Health Education Curriculum Analysis Tool (HECAT)

OVERVIEW

INTRODUCTION

Health education is integral to the primary mission of schools. It provides young people with the knowledge and skills they need to become successful learners and healthy and productive adults. Health education is a fundamental part of an overall school health program. Increasing the number of schools that provide health education on key health problems facing young people is a critical health objective for improving our nation's health.[1]

Health instruction in schools is shaped, in large part, by the health education curriculum. Choosing or developing the best possible health education curriculum is a critical step in ensuring that health education is effectively promoting healthy behaviors. The curriculum selection or development process, however, can lack structure and focus, which can result in choosing or developing curricula that are inadequate or ineffective. The **Health Education Curriculum Analysis Tool (HECAT)** provides processes and tools to improve curriculum selection and development.

The HECAT contains guidance, appraisal tools, and resources for carrying out a clear, complete, and consistent examination of health education curricula. Appraisal results can help schools select or develop appropriate and effective health education curricula, strengthen their delivery of health education, and improve the ability of school health educators to influence healthy behaviors and healthy outcomes among school age youth.

The HECAT builds on the characteristics of effective health education curricula (page 7) and the *National Health Education Standards*[2] for schools. It addresses a comprehensive array of health topics, beginning with modules addressing alcohol and other drug-free, healthy eating, mental and emotional health, physical activity, safety, tobacco-free, and violence prevention curricula. The HECAT includes an overview of school health education, background information about reviewing and selecting health education curricula, guidance to consider during a curriculum review, and tools to analyze commercially packaged or locally developed school-based health education curricula.

The HECAT reflects the importance of

- Using science to improve practice.
- Parent and community involvement in the review and selection of curriculum.
- Local authority in setting health education priorities, determining health education content, and making curriculum selection decisions.
- Flexibility to accommodate different values, priorities, and curriculum needs of communities and schools.

Intended Users of the HECAT

The HECAT is designed to be used by those who select, develop or use school health education curricula and those who are interested in improving school health education curricula. For example,

1. State or regional education agency staff can use this tool to inform the development or review of
   - state health education standards or frameworks.
   - recommendations for conducting state or local curriculum review.
   - a list of state-recommended health education curricula.
2. Curriculum committees or educators at school districts, schools, or community-based organizations who work with schools can use this resource. They can use the HECAT, in conjunction with state

standards and health education frameworks or other locally determined requirements, to

- develop new or improved courses of study, frameworks, learning objectives, or curricula.
- guide the selection of curricula available for purchase.
- examine curricula currently in use.

3. Developers of nationally disseminated and packaged-curricula, such as non-governmental organizations and for-profit curriculum development companies, can use the HECAT to design health education curricula that best meet the needs of schools and the young people they serve.
4. Institutions of higher education teacher preparation programs can use the HECAT to improve their students' understanding of health education, curriculum analysis, and development of instructional skills.

Organization of the HECAT

The HECAT includes guidance and tools for carrying out a thorough assessment of a health education curriculum.

- **Chapter 1** (*Instructions*) provides step-by-step guidance for conducting a health education curriculum review. It includes essential background information and instructions for using the HECAT to review and improve locally developed curriculum.
- **Chapter 2** (*General Curriculum Information*) guides the user in collecting descriptive information about the curriculum, including the developer and the year of development, topic areas, and grade levels.
- **Chapter 3** (*Overall Summary Forms*) provides directions and templates for summarizing ratings scores for the appraisal of a single curriculum or comparing scores across curricula, using the analysis items from multiple chapters.
- **Chapter 4** (*Preliminary Curriculum Considerations*) provides guidance and tools to appraise the accuracy and acceptability of curriculum content, feasibility of curriculum implementation, and affordability of the curriculum materials including cost of implementation.
- **Chapter 5** (*Curriculum Fundamentals*) provides guidance and tools to appraise fundamental characteristics of a health education curriculum including learning objectives, teacher materials, curriculum design, instructional strategies and materials, promotion of norms that value positive health behaviors, and promotion of skills that reinforce positive health behaviors.
- **Chapter 6** (Health Topic Modules): The HECAT provides guidance and tools for appraising specific health-topic curricula based on characteristics of effective health education curricula (page 7) and the *National Health Education Standards*.[2] Chapter 6 includes a module for each of the following topics:

  Module AOD: Alcohol and Other Drugs
  Module HE: Healthy Eating
  Module MEH: Mental and Emotional Health
  Module PA: Physical Activity
  Module S: Safety
  Module T: Tobacco
  Module V: Violence

  Additional modules will be integrated as they become available.
- **Appendices**: The appendices provide additional in-depth guidance for using the HECAT.
- **Glossary:** The glossary defines many common terms used throughout the HECAT.

