Health Education

Elementary and Middle School Applications

TENTH EDITION

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HEALTH EDUCATION: ELEMENTARY AND MIDDLE SCHOOL APPLICATIONS, TENTH EDITION

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PREFACE

VISION AND GOALS

The ideas, concepts, and challenges presented in this text have developed out of many different experiences: teaching elementary and middle-level children; teaching a basic elementary/middle school health course to hundreds of pre-service elementary, early childhood, and special education majors; working with numerous student teachers; and serving on a variety of local, state, and national curriculum and standards committees. Authors and contributors are and have been engaged in teaching in K–8 settings, designing curriculum, developing instructional strategies, and collaborating with state and local educators to provide professional development. This has provided opportunities to use the content and strategies included in this tenth edition.

We have written this textbook with several groups in mind: (1) the elementary and middle-level education major who has little background or experience in health education but will be required to teach health education to their students in the future, (2) the health education major who will be the health specialist or coordinator in an elementary or middle school, (3) the school nurse who works in the elementary/middle school setting, and (4) those community health educators and nurses who increasingly must interact with elementary and/or middle school personnel. Our goal is to help ensure that elementary and middle school teachers and health specialists obtain the information, skills, and support they need to provide quality health instruction to students.

CONTENT AND ORGANIZATION

The tenth edition is divided into three sections. Section I, "Foundations of Health Education," includes Chapters 1 through 4. This section introduces the coordinated school health program, the relationship between health and learning, the national health initiatives, the development of the elementary/middle school health education curriculum, the concept of developmentally appropriate practice, lesson and unit planning, and assessment. The basics of effective health education and effective instruction approaches are provided, including a critical analysis of standards-based approaches to health education and strategies for creating a positive learning environment, managing time constraints, and handling controversial topics and issues.

Sections II and III reflect the Centers for Disease Control and Prevention's Health Education Curriculum Analysis Tool. Section II, "Helping Students Develop Skills for Positive Health Habits," includes Chapters 5 through 9 and focuses on the positive health habits students can adopt and maintain to help them live a healthy life. The chapters in Section II cover mental and emotional health, healthy eating, physical activity, safety and unintentional injury prevention, and personal health and wellness. Section III, "Helping Students Translate Their Skills to Manage Health Risks," focuses on the health risks students need to avoid or reduce to promote health. These chapters (10 through 14) cover intentional injury prevention and violence; tobacco use; the use of alcohol and other drugs; sexual health; and managing loss, death, and grief.

Sections II and III present the content and the personal and social skills that comprise the National Health Education Standards. Each chapter in these sections begins by discussing the prevalence and cost of *not* practicing the positive health behavior, the relationship between healthy behaviors and academic performance, and relevant risk and protective factors. Readers then are provided with information about what schools are currently doing and what they should be doing in relation to the health behavior. Chapters in these sections also provide background information for the teacher, developmentally appropriate strategies for learning and assessment, sample student questions with suggested answers (Chapters 11–14), and additional recommended resources, including commercial curricula, children's literature, and websites.

CHAPTER-BY-CHAPTER CHANGES OF THE TENTH EDITION

The new edition includes updated statistics throughout. Updates have been made to Strategies for Learning and Assessment, Children's Literature, and Internet resources. All references to YRBS and SHPPS data have been updated to include the most recently disseminated data. Additionally, Healthy People references have been updated to include *Healthy People 2030* objectives.

A new section, Considerations for Special Populations, has been added to Chapters 5–14 in an effort to acknowledge current issues influencing the teaching of the chapter content.

Chapter 1: Whole School, Whole Community, Whole Child

- The Whole School, Whole Community, Whole Child section was revised.

Chapter 2: Comprehensive School Health Education

- Revised section on Influence at the National Level.

Chapter 6: Promoting Healthy Eating

- Updated to include most current dietary guidelines.
- Revised school strategies to promote healthy eating.
- Included information on the impact of COVID-19 on food insecurity.

Chapter 7: Promoting Physical Activity

- Updated physical activity guidelines.

Chapter 8: Promoting Safety and Preventing Unintentional Injury

- Strategies for Learning and Assessment were revised to incorporate online tools and resources.

Chapter 9: Promoting Personal Health and Wellness

- Factors that influence personal health and wellness was updated to include more information on social determinants of health.
- Updated HIV information.

Chapter 10: Preventing Intentional Injuries and Violence

- Section on child trafficking was added.
- Revised trauma information.
- Updated findings on targeted school violence.
- Revised recommendations for school staff to prevent and manage bullying.

Chapter 11: Tobacco Use and Electronic Nicotine Delivery Systems Prevention

- Updated prevalence, cost, and tobacco availability information.
- Enhanced information on electronic cigarettes.
- Added student questions and teacher responses about vaping.

Chapter 12: Alcohol and Other Drug Prevention

- Revised influences of social media on alcohol and drug behavior.
- Added data on prescription drug use.
- Added new middle-school-oriented student questions and teacher responses.

Chapter 13: Promoting Sexual Health

- Revised content to help teachers address questions such as "what if we don't want to say NO?"
- Updated HIV information.
- Added information on gender identity.
- Added more resources for supporting LGBTQ+ youth.

Chapter 14: Managing Loss, Death, and Grief

- Revised section on Teacher's Role When a Student or Student's Relative Is Dying or Dies.

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RESOURCES

Key teaching and learning resources are provided in an easy-to-use format for the tenth edition of Heath Education. The resources include the following teaching tools:

- *Instructor's Manual to Accompany Health Education: Elementary and Middle School Applications.*
- *PowerPoint slides.* A complete set of PowerPoint slides is available for download. Keyed to the major points in each chapter, these slide sets can be modified or expanded to better fit classroom lecture formats. Also included in the PowerPoint slides are many of the illustrations from the text.
- *Test bank.* The test bank includes true-false, multiple choice, short-answer, and essay questions.

ACKNOWLEDGMENTS

I would like to express deep appreciation to my colleagues who significantly contributed to the revisions made in this edition.

Janet Kamiri, MPH, CHES, Director of Health and Wellness, Indianapolis Urban League, revised Chapter 6: Promoting Healthy Eating; Chapter 9: Promoting Personal Health and Wellness; and Chapter 13: Promoting Sexual Health.

Chris Wirth, PhD, CHES, Assistant Professor of Clinical Practice, Department of Movement Sciences & Health, University of West Florida, revised Chapter 5: Promoting Mental and Emotional Health; Chapter 7: Promoting Physical Activity; Chapter 11: Tobacco Use and Electronic Nicotine Delivery Systems Prevention; and Chapter 12: Alcohol and Other Drug Use Prevention.

Katherine Greene, MPH, revised Chapter 8: Promoting Safety and Preventing Unintentional Injury; Chapter 10: Preventing Intentional Injuries and Violence; and Ancillaries: Chapter Outlines, Test Bank, and PowerPoints slides.

Their expertise and experience have provided invaluable contributions to the tenth edition.

I continue to be incredibly grateful to those who have made it possible for me to continue to share this resource with you. The vision, expertise, and dedication of Susan K. Telljohann, Cynthia W. Symons, and Beth Pateman will forever be captured throughout this textbook. These three school health educators have been vital in shaping school health education, mentoring the next generation of school health educators, and positively altering what we today know as school health education. Our profession and the work that has come from it are better because of these wise individuals.

We hope that you enjoy the changes and additions made in this tenth edition. We welcome any comments or suggestions for future editions. We wish all the best and success in teaching health education to children and preadolescents.

Denise M. Seabert

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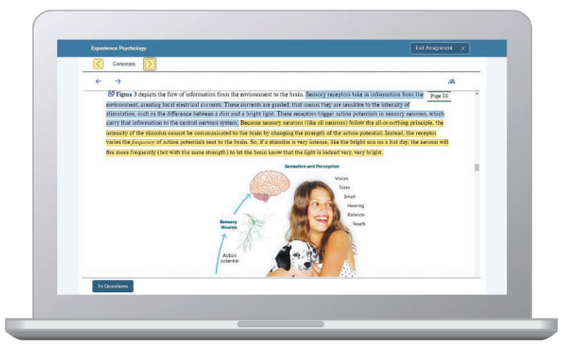

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SECTION I

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Foundations of Health Education

Section I begins with a review of important definitions and concepts that frame current understandings about health and health promotion. Next, a rationale for the importance of school health programming as a mechanism to reduce health risks and promote school success is discussed. With the foundation of the *Healthy People* agenda and findings from the most recent School Health Policies and Practices Study, this section contains a review of the ten critical components of the Whole School, Whole Community, Whole Child approach to health and learning. Teachers in elementary and middle schools will be enriched by examining the ways in which the broad science about brain function and learning have been translated into strategies for improving health instruction. Information about the value of using health education theory to inform practice is introduced, and a critical analysis of standards-based approaches to health education is provided. Finally, this section highlights strategies for creating a positive learning environment, promoting connectedness, managing time constraints, and dealing with controversial content and associated instructional issues in health education and promotion.

1

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OUTLINE

Whole School, Whole Community, Whole Child

A Collaborative Approach to Learning and Health

DESIRED LEARNER OUTCOMES

After reading this chapter, you will be able to . . .

- **Define each of the domains of personal health.**
- **Identify behavioral risk factors that influence illness and death.**
- **Describe the link between student health and academic achievement.**
- **Discuss the influence of school health programs on improving school success.**
- **Summarize the role of each element of the Whole School, Whole Community, Whole Child model in improving the health of all stakeholders in the school community.**
- **Discuss the combined impact of the elements of the Whole School, Whole Community, Whole Child model on improving the health of all stakeholders in the school community.**

HEALTH: DEFINITIONS

A review of common understandings about health reveals that most people think in terms of physical well-being. As such, most people focus their thoughts and efforts on preventing or managing illnesses, participating in fitness activities, or modifying dietary behaviors. It is important, however, for teachers in elementary and middle schools to understand that health is a very broad concept that extends far beyond the limitations of the physical domain.

In 1947, the World Health Organization developed an informative definition of health defining it as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."[1] This definition made a critical contribution by clarifying that health is influenced by a number of interrelated and influential factors.

Today, health is best understood as the capacity to function in effective and productive ways, influenced by complex personal, behavioral, and environmental variables that can change quickly. Bedworth and Bedworth have defined health as "the quality of people's physical, psychological, and sociological functioning that enables them to deal adequately with the self and others in a variety of personal and social situations."[2] Further, Carter and Wilson have clarified that "health is a dynamic status that results from an interaction between hereditary potential, environmental circumstance, and lifestyle selection."[3] These definitions confirm that, although a great deal of personal control can be exerted over some sources of influence over health, the capacity for a person to be in complete control of all such factors is limited. In summary, current definitions emphasize both the independent strength *and* the interactive effect of six influential domains of health: the physical, mental/intellectual, emotional, social, spiritual, and vocational.

Physical Health (Physical/Body)

The most easily observed domain of health is the physical. In addition to being influenced by infectious agents, physical well-being is influenced by the combined effects of hereditary potential, exposure to environmental toxins and pollutants, access to quality medical care, and the short- and long-term consequences of personal behaviors. As such, physical health results from a complex and changing set of personal, family, social, financial, and environmental variables.

Initial and often lasting impressions of the health of a friend or classmate are based on observed physical characteristics, including height, weight, energy level, and the extent to which the person appears to be rested. In addition, it is common to make judgments about health status based on observed behaviors. In this context, if friends participate in regular exercise or always wear a seatbelt, others are likely to conclude that they are healthy. Conversely, very different judgments often are made about the health of friends who are overweight or use tobacco products. Although a person's health outcomes might improve if they participated in fewer risky behaviors, such individuals might be very healthy in other influential domains.

Mental/Intellectual Health (Thinking/Mind)

The capacity to interpret, analyze, and act on information establishes the foundation of the mental or intellectual domain of health. Additional indicators of mental or intellectual health include the ability to recognize the sources of influence over personal beliefs and to evaluate their impact on decision making and behaviors. Observing the processes of reasoning, the capacity for short- and long-term memory, and expressions of curiosity, humor, logic, and creativity can provide clues about mental or intellectual health.[4]

Like the other domains, mental or intellectual health is important at every stage of life. In addition to exerting influence over all elements of well-being, positive mental health can contribute to the ability of people to:

- Realize their full potential.
- Manage stresses of daily living.
- Work productively.
- Make meaningful contributions.

Many factors, including those that are biological (e.g., genetics and brain chemistry) and life circumstances or experiences (e.g., trauma or abuse), can influence mental health. Importantly, positive mental health can be enriched by participating in enriching activities in the other domains of health including regular and vigorous physical activity, getting enough sleep, and maintaining positive relationships with others.

Mental health challenges are common, and help is available. However, even though most people are willing to seek professional help when they are physically ill, many unfortunately are hesitant or even refuse to pursue therapeutic interventions when confronted with mental health challenges. Importantly, when care is provided by a trained professional, many people feel improvement in their mental health status, and others can recover completely.[5]

Emotional Health (Feelings/Emotions)

The emotional domain of health is represented by the ways in which feelings are expressed. Emotionally healthy people communicate self-management and acceptance and express a full range of feelings in socially acceptable ways. Experiencing positive emotions and managing negative ones in productive ways contribute balance to emotional health. Importantly, emotionally robust individuals practice a range of coping skills that enable them to express negative feelings (sadness, anger, disappointment, etc.) in ways that are not self-destructive or threatening to others. In this way, emotional health contributes to and is reflected in perceived quality of life.

Many people who feel isolated, inadequate, or overwhelmed express feelings in excessive or abusive ways. Others suppress or bottle up strong emotions. Routinely attempting to cope with negative feelings by burying them has been demonstrated to contribute to stress-related illnesses, including susceptibility to infections and heart disease. Fortunately, counseling, support groups, and medical therapies can help people manage emotional problems of many types. An important starting resource for those attempting to manage such problems is their family doctor. This professional, with whom people are familiar and comfortable, can diagnose, treat, or make referrals for effective therapies to support and enrich emotional health.[6]

Social Health (Friends/Family)

Humans live and interact in a variety of social environments, including homes, schools, neighborhoods, and workplaces. Social health is characterized by practicing the requisite skills to navigate these diverse environments effectively. People with strength in the social domain of health maintain comfortable relationships characterized by strong connections, mutuality, and intimacy. In addition, socially healthy people communicate respect and acceptance of others and recognize that they can enrich and be enriched by their relationships.[7]

Unfortunately, many people are unable to function in comfortable and effective ways in the company of others. Such individuals can't integrate a range of important social skills into daily living. Often, this is a consequence of being self-absorbed. Such limited focus can compromise one's ability to recognize needs and issues of importance to others. As a consequence, poorly executed social skills and the associated behavioral consequences can place significant limitations on the ability to initiate and maintain healthy relationships. Such limitations compromise personal health and the quality of life of others.

Spiritual Health (Spiritual/Soul)

The spiritual domain of health is best understood in the context of a combination of three important elements:

- Comfort with self and the quality of interpersonal relationships with others.
- The strength of one's personal value system.
- The pursuit of meaning and purpose in life.[8]

Spiritually healthy people integrate positive moral and ethical standards such as integrity, honesty, and trust into their relationships. These individuals demonstrate strong concern for others regardless of gender, race, nationality, age, sexual orientation, or economic status. Although some people believe that spiritual well-being is enriched by their participation in formal religious activities, the definition of spiritual health is not confined to sacred terms or practices.

People with compromised spiritual health might not be guided by moral or ethical principles that are broadly accepted or believe that a higher being or something beyond themselves contributes meaning to their lives. Among such individuals, short-term economic objectives, self-interest, or personal gain at the expense of others could be of primary importance. People with compromised spiritual health are likely to feel isolated and have difficulty finding meaning in activities, making decisions about significant issues, or maintaining productive relationships with others.

Vocational Health (Work/School)

The vocational domain of health relates to the ability to collaborate with others on family, community, or professional projects. Vocationally healthy people are committed to contributing their fair share of effort to projects and activities. This commitment is demonstrated by the high degree of integrity with which individuals approach tasks. In addition to personal enrichment, the vocational domain of health is manifested in the degree to which a person's work makes a positive impact on others or in the community. The behaviors of people with compromised vocational health threaten personal work-related goals and have a negative impact on the productivity of professional associates and the collaborative community of the school or workplace.

Lōkahi: A Model of "Balance, Unity, and Harmony"

When evaluating the quality of a person's health, it is important to remember that balance across the domains is as important as maintaining an optimal level of functioning within each. In this context, a middle school student who uses a wheelchair because of a disabling condition might produce very high-quality academic work and have confident and effective relationships with classmates. Conversely, a person who is very healthy in the physical domain might be limited in the ability to express emotions productively or to behave in ways that confirm a poorly developed moral or ethical code.

All cultures have developed ways to communicate about shared beliefs, values, and norms that influence behaviors within the group. In Hawaiian culture the term *lōkahi,* meaning "balance, unity, and harmony," is used to express this ideal. Depicted in Figure 1–1, the Lōkahi Wheel is a culturally specific depiction of the domains of health.[9] Readers will note that names for each part of the Lōkahi Wheel have been linked to the corresponding name of each domain of health discussed. In addition, this

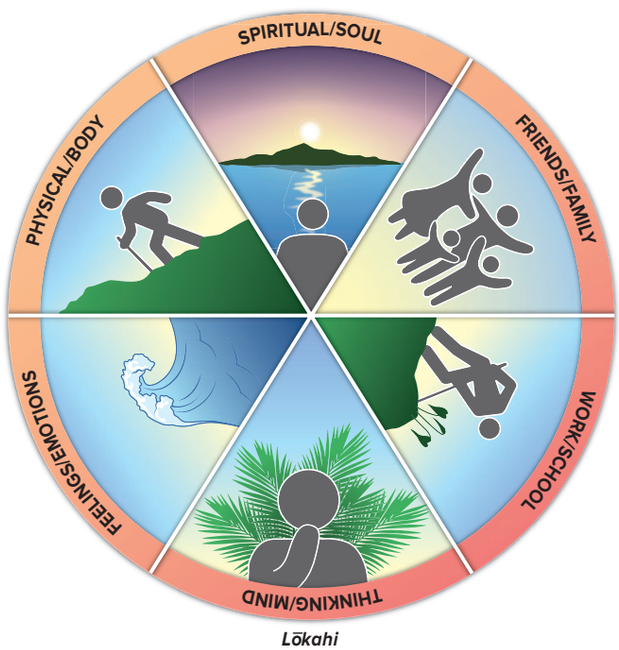


FIGURE 1–1 | **The Lōkahi Wheel**

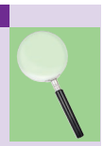
illustration reinforces the importance of maintaining a solid balance across the domains as a foundation for maintaining personal, family, and community health.

With a focus on the health of students in elementary and middle schools, examination of the Lōkahi Wheel reinforces the negative impact that an imbalance in the health of one person can exert on the "balance, unity, and harmony" of their family, school, and community. In this way, a student who uses tobacco, alcohol, or other drugs is likely to face negative health, academic, family, and/or legal consequences. Simultaneously, such behaviors can threaten the health of family and friends. Also, the behavioral risks of one student will disrupt the functional "balance" at school, in the workplace, and in the community. As such, it is clear that unhealthy risk behaviors can have significant personal and far-reaching negative consequences.

Lōkahi serves as a foundation for the Hawaiian term *e ola pono*. Though this term has a number of related interpretations, generally it is translated as "living in the proper way" or "living in excellence." When students live their lives in a way that is orderly, successful, and true to what is in their best interest, the elements of their health are in balance and simultaneously enrich the well-being of their family, school, and community.[10]

As discussed in Chapter 2 of this text, to be effective, developmentally appropriate health education learning activities for students in elementary and middle schools must enable learners to translate general or abstract concepts into understandings or representations that have personal meaning or relevance. To enrich student understanding of the influence of each domain of health and the combined importance of a balance between them, teachers are encouraged to explore the learning activity described in Consider This 1.1.

