Measuring Learning in an Honors Interdisciplinary Course on Video Games

Rudy McDaniel  
*University of Central Florida, rudy@mail.ucf.edu*

Peter Telep  
*University of Central Florida, PTelep@aol.com*

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GAMING 360
The History, Culture, and Design of Video Games

A Team-Taught Honors Interdisciplinary Seminar
SCHOLARSHIP OF TEACHING AND LEARNING PROJECT

Rudy McDaniel
Department of Digital Media

Peter Telep
Department of English

BACKGROUND
We proposed a SoTL project to measure student learning in an honors interdisciplinary seminar first taught during the spring 2007 semester. A critical goal is to communicate to students the utility of gaming technologies for non-entertainment purposes.

RESEARCH QUESTION
How will students improve their understanding of video game concepts and applications of video games as cultural and critical tools as a result of participation in our honors seminar?

LITERATURE REVIEW
We have identified salient literature in each of the following categories:
- Video Games and Pedagogy
- History of Video Games
- Video Game Design
- Cultural Impact of Video Games
- Teaching in Honors

METHODOLOGY
- We are using a quasi-experimental repeated measures analysis of variance design.
- We are administering pre- and post-tests using Forms Manager.
- We have received full IRB approval for our study.

PUBLICATION
Proposal drafted:
“Direct and Indirect Measures of Student Success in an Honors Interdisciplinary Video Games Course: A Rhetorical Analysis in Three Parts”

FUTURE RESEARCH
We plan to teach this course several more times and propose new research into applications for gaming as a tool for learning in all disciplines.
Objective: We will discuss how video games can be used (both as motivational tools and as a scholarly topic of discussion) to create a successful learning outcomes for undergraduates.

Learning Outcomes: By the end of this presentation, participants will learn:

1. How to use video games as pedagogical tools or catalysts in several different scenarios.
2. How to use applied exercises in game design to teach about writing skills, culture, history, story development, digital media tools, and creativity.
Outline

- Part 1: Discussion of Course
- Part 2: Some Preliminary Data
- Part 3: Gaming Activity and Discussion
Part I: Discussion of Course
Course Overview

- Course is a team-taught Honors interdisciplinary seminar taught by instructors from Digital Media and English.
- Course has 20 Honors students comprised of mostly juniors and seniors.
- Course is 15 weeks long and in many cases an elective class for these students.
- Course includes a WebCT component to deliver all course materials.
The Road to Approval

1) Submit to Honors College and get Honors College Review Committee to approve
   (They approved with minor changes)

2) Submit to University Curriculum Review Committee to approve
   (They rejected, thought a gaming course should only be taught by Digital Media).

3) Submit to English Department Curriculum Review Committee to approve.
   (They rejected, thought the course wasn’t rigorous enough in regard to writing).

4) English dept unable to release instructor, who is forced to teach 5 courses.
Course Description

- From our syllabus: “This team-taught Honors interdisciplinary seminar focuses on the history, design, and cultural impact of video games. Our study and exploration of gaming will take us through various degrees of written and cultural and critical analysis to provide a comprehensive, panoramic examination of this topic as a tool for reflection and as a subject of critical inquiry.”
Course Goals

“The primary goal of this course is to strengthen students’ understanding of video game technologies, their ancestry, their design and construction, and their impact on culture and society.

“Secondary goals also include the ability to recognize electronic games as a legitimate form of discourse for academic pursuits and as a tool for the discussion and deconstruction of socially-imposed boundaries.”
Course Curriculum

Course divided into 3 modules:
Curricular Module 1

Module 1: History and Critical Analysis of Video Games

- Play current and old console games in class.
- Examine the historical development of video games via film clips/PowerPoint presentations.
- Analyze games by first studying components: story, characters, music, art, sound effects, etc.
- Activities include: readings, game play journals, short writing assignments, and a research paper whose idea is drawn from a list of 25 topics related to video games.
Curricular Module 2

- Module 2: Video Gaming and Society: Social and Cultural Reflections

- Pair off and engage in debates regarding video game issues.

