

Client-Based Learning Models: Student-Designed Games for Business Applications

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ABSTRACT

In this paper, we present an overview of client-based projects in a game design class, including the incorporation of persona marketing and usability testing, and discuss how these affected learning outcomes.

Categories and Subject Descriptors

K.3.2 [Computers and Education]: Computer and Information Science Education, computer science education

General Terms

Management, Documentation, Theory, Human Factors

Keywords

Learning, video games, business, client-management

1. INTRODUCTION

As part of a specialization within the Arts and Business program at the University of Waterloo, the focus of Digital Arts Communication 300, a third-year undergraduate course, is to create an online casual game to fulfill a client-based need. In addition to learning the principals and concepts of game development, students are introduced to important business and design concepts that include the use of persona marketing, usability testing procedures, exploring the production of media for a specific market under specific constraints and client-based design.

In the most recent incarnation of the course (Winter 2009), the client was the University's office of Marketing and Undergraduate Recruitment (M&UR). The M&UR office is currently beta-testing an online 3D Virtual Campus Tour and wishes to have games that could be associated with the various aspects of the Tour. These games may be discovered by a user inside a classroom in the tour and may relate to student campus life, or peripheral games relating to student experiences that can serve as add-on components to the tour. The games serve as both learning objects and advertising for the course and university. The

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beta site is located at
http://www.findoutmore.uwaterloo.ca/Virtual_Campus_Tour_Flash/Main_nov1.swf.

2. BENEFITS OF CLIENT-BASED PROJECTS

Client-based projects, that is, assignments that are provided for a specific audience outside of just the instructors, are common in technical communication programs but, it is felt, under-utilized in the Arts and Humanities and Computer Science. Client-based projects have many advantages over open projects. The constraints of developing something specific for a client can help to foster, rather than discourage creativity. We found that brainstorming without these constraints resulted in games that were similar to those already in existence, but with the added constraint of the client, student creativity flourished.

Perhaps the most obvious advantage to client-based models is that they add realism to the classroom, which heightens motivation and can encourage ownership over the student's own learning processes [1]. This experiential learning aspect, it was felt, would be particularly valuable to students who would be searching for employment in a difficult economic period. Having the additional job skills of client management, persona marketing and usability testing gave these students an edge over their fellow student game designers. Moreover, client-based learning models help to cultivate communication skills, critical thinking and problem solving.

3. DIFFICULTIES OF CLIENT-BASED PROJECTS

It has been suggested that client-based projects in the classroom are considerably more workload and require extra time commitment, resulting in less use of this model [2]. Notably, finding the right client can be a considerable time issue. However, note Lopez and Lee, "sometimes clients simply fall into the instructor's lap." [2] It has been our experience that every time the course is taught, we have had more opportunities for clients than we require. There are several departments on campus, for instance, that would like us to develop online learning objects for various courses. Other possibilities included business contacts that students themselves had or could foster, and local non-profits, libraries or museums.

Lopez and Lee provide a useful checklist to evaluate the client, since "client management" can become a significant part of the course if the client is not appropriately chosen [2]. Over-involvement or under-involvement can occur. The level of

involvement and role that the client will play must be outlined at the start of the project. In this case, we met with the M&UR office well in advance of the course, discussed their needs as well as our needs, and arranged for three points of contact with students: At the start of the course to introduce their Virtual Tour and their needs, half-way through the course to hear and give feedback on student design document presentations, and at the end of the course to provide feedback on student game project presentations.

All students in this case had the same client, to assist the instructors and students in client management: With just one client, the project could become focused and any correspondence with the client could be first addressed to the instructors.

4. USE OF PERSONAS

It would be possible in a class where students were already familiar with game design and persona marketing to have students themselves meet with a client in the first weeks of classes and develop their own persona, but as we were introducing them to both the concepts of game design and to personas, we constructed a persona for them.

The course instructors met with the client in advance to develop a persona; a way of defining and identifying the target market. A persona is an archetypal user, or in this case, player of the game. Based on real data provided by the M&UR group on their market—high school students selecting schools for their university applications—a two-paged persona named Sarah was developed. The instructors then provided the students with this persona which became an on-going touch-stone for the students to continually ask themselves while they are designing their game: Will my persona like this game?

In the second week of classes, students were required to develop ideas for how they will ensure Sarah was a constant presence in their game design process. Some students suggested wearing a rubber-band bracelet that would say, “What would Sarah do?” Others built Facebook pages for Sarah, cut-outs of a Sarah effigy to bring to class, and one group even created the “Sarah Stick”, a cut-out pasted onto a ruler which would be held up during any discussions that would become the voice of Sarah.

One student noted, “One of the more interesting facts that I learned is that designers tend to design for themselves rather than their end-users or implied designee. The persona is a great tool to help the designer stay focused on the end-users.” Another noted, “I consider the pre-constructed persona a relief personally. I am such an indecisive person... I think Sarah has left us with some interesting challenges too. She's clearly smart. A dumb game won't occupy her so the objective and rules must satisfy her competitiveness in an intelligent way.”

5. GAME DEVELOPMENT

Working in small groups, students created a design concept around the persona and pitched this to the client in the form of a presentation and written design document. After obtaining client feedback, students created a prototype level of their game for usability testing. The students were given tutorials using Multimedia Fusion Developer 2, a software product resembling other point-and-click programming for game development. Students with a computer science background or who had otherwise acquired the skills to program their own games were

given the option of using other development software, such as Adobe Flash.

Throughout the term, students kept an individual design blog, in which they shared their successes, frustrations, and ideas with fellow students, as well as discussed class lectures and readings. This was also a useful exercise in that the course instructors could follow student progress and ensure that they were on track.

6. TESTING PROCEDURES

Throughout the course, students were introduced to usability testing. After learning about usability testing during class lecture periods, students developed their own usability questions to ask their small group of play-testers. In this case, other students outside of their own design groups served as testers. Students then undertook two sets of usability tests. Initially, they tested their prototype using Morae and think-aloud protocols. They identified key problems with their prototype design and redesigned any necessary components. Students wrote reports on their testing. One group noted, “Overall, we found this testing phase to be extremely useful, particularly because some of these issues would not have been detected by our own members. After being able to probe information regarding the tester’s experience, we learned that our game will need a challenge progression to keep the player engaged at all times. With this in mind, we are currently working towards adding different challenge elements to each level including obstacles, and varying speeds of falling objects”. After developing their game, they re-tested the entire game on a new set of users before handing in their final project and presenting it to the clients.

7. ASSESSMENT

Students were assessed on their participation and professionalism, documentation, design document and presentations, and the game project as well as smaller projects that were part of their blogs (writing a tutorial for the software and a game analysis). Assessment therefore included a large individual as well as their group components.

8. CONCLUSIONS: CLIENT-BASED GAMES

It is felt that the instructors must play a key role in the process of client-based games, by selecting the right client for the students in advance of the class, and by developing a persona from which students can design their game. This involves somewhat more time commitment on the part of the instructors, but with positive learning outcomes.

In summary, students in an upper-level undergraduate course have benefitted from client-based game design projects by supplementing game design skills with business skills, while still maintaining their creativity and allowing for enough time to introduce theoretical aspects of game design.

9. REFERENCES

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