

Another Advancement In

STEM Education



Iowa State University informing decision-makers about research in **Science–Technology–Engineering–Mathematics Education**

Math problems get digital update

Too often, educators hear their students asking when they'll use math in real life. Doug Gould, mathematics teacher at Boone High School, can now say with confidence, "every day."

Using a teaching method called digital storytelling, Gould asks teams of students to come up with everyday scenarios that use applications of trigonometry, geometry, or algebra in the approach and solution to the problem. For example, one group of students used trigonometry to determine the angle at which a swimmer should enter the water for the best start in a race. Using high-tech photography and video software and equipment, students develop their real-life story problems into short movies or slideshows and present them to the class for evaluation.

Denise Schmidt, assistant professor of instructional technology at Iowa State University, was part of Gould's advisory committee when he completed his graduate work on digital storytelling for the math classroom. While storytelling itself is not a new way of teaching, the digital format, as well as the application to a math classroom, propelled the learning concept to a new level.

"Digital stories are happening all the time," Schmidt said. "There's an attraction to that kind of format, especially in the minds of young learners. So if we think about what students like, and how akin they are to technology, coupled with a difficulty to connect mathematics teaching to authentic learning, it would make sense to try to integrate digital storytelling in this area."



This photo, used in a digital storytelling project, uses a trigonometry equation to problem-solve a swimmer's projection into the water.

Although Gould admits the high-tech project is more time consuming, he also said his research has shown that when math concepts are presented in the digital storytelling format, students understand them better and achieve higher test scores.

Schmidt went on to say that digital storytelling also improves student outcomes because as compared to traditional mathematics teaching, students are in control.

"Students are very good at reading and listening to stories, but rarely get the chance to tell their own [story]," Schmidt said. "Through a project like Doug's, the students are taking ownership of their learning. Because they had to use real-life examples, it really authenticates the process and understanding."

For more information:

Check out other STEM education stories on the College of Human Sciences web site at www.hs.iastate.edu/news/stem.