- Review Gee’s 39 principles of learning video games.
  - Ex: design principle, semiotic principle, psychosocial moratorium principle, amplification of input principle

- Activities include: in-class debates/presentations, and continued game play and writing in journal.
Curricular Module 3

- **Module 3: Video Game Production**

- Student teams conceive and present concepts of their own video game.

- Student teams collaborate to write a 30-60 page game design document.

- Student teams present their finished game and doc in a competition judged by a professional game designer.
# Course Assessments and Weightings

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game Playing and Weekly Journaling Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>10-15 Page Research Paper</td>
<td>15%</td>
</tr>
<tr>
<td>30-60 Page Game Design Document</td>
<td>20%</td>
</tr>
<tr>
<td>Group Presentation of Game Design Document</td>
<td>15%</td>
</tr>
<tr>
<td>Individual Presentations</td>
<td>10%</td>
</tr>
<tr>
<td>Attendance and Participation</td>
<td>10%</td>
</tr>
</tbody>
</table>
Student Outcomes (Abridged)

By the end of this course, students should be able to:

1. Identify in writing the historical development and impact of video games.
2. Classify in writing various game technologies and identify their design and construction.
3. Describe how the fundamental components that make up video games enhance the experience.
4. Recognize the relationships of video games, critical thinking, and problem solving.
5. Analyze and argue the effects of games on society and the cultural effects of gaming.
6. Compose an original game design document and defend the choices made based upon criteria created for a particular game type.
7. List and explain the works of several critical theorists whose writings have addressed the impact of digital video games on modern culture.
8. Understand both “serious play” and “serious gaming” and apply this creative technique to the rhetorical canon of invention.
Part II: Preliminary Data
Additional modules (not shown) collect information pertaining to cultural and historical knowledge.
## Gaming Habits and Characteristics

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>I currently play video games approximately $X$ hours per week.</td>
<td>$X = 0$</td>
</tr>
<tr>
<td>I am:</td>
<td>Male</td>
</tr>
<tr>
<td>I was born in the year:</td>
<td>1982</td>
</tr>
<tr>
<td>My favorite genre of games is:</td>
<td>First Person Shooters (e.g., Halo2)</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>I access most games by:</td>
<td>Renting</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>I prefer to play games on:</td>
<td>Playstation platform (e.g., PS2, PS3)</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
<tr>
<td>I work on campus $X$ hours per week, and off campus $Y$ hours per week.</td>
<td>$X = 0$, $Y = 0$</td>
</tr>
<tr>
<td>My family yearly income level (or your parent’s income level, if you are not employed) is approximately:</td>
<td>$&lt; $19,999</td>
</tr>
<tr>
<td>The grade I expect to receive in this class is:</td>
<td>A</td>
</tr>
<tr>
<td>I registered for this course primarily because (check all that apply):</td>
<td>I needed it to graduate</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

[Submit Survey]
Demographics
I was born in the year:
My favorite genre of games is:

- **First Person Shooters (e.g., Halo2)**
- **Role Playing Games (e.g., Final Fantasy)**
- **Flight Simulators (e.g., MS Flight Simulator)**
- **Puzzle (e.g., Tetris)**
- **Simulation (e.g., The Sims)**
- **Fighters (e.g., Tekken)**
- **Sports (e.g., Madden)**
- **N/A (I don't currently play games)**
- **I enjoy all type of games equally**
I prefer to play games on

- **Playstation Platform** (e.g., PS2, PS3)
- **Nintendo Platform** (e.g., Gamecube, Wii)
- **Xbox Platform** (e.g., Xbox, Xbox360)
- **PC**
- **Handheld** (e.g., PSP, Nintendo DS)
- **Other (Specify Below)**
Survey Results
Pre-Test

I currently play video games $X$ hours a week

Average: 10.24
Post-Test

I currently play video games approximately X hours per week.

