affect student attitudes (Joint Committee on National Health Education Standards, 2007). Few health or educational professionals outside of professionally trained health educa-
tors learn the process of changing students’ negative attitudes while reinforcing positive ones using health behavior theories (such as social cognitive theory) effective pedagogy, or the development of a classroom environment to facilitate learning (CDC, 2015b). Additionally, only trained health educators learn how to apply real-life skills that are age and developmentally appropriate to various health topics that can affect students’ lives (CAEP Council for the Accreditation of Educator Preparation, 2015).

The CDC’s (2015a) description of health education also includes the statement:

Comprehensive school health education includes curricula and instruction for students in pre-K through grade 12 that address a variety of topics such as alcohol and other drug use and abuse, healthy eating/nutrition, mental and emotional health, personal health and wellness, physical activity, safety and injury prevention, sexual health, tobacco use, and violence prevention. (para. 1)

The CDC literature goes on to state that health curricula and instruction should address the NHES and incorporate the Characteristics of an Effective Health Education Curriculum (CDC, 2015b), which uses evidence-based results to recommend practices for school health education. It is important to note that neither the NHES nor the Characteristics of an Effective Health Education Curriculum (CDC, 2015b) are a prescribed curriculum or program but rather serve as a framework that school districts can use to develop programming materials that best meets their local needs. As a result, local control still exists and the mix and depth of topics and skills to be addressed can vary based on need and would thus be more likely to result in positive outcomes (CDC, 2015b).

Like math, social studies, or ELA, developing proficiency across a wide variety of topics takes time and consistent building and reinforcement. Helping students develop the health knowledge, attitudes, and skills that will result in positive behaviors and outcomes does not occur quickly. This is why “quality” school health education is not simply how well a teacher addresses health education in the classroom but also requires the district and state to support dedicating enough time to deliver health education. SHPPS data shows that only a third of elementary schools, half of middle schools, and three quarters of high schools have any specified time requirements for school health education (CDC, 2017b). The NHES recommend 80 hours per year in Grades 3 to 12 (Joint Committee on National Health Education Standards, 2007) yet competing interests have made allotting time to health education less a priority for many schools (Center on Education Policy, 2008). The focus on the health and well-being of students, including their academic and vocational development, happens neither quickly nor in isolation. Because of this, quality school health education would ideally be offered in the context of the WSSE model and would include many segments of the school that could collectively affect students in a positive way (Birch & Videto, 2015). Those many segments would include efforts reflective of a more systems-based approach such as school counselors addressing student mental health needs, classroom teachers offering social and emotional learning strategies in the classroom, and district-wide support from health administrators for promoting positive mental health in both students and faculty would occur (Birch & Videto, 2015). These are just some examples of how a few of the 10 components of the WSCC model could come together to support the success of students in a district.

Little is known regarding the quality of the health education instruction that is taking place across the United States. As it currently exists, SHPPS includes largely yes/no statements asking the respondent to identify whether their school addresses a given topic (CDC, 2017c). Unfortunately, through numerous trainings and engagement with teachers from across the United States, many school health leaders believe that a large number of teachers may address some of these topics and talk about the skills but might not utilize the practices as described in the NHES or the Characteristics of an Effective Health Education Curriculum (CDC, 2015b). It would be an overwhelming challenge for the CDC to try to determine, through an assessment such as SHPPS, whether school health educators are able to provide the necessary instruction for meeting the definition of a quality program. However, if school health education is going to be part of the solution to improve academic performance, to decrease health-related conditions, and to develop healthy literate individuals, then having a universally accepted expectation, or the new norm, regarding what should be occurring during school health education is critical. In an attempt to assist school districts in determining if they are addressing the characteristics of a quality program, Society for Public Health Education (SOPHE) school health leaders have developed two assessment tools for districts and schools to utilize in making that determination. Sample items from the district-wide instrument are presented in Table 1 and are reflective of best practices in school health education (CDC, 2015b).

**Recommendations for Challenge 1**

Define and describe quality school health education with input from school leaders, health teachers, professional health and educational organizations, and
related government agencies (CDC, State Departments of Education, National Education Association, etc.).

A universal and acceptable definition of quality school health education must exist in order to ensure that buy-in from the local level to the national level will occur. Education sector involvement is important to the success of this process (administrators, faculty, and professional organizations supporting education professionals).

Organize professional health and educational organizations and associations focused on healthy youth and healthy communities to support a coordinated and collaborative approach, such as presented in the WSCC model, which includes school health education, must be made for quality health education to exist.