Consider This **1.1**



Health: A Personal Evaluation

At the beginning of each chapter in this text, readers will find artwork done by students in middle school health education classes. An example of correlated instruction (see Chapter 4), the drawings reveal student understandings about critical issues discussed in that chapter. Additional drawings reinforce components of the WSCC model, a concept discussed later in this chapter, and the National Health Education Standards discussed in Chapter 3.

Importantly, the artistic depiction at the beginning of Chapter 1 was done by a sixth grader. This Lōkahi Wheel provides a very personal view through the eyes of this middle school student of each domain of health and the balance of their combined effects. To enrich understanding and personalize the concept of health, teachers are encouraged to have students draw their own Lōkahi Wheels. The inclusion of color, personally meaningful depictions, and family characteristics should be encouraged. As a way to extend the learning activity, students could be asked to write a journal entry or share their "health story" with family members. In addition, the class could create a composite Lōkahi Wheel representing events, conditions, and circumstances that influence the health of the group as a whole. Finally, this learning activity could be correlated with social studies instruction as a way to explore ways in which people depict and communicate about issues of cultural and historical significance.

DETERMINANTS OF HEALTH

In 1979, the U.S. government embarked on a sweeping initiative to improve the health of all Americans. This multidecade agenda was launched with the publication of *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*. This document confirmed that the leading causes of illness and death among Americans had undergone dramatic change between the beginning and the end of the twentieth century. In the early 1900s, the greatest number of Americans died as a result of infectious or communicable diseases, including influenza and pneumonia, tuberculosis, and diarrhea and related disorders. Fortunately, due to measures such as improved sanitation and medical discoveries, Americans living just a century later enjoyed significantly longer, healthier lives.[11]

During the past century between 1900 and 2000, the average life span of Americans lengthened by greater than thirty years. Many factors contributed to such dramatic improvement in the health and life span of Americans during the twentieth century. In 1999, the Centers for Disease Control and Prevention (CDC) compiled a list of ten specific achievements that made a "great" impact on improving the nation's health during that 100-year period. These achievements are reviewed in Table 1–1.[12] It is important to recognize and celebrate the kinds of individual, community, and governmental activities that made these advancements possible. Such efforts continue to influence improvements in the health of all Americans today.

Although there were dramatic increases in the length and the quality of life of Americans since 1900, *Healthy People* reinforced the need to address factors that continue to cause premature death. This report confirmed that approximately 50 percent of premature morbidity (illness) and mortality (death) among Americans was linked to variables largely beyond personal control. These variables include heredity (20 percent); exposure to environmental hazards, toxins, and pollutants (20 percent); and inadequate access to quality medical care (10 percent).[13] It is significant to note, however, that *Healthy People* confirmed that the remainder of premature illness and death (approximately 50 percent) could be traced to participation in risky health behaviors.[14] Table 1–2[15, 16] contrasts past and current leading causes of death among Americans.

Examination of Table 1–2 contrasts the devastating impact of communicable/infectious diseases on previous generations with the consequences of chronic diseases (those that last a year or longer and require medical attention or limit daily activity) on the length and quality of life of Americans today. Conditions including heart disease, stroke, cancer, diabetes, and arthritis are among the most common, costly, and preventable of all health problems. The combined effects of two of these chronic conditions—heart disease and cancer—account for 44 percent of all American deaths each year. Importantly, the combined effects of chronic diseases account for six of every ten American deaths every year. Six in ten adults in the United States have at least one chronic disease and four in ten adults have two or more.[17] In addition to their prevalence, such conditions cause limitations in the daily activities among people who are affected by them. As a nation, 90 percent of annual health care spending is for

TABLE 1–1

Ten Great Public Health Achievements in the United States, 1900–1999

1. *Vaccination:* resulted in eradication of smallpox; elimination of polio in the Americas; and control of measles, rubella, tetanus, and other infections in the United States and around the world
2. *Improvements in motor-vehicle safety:* include engineering advancements in highways and vehicles, increased use of safety restraints and motorcycle helmets, and decreased drinking and driving
3. *Safer workplaces:* better control of environmental hazards and reduced injuries in mining, manufacturing, construction, and transportation jobs, contributing to a 40 percent decrease in fatal occupational injuries since 1980
4. *Control of infectious disease:* resulted from clean water, improved sanitation, and antibiotic therapies
5. *Decline in deaths due to heart disease and stroke:* a 51 percent decline in cardiovascular death since 1972—related to decreased smoking, management of elevated blood pressure, and increased access to early detection and better treatment
6. *Safer and healthier foods:* decreased microbe contamination, increased nutritional content, and food-fortification programs that have nearly eliminated diseases of nutritional deficiency
7. *Healthier moms and babies:* better hygiene and nutrition, available antibiotics, greater access to early prenatal care, and technological advances in maternal and neonatal medicine—since 1900, decreases in infant (90 percent) and maternal (99 percent) death rates
8. *Family planning:* improved and better access to contraception, resulting in changing economics and roles for women, smaller families, and longer intervals between births; some methods related to reduced transmission of human immunodeficiency virus (HIV) and other sexually transmitted diseases
9. *Fluoridation of drinking water:* tooth decay prevented regardless of socioeconomic status; reduced tooth loss in adults
10. *Recognition of the health risks of tobacco use:* reduced exposure to environmental tobacco smoke; declining smoking prevalence and associated deaths

While not ranked in order of significance or degree of contribution, the accomplishments on this list continue to help Americans live longer and healthier lives.

SOURCE: Centers for Disease Control and Prevention, "Ten Great Public Health Achievements—United States, 1900–1999," *MMWR* 48, no. 12 (1999): 241–43.

TABLE 1–2

Leading Causes of Death Among Americans in 1900 and Today
(ranked in order of prevalence)

1900	Today
Pneumonia	Heart disease
Tuberculosis	Cancer
Diarrhea/enteritis	Unintentional injuries
Heart disease	Chronic lower respiratory disease
Liver disease	Stroke
Injuries	Alzheimer's disease
Cancer	Diabetes
Senility	Chronic kidney disease
Diphtheria	Influenza and pneumonia
	Suicide

SOURCES: U.S. Department of Health, Education and Welfare, Public Health Service, *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (Washington, DC: U.S. Government Printing Office, 1979); National Center for Health Statistics, *Deaths and Morality* (https://www.cdc.gov/nchs/fastats/deaths.htm; 2021).

NOTE: In 1900, the leading causes of death for most Americans were communicable or infectious conditions. Today, however, most Americans die as a result of chronic conditions.

TABLE 1–3

Underlying Risk Behaviors—Actual Causes of Death in the United States in 2000

Risk Behavior	Approximate Number of Deaths	Approximate Percent of Annual Deaths
Tobacco	435,000	18.1
Poor diet and physical inactivity	365,000	15.2
Alcohol	85,000	3.5
Infections	75,000	3.1
Toxic agents	55,000	2.3
Motor vehicles	43,000	1.8
Firearms	29,000	1.2
Sexual behavior	20,000	0.8
Drug use	17,000	0.7

SOURCES: A. H. Mokdad et al., "Actual Causes of Death in the United States, 2000," *Journal of the American Medical Association* 291, no. 10 (March 10, 2004): 1238–45; Centers for Disease Control and Prevention, *Chronic Disease Overview* (https://www.cdc.gov/chronicdisease/overview/index.htm; 2017).

NOTE: It is important to exert influence over the common lifestyle risk behaviors linked to many of the causes of premature death. These health risks represent the actual leading causes, rather than the clinical diagnoses provided at the time of death for the majority of Americans.

people with chronic and mental health conditions.[18] Chronic diseases result in lifelong disability, compromised quality of life, and an overwhelming burden of health care costs—most are preventable.[19]

An important first step to understand and address the complex burden of chronic diseases is to recognize that the majority of these conditions have been linked to participation in relatively few health-risk behaviors. Evidence suggests that four modifiable health-risk behaviors—lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption—account for much of the illness, suffering, cost, and early deaths related to chronic diseases.[20] Data in Table 1–3 identify the risk behaviors that undergird the actual causes of most American deaths.[21, 22] Consistent with the information found in this table, although a physician might indicate a clinical diagnosis of heart disease on a death certificate, the root cause of the heart disease could be traced to the cumulative effects of participation in any number of underlying risk behaviors.

It is important to remember that the greatest majority of adults who participate in risk behaviors initiated those health habits during their youth. Public health professionals at the CDC identified six priority health behaviors to guide educational programmers and intervention specialists. Given the demonstrated link between these behaviors and the leading causes of death and disability among Americans, curriculum developers and teachers should target educational strategies at reducing the risks associated with the following:

- Tobacco use.
- Unhealthy dietary behaviors.
- Alcohol and other drug use.
- Behaviors that contribute to unintentional injuries and violence.
- Inadequate physical inactivity.
- Sexual behaviors related to unintended pregnancy and sexually transmitted diseases, including HIV infection.[23]

In addition to addressing specific personal health risks, school-based professionals must remember that human behavior in general, and health behavior specifically, is influenced by complex sources. While it is important to equip students with the functional knowledge and essential skills to manage personal health risks, it is equally important to recognize that such behaviors do not happen in a vacuum. Public health researchers have identified five major sources of influence on American health. Similar to the causes of premature death identified in the 1979 *Healthy People* and those actions discussed in Table 1–1, today's influential variables include:

- *Biology and genetics:* Examples of such determinants of health include age, sex, and inherited conditions. Importantly, some biological and genetic factors affect some people more than others. In specific, older adults are more prone to poorer health outcomes than their adolescent counterparts and sickle-cell disease is most common among people with ancestors from West African nations.
- *Social factors:* The social determinants of health include physical conditions and other factors in the environment in which people are born, live, learn, play, and work. Examples of importance include the availability of resources to meet daily needs, prevalent and powerful social norms and attitudes, transportation options, public safety, and quality schools.
- *Health services:* Both access to and the quality of available health services influence health outcomes for all Americans. Examples of barriers to medical care include limited availability of specialized services in a local area, high cost, poor insurance coverage, and limited language access. In this context, if people don't have health insurance, research has demonstrated that they are less likely to participate in preventive care and to delay seeking medical treatment for illness or injury.
- *Public policy:* Local, state, and federal laws and policy initiatives have been demonstrated to influence the health of individuals and the population as a whole. For example, when taxes on tobacco sales are increased, the health of the people living in that region is improved by reducing the number of people using tobacco products. Readers are encouraged to review the influence of the federal Affordable Care Act in this regard.
- *Individual behavior:* As discussed, positive changes in individual behaviors including reducing dietary risks, increasing physical activity, and reducing or eliminating the use of tobacco, alcohol, and other drugs, can reduce chronic diseases. In addition, the simple act of hand washing is one of the most important individual acts with the potential to reduce the short-term impact of infections.[24]

Although each of these factors exerts independent influence, the interaction among them is significant. In this context, it is clear that health is rooted in homes, schools, neighborhoods, workplaces, and communities. While individual behaviors such as eating well, staying active, not smoking, and seeing a doctor for preventive care or when sick can influence health, well-being also is influenced by their cumulative effects. Social determinants and environmental factors including access to quality schools, availability of clean water, air and healthy foods, and enriching social relationships help to clarify why some people are healthier than others. Only when people understand and can address the independent and combined effects of these sources of influence, will it be possible to achieve the highest quality of health for all. Given the complexity of this challenge, the coordinated efforts of individuals, families, schools, civic groups, faith-based organizations, and governmental agencies will be necessary to address the complex health challenges confronting youth.[25]

HEALTHY YOUTH, HEALTHY AMERICANS

Since the publication of *Healthy People* in 1979, local, state, and federal agencies have assumed leadership for a long-term broad and collaborative initiative to promote health and prevent disease among Americans. Every ten years, the U.S. Department of Health and Human Services (HHS) has gathered the latest data, analyzed accumulated information, and reviewed the best science about trends and innovations collected across the previous decade. Then, the best of this evidence is used to establish and monitor national health objectives targeting a broad range of health issues. These specific and measurable objectives establish a foundation to help individuals and communities make and act on informed health decisions.[26]

In addition to the focus on a range of critical health issues, this decades-long agenda has been organized around measurable objectives targeting diverse ages and groups of Americans. Among these targeted groups are children and adolescents. Since its inception, *Healthy People* has encouraged collaboration among influential stakeholders and institutions to protect and promote the health of this age group.[27]

Adolescence has been confirmed to be a period characterized by significant developmental transition. Youth between the ages of 10 and 19 are confronted with complex challenges associated with puberty and the task of cultivating skills to negotiate requisite developmental tasks. Although generally a healthy time of

HEALTHY PEOPLE

TABLE 1–4

***Healthy People 2030* Objectives That Specify Action for Advocates and Stakeholders in Schools**

Goal: Promote health, safety, and learning in school settings.

Adolescents	
AH-07	Reduce chronic school absence among early adolescents.
AH-08	Increase the proportion of high school students who graduate in four years.
AH-09	Reduce the proportion of adolescents and young adults who aren't in school or working.
AH-D01	Increase the proportion of trauma-informed early childcare settings and elementary and secondary schools.
AH-D-3	Reduce the proportion of public schools with a serious violent incident.
ECBP-D01	Increase the proportion of middle and high schools that provide case management for chronic conditions.
AH-R04	Increase the proportion of eighth graders with math skills at or above the proficient level.
AH-R08	Increase the proportion of secondary schools with a full-time registered nurse.
AH-R10	Increase the proportion of students served under the Individuals with Disabilities Education Act who earn a high school diploma.
Cancer	
C-10	Reduce the proportion of students in grades 9 through 12 who report sunburn.
Child and Adolescent Development	
AH-05	Increase the proportion of fourth graders with reading skills at or above the proficient level.
AH-06	Increase the proportion of fourth graders with math skills at or above the proficient level.
ECBP-01	Increase the proportion of adolescents who participate in daily school physical education.
AH-R06	Increase the proportion of schools requiring students to take at least two health education courses in grades 6 to 12.
Children	
EMC-D01	Increase the proportion of children who are developmentally ready for school.
EMC-D02	Reduce the proportion of children and adolescents wo are suspended or expelled.
EMC-D03	Increase the proportion of children who participate in high-quality early childhood education programs.
EMC-D06	Increase the proportion of children and adolescents who get preventive mental health care in school.
EMC-R01	Increase the proportion of children with developmental delays who get intervention services by age 4 years.
Emergency Preparedness	
PREP-D01	Increase the proportion of parents and guardians who know the emergency or evacuation plan for their children's school.
Family Planning	
FP-08	Increase the proportion of adolescents who get formal sex education before age 18 years.
LGBT	
LGBT-05	Reduce bullying of lesbian, gay, or bisexual high school students.
LGBT-D01	Reduce bullying of transgender students.
Neighborhood and Built Environment	
EH-D01	Increase the proportion of schools with policies and practices that promote health and safety.
Nutrition and Healthy Eating	
AH-04	Increase the proportion of students participating in the School Breakfast Program.
ECBP-D02	Increase the proportion of schools that don't sell less healthy foods and drinks.
AH-R03	Increase the proportion of eligible students participating in the Summer Food Service Program.
Oral Conditions	
OH-09	Increase the proportion of low-income youth who have a preventive dental visit.
OH-10	Increase the proportion of children and adolescents who have dental sealants on one or more molars.
People with Disabilities	
DH-05	Increase the proportion of students with disabilities who are usually in regular education programs.

SOURCE: U.S. Department of Health and Human Services, *Healthy People 2030: Schools* (health.gov/healthypeople/objectives-and-data/browse-objectives/schools; 2021).

NOTE: Education professionals are encouraged to evaluate the extent to which their schools have established policies and practices that bring them into compliance with these national health objectives.

life, pertinent issues of significance can take root during adolescence. Tobacco and other substance use and abuse, sexual risks, motor vehicle crashes, and suicidal thoughts or acts can determine current health status or influence the development of chronic diseases that will be manifested in adulthood. Research has demonstrated that adolescents particularly are sensitive to contextual influences in their environment. Factors including cues from family members, peers, those in their neighborhoods, and expectations and norms presented in the media can challenge or support their health. This is particularly true of the school environment in which policies, practices, and influential others can exert a powerful impact on the decision making and behaviors of youth.[28]

In addition to the developmental issues that challenge adolescents, a growing body of research has documented the importance of early childhood (birth to age 8) as a period in which the physical, cognitive, and social-emotional foundation for lifelong health and learning are established. During this developmental stage, the brain grows to 90 percent of its adult size and children learn to regulate their emotions, cultivate skills to form attachments, and develop language and critical motor skills. All of these milestones can be delayed if young children experience significant environmental stress or other risks that affect the brain or compromise physical, social-emotional, or cognitive growth.

More than any other stages of development, early and middle childhood (ages 6 to 12 years) set the stage for developing health literacy and practicing self-management, decision making, and the skills to negotiate conflicts with others. Typical and nonfatal conditions including asthma, obesity, and developmental and behavioral disorders can affect the health and education outcomes of those at this developmental stage. Importantly, health risks encountered during early and middle childhood can affect the well-being of the adolescents and adults who children will become.[29]

To review important health promotion targets for children and adolescents contained in *Healthy People 2030,* readers are encouraged to examine Table 1–4. Listed are the objectives that identify actions for many influential stakeholders in school communities designed to promote the health of children and adolescents.[30]

HEALTH IN THE ACADEMIC ENVIRONMENT

Today, youth are confronted with health, educational, and social challenges on a scale and at a pace not experienced by previous generations of young Americans. Violence, alcohol and other drug use, obesity, unintended pregnancy, and disrupted family situations can compromise both their short- and long-term health outcomes.[31]

Educational institutions are in a unique and powerful position to improve health outcomes for youth. In the United States, nearly 62 million students are enrolled in more than 132,000

U.S. Department of Agriculture (USDA)

Quality health education can help empower children in all domains of health.

public and private elementary and secondary schools. In this context, schools have direct contact with more than 95 percent of American youth between the ages of 5 and 17 years. Sustained for over six hours every school day, this instructional engagement proceeds over a thirteen-year period, a time of significant social, psychological, physical, and intellectual development.[32–34] As such, schools represent the only social institution that can reach nearly all young people.

Beyond offering efficient access to the critical mass of youth, schools provide a setting in which friendship networks develop, socialization occurs, and norms that influence behavior are developed and reinforced.[35] Importantly, such social norms prevail in the school environment *before* specific health behaviors can become habitual for individual students. As a result, developmentally predictable experimentation with a range of health behaviors occurs in context of relationships with professional adult educators who are academically prepared to organize developmentally appropriate learning experiences to empower children to lead safer, healthier lives.

Unfortunately, advocates committed to promoting child and adolescent health in schools have been challenged by sweeping efforts to reform public education. Since the early 1980s, many research reports, position statements, and legislative initiatives have been directed at improving the quality of education for all students. The passionate commitment to reform the nation's education enterprise has taken many forms, including experimentation with strategies to improve teacher preparation, evaluation of student performance, and the U.S. Supreme Court decision supporting vouchers to promote school choice options for parents. Most school improvement plans have increased reliance on quantitative measures of student performance in the basic, or core, academic subjects including language arts, mathematics, social studies, and the physical sciences. In addition, significant efforts and financial resources have been

mobilized to enrich instructional practices targeting the Common Core Standards, an agenda explored in Chapter 2.

Support for academic activities designed to address the complex health challenges confronting students are missing in most calls for education reform. *A Nation at Risk,* a report by the National Commission on Excellence in Education, included health education on a list of academic subjects identified as part of the "educational smorgasbord." This prestigious and powerful 1983 report, sponsored by the U.S. Department of Education, asserted that the American education curricula had become "diluted . . . and diffused" and recommended that educational programs in this "smorgasbord" category be either eliminated or significantly reduced in emphasis during the school day.[36] Echoes of this perspective also were seen in the federal *No Child Left Behind* and *Race to the Top* agendas.

