Increasing Student Learning through Integrated Curricular Materials: Partnership for Environmental Education and Rural Health (PEER)

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With the goal of increasing the number of students entering and remaining in academic science and mathematics tracks, the Partnership for Environmental Education and Rural Health (PEER) team and Agricultural Education faculty at Texas A&M University have developed a collaborative program that integrates environmental health science into non-science classes. Using online curricula, teaching development programs, and interaction between environmental health scientists and public school students in rural middle schools, the PEER team has developed an interactive and exciting learning environment. Students learn about environmental risks and about rural health topics such as anthrax and West Nile virus. There are three primary goals of PEER: 1) integrate biomedical/environmental sciences into engaging, multimedia learning materials tailored for rural middle schools; 2) provide professional development opportunities for pre-teacher and teacher training and dissemination on curricular materials; and 3) promote application of science and mathematics establishing direct partnerships between students and scientists and by providing for online interactions.

Purpose

The poster presentation will illustrate the integrated PEER curriculum as well as student evaluation of the PEER program. Additionally, the poster will describe the potential impact on future methods of teaching to facilitate a student-centered learning environment.

Major Points to be Shared

- Curricular materials integrated environmental health science into non-science classes such as English, math, language arts, and social studies. Six modules have been developed: 1) Tut's Revenge (Egypt); 2. Jade Dragon (China); 3. Hard River Escape (Ukraine); 4. Kiss of the Assassin (Peru); 5. Congo Cry (Africa); and 6. Midnight at the Marble Tomb (India)
- Student evaluations \((N=1725)\) of the current integrated curriculum: 1) 93% of students thought the modules contained useful information; 76% thought modules were easy to follow; 89% learned something new; 58% changed the way they thought about the environment and their health; 80% would recommend the modules to other students; and 57% plan to share what they learned with others.
- Transferability and portability of PEER curriculum and the integrated curricula model.

Educational Importance

Student evaluations of the PEER curriculum suggest that current curricular content can be integrated, the use of integrated curricular content facilitates learning of complex scientific and mathematical concepts, and teachers are willing and eager to adopt such approaches to increase student success.

PEER commits itself to the professional development of rural middle school teachers and students to promote environmental health science. PEER effectively integrates science, math, language arts, and social studies (history and geography) in an engaging student-centered learning environment. The application of this concept of curriculum integration to other fields may have an impact on future methods of teaching both domestically and internationally.