While chronic disease, drug addiction, and other health issues are multifactorial, there is little doubt that most of the cases are preventable. The overlap between these and academic and health outcomes should drive numerous sectors to support quality school health education (Michael, Merlo, Basch, Wentzel, & Wechsler, 2015). A collaborative approach such as offered in the WSCC model may require rethinking how school health education is defined, as well as, supported and promoted.

Advocate for the opportunity for quality school health education to occur. This would include proper training of school health educators, hiring of certified school health educators, and providing adequate time for quality school health instruction.

Affecting change in health and academics in the schools will require time and resources that do not currently exist. Advocating for this change and then justifying the change though the measurement of outcomes will be critical.

➤ CHALLENGE 2: MAKE THE CASE THAT SCHOOL HEALTH EDUCATION IS KEY TO IMPROVING HEALTH LITERACY IN THE UNITED STATES

As identified under Challenge 1, health literacy is an important outcome related to quality school health education. The original NHES were even published with the title National Health Education Standards: Achieving Health Literacy (Joint Committee on National Health Education Standards, 1995). However, since the 1970s, there have emerged various definitions of health literacy. In 2012, a systematic review was published with the purpose of integrating the various definitions to capture the most comprehensive evidence-based dimensions of health literacy.

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**TABLE 1**

**SOPHE Characteristics of a Quality School Health Education Program**

*Sample Items From the SOPHE District-Wide School Health Education Program Assessment*

| Item                                                                 |
|---------------------------------------------------------------------|
| • The superintendent and central administrators view health education as a vital link between student health and academic success (i.e., both in the teaching of health education at all grade levels utilizing time requirements recommended by national standards and in addressing the health service needs of low income students). |
| • Principals regularly monitor implementation of a preK-12 (or K-12) health education curricular scope and sequence as applicable to the grades in their schools. |
| • Health education is a graduation requirement at the secondary level (middle school and high school). |
| • Qualified and skilled teachers who are professionally trained in health education provide preK-12 (or K-12) health instruction. |
| • At the elementary school level, health education is a part of the district core curriculum. |
| • Students receive regular report card grades in health education that are factored into their grade point average. |
| • An advisory committee of administrators, teachers, parents or guardians, students, and community representatives is involved in health education curriculum development, review, and revisions. |
| • School and district evaluations include health behavior measures related to risk factors that are associated with academic failure and protective factors associated with maintaining a healthy school environment. |
| • The district wellness policy is up to date and provides for delivery of nutrition education and other instruction designed to improve student wellness within the preK-12 (or K-12) health education curriculum. |

NOTE: SOPHE = Society for Public Health Education.
Health literacy . . . entails people’s knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course. (p. 3)

An essential function of the preK-12 education system is to improve literacy of youth while a related essential function of the public health system is “to inform, educate, and empower people about health issues” (CDC, 2018b, para. 2). In 2003, the U.S. Department of Education’s National Assessment of Adult Literacy measured the health literacy of U.S. adults and found that only 12% had a proficient level (Kutner, Greenberg, Jin, & Paulsen, 2006). One estimate suggests that such low levels of adult health literacy may cost the United States at least $106 to $238 billion annually (Vernon, Trujillo, Rosenbaum, & DeBuono, 2007).

Research shows that academic success, risky behaviors, and health status are all linked, which provides a strong case for the role of health education in the schools (CDC, 2016). The Institute of Medicine (IOM; 2004) Report on Health Literacy noted that “arguably, the most effective means to improve health literacy is to ensure that education about health is part of the curriculum at all levels of education.” (p. 149) and recommended several national actions be taken to help U.S. schools improve health literacy. As one example, in its chapter on Education Systems, the IOM recommended that

The Department of Education in association with the Department of Health and Human Services should convene task forces comprised of appropriate education, health, and public policy experts to delineate specific, feasible, and effective actions relevant agencies could take to improve health literacy through the nation’s K-12 schools. (p. 161)

In a review of health literacy and child health outcomes the author stated, “Most schools do address health literacy, albeit at basic levels” (St. Leger, 2001, p. 204). The author goes on to state that “Health literacy as a concept is very compatible with the health promoting school concept and could form an acceptable outcome by which the success of a health promoting school could be assessed” (St. Leger, 2001, p. 204). Currently the WSCC model would serve as the model for a health promoting school with health literacy as a key outcome for students as a result of a quality program within that model.

In 2010, the DHHS developed a National Action Plan to Improve Health Literacy, the third goal of which is to “Incorporate accurate, standards-based, and developmentally appropriate health and science information and curriculum in child care and education through the university level” (U.S. Department of Health and Human Services, 2010, p. 33). As one example of several strategies proposed to help achieve this goal, framers of the National Action Plan recommended that educational administrators, managers, and policymakers: “Promote health literacy by including the National Health Education Standards in school curriculum reform initiatives” (U.S. Department of Health and Human Services, 2010, p. 33).