Importantly, a growing body of science confirms that student health behaviors, academic outcomes, and school policies and practices designed to address them are "inextricably intertwined."[37] The American Cancer Society and representatives of more than forty national organizations concluded that "healthy children are in a better position to acquire knowledge" and cautioned that no curriculum is "brilliant enough to compensate for a hungry stomach or a distracted mind."[38] To reinforce this position, a recent and significant research agenda concluded that:

> No matter how well teachers are prepared to teach, no matter what accountability measures are put in place, no matter what governing structures are established for schools, educational progress will be profoundly limited if students are not motivated and able to learn. . . . Healthier students are better learners.[39]

In this context, the Council of Chief State School Officers (CCSSO), the professionals responsible for education programming and policy in each state, issued *Policy Statement on School Health*. Recognizing that "healthy kids make better learners and that better students make healthy communities," this policy statement urged education leaders "to recognize the enormous impact that health has on the academic achievement of our nation's youth." Further, the CCSSO urged all educators to "look beyond standards setting and systems of accountability and join with public and private sector mental health, health, and social services providers to address the widespread conditions that interfere with student learning and students' prospects for healthy adulthood."[40]

Beyond making this statement of advocacy, this important policy statement contained a number of recommendations for state and local education leaders that still hold true today. At the state level, education and legislative leaders were encouraged to demonstrate their commitment to acting on the evidence-based links between health and academic success by engaging in such activities as:

- Disseminating data that confirm the impact of health-promoting activities on academic achievement.
- Designating senior-level staff to oversee school health-related activities.
- Supporting policies that promote student health, including restricting vending machine sales, prohibiting tobacco use on school property, and ensuring health insurance coverage for all students and staff.
- Ensuring curricular compliance with the National Health Education Standards.
- Allocating adequate funding for school health education.[41]

In recognition that school-based activities to promote student health must occur in the context of, rather than in competition with, strategies to improve education outcomes, many professional and policy advocates have responded. Of note, ASCD convened a meeting of the Commission on the Whole Child. This group was charged with the important task of redefining the "successful learner."[42] Their specific responsibility was to reframe the understanding of a "successful learner" from a student whose achievement is measured only by scores on academic tests, to one who is knowledgeable, emotionally and physically healthy, engaged in civic activities and events, involved in the arts, prepared for work and for economic self-sufficiency, and ready for the world after completing formal schooling.[43]

The Position Statement on the Whole Child, developed by the Commission of the Whole Child in 2007, affirmed that academics remain essential, but are only one element of student learning and development.[44] The ASCD Whole Child Network™ recently launched "The Learning Compact RENEWED: Whole Child for the Whole World." This publication continues to demonstrate ASCD's commitment to a focus on the whole child with a renewed focus on a child-centered approach to education in a global environment. In an expansion of conventional thinking about education reform, the "learning compact renewed" calls on educators, communities, and decision makers to collaborate to ensure that:

- Each student enters school **healthy** and learns about and practices a healthy lifestyle,
- Each student learns in an environment that is physically and emotionally **safe** for students and adults,
- Each student is actively **engaged** in learning and is connected to the school and broader community,
- Each student has access to personalized learning and is **supported** by qualified, caring adults, and
- Each student is **challenged** academically and prepared for success in college or further study and for employment and participation in a global environment.[45]

Achieving these ambitious outcomes requires the establishment of coalitions of supportive and involved families, community-based organizations, and advocates for school health and whole child approaches.

Given the complex health and learning challenges facing today's students it is critical for educators, families, and other advocates to remember that children don't grow and learn in isolation. They grow physically, emotionally, ethically, expressively, and intellectually in networks of families, schools, neighborhoods, and communities. Educating the whole child won't happen with emphasis only on measures of academic achievement.[46]

As a result of the contributions of such powerful advocates, health education initiatives are gaining credibility as an effective and efficient way to promote student success as stakeholders learn that the choice of focusing on education outcomes *or* academic success is a false one. Mounting evidence has confirmed the

destructive impact of student health risks on attendance, class grades, performance on standardized tests, and graduation rates.[47]

Due to the complexity of the health and academic problems confronting students, it is not reasonable nor realistic to expect that schools can address them without support. Such challenges will require the collaborative efforts of families, communities, health care providers, legislators, the media, and others. While there are no simple solutions, schools can provide a focal point for many such efforts.[48]

WHOLE SCHOOL, WHOLE COMMUNITY, WHOLE CHILD

A Program Model for Best Practice

While it is true that most schools invest considerable time and expertise in managing a range of health problems, in most cases, these efforts are implemented as isolated or competing entities. In this context, it is common for school communities to organize categorical activities such as Red Ribbon Week campaigns to reduce drug risks, transportation safety activities at the start of the school year, physical education instruction, and free or reduced-cost lunches for children living in poverty, with little thought about their focus, coordination, or sustainability. As a result, their effectiveness and sustainability are compromised.

As schools are one of the most efficient systems for reaching children and youth to provide health services and programs, evidence suggests that it is far better to organize school health activities around a framework in which the talents and efforts of many professionals and resources in the school and local community can be mobilized to promote health and school success for all students, not just those with episodic or demanding health challenges. Such a coordinated approach is a way for many school health promotion activities to be systematic and intentional.[49] In addition, health messages can be communicated with consistency and reinforced through multiple channels, the duplication of services can be reduced, resources funded by tax dollars can be maximized, and advocates are better able to focus their efforts.

For years, health educators implemented the Coordinated School Health (CSH) model in effort to collaboratively impact student health. In recent years, ASCD and the Centers for Disease Control and Prevention have collaborated to improve this model, resulting in the Whole School, Whole Community, Whole Child (WSCC) model. The WSCC model combines and builds on elements of the traditional Coordinated School Health model with a significant emphasis on raising academic achievement and improving learning by integrating a health and well-being focus.[50] The WSCC model is "student-centered and emphasizes the role of the community in supporting the school, the connections between health and academic achievement and the importance of evidence-based school policies and practices."[51]

The WSCC model includes ten components. The evolution of this model meets the need for greater emphasis on both the psychosocial and physical environment as well as critical roles that community agencies and families must play. The ten components include the following: health education; nutrition environment and services; employee wellness; social and emotional school climate; physical environment; health services; counseling, psychological, and social services; community involvement; family engagement; and physical education and physical activity.[52]

Consistent with the body of literature confirming links between student health and a range of measures of school success, Dr. Lloyd Kolbe, one of the architects of CSH, revisited his original work and concluded that the goals of the modern school health program are consistent with the agenda of educational reform. Consistent with the advocacy position taken by ASCD for education for the "whole child," Dr. Kolbe asserted that modern school health programs develop when the efforts of education, health, and social service professionals are integrated purposefully to tackle four overlapping and interdependent types of goals for students:

- Goals focused on improving health knowledge, attitudes, and skills.
- Goals focused on improving health behaviors and outcomes.
- Goals focused on improving educational outcomes.
- Goals focused on improving social outcomes among learners.[53]

In this way, the WSCC model puts both student health and academic achievement at the heart of the matter and provides an efficient and effective way to improve, protect, and promote school success *and* the well-being of students, families, and education professionals. When fully implemented in a school community, WSCC has the capacity to:

- Maximize the impact of all available expertise and resources directed toward risk reduction and health promotion.
- Conserve taxpayer dollars by reducing duplication of services for health issues.
- Maximize use of public facilities in the school and community to promote health.
- Enhance communication and collaboration across health promotion professionals in the school and community.
- Address student health risks in the context of, rather than in competition with, the academic mission of the school.

Student health advocates are encouraged to review Figure 1–2, a depiction of how the community, school, and families collaborate with focus on the student.

Health Education: The Keys to Quality Health Instruction

The most familiar component of WSCC is its educational, or instructional, foundation: comprehensive school health education. Comprehensive school health education includes curricula and instruction in pre-K-12 focused on helping students acquire the knowledge, attitudes, and skills they need to make health-promoting decisions, achieve health literacy, adopt health-enhancing behaviors, and promote the health of others. The content taught should be standards-based and include health topics emphasizing physical, mental, and social dimensions of health.[54] A quality health instruction program is focused on enabling and empowering students to gather accurate functional health information, evaluate attitudes, beliefs, and perceptions that influence personal and community health, and practice the essential skills needed to integrate health-enhancing behaviors into daily living. To accomplish this, health education must be addressed with the

FIGURE 1–2 | **Whole School, Whole Community, Whole Child Model**
SOURCE: https://www.cdc.gov/healthyyouth/wscc/

same commitment and integrity as any other academic discipline of the school curriculum.

Consistent with the current literature identifying evidence-based approaches to comprehensive school health education, antiquated thinking and strategies must be updated. In particular, instructional approaches grounded in information acquisition and content mastery alone are not likely to equip students to manage the complex health challenges confronting them. After a decade of evaluation, researchers from the World Health Organization revealed the following important findings about school health education:

- Health education that concentrates on developing health-related skills and increasing comprehension of health knowledge and attitudes is more likely to enable youth to practice healthy behaviors.
- Skill development is more likely to result in healthy behavior outcomes when skill practice is tied to specific health content, decisions, or behaviors.
- The most effective method of skill development is learning by doing—learners involved in active rather than passive learning experiences.[55]

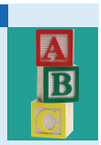
Consistent with best-practice protocol identified in the education literature, quality health education is grounded in planned learning experiences that bridge all three domains of learning: the (1) cognitive, (2) affective, and (3) psychomotor, or skill, domains. In addition, health education curricula must reflect the most current and accurate knowledge base and incorporate developmentally appropriate, ability centered, and culturally relevant learning materials and technological resources.

With a best practice orientation to health instruction, the Joint Committee on National Health Education Standards, a collaborative group of professionals representing national health and advocacy organizations, published *National Health Education Standards: Achieving Excellence.* This publication specified national standards developed to set ambitious goals for improving health education for all students. The developers also provided rationale for each standard and identified specific performance indicators to be achieved by students in grades 2, 5, 8, and 12. Teacher's Toolbox 1.1 highlights the importance of functional knowledge and the essential skills that are the foundation of the National Health Education Standards. The standards provide a framework for developing a rigorous health education instructional scope and sequence and meaningful evaluation protocol for students in all grade levels.[56] Importantly, the School Health Policies and Programs Study (SHPPS) confirmed that nearly 82 percent of schools follow national, state, or district health education standards.[57] Readers are encouraged to review Chapter 3 of this text that contains an expanded discussion of the National Health Education Standards and their applicability for improving health education practice.

In addition to standards-based approaches, school districts use many ways to describe how much health education students

Teacher's Toolbox **1.1**

National Health Education Standards



1. Students will comprehend concepts related to health promotion and disease prevention to enhance health.
2. Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
3. Students will demonstrate the ability to access valid information and products and services to enhance health.
4. Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
5. Students will demonstrate the ability to use decision-making skills to enhance health.
6. Students will demonstrate the ability to use goal-setting skills to enhance health.
7. Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce risks.
8. Students will demonstrate the ability to advocate for personal, family, and community health.

SOURCE: National Health Education Standards: Achieving Excellence, 2nd ed. (Atlanta, GA: American Cancer Society, 2007). www.cancer.org/bookstore

NOTE: "This list of health education standards represents the work of the Joint Committee on National Health Education Standards. Copies of *National Health Education Standards: Achieving Excellence* can be obtained through the American School Health Association, the Association for the Advancement of Health Education, or the American Cancer Society."

at various grade levels are required to receive (minutes per week, hours per quarter, hours per school year). The most recent SHPPS data confirms that nationwide, 32.0 percent of districts specify time requirements for health education for students in elementary schools, 52.3 percent had such requirements for students in the middle grades, and 72.3 percent had such specified requirements for high school students. In this context, SHPPS revealed that nationwide, one-third of elementary schools mandate time be spent on teaching young people to develop healthy behaviors during a time when many young people confront a broad range of health risks.[58]

Across both the standards- and time-based models of health education, research has revealed that more hours of formal health instruction are necessary to produce changes in the affective domain than in either the cognitive or the psychomotor domain of learning. It is important to note that, forty to fifty hours of formal health education is necessary to produce stable improvements across all three domains of learning: functional knowledge, attitudes, and essential skills.[59]

In addition to differences in instructional time mandates, there is great variability in the health topics addressed in the curricula of local school districts. Choosing or developing the best possible health education curriculum is an important step in making sure that the program of instruction is effective at promoting healthy behaviors among all students. Unfortunately, in many districts, the process of curriculum selection or development lacks structure and focus. Such an approach can result in inadequate and ineffective health instruction.

To help address this matter, the CDC has developed the Health Education Curriculum Analysis Tool (HECAT) that contains guidance and resources for conducting a clear, complete, and consistent analysis of health education curricula. Districts that use HECAT will find help in selecting or developing evidence-based, appropriate, and effective health education courses of study. Further, with the help provided by this important resource, school-based professionals and other stakeholders can improve the delivery of evidence-based health education to students.[60]

This textbook is organized around HECAT curricular topics. In addition to an expanded discussion of HECAT in Chapter 2, curricular topics in this text are organized into two sections:

- Section II: Helping Students Develop Skills for Positive Health Habits
- Section III: Helping Students Translate Their Skills to Manage Health Risks

Teacher's Toolbox 1.2 highlights priority health issues that should be addressed in a developmentally appropriate way with all students in elementary and middle grades.[61]

Unlike secondary schools, in which content specialists are employed, elementary and middle school classroom teachers often are expected to deliver health education instruction. In such cases, it is common for the school nurse or community resource personnel to provide additional instructional support or supplemental expertise. Many elementary and middle school teachers report that they have inadequate academic preparation to teach complex or often controversial health education topics,

Teacher's Toolbox **1.2**

Sound Health Education: Instructional Topics for Which HECAT Tools Have Been Developed

- Alcohol and Other Drugs
- Healthy Eating
- Mental and Emotional Health
- Personal Health and Wellness
- Physical Activity
- Safety
- Sexual Health
- Tobacco
- Violence Prevention

SOURCE: Centers for Disease Control and Prevention, *Health Education Curriculum Analysis Tool* (www.cdc.gov/healthyyouth/HECAT/index.htm; 2019).

and lack confidence or enthusiasm for health instruction. Often these deficiencies are related to residual limitations from their teacher preparation program. Unfortunately, state departments of education often specify only minimal requirements for teacher certification or licensure for those who will teach health education concepts to younger learners. As confirmation, SHPPS data reveal that only 67.8 percent of districts require those teaching health at the middle school to be certified, licensed, or endorsed by the state to teach health education.[62]

To help address this matter, standards for the professional preparation of those responsible for the teaching of health education have been developed.[63, 64]

Readers are encouraged to use these competencies as a foundation for conducting a self-check of strengths and weaknesses in their own expertise. Classroom teachers who feel ill prepared or uncomfortable managing health education topics or a range of instructional activities are encouraged to participate in staff development or continuing education opportunities for in-service professionals. Such programs are designed to help teachers update content expertise and develop skills to improve classroom instruction.

In summary, SHPPS data confirm that 81.7 percent of districts follow national, state, or district health education standards.[65] Administrators, curriculum developers, and health teachers can review Table 1–5 for a checklist of important questions regarding the elements of a comprehensive school health education.[66] In addition, readers will find an expanded discussion about this important topic in Chapter 2 of this text.

Health Services

The practice of providing health services in the school setting began in the early twentieth century as a way to improve academic outcomes for students. Public health nurses began working in schools to reduce student absenteeism related to outbreaks of communicable diseases.[67] Today, although communicable diseases are still an issue for many students, there are many other complex health-related barriers to academic achievement. Asthma, child

TABLE 1–5

Confirming a Commitment to Comprehensive School Health Education: A Checklist of Important Questions

Is health education taught in all grades?

Are credentialed/certified/licensed health teachers employed to coordinate and deliver the program of health instruction?

Do all health education teachers:

- Use an age-appropriate sequential health education curriculum that is consistent with State/National Health Education Standards?
- Use active learning strategies and activities that students find engaging and personally relevant?
- Provide opportunities for students to practice or rehearse the skills needed to maintain and improve their health?
- Use a variety of culturally appropriate activities and examples that reflect the community's cultural diversity?
- Use assignments or projects that encourage students to have interactions with family members and community organizations?

Do all health education teachers participate at least once a year in professional development in health education?

Does the health education curriculum address the following essential topics (consistent with HECAT):

- Preventing unintentional injuries, violence, and suicide,
- Physical activity,
- Healthy eating,
- Preventing tobacco use,
- Asthma awareness, and
- Preventing HIV, other STDs, and pregnancy?

SOURCE: Centers for Disease Control and Prevention, *School Health Index: A Self-Assessment and Planning Guide—Elementary School* (Atlanta, GA: CDC, 2019), Module 2.

abuse and neglect, domestic and school violence, adolescent pregnancy and parenting, alcohol and other drug use, mental health concerns, and a lack of health insurance coverage are among the issues addressed by today's school health service providers.[68]

School health services include a range of policies and programs designed to assess the health status of children, as well as measures to protect the health of all children. Although various school personnel contribute to the school health service program, the school nurse assumes primary responsibility for leadership with this WSCC component. With the support of parents, teachers, administrators, support staff, community agency professionals, and a range of medical care providers, the school nurse leads the interdisciplinary effort to:

- Provide direct health care to students and staff.
- Provide leadership for the provision of health services.
- Provide screening and referral for health conditions.
- Promote a safe and healthy school environment.
- Employ primary prevention through health education.
- Serve in a leadership role for health policies and programs.
- Coordinate care between school personnel, family, community, and health care providers.[69]

Effective and timely delivery of such services is influenced by the number of nurses available at the school site to respond to students' needs. The National Association of School Nurses (NASN) has issued a powerful position statement in which it has asserted that to meet the health and safety needs of all students the students should have access to a registered professional nurse all day, every day.[70]

Previous advocacy statements by NASN stated a ratio of one nurse to no more than 750 students in a health school population. However, given the complexities of the role of the nurse and the care needed in schools, the nurse to student ratio no longer is an appropriate determinant of nursing workload. Other factors that must be considered regarding staffing include:

- Safety, medical acuity, and health needs of students;
- Characteristics of the student population that contribute to inequalities in social determinants of health;
- Characteristics of the school nurse and the interprofessional team; and
- Context of the school and school district that influences nursing services delivered.[71]

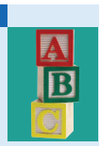
The school nurse is critical to addressing gaps in health care by serving students and the school community as the health expert.[72] Yet, recent SHPPS data confirmed that the majority of schools fail to comply with the NASN recommendations as only 57 percent of districts require each school to have someone coordinate health services at the school level and only 18 percent of districts require each school to have at least a part-time school nurse.[73]

While discussions continue about the types and amount of direct health services that should be provided at the school site, it is clear that school nurses must manage care plans for students with special health care needs. In addition, these service providers must institute policy and protocol approved by the board of education for administering medication to students. As the number of students with special needs attending schools continues to grow, new, expensive, and often labor-intensive demands are placed on school districts and their health service providers. School administrators have legal responsibility for the safety of all students enrolled in each public school district. This includes providing and supervising the program of health services. Unfortunately, many school districts have assigned these tasks to classroom teachers or support staff colleagues who have no training. Such practices are dangerous for the student, the school employee, and the school district.

