PLAYING CLASS: A CASE STUDY OF LUDIC PEDAGOGY

A Dissertation

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By
Jessica E. Broussard
BSEd, Temple University, 2001
MEd, University of Idaho, 2007
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DEDICATION

I dedicate this work to my husband, Corey, and our daughter, Zelda. You both have dealt with a messy house, an overly busy Mom, and too few weekends doing something fun as a family. I cannot think of enough ways to thank you that would adequately show my appreciation for your inspiration, understanding, patience, love and the ability to give hugs and comfort when I didn‘t even know I needed it.

To Dad: for enjoying my Awesome Sauce.

To Mom: for giving me space when I needed it.

To Wanda and Mike: for watching Zelda on long weekends, helping out in so many other ways, and for being happy for me even though we have to move.

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ABSTRACT

The purpose of this study was to examine the efficacy of transforming traditional classroom content and teaching strategy into a "gamified" version through the use of popular gaming strategy, or, in other words, how a college course can be designed or redesigned to mimic ludic pedagogy, as well as the influence of this pedagogy on student performance in understanding course content and course assessments. The researcher acted as a participant observer and used Constant Comparative Method as data driven teaching focused on student created documents. This research provides an exploration on the use of ludically styled teaching methodology which includes students as instructors, the instructor as a “game master,” and the impact of Achievements on student performance in an introductory Education survey course. Findings suggest that pre-service teachers of the Millennial generation may flourish in a gamified environment and need to engage in and experiment with using new styles of pedagogy in order to be prepared to teach their future Generation 2020 students.
CHAPTER 1.
INTRODUCTION

On September 18, 2011, the Journal of Nature Structural & Molecular Biology published an article entitled "Crystal Structure of a Monomeric Retroviral Protease," a paper that outlines the latest breakthrough in AIDS research. According to the authors (Khatib et al., 2011), the key to unlocking one of the most important mysteries involving the development of AIDS was solved by game players in just three weeks. According to the article, “gamers” deciphered the structure of a key protein in the development of AIDS that has stumped scientists for years,” and they accomplished this in only a matter of days using a gaming program called "Foldit" (Khatib et al., 2011). This important finding underscores the significance of this study on Ludic Pedagogy as a transformative teaching strategy/practice for pre-service teachers in schools and colleges of education throughout the United States. The underlying philosophy of the study is that the inherent problem-solving nature of games when applied to, or used within, traditional learning systems such as schools, has the potential to unlock the natural creative ability of students, which is often blocked through more traditional strategies of teaching and learning such as rote memorization and "drill and kill" activities. Hence, this research study represents an initial step in assessing the implementation of Ludic Pedagogy in a college classroom during the Fall 2010 and Spring 2011 semesters from both the teaching and learning perspective.

In order to understand the scope of possibilities of gaming-as-learning, one must first understand the current gaming population, characteristics of individuals using available gaming electronic devices, the array of electronic devices, as well as the raw attraction to games that pervade our current American culture.

In an interview given on the Colbert Report, McGonigal (2011) stated that people world
wide spend three-billion hours per week playing videogames and “the average young person… will have spent 10,000 hours playing online games by the age of 21.” The 10,000 hours of gaming is also approximately the same amount of time students spend “from fifth grade to high school graduation, if [they] have perfect attendance” (McGonigal & Colbert, 2011). Owing to the various forms and technologies on which games can be played, gamers have an educator, coach and playmate that can be accessed 24 hours a day and 7 days a week. Gaming technologies can be invaluable learning tools in the classroom; the chief among them is the entertainment aspect of gaming that captures the imagination of students and draws them into the learning process (Barab et al., 2009; Davidson & Goldberg, 2009; Farell, 2009; Gee, 2003; Jenkins, 2005; McGonigal, 2010; McGonigal & Colbert, 2011; Ryan, 2006; Squire et al., 2008; Steinkuehler, 2011a). A primary benefit of game devices as learning tools is the dimension of immediate feedback. Immediate feedback aids students in the development of skills that could help the student be successful in life outside of the classroom and away from the videogame.

Student use of videogames even in the classroom is not new. Though conceived in 1979, in 1985, the Minnesota Education Computing Consortium (MECC) released a version of “The Oregon Trail” that was designed to be played on the Apple II (Classics, 1999). This game was designed specifically to teach elementary students about the difficulties of 19th Century life on the westward trail. According to Despositio (1985), when the game was released, the idea of having a personal computer was bordering on science fiction, due to the prohibitive expense of the Apple, which cost between $1,300 to $2,600. Today, however, many homes have multiple computers – large desktops that have memory measured in multiple terabytes, which is approximately 2,441,406% more memory than first generation Apple products that contained only four kilobytes. Many savvy individuals today spend high dollars on handheld computing
devices with touch screen capabilities and large storage capacities, such as devices that contain multiple terrabytes of memory.