**Recommendations for Challenge 2**

Define health literacy in the context of quality school health education.

There is a strong relationship between health education and health literacy and efforts should be made to avoid pitting one against the other. Quality school health education includes the promotion of health literacy. This is important because much of the content knowledge learned today will be meaningless when the elementary students are adults. Teaching students how to learn about their health, how to use skills that are applicable across many facets of life, and why these are important in their life (attitudes) should be the foundation of health literacy. It is important that this message be communicated so as not to reinforce a “content only” message and to take place within a program closely linked to the NHES and as an essential component of the WSCC model.

Support school health education as a strategic avenue to achieve health literacy.

Quality school health education with the goal of health literacy is needed to prepare young people to deal with the many issues that could affect their health and well-being. This approach where preK-12 health education is
developed as a way to achieve health literacy needs to be reinforced through teacher education programs, accrediting requirements, and advocacy efforts.

**CHALLENGE 3: OPERATIONALLY DEFINE QUALITY SCHOOL HEALTH EDUCATION AND ESTABLISH RELEVANT MEASURES TO DETERMINE SUCCESS**

Being able to define quality school health education, what processes need to exist in a quality program and measuring the desired impacts and outcomes from such a program make up the heart of this challenge. Nationally recognized assessment tools are available that focus on examining school health in the context of the WSCC model with tools such as the ASCD Healthy School Report Card and the CDC School Health Index (see Table 2). Most of the available assessment tools focus primarily on inputs and process while some address impact. However, few look at actual program outcomes for school health education. Narrower assessments are also available to assess components of the school health curriculum (the Health Education Curriculum Analysis Tool) and related policies (the WellSAT 3.0; see Table 2). What is often lacking is an understanding regarding the impact and outcome of the program itself (Did students gain health literacy skills? Have behaviors changed?). Limited training or background in school health education or training in evaluation methods are barriers that many school personnel face thus preventing adequate measurement of program success.

At the state-level, regents’ exams, comprehensives or other standardized testing are utilized to assess student progress in subject areas such as math and ELA. In school-based health education, measuring long-term health, academic, or vocational outcomes is generally not done, let alone measuring precursors such as health literacy. There are multiple measurement tools to assess health literacy of children and adolescents yet a review of instruments designed for measuring generic health literacy in children and adolescents found to be lacking a clear and conceptual definition of health literacy that aligns with the NHES (Manganello, 2008; Okan et al., 2018). In addition, the authors have found that the majority of the health literacy instruments for children and adolescents focus on clinical interaction versus the NHES skills central to school health education (i.e., decision making, goal setting, interpersonal communication, etc.; Joint Committee on National Health Education Standards, 2007). Without an agreed-upon, standardized approach to defining and measuring school-based health literacy in children and adolescents it will be impossible to truly measure the relationship between quality school health education and health literacy.

School health education success is typically measured in terms of changes in knowledge, attitudes, and

| Assessment | Assessment Focus | Source |
|------------|-----------------|--------|
| ASCD Healthy School Report Card (2nd ed.) | Electronic tool to assess current health programming and to create an evidence-based environment. | ASCD |
| CDC School Health Index (2017 ed.) | Online self-assessment and planning tool to improve health and safety programs and policies. | CDC |
| ASCD School Improvement Tool | Online assessment of Whole Child tenets and indicators along with WSCC model components. | ASCD |
| CDC School Health Policies and Practices Study | National survey periodically conducted to look at school health policies related to health and wellness at the state, district, school and classroom levels. | CDC |
| WellSAT 3.0 | Online tool to assess and improve School District Wellness Policies. | UCONN RUDD Center for Food Policy & Obesity |
| CDC Health Education Curriculum Analysis Tool | Assessment tool to help School Districts assess school health curriculum and related policies. | CDC |

SOURCE: ASCD (2018a); ASCD (2018b); Centers for Disease Control and Prevention (CDC; 2012, 2017c, 2018a); UCONN RUDD Center for Food Policy & Obesity (2018).
sometimes behaviors (or behavioral intentions) in those students participating in a program. For schools that assess knowledge change, it is often with the belief that knowledge would ultimately result in health-enhancing behaviors and practices. Unfortunately, there is not a strong link between knowledge alone and changes in health behavior (Kelly & Barker, 2016). For schools that go to the extent of measuring or tracking health-related behaviors associated with a program or curriculum, it is often conducted using an assessment tool such as the Youth Risk Behavior Surveillance System or a similar assessment (CDC, 2018c). In most cases, what is lacking is a way to assess long-term program outcomes such as health literacy, decreases in health-related conditions, increases in college and career success, and healthier communities (see logic model in Figure 2).