Rationale for the HECAT Development

Improving students' health and safety can yield educational benefits by increasing students' readiness to learn and reducing absenteeism.[3] Well-designed, well-delivered school-based health interventions can enable students to prevent disease and injury.[4,5,6] Health education is a critical component of many effective school health interventions. A health education curriculum is the primary means through which schools deliver health education.

A number of federal agencies have identified specific programs and curricula they have determined to be exemplary, promising, or effective in improving students' health-related behaviors (see Appendix 2, *Federal Agencies' Lists of Programs Considered Exemplary, Promising, or Effective*). However, these curricula do not always meet school district or school needs because

- The number of currently identified health curricula with evidence of effectiveness is limited.
- Few of the identified curricula address multiple health risk behaviors.
- Schools often cannot implement these curricula exactly as they were originally implemented in evaluation studies.
- Many other health education curricula, including those developed locally, have not undergone evaluation using rigorous research methods and therefore are not included on a federal list.
- Some health education curricula with evidence of effectiveness among particular populations of students or in particular settings might not be
  - Readily available in a usable form.
  - Effective with other populations or with a general student population.
  - Effective in other settings.
  - Appropriate or acceptable based on community values.
  - Feasible due to instructional time limitations, excessive costs, or burdensome professional development requirements.

In addition, not all the programs on these federal lists have research evidence of changing behavior. Some lists that do include programs with such evidence are not updated regularly and might include outdated programs or lack recently evaluated programs.

When schools cannot use rigorously evaluated curricula, they can choose curricula that feature characteristics common to effective curricula as determined by research and experience (see *Characteristics of Effective Health Education Curricula*, page 7). The HECAT enables decision makers to assess the likelihood that a curriculum might be effective by analyzing the extent to which it features key characteristics of curricula with proven effectiveness.

The HECAT draws upon a synthesis of research and bases its criteria on

- Findings of CDC's guidelines for school health programs, which identify common characteristics of effective programs in priority health topic areas, including tobacco use[7], nutrition[8], physical activity[9], unintentional injury and violence.[10]
- *The National Health Education Standards*.[2]
- Guidance from the U.S. Department of Education's Office of Safe and Drug-Free Schools[11] and the National Institute on Drug Abuse (DHHS).[12]
- Expertise of health education researchers and practitioners.

INFORMATION ABOUT HEALTH EDUCATION CURRICULA

Determining What is a Health Education Curriculum

The term "curriculum" has many possible meanings. It can refer to a written course of study that generally describes what students will know and be able to do (behavioral expectations and learning objectives) by the end of a single grade or multiple grades for a particular subject area, such as health education or tobacco prevention education. Curriculum can also refer to a more detailed set of directions, strategies, and materials to facilitate student learning and teaching of content. Although the HECAT can inform the development or revision of a course of study, it is intended to guide the analysis and appraisal of a more detailed set of materials.

For the purposes of using the HECAT, "health education curriculum" refers to those teaching strategies and learning experiences that provide students with opportunities to acquire the attitudes, knowledge, and skills necessary for making health-promoting decisions, achieving health literacy, adopting health-enhancing behaviors, and promoting the health of others. A health education curriculum is more than a collection of activities. A common set of elements characterize a complete health education curriculum, including

- A set of intended learning outcomes or learning objectives that are directly related to students' acquisition of health-related knowledge, attitude, and skills.
- A planned progression of developmentally appropriate lessons or learning experiences that lead to achieving these objectives.
- Continuity between lessons or learning experiences that clearly reinforce the adoption and maintenance of specific health-enhancing behaviors.
- Accompanying content or materials that correspond with the sequence of learning events and help teachers and students meet the learning objectives.
- Assessment strategies to determine if students achieved the desired learning.

If materials do not meet all of these elements, they do not comprise a complete health education curriculum. The materials could be considered resources for a curriculum – part of a curriculum, but not a complete curriculum. The HECAT guidance and tools are not intended to be used to appraise an individual curriculum resource material such as a textbook, or a collection of resources, unless these will be appraised as part of the overall curriculum in which they will be used. (See Appendix 3, *Using the HECAT for the Review of Health Education Resource Materials*.)

