Attraction by design: Researchers pique girls' interest in computing science

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A joint research project between the University of Alberta's Faculty of Education and the Department of Computing Science has found that, for high-school girls, the fun is in making video games, not just playing them.

Computing science professor Duane Szafron and fellow U of A researchers Mike Carbonaro, Jonathan Schaeffer and Maria Cutumisu say that women in computing science are rare, but their study shows that if you want to get more females interested in computing science, you have to rewrite the program, so to speak.

"There's been a huge push throughout North America to try and get girls to go into computing science, but [educators are] having a lot of challenges convincing them," said the Faculty of Education's Carbonaro. "The findings are important, as they demonstrate a way to motivate girls' interest in computing science"

In their study, the researchers wanted to see whether girls would gain as much interest in game development as they boys in the class control group. To facilitate the experiment, they introduced a group of local Grade 10 students to a program called ScriptEase, a tool that allowed them to develop and design their own games. A key factor in the study was having male participants who had more experience than the females in gaming.

Szafron says that there is an inherent creative component to computing

science, and that having a student design and construct something using the tool is one way to allow them to investigate that aspect of computing science. "We thought we should have female students create games and see if they are just as excited about making games as male students and see whether it's an attractor to computing science that is independent of gender," he said.

Their findings indicated that female students enjoyed creating games as much as their male counterparts; further, they preferred game construction to activities such as story writing. Further, he noted the female students gained and used practical skills that are crucial to understanding computing science.

"The female students built games that were every bit as good as the male students made, even though the male students had more experience with playing games," said Szafron. "In terms of the quality of the games developed and the abstraction skills that the students learned, which could translate to knowledge of competing science—and in terms of the amount of fun that they had—there was no difference between the two groups."

According to Carbonaro, computing science teachers need to look at redesigning the types of projects and content they use in class to make them more "female-user friendly."

"If you want more females in computing science, you need to radically change the curriculum. You need to provide activities that are more gender neutral so that they'll be attracted to the discipline."

  More information: The research study was recently published in *Computers and Education*.

Provided by University of Alberta