The National Association of School Nurses has asserted that health services should be provided directly by a registered professional school nurse who has a minimum of a baccalaureate degree in nursing and is licensed through a board of nursing.[74] Consistent with this assertion, Teacher's Toolbox 1.3 identifies recommended policies and procedures to guide safe and effective administration of medications in schools.[75] Consistent with these minimum guidelines boards of education and district administrators are encouraged to review local policies to confirm that they ensure the safety and legal protection of all concerned.

Although school nurses assume primary leadership for providing health services, many other educators and advocates are engaged in responding to student health issues. Classroom

Teacher's Toolbox **1.3**



Safe and Effective Medication Administration in Schools: Policies and Procedures

The National Association of School Nurses developed a position statement providing guidance in the development of policies and procedures that ensure safe and effective medication administration in schools. The registered professional school nurse is responsible for medication administration and leading the development of policies and procedures that will ensure effective and safe medication administration. Policies and procedures, consistent with federal and state laws, should be established to address the following:

- Delegation (when permissible by state law), training, and supervision of unlicensed assistive personnel;
- Student confidentiality;
- Medication orders;
- Medication doses that exceed manufacturer's guidelines;
- Proper labeling, storage, disposal, and transportation of medication to and from school;
- Documentation of medication administration;
- Rescue and emergency medications;
- Off-label medications and investigational drugs;
- Prescription and over-the-counter medications;
- Complementary and alternative medications; and
- Psychotropic medications and controlled substances.

SOURCE: National Association of School Nurses, *Medication Administration in Schools: Position Statement* (www.nasn.org/nasn/advocacy/professional-practice-documents/position-statements/ps-medication; Revised February 2017).

teachers are in an important position to participate in initial observation and referral of any conditions evident in students. Reports of such observations should be made to the school nurse or others specified in school district policy. In response, the coordinated team of health service providers can plan appropriate interventions to address the problem.

School nurses also collaborate with a range of allied health professionals in providing a formalized program of student health status assessments. In most school districts, a student must have a health examination before enrolling in school. Some school districts require additional periodic health examinations for students. These requirements vary from state to state. Most states also require vision and hearing screening at some point during the school life of each student. Often, vision and hearing difficulties are not identified until the child enters school. Scoliosis screening is a simple, but very effective, procedure to identify spinal curvatures among students in upper-elementary grades. During the elementary school years, the child's weight and height also are recorded. These measurements provide a record of basic childhood growth and development. Such growth data can provide quick confirmation that a child's physical development is on pace with chronological age.

School health service professionals also coordinate disease prevention measures and participate in activities to protect the health of students, faculty, and staff. To this end, policies must be developed in collaboration with public health officials to exclude from school activities those children who are infected with contagious conditions. Classroom teachers must be informed about when and under what circumstances a child excluded from school due to a communicable disease can be permitted to return.

Every state has a legislative mandate requiring that children be immunized against certain communicable diseases before they can enroll in school. Although these state requirements differ slightly, immunization requirements for polio, diphtheria, pertussis, tetanus, measles (rubeola), German measles (rubella), and hepatitis are common. Accurate record keeping and communication with immunization providers can be very time-consuming, but important, roles of the school nurse.

Finally, it is imperative that school districts develop written policies for managing sick and injured students. In addition to a protocol for managing emergencies, staff development programs must ensure full compliance with universal precautions for handling body fluid spills in the educational environment. Such training should be extended to all school staff, including playground monitors, bus drivers, and other classified staff.

Clearly, the program of school health services fills a critical role in promoting student health and advancing the academic mission of schools. Table 1–6 provides a checklist of important questions to help guide the establishment of a quality program of health services in a school community.[76]

Healthy School Environment

Like other elements of the WSCC model, the environment in which a student spends a large part of every day in the school year makes an impact on both their health status and academic achievement. The most conspicuous element of a

TABLE 1–6

Confirming a Commitment to a Quality Program of Health Services: A Checklist of Important Questions

Does your school have a full-time, registered school nurse responsible for health services all day, every day?
Are an adequate number of full-time school nurses available (at least one nurse per school)?
Does the school nurse or other health services provider promote the health and safety of students and their families by engaging in classroom and other activities about essential health topics (consistent with HECAT)?
Does your school implement a systematic approach for referring students, as needed, to appropriate school- or community-based health services?
Does your school have a system for collecting student health information prior to school entry and every year thereafter?
Is all pertinent health information communicated in writing to all appropriate staff members?
Does your school have access to and work with a consulting school health physician who assists with your school health programs?
Does the school nurse or other health services provider have a system for identifying and tracking students with chronic health conditions?
Does your school facilitate or provide case management for students with poorly controlled chronic health conditions?

SOURCE: Centers for Disease Control and Prevention, *School Health Index: A Self-Assessment and Planning Guide—Elementary School* (Atlanta, GA: CDC, 2017), Module 5.

healthy school environment is related to the physical condition of the buildings, vehicles, playgrounds, sport facilities, and other school district properties. Policies adopted by the local board of education govern safety and management of noise, temperature, lighting, and air and water quality in physical learning environments. In addition, administrators establish and implement policies that govern school start times, an issue that has been demonstrated to influence academic outcomes particularly among teens.[77] Finally, these leaders are in a position to establish policies including the establishment of "bully-free zones" that help maintain a healthy social and emotional environment in the school community.

In a broad agenda to establish healthy school communities, research has revealed that the role of school administrators, particularly building principals, is critical. By integrating policies and practices that promote health into the overall school improvement process, school leaders are able to take concrete steps to enrich all elements of the school environment.[78]

While it is the responsibility of school leaders to adopt and enforce policies to ensure health and safety in all school facilities and on all school grounds, it is the responsibility of all school personnel to ensure that children do not become injured in classrooms or during activities for which they are the designated supervisors. Although this does not mean that the classroom teacher must make necessary repairs to school equipment, it is important for all school employees to report potential health hazards to designated district personnel. To ensure that potential hazards are addressed quickly, teachers should make such reports in writing.

A primary source of concern for school environmental advocates is the management of specific physical hazards. Recent research has confirmed the importance of the relationship between the physical environment of a school and the health and academic achievement of learners. Leaky roofs, problems with heating and ventilation, lack of cleanliness, and the use of cleaning chemicals can trigger a range of health problems in students. Asthma and allergies that can increase absenteeism and reduce academic performance are among the most common of such negative consequences of threats in the school environment. Importantly, a growing body of research has confirmed that when an investment is made to improve the environment of a school, not only are student health and achievement influenced, but teacher and staff absenteeism, effectiveness in the classroom, morale, and job satisfaction are improved.[79]

School districts also are responsible for the safety of students being transported on school buses and in other school vehicles. Because the potential for injury is always present, all school vehicles must be in safe operating condition. In addition, bus drivers should be provided with continuing education opportunities focused on the operation of the bus, the management of the behaviors of their young passengers, and compliance with universal precautions in the event of an emergency in which someone could be exposed to blood or other body fluids.

In addition, classroom teachers play a role in school district transportation matters by providing instruction for and supervision of students. Children need to learn appropriate ways to get on and off buses and safe and appropriate behavior when they are being transported. Also, students should receive information about safe places to wait for the bus along roadways and how and where to proceed from the bus after disembarking.

In cooperation with community police departments, teachers and other school district personnel participate in a range of safety programs. These programs, intended to meet the needs of students who attend schools within walking distance of their homes, are designed to teach pedestrian safety to students in elementary grades. In addition, many districts and local communities employ adults to monitor student safety at the busiest, or most hazardous, intersections in the district.

Another critical, but often overlooked, aspect of a healthy environment is the social and emotional climate of the school. The social and emotional climate "provides the support and structures for students to feel safe and build relationships that enable them to learn."[80] Effective policies and practices help ensure the learning environment supports development of high-quality relationships, promotes equity, establishes a sense of physical and emotional safety, and enhances student engagement in learning.[81] Practices such as anti-bullying policies, early warning systems for chronic absenteeism, limitations on suspensions and expulsions under certain conditions, guidelines for law enforcement referrals, and dating violence polices have been identified as ways in which the social and emotional climate can be strengthened.[82] A safer social and emotional school climate results in a healthier and more productive learning environment.

The emergence of social and emotional learning (SEL) programs combined with the emphasis on strengthening the social and emotional school climate has resulted in systematic efforts to integrate and build positive school climates that support SEL. Research indicates that when students experience engagement and feel a sense of belonging and connection with adults and peers at school, they are more able to receive feedback and navigate and persevere through challenges.[83] When emphasis is placed on developing supportive relationships, engagement, safety, cultural competence, cultural responsiveness, and expressions of high expectations, the entire school community benefits. A feeling of social and emotional safety results in learners who are more able to focus on learning and thus able to take academic risks.[84]

Educators are reminded that the important elements of a healthy school environment are not limited to the maintenance of physical facilities and the establishment of a welcoming emotional climate. In addition, school professionals must enforce policies that manage the full range of student risk behaviors including bullying, weapon carrying, tobacco, alcohol, and other drug possession, and acting-out behaviors. Such policies must be enforced consistently for all students and personnel within the school community. Enforcement of tobacco-free campus policies during all school activities and elimination of fund-raising activities that threaten the nutritional health of students are examples of such policies under review in many school districts.

Creating and maintaining a safe and healthy school environment is consistent with WSCC.

All school personnel and child health advocates share a responsibility for maintaining the highest standards for a healthy, safe, and nurturing learning environment. Examine Table 1–7 for a review of important questions that when answered in the affirmative confirm a commitment to a healthy school environment.[85]

TABLE 1–7

Confirming a Commitment to School Health and Safety Policies and Environment: A Checklist of Important Questions

Does your school or district have written comprehensive health and safety policies that they communicate broadly and through varied outlets?
Does your school foster a positive psychosocial school climate?
Has your school implemented all components of the district wellness policy?
Has the school established a climate that prevents harassment and bullying?
Do staff members actively supervise students everywhere on campus?
Does your school have a written crisis response plan that includes preparedness, response, and recovery elements?
Is the crisis response plan practiced regularly and updated as necessary?
Does the school provide and maintain a safe physical environment on all grounds and buildings?
Does your school consistently implement indoor air quality practices including for pest management?

SOURCE: Centers for Disease Control and Prevention, *School Health Index: A Self-Assessment and Planning Guide—Elementary School* (Atlanta, GA: CDC, 2017), Module 1.

Nutrition Environment and Services

Schools are in a unique position to promote healthy dietary behaviors and help ensure sufficient nutrient intake among America's youth. A comprehensive program of school-based nutrition services provides a variety of nutritious and appealing meals that meet the health and nutrition needs of all students. Since a national epidemic of childhood obesity and the associated costs and consequences have been documented, establishing a school nutrition program of consistent quality has become a top priority in many communities.

The dietary behaviors of elementary and middle school students have a significant impact on their physical development. In addition, a growing body of literature has confirmed the strong relationship between nutritional behaviors and student achievement. Researchers have noted that hungry children manifest behaviors such as apathy and shorter attention spans. These students often have lowered energy levels and a compromised ability to concentrate, factors that threaten attention to detail and the general quality of academic work.[86] Hungry children have lower math scores, and are more likely to repeat a grade, come to school late, or miss school entirely.[87] There is little question that students who are hungry or poorly nourished will suffer academically and developmentally.

In response to the inadequate nutritional intake of many students, the national school lunch and breakfast programs were initiated by the federal government. Begun in 1946 with the enactment of the National School Lunch Act, local school districts were provided with surplus agricultural commodities and federal funds to defray the costs of providing nutritious meals delivered through the mechanism of a school-based lunch program. Today, management of this program is the responsibility of the U.S. Department of Agriculture.

Whereas the costs of operating school-based breakfast and lunch programs are significant, concern over such fiscal matters must be balanced against research that has demonstrated that such meals are a significant source of nutrition for many children. On school days, many children consume as much as half their daily calories at school.[88] Today nearly 100,000 schools/institutions serve school lunches to 30 million students as part of the National School Lunch Program with more than 75 percent of those students receiving free or reduced priced lunches due to income status. Nearly 15 million students are served breakfast at school with more than 87 percent of those students receiving free or reduced price breakfasts.[89] The impact of the National School Lunch and Breakfast Programs on food security and student academic success is undeniable.

To help manage the identified costs and to provide support for the nutritional enrichment of so many children, the *Healthy, Hunger-Free Kids Act* was passed by the federal government in

David Buffington/Photodisc/Getty Images

Adequate nutrition is critical to the physical and emotional well-being of children and supports their academic success. School breakfast and lunch programs provide a key source of nutrition for many students.

2010. This legislation authorizes funding and sets policy to guide the core child nutrition programs managed by the U.S. Department of Agriculture. As a consequence, for the first time in over thirty years, real reforms to the school breakfast and lunch programs were made to improve the critical nutrition and hunger safety net for millions of school-age children and youth.[90]

Beyond the amount and enriching nutritional density of foods made available to children through school-based programs, research has confirmed that student participants have greater class participation and greatly improved achievement than do hungry students.[91] Compared to children who skip it or those who eat breakfast at home, children who eat a school breakfast enjoy such improved health outcomes as eating more fruits, drinking more milk, and eating diets that are adequate or exceed important vitamins and minerals.[92] In addition, offering a free breakfast to all students improves the learning environment for all. Research has demonstrated that in schools in which students are offered this nutritional enrichment, there are the following:

- Improved academic achievement, especially math scores.
- Improved depression, anxiety, and hyperactivity.
- Decreased incidents of tardiness.
- Increases in student attendance and attentiveness.[93]

In addition to schoolwide policies and practices, wise teachers have learned to collaborate with food service personnel to enrich the nutrition education curriculum. Food service personnel in some school districts provide nutrition education activities that are developmentally appropriate and meaningful for all students. Some schools have organized student/food service advisory councils, to collaborate on special meal planning and nutrition education activities. Chef-inspired menus, local sourcing of food, ethnic recipes and taste-testing events to expand student palates, and nutritional labeling of breakfast or lunch line food choices are ways to enrich and extend the nutrition education program beyond the classroom.[94, 95]

Beyond its use as a location for breakfast and lunch, the cafeteria in many middle schools is used only to accommodate large-group study halls. Wisely, some districts have developed ways to use this area for more academically enriching activities. Special mini-lectures on a range of topics can be targeted to particular students during their lunch meal. In addition, student organizations, teachers, and administrators can construct table tents to highlight important content matters or upcoming events on the school calendar.[96] In this way, nutrition education is enhanced without sacrificing valuable classroom instruction time, and the use of valuable instruction space is expanded.

In addition to using the cafeteria as a learning laboratory, classroom teachers are encouraged to engage students in a range of cross-curricular instructional activities that can extend healthy eating concepts across the school day. Using fruits and vegetables to teach younger students about colors, engaging middle school students in learning about weights and measures using foods grown in a school garden, and reinforcing math and health concepts through calorie counts and nutritional value charts are just a few examples of such extension activities.

Unfortunately, it has become more and more common for food industry marketers to invest in strategies to increase access of their products and messages to children. Experts in marketing to children realize that targeting adult policymakers in schools is sound short- and long-term practice. In return for needed funds and materials, marketers gain access to captive audiences of children who have money to spend, who can influence the purchasing patterns of their families, and who are the consumers of the future. Marketing strategies that focus on children in schools are very successful, as brand-name and less healthy foods are marketed in school cafeterias and hallways, products and coupons are distributed on holidays and as rewards for achievement, and students and their parents sell products to raise funds for their schools.[97]

Many elementary and middle schools provide access to less-than-healthy foods. For example, SHPPS findings revealed that approximately two-thirds of school districts have no policies which require schools to prohibit junk foods (foods or beverages that have low nutrient density) from being sold in vending machines, served at class parties, or made available in school stores or snack bars. Fewer than 10 percent of districts have policies that prohibit serving junk food at staff meetings, in concession stands, and during meetings attended by student family members.[98]

In light of growing concerns about childhood obesity and related negative health outcomes, administrators, parents, and child health advocates need to explore alternative funding options that do not compromise the health of enrolled students. To this end, Table 1–8 provides a checklist of important questions to guide school health advocates toward confirming a commitment to quality school nutrition services.[99] (Readers can find much more information about promoting healthy eating in Chapter 6 of this text.)

TABLE 1–8

Confirming a Commitment to Nutrition Services: A Checklist of Important Questions

Does your school offer school meals that are accessible to all students?
Do school meals include a variety of offerings that extend beyond minimum requirements?
Does your school food service consistently follow practices that ensure healthier foods are purchased and prepared?
Does your school promote healthy food and beverage choices and school meals that meet best practice lunchroom techniques?
Do your students have adequate time to eat school meals?
Does your school implement any Farm to School activities?

SOURCE: Centers for Disease Control and Prevention, *School Health Index: A Self-Assessment and Planning Guide—Elementary School* (Atlanta, GA: CDC, 2017), Module 4.

Counseling, Psychological, and Social Services

Just like students who are safe and well-fed, mentally healthy students are more successful in school. When students receive social-emotional and mental health support they achieve better academically. Additionally, improvements are seen in school climate, classroom behavior, and students' sense of connectedness.[100] Stress, anxiety, depression, family problems, bullying, learning disabilities, as well as serious mental health problems, such as self-injurious behaviors and suicide, come to school with students. Research estimates that only about 40 percent of students receive the treatment they need.[101] Thus, schools are an

ideal place for mental health prevention and intervention policies and practices for students. School psychologists, school counselors, and school social workers are essential to meeting the mental health needs of students and play a critical role in helping students and families access services. Research indicates that students are more likely to seek counseling when services are available in schools as they are, in some cases, the only mental health services in the community.[102] It is clear why counselors, psychologists, and other social service providers play such an important role in WSCC.

While resources to promote and protect mental health often are limited in the school community, educators must not underestimate the impact of mental health challenges on academic success. Psychologist Dr. Howard Adelman has identified five related barriers to learning:

- Inadequate basic resources—food, clothing, housing, and a sense of security at home, at school, and in the neighborhood.
- Psychosocial problems—difficult relationships at home and at school; emotional upset; language problems; sexual, emotional, or physical abuse; substance abuse; delinquent or gang-related behavior; and psychopathology.
- Stressful situations—inability to meet the demands made at school or at home, inadequate support systems, and hostile conditions at school or in the neighborhood.
- Crises and emergencies—death of a classmate or relative, a shooting at school, or natural disasters such as earthquakes, floods, or tornadoes.
- Life transitions—onset of puberty, entering a new school, and changes in life circumstances (moving, immigration, loss of a parent through divorce or death).[103]

Although there are a number of models and approaches around which school-based mental health services are organized, three kinds of professionals most frequently offer such care: school counselors, psychologists, and social workers. Originally, school counselors were employed to provide vocational guidance for students. Today, their role has been expanded to include helping students solve relationship problems, make decisions to improve learning outcomes, and address developmental challenges. Their mental health colleagues—school psychologists—evaluate the psychological functioning and needs of students and coordinate referral networks and collaborative activities with other community service providers. In particular, school psychologists play a critical role in responding to learners with special needs. In addition, school psychologists provide individual and group counseling for students, and conduct informational sessions for parents, faculty, and staff. Finally, in many school communities, social workers bridge the school, the home, and the community, by offering case management, group counseling, home visits, advocacy, parent education, and coordination of programs for youth.[104]

In addition to intervention services for students and their families, counselors and social workers provide instruction in many elementary and middle schools. These resource professionals organize learning activities focused on nonviolent conflict resolution, problem solving, communication, and decision-making skill development. In addition, counselors, psychologists, and social workers collaborate in curriculum and staff development activities in some districts.

TABLE 1–9

Confirming a Commitment to Quality School Counseling, Psychological, and Social Services: A Checklist of Important Questions

Are counseling, psychological, and social services provided by a full-time counselor, social worker, and psychologist?
Does the counseling, psychological, or social services provider promote the emotional, behavioral, and mental health of and provide treatment to students and families?
Does the counseling, psychological, or social services provider collaborate with other school staff members to promote student health and safety?
Does your school implement a systematic approach for referring students, as needed, to appropriate school- or community-based counseling, psychological, and social services?
Does your school aid students during school and life transitions (such as changing schools or changes in family structure)?
Does the counseling, psychological, or social services provider have a system for identifying students who have been involved in any type of violence and, if necessary, refer them to the most appropriate school-based or community-based services?