The field needs a nationally endorsed operational definition of school health education success. To develop and measure successful school health education programs, it is important to determine what program success means for students, schools, and the profession. Processes to measure this success needs to be realistic without holding the health teacher to unrealistic standards beyond what is typical among teachers of other subjects.

Looking at successful programming that encompasses more than just curricular impact has been done through examination of programs and policies at local, state, and national levels with the CDC SHPPS (CDC, 2017a) and through guidance provided by the national agenda and objectives of Healthy People (CDC, 2019). Tracking health literacy and the associated skills is warranted—yet lacking adequate instructional time, appropriate skill pedagogy, and a comprehensive preK-12 program (quality education) is asking for something that schools are not yet prepared to deliver.

Research continues to demonstrate the relationship between health and academic success (Cabrera,
However, factors that are strongly linked to health and academic success such as social/emotional development and learning (SEDL), root causes of academic concerns (poverty, housing stability, food insecurity), and risk factors that impact health are not examined. When data are collected, they are often not used to establish policies and programming. It is not common practice for school personnel to use health measurement data at the school, district, and state levels or to share that data in accountability avenues such as the statewide School Report Cards. Being able to link health education and health literacy to SEDL, root causes of academic concerns, and the reduction of risk factors could be a useful outcome measure for schools (Paakari & Paakari, 2012). Quality school health education would be the primary driver of increasing health literacy in the schools but other facets of the WSCC model are also likely important in addressing factors that impact health and academics of students. An examination of the status of the five ASCD Whole Child tenets of healthy, safe, engaged, challenged, and supported, at the core of the WSCC model (ASCD, 2018c) are certainly valuable to consider. Measurement of these whole child factors is important as is the measurement of additional factors that affect health and academics including poverty, housing stability, food security, and other factors shown to stand in the way of success for children (Health Impact Project, 2017).

Collecting data on these myriad issues and determining how quality school health education plays a role in mediating their effect on academic outcomes such as absenteeism, SEDL, school connectedness, and school discipline (data already collected by the schools) can provide guidance for new or revised policies that support quality school health education.

Since the introduction of the WSCC model, and the interest on data linking health and academics, an expanded understanding of outcome measures related to these trends, can be advanced. Translating these measures into a revised school health logic model may help to initiate the dialog necessary to move the health profession closer to an understanding of what it would take for quality school health education to be defined and measured.

**Recommendations for Challenge 3**

Integrate academic and public health processes, impacts, and outcomes in a unified model demonstrating the potential impact of a quality school health education.

Without local, state, and national support, positive movement in the schools toward quality school health education will continue to stall. Having a logic model (Figure 2) detailing these relationships can help to influence decision makers at the local, state, and national levels. It can also serve as a foundation for initiating a national conversation of what needs to be measured to demonstrate the importance of quality school health education.

Include the measurement of health education indicators in state accountability systems.

Education and advocacy will need to occur at the state level to include the measurement of health education indicators in state accountability systems (Health Impact Project, 2017). This will require funding support for the necessary inputs and processes to take place in local educational agencies.

Establish a standard definition of a quality school health education program and the means to measure indicators of such a program.

Actions at the national level need to include a consensus as to what constitutes a quality program (as discussed in Challenge 1) and then an agreed-upon means by which the critical elements of school health education are specified and measured. The CDC, ASCD, national professional associations such as SOPHE and ASHA, leaders in higher education professional preparation programs, the Society of State Leaders of Health and Physical Education, and others are needed to assist the school-based practitioners in identifying, defining, and supporting processes to implement and monitor changes through a system such as an expanded version of SHPPS. A revised or expanded SHPPS could include academic as well as additional health measures that reflect the data important to the mission and success of the schools (CDC, 2017b).
DISCUSSION AND CONCLUSION

The purpose of this article is to initiate dialog around multiple challenges and suggested recommendations to advance the school health education profession. While these challenges and recommendations are delineated, this article serves as an organizational tool to help develop advocacy efforts pertaining to specific areas of concern. In reality, these challenges and recommendations all interrelate and cannot be separated from one another. Making quality school health the new norm, that school health education is the key to improve health literacy, operationally defining quality school health education, and establishing measures of success are all critically important to one another. Collectively, these are about changing the culture and perceptions regarding school health education within the context of the WSCC model. There is ample research that links quality curriculum to behavior change; research that links health behavior change to health outcomes; research that links health behaviors to academic outcomes; and research that links health literacy to health behaviors and outcomes. Additional research is needed to examine the impact of quality school health education curricula on long-term health and academic outcomes in students. Advocacy work is also needed to organize school, public health, education, and other organizations around the vision for quality school health education as an expectation for all students.

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