Setting Direction for Health Education: Health Education Standards and Frameworks

The National Health Education Standards delineate the essential knowledge and skills that every student should know and be able to do following the completion of a high quality instructional program in health education. (Figure 1, pg. 5). These standards provide a foundation for curriculum development, instructional delivery, and assessment of student knowledge and skills in health education, for students in grades pre-K–12. Many state boards of education, state departments of education, and local school boards have adopted their own state- or local-level health education standards using the *National Health Education Standards* as a guide. The appraisal tools in the HECAT health topic modules correspond with the *National Health Education Standards*.

Figure 1: NATIONAL HEALTH EDUCATION STANDARDS

STANDARD #1: Students will comprehend concepts related to health promotion and disease prevention. The acquisition of basic health concepts and functional health knowledge provides a foundation for promoting health-enhancing behaviors among youth. This standard includes essential concepts that are based on established health behavior theories and models.

STANDARD #2: Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors. Health is impacted by a variety of positive and negative influences within society. This standard focuses on identifying and understanding the diverse internal and external factors that influence health practices and behaviors among youth including personal values, beliefs and perceived norms.

STANDARD #3: Students will demonstrate the ability to access valid information and products and services to enhance health. Accessing valid health information and health-promoting products and services is critical in the prevention, early detection, and treatment of health problems. This standard focuses on how to identify and access valid health resources and to reject unproven sources. Applying the skills of analysis, comparison and evaluation of health resources empowers students to achieve health literacy.

STANDARD #4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks. Responsible individuals use verbal and non-verbal skills to develop and maintain healthy personal relationships. The ability to organize and to convey information and feelings is the basis for strengthening interpersonal interactions and reducing or avoiding conflict.

STANDARD #5: Students will demonstrate the ability to use decision-making skills to enhance health. This standard includes the essential steps needed to make healthy decisions, important for establishing and maintaining a healthy lifestyle. When applied to health issues, the decision-making process enables individuals to collaborate with others to improve quality of life.

STANDARD #6: Students will demonstrate the ability to use goal-setting skills to enhance health. This standard includes the critical steps needed to achieve both short-term and long-term health goals. These skills make it possible for individuals to have aspirations and plans for the future.

STANDARD #7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks. Many diseases and injuries can be prevented by avoiding or reducing harmful and risk taking behaviors. This standard promotes accepting personal responsibility for health and encourages the practice of healthy behaviors.

STANDARD #8: Students will demonstrate the ability to advocate for personal, family and community health. Advocacy skills help students adopt and promote healthy norms and healthy behaviors. This standard helps students develop important skills to target their health enhancing messages and to encourage others to adopt healthy behaviors.

Source: The Joint Committee on National Health Education Standards. *National Health Education Standards: Achieving Excellence (2nd Edition).* Atlanta: American Cancer Society; 2007.

Many school districts use standards and input from school staff, parents, and others, to develop and adopt a pre-K–12 curricular framework that outlines the scope of key health learning concepts and the sequence of essential knowledge and skills to be addressed at each grade level (also referred to as a "scope-and-sequence"). The scope-and-sequence aligns with the course of study and conveys the progression of health concepts and skills across different grade levels within a topic area. The learning experiences of students should progress from basic to more complex health concepts and skills as they advance from pre-kindergarten through grade 12. When assessing a curriculum, reviewers should consider the curriculum's compatibility with their course of study and scope-and-sequence. The appraisal instruments in HECAT are designed to be adapted and accommodate variations that are necessary based on state standards, local health education courses of study, and local community needs.

School districts can also use the HECAT to help identify essential health education concepts and skills that could be used in the development or revision of a scope and sequence. More information about the application of the HECAT in the scope-and-sequence development process can be found in Appendix 4: *Using the HECAT to Develop a Scope-and-Sequence for Health Education*.

Some states do not include pre-kindergarten in their state standards or course of study. However, many state education agencies have worked with state partners to promote state-level, early learning standards and guidance for pre-school programs that include health education. More information about applying standards for pre-school programs can be found in Appendix 5, *Using the HECAT to Analyze Curricula for Early Childhood Programs*.

Characteristics of Effective Health Education Curricula

Today's state-of-the-art health education curricula reflect the growing body of research that emphasizes teaching functional health information (essential concepts); shaping personal values that support healthy behaviors; shaping group norms that value a healthy lifestyle; and developing the essential health skills necessary to adopt, practice, and maintain health-enhancing behaviors. Less effective curricula often overly emphasize teaching scientific facts and increasing student knowledge.