Source: Centers for Disease Control and Prevention, *School Health Index: A Self-Assessment and Planning Guide—Elementary School* (Atlanta, GA: CDC, 2017), Module 6.

In summary, school-employed mental health professionals ensure that services provided in school reinforce learning, support the creation of a safe and supportive school environment, and help link students and families to community interventions and resources.[105] SHPPS has confirmed that nearly 90 percent of school districts have adopted policies mandating such services for all students.[106]

To evaluate the program of mental health services in local schools, readers are encouraged to review Table 1–9, a checklist of important questions that confirm a commitment to quality school counseling, psychological, and social services.[107] Further, readers can find additional information about promoting mental and emotional health among students in elementary and middle grades in Chapter 5.

Physical Education and Physical Activity

In 1996, the Surgeon General of the United States published a landmark report on physical activity and health. This document confirmed the following significant benefits of regular participation in physical activity: a reduced risk of premature death and a decreased likelihood of developing heart disease, diabetes, and colon cancer.[108] In addition, people who exercise on a regular basis are more likely to participate in other healthy behaviors including improved dietary behaviors, more effective stress management practices, and lower cigarette use.[109]

Importantly, the Surgeon General's report documented that the health benefits of physical activity are not limited to adults. Regular activity among children and youth helps build healthy bones, muscles, and joints; helps control weight; supports development of lean muscle mass; addresses risks for high blood pressure; and reduces feelings of depression and anxiety.[110]

In addition to numerous health benefits, emerging literature has established a link between participation in physical activity and enhanced academic outcomes for students. In particular, research has concluded that students engaged in a school-based physical activity experience improved attention, better mood and memory, lower risk of depression, and better grades.[111] Additionally, the benefit of physical activity at school to teachers is more students on task, improved classroom behaviors, students earning better grades, and fewer student absences.[112]

Given the amount of time spent there, schools are an ideal location for students to get the recommended sixty minutes of physical activity each day. Given the availability of facilities and trained professionals, schools can pursue a combination of strategies to help students be more active. Among such steps, schools can:

- Create policies that increase access to and encourage physical activity for all students.
- Maintain strong physical education programs that engage students in moderate to vigorous activity at least 50 percent of their class time.
- Integrate physical activity into classroom practice so students can be active across the school day and not only in physical education class.
- Employ qualified and credentialed staff to teach physical education and to meet the activity needs of students with disabilities.[113]

Sound physical education programs provide the backbone for school-based physical activity programs. Such programs are developed to include a range of learning activities targeting cardiovascular health, muscular endurance, flexibility, strength, agility, balance, coordination, and good posture. Emphasis is placed on physical fitness and the development of skills that lead to lifelong habits of physical activity. As in other content areas, national physical education standards have been developed to provide guidelines for evidence-based program development.

The amount of time allotted for the physical education class varies from as little as fifteen to twenty minutes at some schools to as much as forty-five minutes to one hour at others. To address such variability, SHAPE America recommends that students in elementary schools receive a minimum of 150 minutes of physical education per week. Depending on the needs and maturation of students, this equals an approximate average of thirty minutes of formal physical education instruction per day.[114]

The amount of vigorous aerobic activity in which each student is a participant also is worthy of discussion. When observing an elementary physical education class, it is common to witness large blocks of time when many students are standing or sitting while a few are active or the teacher is instructing. Relays and team games tend to result in limited participation for the majority of students. Current recommendations encourage instructional practices that engage students in moderate to vigorous physical activity for at least 50 percent of the class time and address content through cognitive, affective, and psychomotor domains.[115]

An important addition to the program of formal physical education is the provision of recess for most elementary school students. Unfortunately, many schools reduce recess time in favor of preparation for proficiency testing or count recess time periods toward compliance with state requirements for participation in physical education. This practice is unacceptable, as it implies that physical education learning experiences are less important than experiences in other academic subjects. Unfortunately, SHPPS confirmed that only 64.8 percent of school districts required schools to provide regularly scheduled recess periods for students in the elementary grades.[116]

Table 1–10 reviews important questions that confirm a commitment to quality physical education and other physical activity programs.[117] Further findings are available for reader review in Chapter 7.

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Daily physical activity for children—during physical education class and recess—enhances academic performance and sets the stage for lifelong healthy activity habits.

TABLE 1–10

Confirming a Commitment to Quality Physical Education and Physical Activity: A Checklist of Important Questions

Do all students in each grade receive physical education for at least 150 minutes per week throughout the school year?
Do physical education classes have a student/teacher ratio comparable to that of other classes?
Do all teachers of physical education use an age-appropriate, sequential physical education curriculum that is consistent with national or state standards for physical education?
Does the school prohibit exemptions or waivers for physical education?
Do teachers keep students moderately to vigorously active for at least 50 percent of the time during most or all physical education class sessions?
Are all physical education classes taught by teachers who are certified or licensed to teach physical education?
Does the physical education program consistently use practices as appropriate to include students with special health care needs?
Does your school promote or support walking and bicycling to school?
Does your school or district ensure that spaces and facilities for physical activity meet or exceed recommended safety standards for design, installation, and maintenance?

SOURCE: Centers for Disease Control and Prevention, *School Health Index: A Self-Assessment and Planning Guide—Elementary School* (Atlanta, GA: CDC, 2017), Module 3.

Employee Wellness

Since the 1970s, corporate America has demonstrated an increased interest in health promotion initiatives for employees. Providing long-term hospitalization for an aging American public has led many businesses to seek ways to reduce costs for hospital, medical, and other types of insurance. Many in the health promotion and medical care professions are committed to the notion that, with appropriate health promotion and disease prevention initiatives, these costs can be reduced. Corporations with worksite health promotion programs formalize opportunities for employees and their families to assume more responsibility for their health and well-being. In turn, the employees tend to be more productive, are absent less frequently, and have improved attitudes and better morale.

Boards of education and administrators are faced with the same issues as corporate America. Schools represent one of the largest employers in the United States. As with any business, a significant portion of a school district budget is earmarked for health insurance and related benefits for faculty and staff. Thus, school districts are ideal locations for employee wellness programs. School buildings are constructed with a wide range of facilities, and school districts employ resource professionals skilled in planning and implementing quality health promotion programs. Screenings, health education, employee assistance programs, health care, immunizations, and policies that support safe and healthy lifestyles are among the formalized activities integrated into the employee contracts in some school districts.

School-based employee wellness programs for faculty and staff have been shown to:

- Decrease absenteeism.
- Lower health care and insurance costs.
- Increase employee retention.
- Improve morale.
- Reduce staff stress.
- Increase productivity.
- Provide healthy role models for students.[118, 119]

Healthy teachers, administrators, and support staff are less costly to taxpayers and have fewer absences that require temporary employment of substitute teachers. Better continuity of instruction for students is maintained and costs are contained. In support of such health and cost containment outcomes, SHPPS contains confirmation that 54 percent of school districts require schools to have employee wellness programs. Further, nearly one-quarter of districts provide preventative screenings such as body mass index, diabetes, and cholesterol.[120] Elementary and middle school teachers interested in exploring the advantages of such programs in their local district should review Table 1–11. This checklist reviews important questions that confirm a commitment to quality health promotion for staff.[121]

TABLE 1–11

Confirming a Commitment to a Quality Employee Wellness and Health Promotion: A Checklist of Important Questions

Does your school or district offer staff members health education and health-promoting activities that focus on skill development and behavior change and that are tailored to their needs and interests?
Does your school or district offer staff members accessible and free or low-cost health assessments at least once a year?
Does your school or district offer staff members accessible and free or low-cost stress management programs at least once a year?
Does your school or district offer staff members accessible and free or low-cost physical activity/fitness programs?
Does your school or district offer staff members healthy eating/weight management programs that are accessible and free or low cost?
Does your school or district offer staff members tobacco-use cessation services that are accessible and free or low cost?

SOURCE: Centers for Disease Control and Prevention, *School Health Index: A Self-Assessment and Planning Guide—Elementary School* (Atlanta, GA: CDC, 2017), Module 9.

Family Engagement and Community Involvement

Today, many associate a range of student problems with shortcomings in the school program, yet there are many entities in every community with whom children and their families engage. Children who attend local schools also are influenced by practices in the neighborhoods, churches, and stores and by medical care providers with whom they have contact. No school district is solely responsible when a community is confronted with children who have developed problems with tobacco, alcohol or other drugs, or violence. Rather, every student who is at risk lives in some kind of family arrangement, resides in a neighborhood, shops in local stores, and might participate in religious celebrations. All student advocates must remember that the complexity of today's health and social problems require that no one agency or group be blamed or held responsible for intervening in the absence of other stakeholders. Student risk behaviors are influenced by a complex set of variables. Thus, effective prevention and intervention are based on collaborative approaches.

Key stakeholders in this collaboration are parents or custodial caregivers. By action and example, these adults shape the lives of their children from birth through adulthood. Whereas it is common for the influence of friends and peers to increase during adolescence, research has confirmed the continued significance of parents in shaping choices and behaviors of their children. Close parent–child relationships characterized by mature parenting skills, shared family activities, and positive role modeling have well-documented effects on the health and development of youth.[122]

As an important step in confronting such challenging issues, the school health literature has confirmed the need for local districts to establish a school health advisory council. Such organizations focus the efforts of school, medical, safety, and advocacy services on health in the school community. Specifically, such coalitions or committees work to increase the quantity and quality of school-based health education efforts. Such groups also help reduce duplication of services and enhance the visibility and potential impact of all participant agencies. With pooled

TABLE 1–12

Confirming a Commitment to Quality Family Engagement and Community Involvement: A Checklist of Important Questions

Does your school communicate with all families in a culturally and linguistically appropriate way, using a variety of communication methods, about school-sponsored activities and opportunities to participate in school health programs and other community-based health and safety programs?
Does your school's family education program address effective parenting strategies?
Do families and other community members help with school decision making?
Does your school or district have a formal process to recruit, train, and involve family and other community members as volunteers to enrich school health and safety programs?
Does your school provide opportunities for family members to reinforce learning at home?
Do family and community members have access to indoor and outdoor school facilities outside school hours to participate in or conduct health promotion and education programs?
Does your school work with local community organizations, businesses, or local hospitals to plan community events that promote health and wellness for students, families, and community members?
Does your school partner with community-based healthcare providers to link students and families to accessible community health services and resources?

SOURCE: Centers for Disease Control and Prevention, *School Health Index: A Self-Assessment and Planning Guide—Elementary School* (Atlanta, GA: CDC, 2017), Modules 10 & 11.

resources, advocacy initiatives that are too large for any one agency become realistic collaborative efforts.[123]

In addition to addressing more global concerns, elementary and middle school classroom teachers would be wise to cultivate relationships with student health advocacy organizations and agencies in their communities. Many of these organizations offer support for classroom instruction by providing resource materials developed to focus on a broad range of health content matters.

Table 1–12 contains a checklist of important questions that confirm a commitment to quality family engagement and community involvement with the schools.[124] In addition, parent engagement is discussed in greater detail in Chapter 2 and throughout this text.

Pulling It All Together

The health status and academic achievement of students who attend elementary and middle schools are threatened by many complex health-related variables. While learning is threatened among students who are absent due to allergies or communicable infections, others have difficulty maintaining their attention to schoolwork because of dietary risks or bullying. The key to confronting such complex issues is to capitalize on the many resources and talents of professionals who are committed to promoting the health of students.

The Whole School, Whole Community, Whole Child (WSCC) model represents best practice in school health promotion. The successful integration of this model into the active life of the school community depends on several key elements. As a foundation, all school and community personnel with expertise in any aspect of student health should be engaged as active participants in this proactive health promotion agenda. The likelihood of successful implementation of the WSCC model in a local school community is related to the extent of cooperation, collaboration, and communication among the stakeholders. Adults with particular expertise representing the eight component programs must organize their efforts in a coordinated manner.

Many schools offer a range of programs designed to react to the health risks of students who are at risk. Additionally, other districts offer diverse activities to prevent participation in any number of health-risk behaviors. Importantly, activities must be offered in a coordinated and intentional manner to increase the probability of their longevity and success.

As an example of such a coordinated approach, nutritional health promotion is very different in a school community with the WSCC model than in one that has not embraced this model. Such a district, with an established school health council, might collaborate in planning proactive and well-organized activities, including the following:

- *Health education:* Provide a developmentally appropriate nutrition education curricular scope and sequence.
- *Health services:* Provide consultation and resources for planning a nutritional health week in which cross-curricular instruction focuses on healthy foods.
- *Healthy environment:* Review, by administrators and the board of education, all fund-raising policies and practices to make sure that none sabotage the district commitment to nutritional health promotion.
- *School food services:* Establish training tables for athletes, students involved in co-curricular activities, and interested others, including building faculty and staff.
- *Counseling:* Provide support groups and appropriate referral activities for students with eating disorders or other risky dietary behaviors.
- *Physical education:* Develop exercise prescriptions that feature healthy weight management practices for all students.
- *Faculty and staff:* Organize a "Healthy Nutrition for Life" support group open to all faculty and staff.
- *Family engagement:* Have students plan a healthy meal with their families.
- *Healthy community:* Organize "a taste of [name of your community]" event. Invite local restaurants and food outlets to the school campus to prepare samples of their healthy entrées for school district residents. Proceeds can support a range of health promotion activities.

Finally, many school health advocates have identified the need for a person or leadership group to coordinate and serve as "champions" for all activities of the school health program. The primary responsibility of this person or group is to translate the model components into specific programming activities to meet local needs. In particular, such program coordinators focus their professional time and energies on heading the school health advisory committee, maintaining the program budget, and organizing advocacy and liaison activities with district, community, and state agencies. The coordinator provides direct health promotion activities and services and organizes evaluation activities to ensure quality control of the many aspects of the WSCC model.[125]

The School Health Index (SHI), referenced in this chapter, is a valuable tool developed by the CDC, and can help schools improve their health and safety policies and programs. Easy to use and completely confidential, the SHI has two activities that teams of representatives from school communities can complete. The self-assessment process structures a way for stakeholders to identify strengths and weaknesses in all components of the WSCC model. After this self-assessment is completed, schools can use the planning tool in the SHI to identify and rank-order recommended actions for improving a collaborative approach to student health.[126]

ASCD, one of the nation's largest and most respected education organizations, issued a *Statement for the Integration of Health and Education*. This important statement is based on the notion that health and education are symbiotic. ASCD states, "The healthy child learns better just as the educated child leads a healthier life. Similarly, a healthier environment—physically as well as socially-emotionally—provides for more effective teaching and learning."[127] Consistent with the text in this chapter, ASCD has taken the position that health should be fully embedded into the educational environment for all students and affirms that:

- Health and learning is a multifaceted concept that includes intellectual, physical, civic, and mental health of students.
- Health and learning are supported by coordinated and comprehensive teacher, school, family, community, and policy resources.
- Health and learning supports the development of a child who is healthy, knowledgeable, motivated, engaged, and connected.
- Health and learning is the reciprocal responsibility of communities, families, schools, teachers, and policymakers.[128]

ASCD and the Centers for Disease Control and Prevention (CDC) collaborated in the development of the Whole School, Whole Community, Whole Child (WSCC) model. This contemporary approach demands adults in positions of responsibility and authority focus on promoting student health while maintaining a focus on the primary mission of schools: to maintain the highest standards of academic achievement.[129]

INTERNET AND OTHER RESOURCES

WEBSITES

Action for Healthy Kids
www.actionforhealthykids.org

Alliance for a Healthier Generation
www.healthiergeneration.org

American Cancer Society
www.cancer.org

American School Health Association
www.ashaweb.org

ASCD
www.ascd.org

Center for Health and Health Care in Schools
www.healthinschools.org

Centers for Disease Control and Prevention—Division of Adolescent and School Health
www.cdc.gov/healthyyouth/

Centers for Disease Control and Prevention—Health and Academic Achievement web page
www.cdc.gov/healthyyouth/health_and_academics/

National Association of School Nurses
www.nasn.org

Office of the Surgeon General
https://www.hhs.gov/surgeongeneral

School Health—Society for Public Health Education
www.sophe.org/focus-areas/school-health

U.S. Department of Agriculture's Team Nutrition Website
www.fns.usda.gov/tn

U.S. Department of Education—Safe & Supportive Schools
oese.ed.gov/offices/office-of-formula-grants/safe-supportive-schools/

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2

Source: Shayna, age 12

Comprehensive School Health Education

Applying the Science of Education to Improving Health Instruction

OUTLINE

DESIRED LEARNER OUTCOMES

After reading this chapter, you will be able to . . .

- **Identify key policymakers and ways in which they influence education practice in the United States.**
- **Summarize ways in which findings from the growing body of brain science can be applied to improve teaching and learning.**
- **Describe the application of developmentally appropriate practice to improving health instruction for students in elementary and middle schools.**
- **Summarize characteristics of effective health education curricula.**
- **Describe effective strategies for engaging students in curriculum planning.**

INTRODUCTION

One important way to begin the process of developing effective health education curricula and instructional practices is to review important findings about learning from education literature. Health educators who understand how students learn and the developmental challenges confronting them are better equipped to develop and implement evidence-based and effective learning experiences. In addition, a review of literature about how schools function and current findings about educational effectiveness can inform the thinking of parents, teachers, and administrators involved in making decisions that affect local health education policy, practice, and curricula.

INFLUENTIAL POLICYMAKERS IN THE EDUCATION COMMUNITY

The education enterprise in the United States is grounded in a commitment to decentralization. Rather than being controlled by the federal government, the education of our youth is the responsibility of each state. State-specific mandates and recommendations are interpreted and applied by each local school district. As such, the system for educating American children is designed so that decisions about curricular topics and their boundaries, teacher licensure requirements, and the planning, development, implementation, and evaluation of instruction reflect the unique interests and education standards adopted by each state.

As the voice for education reform has become more powerful, experimental models for educating students have emerged and are being tested. Today's parents can choose from a range of schooling options for their children. This expansion has fulfilled the dreams of school choice advocates who entered the education reform conversation in the past century during the Reagan administration. Vouchers for public school students to attend private schools and proposals for the establishment of charter or community schools were offered. The belief that the competition provided by school choice would pressure poorly performing public schools to improve was the central argument among advocates for education reform at this early time.[1]

Today, positions represented by varied stakeholders and advocacy groups communicate strong, yet competing messages about what is best for schools and students. Shared by many educators and teachers' unions is the belief that schools alone can't eliminate achievement gaps and other education challenges. Supporters committed to the notion that the problems confronting schools result from such complex factors as socioeconomic disparities call for more government spending on the health of poor children, expanded preschool programming, supports for parents, and meaningful after-school activities for students. Others, including many politicians, place the blame for failing schools on teachers' unions that "protect ineffective teachers," rather than focusing on what is best for learners. Still others advocate for greater accountability for schools and their employees. Those supporting this commitment to increased and documented accountability call for resistance of any forces that support what they consider to be the status quo.[2] Due to the range of complex challenges confronting the education enterprise, elements of all of these positions are true. Importantly, as vigorous debate continues and alternative models for educating youth are tested, it can be difficult to understand who controls the structure, policies, and practices governing schooling in the United States.

