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The Post

Wednesday, February 27, 2008

Grad students play 'virtual scientists' for middle school students

Published: Wednesday, February 27, 2008
Last Modified: Wednesday, February 27, 2008, 3:02:20am

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An Ohio University program allows Appalachian middle school students to play along with virtual scientists as they take them step-by-step through experiments.

In the Science and Technology Enrichment for Appalachian Middle-schoolers (STEAM) project, graduate students create games and interactive experiments in Second Life, a virtual online world. The programs teach Appalachian middle school students about science, technology, education and math.

The STEAM project, funded by the National Science Foundation, started at OU in April 2006, said Teresa Franklin, a STEAM administrator and associate professor of education.

"It is an interdisciplinary program with the colleges of education and engineering," Franklin said. Currently six schools and eight teachers participate in the STEAM project, she said.

The games incorporate subjects such as Earth science, genetics and the scientific method. In "Rafting Adventures," students, using the arrow keys, ride down a mountain in a raft while stopping to learn about erosion.

"The kids have fun when they play them. They learn," Franklin said. "It is one more way to reach children and learn science."

Another game, "Furry Family," allows students to choose the appearance of three baby bunnies using Punnett squares, which are used to determine the probability that genetic attributes will appear in offspring.

"The kids get really excited about these educational games we create for them," said Tessa Cooper, an OU graduate student, "I enjoy working with the kids and teaching them."

Graduate students, who create the games as well as assist the teachers in the classroom, run the project. Cooper, who said she was encouraged by an adviser to apply, created "The Nutrition Game," which allows students to choose their meals and then evaluates their food choices.

A number of the games involve pre-tests and post-tests, which enable STEAM administrators to evaluate what a student has learned by playing the games, according to the STEAM Web site.

Although Mary Ann Hopple, a seventh grade science teacher at Athens Middle School, did not have any statistics as evidence of improvement, she said her students do understand the concepts better.

"Different games do different things," Hopple said. "Some are problem-solving. Some of the games we have help them review."

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