Reviews of effective programs and curricula and input from experts in the field of health education have identified characteristics of effective health education curricula.[13–24]

These characteristics are summarized below. The health behaviors, analysis items, and scoring criteria used in HECAT have been developed to be consistent with this research. Each characteristic below includes a reference as to where it is addressed in the HECAT appraisal instruments. An effective health education curriculum includes the following:

- **Focuses on specific behavioral outcomes.** Curricula have a clear set of behavioral outcomes. Instructional strategies and learning experiences focus on these outcomes. (Chapter 6.)
- **Is research-based and theory-driven.** Instructional strategies and learning experiences build on theoretical approaches, such as social cognitive theory and social inoculation theory that have effectively influenced health-related behaviors among youth. The most promising curricula go beyond the cognitive level and address the health determinants, social factors, attitudes, values, norms, and skills that influence specific health-related behaviors. (Chapters 2 and 6.)
- **Addresses individual values and group norms that support health-enhancing behaviors.** Instructional strategies and learning experiences help students accurately assess the level of risk-taking behavior among their peers (e.g., how many of their peers use illegal drugs), correct misperceptions of peer and social norms, and reinforce health-enhancing attitudes and beliefs. (Chapters 5 and 6.)
- **Focuses on increasing the personal perception of risk and harmfulness of engaging in specific health risk behaviors as well as reinforcing protective factors.** Curricula provide opportunities for students to assess their actual vulnerability to health risk behaviors, health problems, and exposure to unhealthy situations. Curricula also provide opportunities for students to affirm health-promoting beliefs, intentions, and behaviors. (Chapter 6.)
- **Addresses social pressures and influences.** Curricula provide opportunities for students to deal with relevant personal and social pressures that influence risky behaviors, such as the influence of the media, peer pressure, and social barriers. (Chapter 6.)
- **Builds personal competence, social competence and self efficacy by addressing skills.** Curricula build essential skills, including communication, refusal, assessing accuracy of information, decision making, planning and goal-setting, self control, and self-management, that enable students to build personal confidence and ability to deal with social pressures and avoid or reduce risk behaviors. For each skill, students are guided through a series of developmental steps:
  1. Discussing the importance of the skill, its relevance, and relationship to other learned skills.
  2. Presenting steps for developing the skill.
  3. Modeling the skill.

4. Practicing and rehearsing the skill using real-life scenarios.
5. Providing feedback and reinforcement. (Chapter 6.)

- **Provides functional health knowledge that is basic and accurate, and directly contributes to health-promoting decisions and behaviors.** Curricula provide accurate, reliable, and credible information for usable purposes - so that students can assess risk, correct misperceptions about social norms, identify ways to avoid or minimize risky situations, examine internal and external influences, make behaviorally relevant decisions, and build personal and social competence. A curriculum that disseminates information for the sole purpose of improving knowledge is inadequate and incomplete. (Chapters 5 and 6.)
- **Uses strategies designed to personalize information and engage students.** Instructional strategies and learning experiences are student centered, interactive, and experiential. The strategies include group discussions, cooperative learning, problem solving, role playing, and peer-led activities. Learning experiences correspond with students' cognitive and emotional development, help them personalize information, and maintain their interest and motivation while accommodating diverse capabilities and learning styles. Instructional strategies and learning experiences include methods for
  1. Addressing key health-related concepts.
  2. Encouraging creative expression.
  3. Sharing personal thoughts, feelings, and opinions.
  4. Developing critical thinking skills. (Chapters 5 and 6.)
- **Provides age-appropriate and developmentally-appropriate information, learning strategies, teaching methods, and materials.** Curricula address students' needs, interests, concerns, developmental and emotional maturity levels, experiences, and current knowledge and skill levels. Learning should be relevant and applicable to students' daily lives. Concepts and skills are covered in a logical sequence. (Chapters 4, 5, and 6.)
- **Incorporates learning strategies, teaching methods, and materials that are culturally inclusive.** Curricular materials are free of culturally biased information, but also include information, activities, and examples (e.g., gender, race, ethnicity, religion, age, physical/mental ability, and appearance) that are inclusive of diverse cultures and lifestyles. Strategies promote values, attitudes, and behaviors that support the cultural diversity of students; optimize relevance to students from multiple cultures in the school community; strengthen students' skills necessary to engage in intercultural interactions; and build on the cultural resources of families and communities. (Chapters 4, 5, and 6.)
- **Provides adequate time for instruction and learning.** Curricula use adequate time to promote understanding of key health concepts and practice skills. Affecting change requires an intensive and sustained effort. Short-term or "one shot" curricula (e.g., a few hours at one grade level) are generally insufficient to support the adoption and maintenance of healthy behaviors. (Chapter 6.)
- **Provides opportunities to reinforce skills and positive health behaviors.** Curricula build on previously learned concepts and skills and provide opportunities to reinforce health-promoting skills across health topic areas and grade levels, such as more than one practice application of a skill and skill "booster" sessions at subsequent grade levels or in other academic subject areas. Curricula that address age-appropriate determinants of behavior across grade levels and reinforce and build on learning

are more likely to achieve longer-lasting results. (Chapter 6.)

