Using Game Modding to promote and provide basic IT skills to a female audience

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Many researchers have argued for the use of video games as a useful learning tool (Aldrich, 2003; Jasinski and Thiagarajan, 2000; Gee, 2003; Glifford, 1991; Prensky, 2003; White, 1984). Seif El-Nasr and Smith (2006) have previously argued that game modding offers a learning approach that provides motivation. In addition, they also argued that through the use of game modding tools students gained several IT skills, such as software integration, prototyping, design, object oriented programming, and threading (Seif El-Nasr and Smith 2006). This presentation extends this argument by examining the use of video game modding in motivating female students to learn basic IT skills.

While there are many previous works that targeted the use of playing and/or building video games as a teaching tool, video game development has the perception of being a male-oriented activity. Even though 39% of active gamers in the U.S. are women (Krotoski, 2004), only 11.5% of game industry jobs belong to women, according to the International Game Developers Association (2005). This is an extreme case of a bigger problem in the larger IT industry. U.S. Department of Education (2004) reports that only 26.9% of total Bachelor's degrees in Computer and information sciences were awarded to women in 2002-2003, even though 57.5% of all Bachelor's degrees in 2002-2003 were awarded to women. An interesting question, therefore, is what considerations must be made to use video game modding to teach IT skills to a female audience.

In this presentation, we will present results from a 25-student all female class. We taught this class in the fall of 2006. During the class, we collected survey data and analyzed final projects to deduce (1) if students were motivated in modifying or creating their own games using the game engine supplied in the class, and (2) what IT skills did students learn and at what proficiency.

Results collected show that (1) video game modding is an effective motivational teaching tool, (2) video game modding is an effective tool for teaching IT skills, and (3) video game modding is an effective teaching tool for an all female audience with certain considerations, including gender imbalance in the video game industry, hyper-sexualized character design, and social perceptions of women and games. These results will be discussed as well as the data and methods of evaluation.

While the class size is small, we believe that the results collected and analyzed allude to the success of the technique of game modding in motivating female students to learn some IT skills. We are currently experimenting with several other game engines in other

female classes to compare the results and the learning process.

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Presenter Bios

Ibrahim Yucel
Ibrahim is a first year PhD student in the college of Information Sciences and Technology at Penn State (IST). He has four years of education experience, working for both the Morgan Academic Support Center for Student Athletes and The college of IST. He has graduated with a BS in Information Science and Technology, with a minor in Digital Arts. He has also interned for Miramax Films' advertising department.
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Joseph Zupko
Joe Zupko is a Ph.D. candidate in the College of Information Sciences and Technology at the Pennsylvania State University. Joe has a B.S. in Computer Science from Penn State. He is part of the Real-time Aesthetics and Experience lab at IST working under

supervision of Dr. Magy Seif El-Nasr. His research interests includes sound design in interactive applications.

Magy Seif El-Nasr

Dr. Seif El-Nasr earned her Ph.D. degree from Northwestern University, her master's degree in Computer Science from Texas A&M University and her B. S. degree in Computer Science from the American University in Cairo. Dr. Seif El-Nasr received several awards, including 2nd best paper award at the International Conference of Virtual Storytelling, and *Leadership Excellence Award* from Texas A&M University. She is on the editorial board of the International Journal of Intelligent Games and Simulation, and ACM Computers in Entertainment. She is the co-director of the RAEL (Real-time Aesthetic and Experience Lab). Her research work includes designing and developing tools that enhance the engagement of interactive environments used for training, education, and/or games.

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