Exercised by an increasing number of parents, the education option of charter, or community, schools is being selected by caregivers for their children. Recent data from the National Center for Education Statistics confirm that 3.1 million (6 percent) students attend more than 7,500 such schools in the United States.[3] Charter or community schools operate with public monies and must conform to state standards for health and safety. Charter schools also must operate in full compliance with federal civil rights laws. These schools, however, are granted considerable autonomy in developing policies, curricula, and programs.[4]

As another option, a growing number of students are being educated in their homes by parents or caregivers. Since 1999, when national prevalence data about home schooling were first collected, the estimated percentage of the school-age population being home schooled has risen to approximately 1.7 million or slightly more than 3 percent of American students.[5] Reasons offered for making this choice include a concern about the environment of other schools; a dissatisfaction with academic instruction; a desire to provide a nontraditional approach; the desire to provide religious or moral instruction; or the capacity to respond to a child's special needs, temporary illness, or other health concerns.[6] Every state regulates homeschooling differently. Some states require family members to submit instruction plans and have student academic progress assessed each year; other states require little or nothing.[7] Parents and caregivers who choose to home school their children can find an increasing amount and variety of educational materials, including Internet resources specifically developed to meet their needs.

First tested in the cities of Milwaukee and Cleveland, tuition voucher programs were proposed by politicians and education reform advocates as a way to give economically disadvantaged families access to the widest range of school choice alternatives. Vouchers were challenged by many groups of professional educators who saw such programs as a drain on the limited allocations of public monies for public education. Currently there are twenty-nine voucher programs in eighteen states with nearly 190,000 students using vouchers. An additional sixty-five operational educational choice programs exist in twenty-eight states, the District of Columbia and Puerto Rico.[8] These programs include approximately 1 percent of K-12 students. These programs allow the use of public tax dollars for students to attend private schools.[9]

Private schools represent a more established and historically significant education alternative in the United States. More broadly available and widely accessed by parents and their children than other school choice options, private schools operate with a minimum of government influence or control. Recent data confirm that approximately 5.7 million students

(about 10 percent) attend approximately 34,500 private schools (25 percent of U.S. schools) across the United States.[10, 11] Importantly, great variability exists across states concerning government involvement in or oversight about such matters as curriculum, performance evaluation, and professional preparation requirements for teachers and administrators. Many private schools were established by religious organizations to meet the educational needs of the children of early settlers, whereas others were organized around secular unifying missions or goals. To this day, the largest private school enterprise in the United States operates under the auspices of the Catholic Church. In most cases, boards of directors or trustees comprised of prominent members of the community, volunteers, religious leaders, and/or alumni of the school are responsible for setting policies for individual schools or groups of schools. The majority of funding for private schools is generated from the tuition and fees charged to attendees.[12]

Attended by over 51 million or the majority of students, public schools in the United States must operate in full compliance with several layers of federal, state, and local laws.[13] In addition, public schools and their employees must respond to the expectations and concerns of parents and other taxpayers in the local community. As a result, many stakeholders have a voice in public school policy and practice.

Influence at the National Level

Throughout U.S. history, the federal government has exerted only narrow and limited influence over education policy. Contrary to the assertions of many that the governance of public schools is centralized in Washington, DC, Congress specified that the U.S. Department of Education would maintain a very broad role in public education by participating in activities such as the following:

- "Establishing policies on federal financial aid for education, distribution and monitoring of such funds.
- Collecting data on America's schools and disseminating research.
- Focusing national attention on key educational issues.
- Prohibiting discrimination and ensuring equal access to education."[14]

No Child Left Behind (NCLB)

With the reauthorization of the Elementary and Secondary Education Act in 2002, the influence of the federal government over public education in the United States was strengthened. This act, termed *No Child Left Behind (NCLB),* established a multiyear national agenda intended to improve academic achievement among all students. As a result of this legislation, the federal government assumed leadership for specific activities in state education agencies and local school districts across the nation with a focus on:

- Improving student performance on test scores in selected content areas.
- Eliminating achievement gaps among different racial, ethnic, income, and disability groups of learners.
- Upgrading the qualifications of teachers and paraprofessionals working in schools.

The original purpose of NCLB was a worthy one. This act was intended "to ensure that all children have a fair, equal, and significant opportunity to attain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments."[15] This federal law affecting public education policy and practice in all schools was built with a focus on four key elements:

- Accountability for results.
- Emphasis on policies and instructional practices demonstrated by research to be effective.
- Expansion of options for parents.
- Extension of local control and flexibility in the management of schools.[16]

Findings about the effectiveness of this federal legislation confirmed that the results were mixed. Education officials in many states and school districts reported that scores on tests of math and reading went up, and achievement gaps narrowed or remained constant. In general, schools began to invest more energy in aligning curricula with standards and many started to use assessment data to inform decision making about school improvement. In addition, nearly 90 percent of teachers in core subjects met the NCLB definition of "highly qualified."

Importantly, NCLB was a federal mandate that was grossly underfunded. Federal funding to support NCLB implementation stagnated and nearly 80 percent of school districts reported that they had to use local tax dollars to cover the costs of mandated activities.[17]

In addition to managing the financial burdens of NCLB compliance, school districts had to change instructional time allocation to accommodate mandated testing.[18] Analysis of such costs in midsize school districts revealed the following:

- Students in heavily tested grades spent as many as 50 hours per week taking tests.
- Students in high-stakes testing grades spent up to 110 hours per year engaged in such test-preparation activities as taking practice tests and learning test-taking strategies (110 hours equals approximately 1 month of school).
- The estimated annual cost of testing in heavily tested grades often exceeded 10 percent of the annual per pupil expenditure amount in a typical state.
- If the testing agenda were abandoned, instructional time could have been increased by approximately 40 minutes each school day.[19]

Blueprint for Reform of the Elementary and Secondary Education Act

Given the failure of the U.S. Congress to reauthorize NCLB and the commitment to education reform made by the Obama administration, the White House released the *Blueprint for Reform of the Elementary and Secondary Act* in 2010. Grounded in the belief that NCLB created a system of incentives for

states to lower standards and measure students' skills on "bubble tests," the *Blueprint* contained strategies to fix identified problems revealed in the law and to move the imperative of education reform forward with "common-sense strategies." Specifically, the *Blueprint:*

- Acknowledged that the most effective teachers generally are not rewarded for doing a great job or for accepting additional responsibilities *and* reinforced the value of using multiple assessment strategies (not just student test scores) to evaluate teachers fairly and pay them for hard and successful work.
- Recognized that NCLB narrowed the focus of the curriculum and marginalized history, the arts, and other critical subjects *and* reformed the need to focus on year-to-year text scores so educators could focus on high-quality educational outcomes for all students in subjects such as the arts and foreign languages, as part of state accountability systems. In this way, teachers of subjects other than math and science would not be ignored.
- Eliminated the misuse of test data and teaching to the test *and* measured school performance both on achievement level and on growth in student performance.
- Refocused the punitive orientation of NCLB *and* empowered states to adopt high and rigorous standards for student performance and then to reward schools for both progress and achievement.[20]

Realistic Reflections

Children with special needs increasingly are integrated into general education classrooms where instructional adaptations can be made to meet their needs.

Even though 80 percent of federal funding policies for core programs remained relatively consistent, more than $4 billion was awarded to states identified to be leading the way in education reform. This national competitive federal fund, titled "Race to the Top," served as a catalyst for change in states to establish and maintain effective education strategies in four critical areas:

- Adopting internationally benchmarked standards and assessments designed to prepare students for success in college and the workplace and to compete in the global economy.
- Building data systems that measure student growth and success, and inform teachers and principals about how they can improve instruction.
- Recruiting, developing, rewarding, and retaining effective teachers and principals, especially where they are needed most.
- Turning around the lowest-achieving schools.

States that demonstrated readiness to meet benchmarks for reform in these critical areas received federal grants not based on politics, ideology, or the preferences of a particular interest group. Rather, funding and implementation of the *Blueprint for Reform of the Elementary and Secondary Act* focused on improving education outcomes for children and the nation as a whole.[21]

The Common Core State Standards Initiative

Consistent with the education reform movement of the 1990s, state departments of education across the United States began to develop instructional standards across a range of content areas. By the early 2000s, every state had developed and adopted its own learning standards specifying what students in each grade level should know and be able to do. In addition, each state defined "proficiency" of the level at which students were identified to be sufficiently educated at each grade level and by the time they graduated from high school. In the name of accountability—a key tenant of the federal NCLB legislation—states then developed and administered high-stakes assessments. Over time, an uneven patchwork of academic standards had been developed, and there was no agreement on what students should know and be able to do. Further, there was no consistency across the nation as to how outcomes should be measured among students at each grade level.[22]

Recognizing the value of and need for consistent learning goals across the states, state-level representatives from the Council of Chief State School Officers and governors representing the National Governors Association coordinated a state-led effort to develop standards designed to provide a clear and consistent framework for educators. In collaboration with teachers, administrators, and other experts, the Common Core State Standards published in 2010 provide a set of high-quality academic standards in Mathematics and English language arts and literacy (ELA) that identify what students should know and be able to do by the completion of each grade in school. In addition, these

goals were created to ensure that all students would graduate from high school with the skills and knowledge necessary to succeed in college, career, and life, regardless of where they live.

The Common Core State Standards are:

- "Research- and evidence-based
- Clear, understandable, and consistent
- Aligned with college and career expectations
- Based on rigorous content and applications of knowledge through higher-order thinking skills
- Built upon the strengths and lessons of current state standards
- Informed by other top-performing countries in order to prepare students for success in our global economy and society"[23]

Although a number of concerns have been voiced about this national initiative, including those focused on threats to the historical tenant of local control and the "one-size-fits-all" orientation, forty-one states, the District of Columbia, four U.S. territories, and the Department of Defense Education Activity (DoDEA) have adopted the Common Core State Standards.[24]

Federal Monitoring and Supervision of School Health Activities

A number of federal agencies have been charged with the responsibility of monitoring and providing support for school-based health education and promotion activities. The Safe and Healthy Students Unit in the U.S. Department of Education provides program support and technical assistance for drug and violence prevention, school-based mental health services, bullying prevention, among others. The U.S. Department of Agriculture oversees school food service activities, including the National School Breakfast and National School Lunch Programs.

Even though it has no direct policy or governing authority over state and local education agencies, the U.S. Department of Health and Human Services (USDHHS) manages a range of activities that support school health efforts. In particular, the Centers for Disease Control and Prevention, a subdivision of the USDHHS, manages funding programs to support prevention and control of diabetes, heart disease, obesity, and associated risk factors and the promotion of adolescent health through prevention and surveillance efforts. Further, CDC's Division of Adolescent and School Health manages youth at-risk behavior surveillance activities and provides resources and support for the implementation of the Whole School, Whole Community, Whole Child model (described in Chapter 1). In addition, the Office of the Surgeon General has produced a number of documents and reports focusing national attention and resources on the health issues confronting children and youth.

Teaching Students with Exceptional Needs: A Brief Introduction

In context of recognized criteria, children with disabilities are defined as those who face persistent challenges when they try to participate in ordinary childhood activities. Specific challenges include those that are physical, behavioral, or emotional making it difficult for affected children to participate in strenuous activities, get along with others, communicate and learn, or participate in neighborhood or school activities with peers.[25] Among school-age children, the most common functional disabilities that limit participation in activities of daily living include learning disabilities, speech or language impairments, health impairments, and autism.[26]

To respond to the needs of children with disabilities, the reauthorization of the Individuals with Disabilities Education Act (IDEA) was passed into law in December 2004. The Individuals with Disabilities Education Improvement Act ensures that services will be provided for children with disabilities across the nation. To accomplish this, IDEA 2004 governs how states and public agencies provide early intervention and special education and related services for more than 7.1 million eligible infants, toddlers, children, and youth with disabilities between their birth and age 21.[27]

With particular focus on children and youth of school age, the law stipulates that a free appropriate public education in the least restrictive environment must be made available for students diagnosed with disabilities who require special education services. IDEA 2004 identifies specific disability categories that qualify students for special education and/or related services, including specific learning disability, serious emotional disturbance, mental retardation, autism, other health impairments, and orthopedic impairments. Students with disabilities also can access educational services under Section 504 of the federal Rehabilitation Act.[28]

Nearly 14 percent of U.S. school-age children have been diagnosed with a specific disability, and an increasing number of them are being integrated into general education classrooms.[29] In most cases, it is the classroom teacher who assumes instructional responsibility for students with disabilities. As such, regardless of their training, teachers must learn to adapt and accommodate all instruction to meet the educational needs of all learners. Typically teachers or other support staff with particular expertise in special education or related services are be identified to assist classroom teachers with necessary classroom assistance or instructional modifications. In this way, classroom teachers are an integral part of the multidisciplinary team engaged in decision making about best practice for each student with a disability. Then, these decisions are reflected in the specific Individualized Education Program (IEP) or 504 plan developed to meet the needs of each child.

Often overlooked is the critical need for educators and parents to collaborate in meeting both the academic and the health needs of students with disabilities. To support both school success and healthy behavioral outcomes for all students, teachers must be skilled at and comfortable with implementing a wide range of instructional strategies, including adapted learning centers, computer-assisted instruction, cooperative and peer-based learning activities, and skill development in self-management and other essential skills. All students benefit from diversified instruction complemented by instructional adaptations or accommodations when necessary. Most accommodations are simple and easily implemented (e.g., more time for completing tasks, adapted

assignments, the use of special equipment). Other accommodations can be extensive. Having a large repertoire of strategies that support academic and health outcomes is the key to learning success for all.[30]

Influence at the State Level

The U.S. Constitution asserts that education is the responsibility of each state. At the state level, the governor is responsible for developing the state budget and proposing initiatives of importance. The state legislature, however, has final authority over state policies, state budgets, and the distribution of state funds. Across the United States, states contribute about 45 percent of the funds necessary to cover public education costs.[31] Many governors and legislators have found that it is politically wise to express their commitment to improving education outcomes as a way to generate support and popularity among constituents. Unfortunately, competing political pressures, budgetary realities, and turnover among officials in state government often challenge continuity and implementation of such intentions. As such, public school districts in most states are confronted with significant budgetary challenges.

Although the scope of influence varies from state to state, it is the state board of education (SBE) that is responsible for policymaking and enforcement and for governance of the public schools. In some states, members of the SBE are elected. In others, they are appointed by the governor. In most states, a chief state school officer chairs the SBE. This professional, usually trained as an educator, holds the title of state superintendent, commissioner, secretary, or director of education. Typically, the SBE is responsible for maintaining a broad long-term vision for education. Further, this body must provide bipartisan leadership over matters such as decision making concerning engagement in the Common Core Standards initiative, graduation requirements, and teacher licensure.

In this way, the SBE sets many policies that influence school health programming in the local school districts of each state. This body has the power to require that all students receive nutrition education or daily physical education. In addition, many SBEs have wrestled with questions concerning the amount and type of sexuality education to be delivered within their state.

Under the guidance of the chief state school officer and the SBE, the state education agency (SEA) or state department of education enforces regulations governing federal and state programs, distributes funds to local school districts, and offers technical assistance and training for employees. In addition, the state department of education, sometimes referred to as department of public instruction, develops curricular guidelines, performance standards in specific content areas, and tests of student performance. This body also is responsible for evaluating school improvement plans. As such, SEA employees collaborate with community agencies and school leaders to support continuous improvement in local school districts.[32]

Influence at the Local Level

In each community, public school districts must comply with all federal and state education laws. Importantly, it is the local school board that is responsible for establishing policies and practices that define the day-to-day operations in the schools. This model of governance grew from a commitment to the belief that local citizens should control the policies and practices of the public schools in their communities. Currently, there are approximately 13,500 local public school boards operating in the United States. Their responsibilities include hiring personnel, approving the district curricula, selecting texts, managing the budget, and contracting for services.[33] Local tax dollars account for approximately 45 percent of local public education costs.[34]

With very few exceptions, local school boards are composed of elected members. The number of school board members varies from state to state, but there are three general eligibility requirements for candidates:

1. *Age.* In most states, those seeking a seat on the board must be at least 18 years of age.
2. *Residence.* Candidates must live within the geographic boundaries of the school district they will represent.
3. *Financial affiliation.* To avoid the potential for conflict of interest, persons running for a seat on the school board must not be employed by the school district.

In this context, a wide range of professional expertise and interest is reflected in the deliberations and decisions made by a local school board.

Every school board member has strong beliefs about what constitutes the best education for local children. Disagreements about how this ideal is translated into practice are common among members of local boards of education. In addition to personal passions about education issues, elected members must represent the values and interests of their constituents. As such, activist residents and special interest groups can exert a powerful influence over school district policies and practices.

To help bridge gaps that emerge between the education ideals of members of the board, concerned citizens, and the education needs of students, school districts employ a superintendent, or chief executive officer who is responsible for implementing policies and practices adopted by the local school board. Typically, the superintendent is supported by a number of professional assistants. Depending on the size and budget of the school district, a number of trained specialists serve as staff in the central office of the district. Collectively, these professionals oversee curriculum, budget, personnel, operations, transportation, and policy implementation.

Unions and other employee associations influence the budget and operations within school districts. Many school communities have organized unions for teachers (the National Education Association [NEA] and American Federation of Teachers [AFT]) and administrators. Local chapters of unions for noncertified or classified staff can be very active. These groups participate in activities such as contract negotiations, employee health and advocacy initiatives, and resolution of conflicts or grievances.

Within each school building, a variety of employees manage daily operations. The principal supervises the instructional program, maintains a safe and nurturing learning environment, evaluates teachers and other staff, and represents the school to parent and community groups. Assistant principals and "school improvement" or "site-based management" teams assist many principals. These

teams are composed of teachers, coaches, custodial and school support staff, and parents or other community representatives.

A growing body of literature confirms the importance of engaging parents and concerned others in informing the health education programs and practices in local schools.[35] Teachers in elementary and middle schools who are challenged by curricular decisions and threats to student success and healthy behavior outcomes would be wise to identify committed stakeholders within their school community from whom they can seek counsel and support.

Understanding the organization and sources of influence over public schools is important for educators and other student advocates. Though the structure of the public education system appears to be cumbersome and inconsistencies between local policies and practices are common, it is designed to maximize input from taxpayers and other concerned stakeholders. With this sound philosophical underpinning, children can be educated in ways that reflect the best education practice mediated by parental concerns and community needs, values, and standards.

LESSONS FROM THE EDUCATION LITERATURE

As discussed, the sources of influence over school policy and practice are varied, and the call for education reform has been loud and persistent. All of this is happening at a time when student populations are becoming more diverse, and school communities are being asked to deliver more services to meet the broadest range of learner needs. As a result, education professionals are challenged to improve academic success while meeting social, emotional, occupational, and health needs among increasingly diverse learners.

A range of educational innovations, including school councils, parent involvement task forces, continuous improvement teams, and authentic assessment resource networks, have been proposed as ways to improve the quality of instruction to maximize academic success for all students.