- **Provides opportunities to make positive connections with influential others.** Curricula link students to other influential persons who affirm and reinforce health-promoting norms, beliefs, and behaviors. Instructional strategies build on protective factors that promote healthy behaviors and enable students to avoid or reduce health risk behaviors by engaging peers, parents, families, and other positive adult role models in student learning. (Chapters 5 and 6.)
- **Includes teacher information and plans for professional development and training that enhances effectiveness of instruction and student learning.** Curricula are implemented by teachers who have a personal interest in promoting positive health behaviors, believe in what they are teaching, are knowledgeable about the curriculum content, and are comfortable and skilled in implementing expected instructional strategies. Ongoing professional development and training is critical for helping teachers implement a new curriculum or implement strategies that require new skills in teaching or assessment. (Chapters 2, 5, and 6.)

Health Education Curricula and Assessment of Student Performance

State-of-the-art health education curricula are based on succinct learning objectives, or standards, and include a variety of curriculum-embedded performance assessment strategies that are linked to those objectives or standards. Health education standards describe what a student should know (knowledge) and be able to do (skills) as a result of the instruction provided and learning experienced. Measuring student proficiency in meeting the health standards is best accomplished by assessing student performance.

The purpose of performance assessment is to improve student learning and instructional practice. It is important to consider the degree to which student assessment is included when appraising a health education curriculum. Exemplary health education curricula include a variety of student assessment strategies—linked to the relevant objectives/standards—that provide students with opportunities to demonstrate their understanding of key health concepts and apply learned skills to real-life situations. A high-quality student assessment process also includes criteria for examining student work (such as a rubric) and incorporates multiple measures over time.

The HECAT integrates student assessment into the curriculum analysis process and scoring criteria. Additional information about health education standards and student assessment can be found in Appendix 6: *Understanding Health Education Assessment*.

Community Review of Health Education Curricula

To increase relevance and acceptability within a community, health education curricula should reflect local school and community health interests, priorities, and values. School districts and, when appropriate, schools can establish a process for ensuring that key stakeholders from the school and community review curricular materials, typically through a health education curriculum review committee. This committee might be the entity that completes the HECAT analyses and appraisal of curricula or it might be a decision-making body that reviews and acts on reports from another committee that has completed an analysis using the HECAT appraisal instruments.

The organization of a health education curriculum review committee differs among communities. In some locations, it is a specific committee charged only with reviewing health education curricula. In other locations, it is a subcommittee of the district's school health council, school wellness council, school-based management council, or the district's broader curriculum selection committee.

Health education curriculum review committee membership usually includes

- Key school policy makers and staff, including school board members, principals, curriculum directors, administrators, and teachers who are responsible for implementing health education curricula, as well as representatives from other school health program components such as physical education and school health services.
- Representatives from relevant community agencies and organizations, such as the health department, health care providers, and youth serving organizations.
- Representatives from other groups within the community with interests in the positive health and development of students, such as the faith community.
- Parents and caregivers of students who will receive the curriculum.
- Students.

Health Education as Part of Other School and Community Health Promotion Efforts

Health education is not the only school-based strategy to improve health outcomes. Rather, it is only one component of a coordinated school health program. A coordinated school health program consists of eight interactive components, each of which plays a vital role in supporting the health of students, staff, and the community. In addition to health education, these components include physical education, health services, mental health and social services, nutrition services, healthy school environment, parent and family involvement, and health promotion for school staff. The effectiveness of school health education is enhanced when it is implemented as part of a larger school health program and when health education outcomes are reinforced by the other seven components.[25]

The HECAT addresses only the health education component. CDC's *School Health Index [SHI]* was developed to help schools identify the strengths and weaknesses of their health and safety policies and programs across all components of the school health program. Information about the SHI is available at http://www.cdc.gov/HealthyYouth/SHI.

Schools have an important influence on the education, social development, and health of youth. But they are not the only societal institution responsible for achieving these outcomes. Families, faith-based organizations, voluntary organizations, health care providers, community youth-serving agencies, employers, media providers, public health agencies, social service agencies, and other government agencies play critical roles in promoting the health of youth.

School health education should reflect and reinforce community health priorities. The HECAT acknowledges the need to consider these priorities in the analysis of a health education curriculum. However, the HECAT is not designed to analyze a community health promotion program.

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