

**GRAVEL: Game Research and Virtual Environment Lab
Seed grant application**

Title: **A survey and examination of game authoring software**

Principle investigator: Brad Hokanson, Associate Professor

Department: Design, Housing, and Apparel

Email: bhokanson@che.umn.edu

Address: DHA 240 McNeal Hall
 1985 Buford Ave.
 St. Paul MN 55108

Telephone : 612.624.4918

Signature of Department Chair:

Date: _____

Becky Yust, Department Head, Design, Housing, and Apparel

Title: A survey and examination of game authoring software

Introduction

We recognize the strength and impact of games in today's society; they are a larger industry than the movie industry, and more people play a game more frequently than attend a movie. We also recognize the potential value of games for communicating and learning; both major political campaigns in the 2004 election had affiliated game designers and games are an important topic in the broad field of education (see, for example, Gee, 2002). The ability to author games and similar presentations is an important adjunct to more traditional learning outcomes in design, communication, and education.

The Department of Design, Housing, and Apparel will be offering a new class, Game Design beginning Fall Semester, 2005. It will be offered as part of the department's MFA program in Interactive Media, complementing courses such as Interactive Design [DHA4384], Interface Design [DHA5342], and Theory of Electronic Design [DHA5399].

As we develop these new directions in our curriculum, and as our work at the University evolves to address changes in society, the tools we must use to teach and learn will change. A most significant change in recent times has been the shift of society to the widespread use of games.

Game authoring software is valuable for a number of reasons. First, students learning one or more authoring systems develop transferable software skills that can be used in other venues. Learning the specifics of an single authoring system is less critical than the broader understanding gained in computer based designing.

Second, structuring and designing a game is mentally challenging, resulting in cognitive gains for designers. In my previous classes, I have used the mystery novel as a model for interactive development. A mystery novel must present and order information, have interesting character development and scenario design, present a larger idea or message, and provide a logical result. It is as complex...if not more complex... than authoring a written paper. The development of a game requires many of the same high level skills.

Finally, the end results of game authoring systems can also provide benefits in the retention of information; Kurt Squires (2004) frequently recounts how the game, Pirates of the Carribean had a positive, residual effect on his knowledge of geography.

Description of the project

The proposed project will focus on the use of game authoring systems and their use in education, communication, and design, with the specific goal of integrating game authoring programs into our research and educational processes.

A number of software packages will be examined for their potential for use in the classroom. Demonstration games will be developed to show the capability of the authoring systems, and a report summarizing the findings will be completed. Results of the findings will be shared with GRAVEL and in professional meetings.

One specific goal is to investigate authoring systems that go beyond Macromedia Flash and other common and standardized commercial software.

Plan of work

Phase 1: February–April

Authoring systems that are available for little or no cost will be located and, if need be, purchased. A starting point for software sources is listed on the INMS site by Marc Prensky. Given the limited scope of the seed project, three to five software packages will be evaluated. This will include Croquet and Neverwinter Nights, two current software packages of interest.

Phase 2: May-July

This stage will involve writing a summary report about the collected data. The report will include reflection, discussion, comments, implications and a conclusion. Future directions will also be addressed.

July-August

Application of software into the course will be developed and results of the survey will be disseminated. Potential publication locations include the Association for Educational Communications and Technology, International Visual Literacy Association, and i-Teach (a conference of the Minnesota State Colleges and Universities).

Description of broader potential of the idea

It's widely recognized that active learning, i.e. learning that engages the student in active and challenging processes, is much more effective than more traditional and passive means of pedagogy. While interactive media has provided a substantial platform for the development of computer-based instruction, it has limits in terms of affective motivation. Games provide a significant connection with learners, being both interactive and affective, increasing their capability for instruction.

We have also recognized over the past years of the value and engagement of story based learning.

It is anticipated that many of the game development tools could be applied to other educational and communication venues. Distributing to faculty and other researchers, the capability and skill of game authoring systems would be very valuable in the development of their own educational objects.

Idea development team

Brad Hokanson, the principal investigator of this grant proposal, teaches interactive media, creative problem solving, and interface design in the Department of Design, Housing, and Apparel. He was one of the University's first Digital Faculty Fellows, and has a Ph.D. in Instructional Technology. He is engaged with a wide variety of digital media, including teaching fully online courses and serving as a consultant to a PalmOS based educational startup company.

Beth Koch, an MFA student in Interactive Media will be hired as a research assistant. Koch has an excellent background in interactive design, and extensive teaching experience in design. This project will fit into her current research emphasis of design education; she has recently authored a Flash based game to help teach typography. She has had a number of papers accepted in the field of design education, and currently served on the College of Human Ecology's eScholarship Committee.

Budget

A research assistant will be hired for summer 2005. The cost of salary and fringe benefits will be approximately \$2000. Additional monies will be needed for purchasing computer games, photocopying, publications purchases, and producing computer output. The total request for funding is \$2,500 dollars.

References

Gee, James (2003). *What Video Games Have to Teach Us About Learning and Literacy*, New York: Palgrave Macmillan.

Prensky, M. (2005). http://www.marcprensky.com/writing/TOOLS_FOR_GAMES.pdf, retrieved 1/14/05).

Squires, K. (2004). Keynote presentation at the Classrooms of the Future Conference, May 25, 2004.