Unfortunately, many proposals to reform education have political, financial, procedural, or operational motivation. As a consequence, many strategies are not grounded in sound education theory or evaluated to confirm that they are evidence-based. The highest standards, the most rigorous achievement testing protocol, and the most creative curricula can undermine meaningful learning unless they are planned and implemented with specific attention to how students process information and learn.[36]

Connecting Brain Research with Learning

As a foundation for improving teaching and learning, educators have begun to explore ways to translate research from the neurological and cognitive sciences into effective classroom practices. Such brain research has shown promise for improving teaching and learning, particularly among students with diverse learning needs.[37]

Brain research has given educators a way to translate neuroimaging data into classroom activities that stimulate parts of the brain demonstrated to be active during information processing, memory, and recall. Research suggests that the most successful strategies are those that teach for meaning and understanding, and that learning is most likely to occur in classrooms in which students feel low levels of threat but reasonable degrees of challenge. In addition, research has confirmed that students who are active, engaged, and motivated devote more brain activity to learning than do their counterparts. Findings from this growing body of literature cluster into the following categories.[38]

Findings About Acquiring and Integrating Knowledge

Brain research has confirmed that learning must occur within the context of what the learner already knows, has experienced, or understands.[39] In addition, new information must be processed so that it can be retrieved for use across different situations or contexts. The more a student repeats a learning activity, the more nerve connections in the brain are stimulated. Further, different parts of the brain store different parts of a memory. For example, singing a song is the result of complex brain activity. One part of the brain stores the tune, while another area stores the song's lyrics. As a result, the brain must reconstruct the parts of that memory before the person can re-create the whole song.[40]

To promote learning, teachers are encouraged to:

- Present new information within the context of prior knowledge or previous experience.
- Structure opportunities for students to repeat learning activities as a way to cement information or skills in their memories.
- Use mnemonics to promote associations in memory tasks.
- Incorporate visually stimulating learning materials and hands-on manipulatives to activate the right hemisphere of the brain and incorporate text-based presentations to activate the left hemisphere.
- Integrate art, music, and movement into learning experiences to promote learning by activating different parts of the brain.[41]

In this context, Teacher's Toolbox 2.1 contains brain-friendly techniques for improving memory.[42]

Findings About Positive Attitudes Toward Learning

While teachers have long suspected that attitudes affect learning, a growing body of brain research has confirmed this link between the cognitive and affective domains of learning. Interestingly, the concept of "emotional intelligence" has been characterized as the best predictor of life success.[43] Though understandings of emotional intelligence have been debated, brain science has confirmed that nerve pathways connect the emotional and cognitive processing centers in the brain. For example, research has confirmed that hormones alter brain chemistry in students under stress. When students are stressed, chemicals are released into the brain that can impair memory and learning.[44] In this context, evidence suggests that teachers should consider the following emotionally supportive classroom practices as a foundation for promoting learning:

- Establish a challenging but supportive classroom environment that reduces stress associated with academic difficulties and peer conflicts. Pair students with a homework

Teacher's Toolbox **2.1**

Brain-Friendly Techniques to Improve Memory

The body of research about the brain has the potential to enrich classroom practice for students with a variety of learning styles and abilities. In particular, the suggested strategies extend memory activities beyond the confines of repetitive drills. Such strategies are evidence-based and can be applied to all content areas.

Connect to prior knowledge, experience, or skill.	• Discuss common experiences. • Identify emotions in memory. • Review senses memories.
Develop personal relevance.	• Identify rationale for activities. • Associate family experience. • Clarify personal value of action. • Create mnemonics.
To go from short- to long-term memory, information must make sense.	• Integrate manipulatives. • Represent ideas with foods. • Map concepts visually. • Write associations in journals.
Elaborate and extend key concepts.	• Simulate concepts with gross-motor activities. • Depict ideas with sounds or verbalizations. • Represent ideas with the arts. • Reinforce concepts with play. • Create computer-based simulations. • Reinforce classroom work by going on field trips. • Interview family about topic.

SOURCE: J. King-Friedrichs, "Brain-Friendly Techniques for Improving Memory," *Educational Leadership* 59, no. 3 (November 2001): 76–79.

buddy, arrange for peer-based tutoring or practice sessions focusing on study skills, and conduct one-on-one meetings with students to reinforce trust.

- Structure learning experiences that enable students to practice social skills and peer acceptance. Hold class meetings and use literature- and history-based learning materials that celebrate diversity. Model appreciation for contributions of students with different learning styles and needs.
- Create and reinforce a climate of civility in the classroom. Model saying "please" and "thank you" for specific student behaviors.
- Use humor, movement, or the expressive arts to promote an engaging learning environment and ease instructional transitions. Such activities arouse emotional centers in the brain, a foundation for peak academic performance.[45]

Findings About Extending and Refining Knowledge

Like many skills, thinking must be practiced for students to be able to extend and refine knowledge. Classroom activities should require students to go beyond the lower-order tasks of recognizing or memorizing. Learning strategies must be constructed in such a way that students are challenged to explore information more deeply and analytically. Students must practice manipulating information by comparing, contrasting, deducing, analyzing errors, and analyzing perspective. Further, brain research supports activities in which students are engaged in classifying concepts and using complex retrieval and integration systems in the brain.[46] To this end, teachers are encouraged to consider the following classroom strategies:

- Design learning activities that require students to build on prior knowledge or experience.
- Structure opportunities for students to compare their work with model responses.
- Create rubrics that require students to develop models or visual representations of error patterns in their work.
- Structure learning experiences in which students identify patterns of events and compare or contrast characteristics or attributes among ideas.[47]

Findings About Meaningful Use of Knowledge

Learners are most successful when they believe that information is necessary to help them accomplish a goal. Evidence suggests that experiential learning activities that require students to make decisions, conduct experiments, and investigate ways to solve real-world problems activate those areas within the brain responsible for higher-order thinking. In this context, productive learning experiences extend beyond hands-on activities. When physical activities are paired with problem-solving tasks, memory and learning are enhanced.[48]

Examples of such strategies include the following:

- Assignments in which students are actively engaged in investigating, analyzing, and solving problems from the world around them.
- Learning activities that require students to demonstrate learning in multiple ways, including inventions, experiments, displays, and musical or oral presentations.[49]

Findings About the Learning Habits of the Mind

Learning is promoted for students who are able to establish and practice important habits, including goal setting, monitoring their own thinking, setting standards for self-evaluation, and regulating behaviors, including their own work habits. Research has confirmed the value of exploring, understanding, and applying concepts in the context of individual ways of thinking and interpreting.

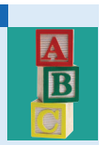
In this context, researcher Howard Gardner has asserted that intelligence is difficult to reduce to a single number, or IQ score. In this spirit, teachers are encouraged to review the extensive bodies of research focused on learning styles and multiple intelligence theory as a context for translating brain research into teaching strategies.[50] Teacher's Toolbox 2.2 contains a checklist for identifying and responding to the range of intelligences represented in a group of learners.[51]

Pertinent classroom strategies include the following:

- Use thinking logs and reflective journals with students of varying abilities.
- Embed group discussions into cooperative learning structures.

Teacher's Toolbox **2.2**

A Checklist for Identifying and Responding to Multiple Intelligences



VERBAL-LINGUISTIC INTELLIGENCE

Learning through spoken and written words—reading, listening, speaking, and writing

Planning question for teacher:

- How can I incorporate language and words into daily classroom practice?

Helpful teaching materials:

- Books, audiobooks, comic books, word games, podcasts

LOGICAL-MATHEMATICAL INTELLIGENCE

Learning through reasoning and problem-solving

Planning question for teacher:

- How can I incorporate numbers, classification, or logic activities into daily classroom practice?

Helpful teaching materials:

- Computers, math manipulatives, number games, brain teasers, science experiments

SPATIAL-VISUAL INTELLIGENCE

Learning visually and organizing ideas spatially; capacity to think in images and pictures

Planning question for teacher:

- How can I incorporate visual aids, color, or art into daily classroom practice?

Helpful teaching materials:

- Graphs, maps, cameras, building sets, art materials

BODY-KINESTHETIC INTELLIGENCE

Learning through interaction with one's environment and concrete experiences

Planning question for teacher:

- How can I incorporate body movement, hands-on experiences, and dramatic depictions into daily classroom practice?

Helpful teaching materials:

- Building tools, sports equipment, manipulatives, drama, dance

MUSICAL-RHYTHMIC INTELLIGENCE

Learning through songs, patterns, rhythms, instruments, and musical expression

Planning question for teacher:

- How can I integrate music, sounds, rhythmic patterns, and melodies into daily classroom practice?

Helpful teaching materials:

- Music, musical instruments, recording devices, rhythmic learnings

INTERPERSONAL INTELLIGENCE

Learning through interactions with others, working collaboratively and cooperatively

Planning question for teacher:

- How can I engage students in peer sharing, cooperative learning, and group activities in daily classroom practice?

Helpful teaching strategies:

- Cooperative learning, peer tutoring, community involvement, simulations, role plays

INTRAPERSONAL INTELLIGENCE

Learning through feelings, values, and attitudes; clear understanding of ones' own thoughts and feelings

Planning question for teacher:

- How can I engage students in reflection and learning that stirs emotions in daily classroom practice?

Helpful teaching materials:

- Journals, personal progress charts, materials that encourage self-checking

NATURALISTIC INTELLIGENCE

Learning through classification, categories, and hierarchies; ability to pick up subtle differences

Planning question for teacher:

- How can I incorporate living things, nature, or ecological exploration into daily classroom practice?

Helpful teaching materials:

- Plants, animals, binoculars, tools to explore and document the environment

SOURCE: T. Armstrong, *Multiple Intelligences in the Classroom,* 3rd ed. (Alexandria, VA: ASCD, 2009). Used with permission.

- Model classroom habits that foster reflection about learning. Holding class discussions that reinforce reflection and recording important concepts and facts learned in a lesson are very productive strategies.[52]

Although researchers agree that exploration of brain function is an emerging science, the field of neurology and cognitive science has experienced an explosion in recent years. As the research matures, it will continue to shed light on thinking and learning patterns among the broadest range of learners. In addition, as more inroads are made in translating this body of research into meaningful classroom practice, decision making about reforming education in classrooms and schools will become easier for teachers, curriculum developers, and school

administrators. Evidence gathered to this point has confirmed that brain-compatible instruction:

1. Provides as much experiential learning as possible.
2. Structures ways for learners to build on prior knowledge.
3. Includes rehearsal strategies for students.
4. Enables students to revisit instruction over time.
5. Emphasizes concepts more than facts.
6. Clarifies when and how information could be used in the "real world."
7. Takes place in a safe and nurturing environment.
8. Includes positive emotional components to enhance learning and retention.[53]

A summary of brain research, implications for classroom practice, and examples for improving health education can be found in Teacher's Toolbox 2.3.[54, 55]

Authentic Instruction and Achievement

Once district curricula are updated and teachers have participated in staff development to increase their capacity to manage approaches to learning based on the growing body of brain science, the next step is to maximize the authenticity of all learning activities. Newmann and Wehlage describe *authentic learning* as that which has meaning and significance. This is contrasted with many conventional approaches to instruction and testing that may be superficial or ineffective.[56] As a quick test, teachers can evaluate the extent to which current classroom practice is likely to result in authentic outcomes by asking themselves a few important questions as they plan and organize learning activities. Teachers are encouraged to reflect on the extent to which, as a result of their participation,

- Students will practice the construction of meaning as a foundation for producing knowledge.
- Students will be engaged in disciplined inquiry as a basis for constructing meaning.
- Students will produce work directed toward discussion, outcomes, and/or performances that have value or meaning beyond the confines of the classroom or school.[57]

Specifically, it is the responsibility of teachers to make sure that their approach to teaching is consistent with the following five criteria, or standards, of authentic instruction:

1. *To what degree are students encouraged to use higher-order thinking skills?* Lower-order thinking occurs when students are asked to memorize then recite facts. At this lower level, learners apply rules though repetitive experiences. By contrast, higher-order thinking requires students to manipulate, synthesize, explain, or draw conclusions about ideas. The goal of all instructional activities should be for students to transform the original meaning of an idea in some way. While higher-order thinking implies a challenge for students, it ensures that they will be engaged in solving problems and making meaning that has applicability or relevance. For example, student learning and violence risk reduction are enhanced when learners engage in translating district violence policies into meaningful classroom practice rather than simply reading or memorizing the local code of conduct.

2. *What is the depth of knowledge included in the lesson?* Depth of knowledge refers to the extent to which student work reflects their understanding of ideas that are substantial or important. Knowledge is characterized as thin or superficial if it does not deal with significant issues or ideas within a topic or content area. Superficiality is inevitable if students grasp only a trivial understanding of important concepts, or if they cover large amounts of fragmented information. Knowledge is characterized as deep when it focuses on developmentally appropriate ideas that are central to a topic or discipline. Students are engaged in work that is deep when they make distinctions, develop arguments, and construct explanations. Though fewer topics might be addressed within a specified time period, this approach is far more sound. By planning for deep instruction, teachers are better able to help students make connections between topics.[58] Chapter 3 provides a discussion focused on applying this standard to promoting student health.

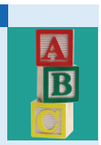
3. *To what extent do instructional activities and class content have meaning beyond the classroom?* Unfortunately, many common learning activities make no authentic contribution to learning. Some certify only that students have been compliant with the rules and norms of their school. Other such instructional activities provide evidence only that students have navigated systems in the school established to support efficiency rather than learning. Lessons gain authenticity when instruction is connected to the larger community in which students live. As a framework for understanding or applying knowledge, students must address real-world problems or incorporate experiences or events from outside the school into classroom learning experiences.[59] For example, student learning and nutritional health can be enriched when learning opportunities extend beyond content mastery about vitamins and minerals. Functional knowledge and decision-making skill development are supported by visiting local food producers, conducting product analyses at local grocery stores, or carrying out vitamin and mineral scavenger hunts in home kitchens.

4. *How much class time is involved in substantive conversation about the subject?* It is all too common for teachers to engage students in unsophisticated classroom conversation. Typically, classroom instruction is one-directional with a planned body of information delivered from teacher to students. Then it is common for part of the lesson to be followed by a recitation period in which students respond to predetermined questions in pursuit of predetermined answers. This process is the oral equivalent of true-false or short-answer written tests of content acquisition. By contrast, high-level, substantive conversation is framed by three characteristics:

- Conversation is focused on higher-order ideas about the topic, including making distinctions, applying ideas, and raising questions rather than simply reporting facts, definitions, or procedures.
- Ideas are shared in an unscripted forum—students are encouraged to explain their thinking, ask questions, and respond to the comments of classmates.
- Conversation builds improved collective understanding of lesson themes or topics.

Teacher's Toolbox **2.3**

Summarizing and Applying Brain Research to Health Education



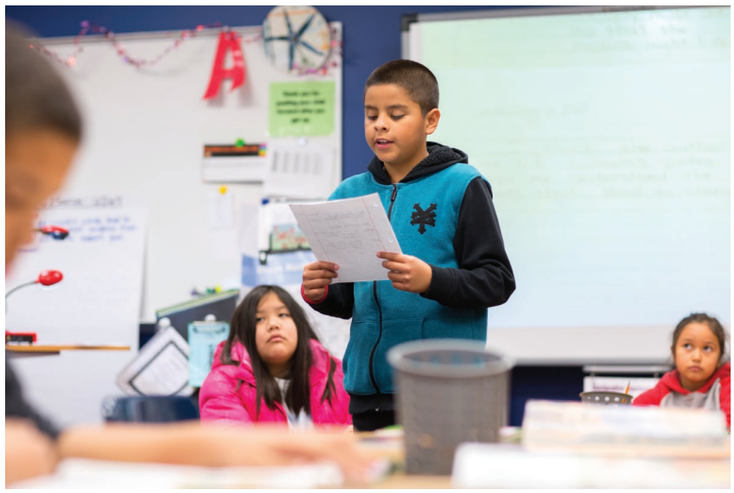
Each number below highlights a research finding from the growing body of brain science. Each finding is interpreted for better understanding (A), general implications for improving classroom practice are discussed (B), and an example for improving student health promotion is provided (C).

1. *The brain is a complex parallel processor.*
   A. Thoughts, emotions, and imagination all operate simultaneously, allowing elements of the system to interact and to exchange input from the environment.
   B. Because no single teaching method or learning strategy can address all the variations of brain operation, teachers need to create learning environments that engage as many aspects of the brains of students as possible.
   C. To promote nutritional health, teachers would be wise to include pertinent music, visual depictions, menu planning, and food preparation and tasting into units of instruction.
2. *Learning involves the whole body and its processes.*
   A. Learning is natural for the brain, but it is a process that can be supported or influenced negatively by student health status.
   B. Classroom practice is enriched when teachers help minimize stress, threats, and boredom. Such states affect brain function differently than do peace, challenge, and contentment. In addition, teachers must recognize that health is not just an instructional class or body of information. Despite the fact that they might be the same chronological age, it is unrealistic to expect children of unequal health status to reach the same level of achievement. Healthy kids may differ by as much as five years in acquisition of basic skills.
   C. Regardless of the health unit of instruction, teachers should create health class practices that encourage children to drink enough water to keep their brains properly hydrated.
3. *The search for meaning is innate.*
   A. Making sense of our experiences is linked to survival and is a basic brain function. Our brains register the familiar while searching out and responding to novel stimulation.
   B. While teachers would be wise to establish classroom policies and routines that communicate stability and behavioral boundaries, they must balance the familiar with learning opportunities that satisfy curiosity, discovery, and challenge.
   C. The kinds of alcohol risk reduction activities developed to engage and challenge learners identified as gifted and talented should provide guidance for developing learning opportunities about this topic for all students.
4. *The brain searches for meaning by patterning.*
   A. The brain is designed to identify and generate patterns, to organize and categorize information into meaningful groupings.
   B. For learning activities to be effective, they must be based on or associated with things that make sense to students. Teachers should avoid basing lessons on elements of isolated or disconnected pieces of information.
   C. Tobacco lessons based on repetition of facts are far less successful than thematic units of instruction that require students to use math skills to calculate costs of tobacco use or to explore the history of tobacco as a cash crop in various states in the United States.
5. *Emotions are critical to patterning.*
   A. Emotions, expectations, and thoughts can shape one another and can't be separated in the brain.
   B. Teachers must remember that the degree to which students feel supported by them and their colleagues will affect student learning.
   C. When teachers model consistent communication patterns across the school day that convey respect and value for learners, students are more likely to practice similar communication skills with classmates and others when confronted with health issues.
6. *The brain processes parts and wholes simultaneously.*
   A. Research has demonstrated that there are significant differences between the left and right lobes of the brain. However, both hemispheres work to organize information by reducing it to parts and by working with wholes or series of whole sets of inputs.
   B. Learning is cumulative and developmental.
   C. As a way to address decision-making skill development, many teachers create units of instruction focused on practicing such skills outside the context of genuine experiences. It is far more effective to teach and practice decision-making skills in the context of daily dietary experiences or field trips to the grocery store.
7. *We understand and retain best when facts and skills are embedded in spatial memory.*
   A. Learning experiences are enriched by both internal processes and social interaction.
   B. To maximize learning experiences, teachers should connect them to real-life experiences as often as possible. Examples include field trips, stories, metaphors, drama, and meaningful homework experiences that connect learners with their families, neighborhood, and community.
   C. The impact and value of bullying risk reduction activities are enriched when students are immersed in complex and interactive learning experiences. Rather than only lecturing about the negative consequences of bullying, teachers should construct activities in which students read developmentally appropriate and pertinent stories, participate in dramatic play activities and simulations, and practice personal management and advocacy skills with others.
8. *Complex learning is enhanced by challenge but is inhibited by threat.*
   A. The brain is able to maximize connections when risk taking is encouraged within a safe context. Similarly, the brain processes stimulation less efficiently and effectively when the individual perceives threat.
   B. Creating a safe learning environment for relaxed alertness, thinking, and risk taking is critical for understanding and learning.
   C. While sexual health instruction should be regarded with as much academic rigor as other subject matter, the threat of failure or of a low grade might inhibit critical thinking and learning about developmentally appropriate sexual health issues.

Sources: R. N. Caine and G. Caine, *Unleashing the Power of Perceptual Change: The Potential of Brain-Based Teaching* (Alexandria, VA: ASCD, 1997); B. Samek and N. Samek, "It's a Brain Thing: Keeping Students Focused and Learning," a presentation at the 78th Annual Meeting of the American School Health Association, October 16, 2004.

For example, instruction about injury risk reduction is enriched when teachers make time to cultivate and extend discussions about ways to manage potentially dangerous play spaces at school, at home, and in local neighborhoods.