Average: 7.47
Pre-Test

I feel confident in my knowledge of video game technologies

- Strongly Agree: 60.00%
- Agree: 20.00%
- Neutral: 10.00%
- Disagree: 0.00%
- Strongly Disagree: 0.00%
I feel confident in my knowledge of video game development technologies.
I feel confident in my knowledge of video game history and historical developments
I feel confident in my knowledge of video game history and historical developments.

- Strongly Agree: 65.00%
- Agree: 15.00%
- Neutral: 10.00%
- Disagree: 0.00%
- Strongly Disagree: 0.00%
Pre-Test

Video Games promote violent and aggressive behavior in children

Bar chart showing the percentage of responses for different levels of agreement with the statement: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree.
Post-Test

Video games promote violent and aggressive behavior in children.
Video games are useful outside the realm of entertainment, for purposes such as education, training, or therapy.
Video games are useful outside the realm of entertainment, for purposes such as education, training, or therapy.
Video games have unique and noticeable cultural effects on society. For example, video games have interesting implications for gender roles.
Video games have unique and noticeable cultural effects on society. For example, video games have interesting implications for gender roles.
The grade I expect to receive in this class is:
Post-Test

The grade I expect to receive in this class (after completing it) is:

![Bar chart showing grade distribution]
Qualitative Measures

- In addition to our survey data, we also collected a great deal of student writing dealing with their observations and reflections of the course and their critical gaming experiences throughout the semester.
- Many of these entries revealed that the students were able to critique, synthesize, and culturally observe games by focusing on a theme such as violence, gender, or race.
Critique:

“The music between zones in Okami is very distinct. The first zone revived and restored was Kamiki Village. This place is categorized as home base requiring frequent visits to update mission information. Music in the background here is almost meditative with long notes and a soft percussion. It provides a feeling of comfort and safety that hugs you and says ‘Everything is okay, you’re home now.’”
Synthesis:

“While I did not find much worth noting from Minsky’s presentation, one thing that can apply to games is learning by metaphor. According to this idea, a machine can learn how to act or behave by comparing the current situation to one it has already seen. Metroid Prime could certainly benefit from this type of AI, but certain steps must be taken first.”
“Video games provide the player with a lot more visual images and hands-on interactive participation than books provide, resulting in more violent and dangerous behavior. Are they the sole reason why our society appears to be more violent? Nope. Do they play a large factor in the violence of the present day society? Yes. Do the visuals and interactivity produce more dangerous behaviors than books? Yep.”
Other Student Comments

- :(  
- Amazing class...thanks for pushing for it!  
- Excellent course. Some of the "design" questions in this survey I think I got right, but I was not as confident about it as I was the question on "serious" games. If these are important concepts, you should really drive these home!  
- Never take this class with another that is heavy in outside class work.  
- Not what I originally expected (lottsa work) but well worth the effort. Very fun and interesting course. A few timetable glitches but nothing unexpected of a first time course.  
- Would have liked it to be more focused on cultural impact of games than game design; there are a number of the later, but fewer of the former.  
- I feel as though my group for the Game Design Document did fairly well at the end, unfortunately when we had to push to work together. In general, I felt as if my group (once motivated) did much more work than I did on the final project. It was frustrating to be the one who, at first, was doing most of the work, but then it also was good to see that my part of the document didn't need much more clarification or correction. While I don't think I will pursue game design as a career, I appreciate having to undertake the process to show me what I truly do wish to do.
Part III: Activity
Group Activity (Step 1)

- Divide into groups of 3-4
- From the prop bag, each group may choose one item only. Each group will proceed one at a time until all items are chosen. If the item is a box, it may not be opened until all items have been chosen.
Group Activity (Step 2)

- Devise a game which utilizes *all* items chosen by your group. Your game should have the following characteristics:
  - Rules for gameplay
  - Rules for scoring
  - A back story
- Try your best to make a *fun* game that meets these requirements. Remember, you must use *all* items selected by your group. We’ll discuss as a group.