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Video games in the classroom

OU students, local teachers blend learning with fun

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ATHENS -Will middle school students ever think it's cool to mix their video games with math and science?

That's what a team of Ohio University professors, Southeast Ohio middle school teachers and a handful of OU computer science graduate students are trying to figure out.

How are they doing this? By developing a series of "digital curriculum modules," or better known to any teenager as video games. Thanks to a $1.67 million grant from the National Science Foundation awarded to OU, three professors are leading a project known as the Science and Technology Enrichment for Appalachian Middle-Schoolers (STEAM).

Eight graduate students in the process of earning their master's degrees in computer science were paired up with the eight participating middle school teachers and worked daily this past week to create educational video games to present to their classrooms in the 2006-2007 school year.

Each student/teacher team presented the first of four of their educational video games in a luncheon presentation Friday at the Ohio University Human Resources Training Center. The student/teacher duos presented the crowd with everything from virtual science labs where students could produce their own science experiments to Pac-Man style science games to virtual, three-dimensional playgrounds.

CHRIS CROOK/Times Recorder

Timothy Taylor of Roseville Middle School presents his video game.

"This project not only gives the graduate students a chance to communicate, but we're hoping it will improve the science programs in the middle schools and get kids interested in science," said Teresa Franklin, instructional technology associate professor in the college of education.

Franklin, Chang Liu, assistant professor in the Fritz J. and Dolores H. Russ College of Electrical Engineering and Computer Science (EECS), and David Chelberg, EECS associate professor, are collaborating the efforts between the graduate students and middle school teachers.

Two local teachers, Angela Adams of Miller Middle School and Timothy Taylor of Roseville Middle School participated in the project.

Adams said she is excited to introduce her students to the games she and graduate student Mark Smearcheck co-created. The duo spent the week creating a video game illustrating the life of a star.

"It's an interesting way to integrate technology into the classroom," Adams said.

Adams has been teaching eighth-grade science and social studies at Miller Middle School for seven years.

"I love the idea of video games in the classroom. It keeps the students engaged and excited, and I want to do more of it. I hope it inspires the kids to get interested in computer programming and engineering, and inspire them to have a passion for it," Adams said.

The project doesn't end with the intense week of designing and creating an educational video game. The next step will occur when the graduate students go into the classrooms weekly throughout the school year to help the class work with the video games.

"(Chad Mourning) will be coming into my class all day every Wednesday through the school year and for two hours on Fridays," Taylor said. "He'll be working on his module, helping and observing," Taylor said.

"I'll use any method I can to get the material across to students because each student learns differently," Taylor said. Taylor is hoping Mourning will be a kind of role model to his students and encourage them to take an interest not just in science, but in attending college.

Taylor has 27 years of experience in education, all at Roseville Middle School. He's been a learning disabilities teacher, a fifth grade math, science and reading teacher and is now a sixth grade science teacher.

Taylor and Mourning worked together to create a "mass vs. volume" video game.

"Chad is blowing my mind. It's amazing, as a teacher I'm bringing in the content and knowledge, and as a student he's bringing in the technology," Taylor said.

Taylor said the video game he and Mourning created this week will challenge his students to use mathematical formulas to determine the density of an object and teach them to not base their answers on physical characteristics of objects.

"Mass and volume is just one of those topics that they just don't get," Taylor said during his presentation.

The $1.67 million National Science Foundation grant is a three-year grant and, according to OU President Roderick McDavis, is one of the largest National Science Foundation Grants the university has ever received.

"This is an excellent example of programs available at the graduate level. This increases our goal of increased research funding," McDavis said.

According to Dr. David Walsh, with the National Institute on Media and the Family, 79 percent of American children play computer or video games on a regular basis, with children between the ages

of 7 and 17 spending an average of eight hours each week playing games.

Chelberg said once the educational video games are implemented into our local schools and given a trial run, they'd like to promote and publicize the games so they may be available to teachers and classrooms everywhere.

"We want to package it so student can even continue to play the games at home if they'd like," Chelberg said.

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