5. *Is there a high level of social support for the achievements of peers?* Low levels of social support for achievement are evident in classrooms in which the behaviors or comments of teachers and classmates discourage effort, experimentation, creativity, and engagement among all students. Conversely, high-level social support is evident when teachers and classmates reinforce norms of high expectations for all students with consistency. In such classrooms, everyone communicates mutual respect and celebrates risk taking and hard work when confronting challenging tasks.[60] To support cognitive enrichment and skill development about physical activity, opportunities should be provided for students to experience activities that feature group problem solving, celebrate the contribution of diverse skills, and eliminate rewards for selected "stars" who experience individual success.



Pradeep Edussuriya/McGraw Hill

Social support for achievement promotes positive learning experiences.

Professionals are reminded that authentic instructional approaches are useful for all content areas and teaching methods. This approach is demonstrated when any instructional activity—new or old, in or out of school—engages students in using complex thinking skills to confront issues and solve problems that have meaning or value beyond simple written tests.

Developmentally Appropriate Practice

Regardless of the age of students or the focus of a lesson (increasing functional knowledge, helping students examine their health beliefs and attitudes, or practicing essential skills to live healthier lives), developmentally appropriate practice criteria should serve as the foundation for translating content recommendations contained in the district curriculum document into sound classroom practice. Researchers have found that "the use of developmentally appropriate practices is one of the best current strategies to ensure that individual children will have opportunities for engaging in meaningful and interesting learning on a daily basis."[61]

Developmentally appropriate practice requires teachers to meet students where they are, then to organize learning environments and experiences so learners can reach goals that are challenging yet achievable. To accomplish this, instruction is delivered in context of the age and developmental characteristics of learners and responds to the social and cultural contexts in which they live and go to school. Importantly, developmentally appropriate practice does not mean that instructional rigor is reduced. Rather, learning experiences are organized and delivered in a way that is contextual to student capacity while being challenging enough to promote engagement, growth, and progress.[62]

The National Association for the Education of Young Children reminds all teachers that planning developmentally appropriate learning activities for any content area has two important dimensions. These involve instructional practices that respond to:

- The age-appropriate attributes of learners.
- Individually appropriate characteristics of students.

Age-Appropriate Activities

Teachers in elementary and middle grades are advised to focus their lesson-planning energies on organizing age-appropriate learning activities for students. Age-appropriate practices are based on research in human development that confirms the universal and predictable sequences of growth and change that occur in the physical, emotional, social, and intellectual, or cognitive, dimensions of all children.[63]

Teachers will use general information about typical or predictable development of students as a foundation for cultivating a productive learning environment and for planning instructional activities that correspond to the developmental attributes, needs, and abilities of students of a given age.[64] With the foundation of a developmental framework, teachers who have had no or only limited personal contact with a particular group of students, such as at the start of the school year, can maximize their planning time. Further, age-appropriate cues are helpful for teachers as they introduce new, potentially emotionally charged, or controversial health education topics.

Individually Appropriate Activities

As teachers have more contact with particular groups of students, they learn that students have different patterns and/or timing in their personal growth and development that can influence their ability to integrate education concepts into daily behavior.[65] With the advantage of such familiarity with their students, teachers are able to build lessons that respond to specific individual and group needs and characteristics. In this way, enrichment of the learning environment and instructional practice evolves as specific student characteristics become evident.

It is important to remember that there can be discrepancies between chronological age and ability. Whereas all students need

structured opportunities to practice health-promoting skills, students with cognitive disabilities might need instructional adaptations or accommodations to learn age-relevant skills. By paying attention to individual learner attributes, teachers are better equipped to develop lessons that are both age and ability centered.

Conclusion

In relation to planning from either an age- or an individually appropriate practice perspective, teachers should begin their decision making and planning with a review of the following student characteristics:

- *Physical* abilities and limitations.
- *Mental,* or *cognitive,* attributes, including variables such as time on task, attention span, and interests.
- *Social* interaction patterns with family, friends, teachers, and influential others.
- *Emotional* characteristics and reaction patterns.
- *Language* skills and attributes as a foundation for understanding and communication.[66]

Such information about students can serve as a foundation for best practice when teachers integrate the following considerations into their curriculum development and lesson planning:

- *What is known about child development and learning, including:*
  1. Age-related human characteristics to support decisions about meaningful instruction.
  2. General age-related clues about activities, materials, interactions, or experiences that will be safe, healthy, interesting, achievable, and challenging to learners.
- *What is known about the strengths, interests, and needs of individual learners in a group, as a foundation for:*
  1. Identifying individual variations in students.
  2. Adapting classroom policy, practice, and learning activities to respond to needs, interests, and abilities of diverse students.
- *What is known about the social, cultural, and family contexts in which children live, as a way to:*
  1. Make sure that learning experiences are meaningful and relevant.
  2. Ensure that respect for the uniqueness among learners and their families is communicated.

The content and skills to be learned and how best to construct or organize the learning environment should be based on:

- The body of literature confirming attributes of best practice about the topic (evidence-based practice guidelines).
- Family and community standards.
- Policy mandates of the state and the local board of education.
- Developmental characteristics and abilities of students.
- The relationship between previous learning experiences and the new content and/or skills to be mastered.[67]

To balance less sound approaches based on distractions including teacher comfort levels or preferences, antiquated textbook content, or community traditions that compromise learner health, the National Association for the Education of Young Children reminds health educators that developmental needs and characteristics of learners must serve as the guide for best practice. For this reason, tobacco, alcohol, and other drug–prevention instruction for primary-grade children should focus on developmentally appropriate concepts such as:

- Recognizing why household products are harmful if ingested or inhaled.
- Complying with rules about safe and adult-supervised use of medication.
- Identifying community health helpers who provide directions and prescriptions for medication.
- Recognizing that matches and lighters should be used only by grown-ups.
- Practicing fire prevention and safe escape strategies.

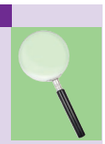
In this way, the needs and abilities of the learners, rather than other pressures, become the basis for planning and implementing lessons. Learner attributes, needs, and concerns must take center stage in lesson planning and curriculum development. Consider This 2.1 summarizes important developmental tasks confronting elementary and middle grade students. This information can provide a foundation for creating developmentally appropriate curricula and lesson plans.[68]

When organizing learning strategies that are both age and individually appropriate, health educators of students in elementary and middle grades should remember the following:

- The most effective activities tend to be those that help students connect the health-promoting functional knowledge and essential skills addressed in class with other aspects of their lives in and out of school.
- The most effective lesson planning is based on a combination of developmental and/or observed characteristics of students, the body of literature in the content area, and teachers' best professional judgments.
- Learning, particularly about health-promoting behaviors, is rarely successful if teachers approach it as a spectator sport for students. Students of all ages learn best in an active learning environment that encourages exploration and interaction with materials, other children, teachers, and other adults.
- Learning activities and materials should be concrete, real, and relevant to the daily lives of the students, rather than focused on some possible negative long-term outcome.
- Flexibility, resourcefulness, and humor are important characteristics for teachers to cultivate. Children's interests and abilities often violate developmental expectations (think about young children and their fascination with the language and lore of dinosaurs), and even well-planned lessons sometimes flop. Teachers must be prepared to adapt, adjust, and think on their feet.
- Planning to celebrate human diversity is critical. Given the range of health beliefs and practices represented in every classroom, activities should be carefully structured to omit sexist and culturally biased language, examples, and stereotypes.[69, 70]

Consider This **2.1**

Developmental Missions Confronting Students in Elementary and Middle Grades



1. *Sustain self-esteem.* Experience a range of experiences and interactions with others, bounce back after difficulties, and establish a loving, trusting relationship with significant adults.
2. *Be liked and accepted by peers.* Establish a range of behaviors, dress, and language patterns to be an insider with peers.
3. *Fit in while remaining unique.* Compromise on preferences without sacrificing individuality—often in conflict with establishing peer acceptance.
4. *Identify acceptable role models.* Experiment with identities and behaviors recognized in others—an evolving process helpful for self-discovery and goal setting.
5. *Question family beliefs/values.* Evaluate previously accepted "truths" and begin development of personal philosophy—consistent with increased exposure to a range of environments and people.
6. *Earn respect with family.* Gain affirmation from parents or caregivers—pride about and from the family is essential to self-worth.
7. *Seek independence/test limits.* Rehearse adolescent roles, test abilities to manage increasing independence—often leading to struggles with parents over boundaries of authority.
8. *Gather information/master skills.* Seek knowledge and practice a range of requisite life skills—limited defenses against failure can lead to embarrassment.
9. *Accept physical appearance.* Compare and contrast physical attributes with those of others—concern over differences contributes to worry and extreme modesty.
10. *Manage fears.* Establish coping skills to manage common worries—the future, loss, or humiliation.
11. *Control drives and desires.* Compromise about wants, accept reasonable alternatives, and manage passions.
12. *Define a realistic sense of self.* Express strengths and weaknesses in skills and abilities—a foundation for meeting adolescent challenges.

SOURCE: P. Keener, *Caring for Children: Useful Information and Hard-to-Find Facts About Child Health and Development* (Indianapolis, IN: James Whitcomb Riley Memorial Association, 2001), 106–8.

Research-Based Strategies for Improving Achievement

Until recently, many people were convinced that achievement and learning were influenced exclusively by nonschool factors, including the home environment, socioeconomic status, and/or natural aptitude or ability of learners. Before the 1970s, teaching was regarded largely as an expression of individual passion or the manifestation of an artistic gift, rather than resting firmly on a foundation of scientific research. In this regard, the 1966 landmark Coleman Report asserted that the actions taken by schools contributed little to student achievement.[71]

By the late 1970s, however, researchers began to narrow their work to focus on analyzing the influence of teachers and their instructional practices on student success. Findings confirmed that classroom teachers have the potential to make a significant impact on student achievement. Research has documented that whereas effective teachers are successful with students of all ability levels, the students of ineffective teachers generally make less than adequate academic progress.[72]

To enrich understanding, researchers conducted a comprehensive study that identified those instructional strategies most likely to enhance student achievement among all students, in all grade levels, and across all subjects. Findings revealed nine categories of instructional strategies that have a strong and positive influence on student achievement.[73] Teachers planning lessons for students in elementary and middle grades are encouraged to examine related descriptions and recommendations contained in Teacher's Toolbox 2.4.[74, 75]

Drawn from the literature about learning theory and from the disciplines of behavioral psychology and neuroscience, the following summary should serve as a reminder to teachers, administrators, and parents that students learn best when:

1. Information or skills seem relevant to them.
2. Students are actively involved in the learning process.
3. Learning experiences are organized.
4. Learning experiences enable students to derive their own conclusions.
5. Students become emotionally involved with or committed to the topic.
6. Students can interact with others.
7. Information can be put to immediate use or skills can be practiced rather than simply discussed.
8. Students recognize the reason for or value of the information or tasks to be mastered.
9. Positive teacher–learner relationships are cultivated.
10. A variety of teaching methods and learning strategies are used.[76]

THE STATE OF THE ART IN HEALTH EDUCATION

Health education is integral to the primary mission of schools. It provides students with functional knowledge and essential skills to be successful learners and to adopt, practice, and maintain healthy-enhancing behaviors.[77] By increasing the capacity of schools to provide state-of-the-art and developmentally appropriate health education, the critical need to improve the health of our nation can be addressed more efficiently and effectively.[78] In support of this assertion, a groundbreaking joint position

Teacher's Toolbox **2.4**

Instructional Strategies That Influence Student Achievement

IDENTIFYING SIMILARITIES AND DIFFERENCES

Presenting students with explicit direction for identifying similarities and differences between and among objects or ideas enhances understanding and the ability to use knowledge. The following classroom strategies are suggested to support learning:

1. Comparison tasks
2. Classification tasks
3. Metaphors
4. Analogies

SUMMARIZING AND NOTE TAKING

The creation of a summary requires students to delete, substitute, and retain selected information. This requires students to analyze the organization, structure, and sequence of the information beyond the superficial level. The following classroom strategies are suggested to support learning:

1. Rule-based strategies for summarizing.
2. Summary frames (organizing summary by responding to a series of teacher-developed questions).
3. Teacher-prepared notes or outlines.
4. Webbing notes (visual "web" depictions of key concepts).
5. Narrative/visual note combinations.

REINFORCING EFFORT AND PROVIDING RECOGNITION

Although these strategies do not engage the cognitive skills of learners, they help students examine attitudes and beliefs they hold about themselves and others. In particular, reinforcement and recognition highlight the importance of investing effort in tasks and affirm accomplishments with meaningful rewards. The following classroom strategies are suggested to support learning:

1. Using literature, art, or other references to reinforce the value of investing effort when confronting tasks.
2. Charts or rubrics depicting effort and achievement.
3. Personalizing recognitions (e.g., "personal bests").
4. "Pause, prompt, then praise."
5. Verbal and concrete symbols of recognition (nothing that compromises student health—candy, pizza parties, etc.).

HOMEWORK AND PRACTICE

These familiar strategies enable students to deepen their understanding and to master requisite skills. The purpose of homework should be made clear to students and the volume of work should be variable as students get older. In addition, sufficient class time should be allocated for focused practice sessions. The following classroom strategies are suggested to support learning:

1. Establish, communicate, and reinforce homework policies.
2. Design assignments with clearly identified purposes and outcomes.
3. Vary feedback.
4. Chart accuracy, efficiency, and speed in using skills.
5. Segment complex skills.
6. Clarify the importance of skills or processes to be mastered.

NONLINGUISTIC REPRESENTATIONS (IMAGES OF IDEAS)

There are many ways for students to create images of ideas to reinforce their understanding. In all cases, these representations should clarify, refine, or elaborate on student knowledge. The following classroom strategies are suggested to support learning:

1. Graphic organizers
2. Physical models
3. Mental pictures
4. Movement representations or depictions

COOPERATIVE LEARNING

Please refer to Chapter 4 for an extensive discussion, recommendations, and examples of cooperative learning applications.

SETTING OBJECTIVES AND PROVIDING FEEDBACK

The skills associated with setting clear goals enable students to establish direction for their learning and help them realize both short- and long-term desires. Instructional goals help students narrow and refine the focus of their work and personalize tasks assigned by teachers. To be most meaningful, teacher feedback should be corrective, constructive, complimentary, and timely and should reinforce a specific task or goal specified by the teacher or the student. The following classroom strategies are suggested to support learning:

1. Contracts
2. Criterion-referenced feedback
3. Student-led feedback (peer-based or self-directed)
4. Progress monitoring

GENERATING AND TESTING HYPOTHESES

These processes require students to engage in higher-order thought. To accomplish such learning tasks, students must make predictions or draw conclusions about an event or an idea. Students should be encouraged to practice making clear explanations about their hunches and the outcomes they expect. The following classroom strategies are suggested to support learning:

1. Problem-solving tasks
2. Historical investigations
3. Inventions
4. Decision-making exercises
5. Templates and rubrics for reporting work

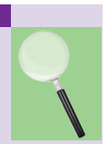
CUES, QUESTIONS, AND ADVANCE ORGANIZERS

This category of activities is intended to help students retrieve and activate what they already know about a topic. The activation of prior knowledge is critical to all types of learning, as it enables students to focus on important concepts and to reflect on issues from a higher-order perspective. The following classroom strategies are suggested to support learning:

1. Questions that elicit inferences
2. Questions that require analysis
3. Narratives as advance organizers
4. Skimming information prior to reading for depth
5. Graphic advance organizers

Sources: R. Marzano, D. Pickering, and J. Pollock, *Classroom Instruction That Works* (Alexandria, VA: ASCD, 2001); C. Dean et al., *Classroom Instruction That Works,* 2nd ed. (Alexandria, VA: ASCD, 2012).

Consider This **2.2**



Health Education in Schools—The Importance of Establishing Healthy Behaviors in Our Nation's Youth

The American Cancer Society, the American Diabetes Association, and the American Heart Association believe that quality health education programs delivered in the nation's schools can improve the well-being and health of our children and youth. In the United States, chronic diseases are the leading causes of morbidity and mortality; however, engaging in healthy behaviors, such as participating in physical activity, eating healthy, and avoiding tobacco use, has been linked to prevention of chronic diseases.

The health and well-being of our nation's young people is not a matter of luck. It is not a chance or random event. It must be a planned outcome. The case for well-designed, well-resourced, and sustained health education in the nation's schools is compelling.

The American Cancer Society, the American Diabetes Association, and the American Heart Association encourage quality school health education within all schools in the United States through the use of strategies such as

- Utilizing school health education programs that adhere to the recommendations from the National Health Education Standards.
- Employing highly qualified and effective health educators.
- Ensuring recommended health education instruction time at the elementary and secondary levels.
- Having a national plan and budget to support school health education.

In conclusion, the potential for school health education to improve health and save lives is significant. If we as a nation want to keep children and adolescents healthy, it is important to find better ways to provide quality school health education.

SOURCE: American Cancer Society, "Health Education in Schools—The Importance of Establishing Healthy Behaviors in Our Nation's Youth" (*Health Educator*, Fall 2008, Vol. 40 Issue 2).

statement was released by the American Cancer Society, the American Diabetes Association, and the American Heart Association. Readers are encouraged to review excerpts from this statement, developed collaboratively and endorsed by these preeminent national organizations, in Consider This 2.2.[79]

Grounded in the body of sound education research, the health education curriculum in local school districts must be organized into a scope and sequence that supports the development of and increasingly sophisticated body of functional knowledge, analysis of influential beliefs and attitudes, and practice of essential health-promoting skills. A Comprehensive Health Education Program is designed to promote healthy living and discourage health-risk behaviors among all students (Chapter 1). To reach these instructional goals, sound health education curricula include structured learning opportunities in which students are engaged as active learners. The foundation for effective practice is provided by the National Health Education Standards (Chapters 1 and 3) and reinforced for local school districts by state instructional standards.

It is important to remember that, regardless of local district practices, all health education classrooms include heterogeneous groups of students. In addition to intellectual ability, students vary with regard to interest, background, and health experiences. As such, the school district health education course of study must be developed to meet the highest standards, be regularly and rigorously evaluated, be consistent with community standards, and respond to the needs of the widest range of learners.

Supporting Sound Health Education Teaching Practice

The majority of people begin to experiment with all kinds of health-risk behaviors during their youth. Initial exposure to such risks occurs before most people participate in any formal and evidence-based health instruction. To address this obvious case of developmentally *inappropriate* practice, health education advocates have invested considerable energy in trying to make planned and intentional health education a more prominent and consistent part of the course of study in elementary schools.[80]

Evidence has emerged that supports a comprehensive approach to health education. Importantly, as years of sound health instruction increase, so do student knowledge, reflections of healthy attitudes, and practice of health-enhancing behaviors. Yet barriers continue to make it difficult to implement effective health education. Time limitations, policy constraints, teacher priorities, the pressure to focus on subjects included in high-stakes tests, and a general lack of reinforcement by state and local education policymakers are a few of the challenges faced. Though research has confirmed that teachers have an interest in addressing health issues with their students, many report feeling inadequately prepared to provide health instruction to their students. As a result of an emphasis on other matters in university teacher education programs, teachers have expressed that they were ill-equipped to plan developmentally appropriate health instruction for young learners. As a consequence of the combination of such factors, health education is relegated to a very low status in most elementary schools.[81]

Regardless of the professional preparation that they received, all in-service health teachers must participate in an ongoing program of staff development. Many school districts regard staff development as a responsibility to be managed within the district. Others collaborate with state or regional colleagues to plan meaningful and timely enrichment activities. In addition, it is common for teachers to attend conferences of state or national organizations to gain professional enrichment.

Regardless of where it is delivered, staff development programming should focus on specific issues that update and refine teacher expertise. It is important for all teachers to increase their comfort with interactive teaching methods across a range of