Technological advances have also led to advances in the videogames that people play. While “The Oregon Trail” was initially designed for the personal computer (PC), students and those who play videogames, also known as gamers now have multiple options that allow them to play regardless of where they are physically located. Players have the option of playing on PCs, which includes laptops, home consoles that can connect to televisions, and several versions of hand-held devices like the Nintendo DS (dual screen) series and PlayStation’s PSP (PlayStation Portable). In addition, there are also systems designed to be educational in nature like Leap Pad systems, and generic versions of all of these, as well as games available on cellular phones.

According to Sweeney (2006), students of Generation Y, individuals born between 1981 and 2001, have been raised in an age where technology has not only become more powerful but highly affordable. Electronic devices have not only decreased in price, but also in size. Many are small enough to carry in book bags, purses, briefcases, or pockets in ordinary wearing apparel. The appeal of small-sized electronic devices is that a student can receive immediate feedback throughout the day, whether they are in a formal learning environment such as a classroom or outside of the classroom, as in a doctor's waiting room, or simply riding home from school on the bus. In all of the above scenarios, students are developing strategy and thinking skills, which may serve them well academically and socially. Additionally, gaming technology provides students with an avenue of learning where the learning itself is entertaining and where students like to learn (Prensky, 2001). It seems that it would behoove classroom teachers to learn more about videogames, and find ways in which the attraction of students to learning video games might be emulated in the classroom so that students will like learning as much in a classroom
environment as they do in their leisure time. In other words, teachers and schools should capitalize on the learning modes favored by students in their everyday experiences, which is a concept of Deweyan philosophy.

**Purpose of Study**

The purpose of this study was to examine the efficacy of transforming traditional classroom content and teaching strategy into a "gamified" version through the use of popular gaming strategy, or, in other words, how a college course can be designed or redesigned to mimic ludic pedagogy (the manner through which games teach players to play), as well as the influence of this pedagogy on student performance in understanding course content and course assessments.

**Guiding Questions**

1. What changes would have to be made to a college introductory survey course design to create a game-like feel?

2. How would students who are traditionally not thought of as gamers react to a teaching methodology designed around ludically inspired pedagogy?

3. How would the teaching method change as the classes progressed to encourage proper “game balance” and player engagement?

**Definition of Terms**

**Achievements** – virtual awards given for completing various objectives.

**Agon** – term coined by Roger Caillios as part of the classification of versions of *play* and *game*. Agon is the term meaning competition between players but with artificially created fairness or equality among the players' resources.

**Alea** – term coined by Roger Caillios as part of the classification of versions of *play* and *game*. 
Alea is the Latin word for dice, Caillios uses it to represent the idea of chance in a game where winning is the result of fate and the player has no control.

**Avatar** – A character that is meant to be the virtual embodiment of a player.

**Buffing** – Common slang term created by gamers but now adopted by designers according to Schell (2010) and Soell (2011), to describe a strengthening of traits in items or abilities in characters by the designer of a game. This most often occurs in Massively Multiplayer Online Role Playing Games (MMORPG), where games undergo frequent updates and changes.

**Criterion Referenced Achievement** – type of achievement where students’ performances are evaluated in terms of the completion of predetermined criteria. The students, who most accurately fulfill the requirements of the Achievements, receive the award.

**Engagement** – behavior that students exhibit showing that they are attracted to or interested in the materials or participating in activities. This behavior may vary by student: personality, gender, or age.

**Game balance** – The act of strengthening or weakening the traits, abilities or requirements of items, characters, or quests in a game so that one group has a distinct or powerful advantage or that no challenge is so difficult that it cannot be overcome. According to Schell, this occurs in the design phase before a game is released to the public or in the case of Massively Multiplayer Online Role Playing Games these changes are made as necessary.

**Game Master (GM)** – player in a role playing game who designs or guides other players‘ characters through a narrative or battles (encounters).

**Gamer** – one who plays videogames for fun and usually with regularity, may or may not be dedicated to a specific genre of game.

**Gamify** – turn something into a game or make it more game like. (Zimmerman)
Generation Y/Millennial Student – students born between the years of 1981 and 2001

Guild – a group of students/players that play together offering both assistance and challenge when needed.

Ilinix – term coined by Roger Caillios as part of the classification of versions of play and game. For Caillios, ilinix is seeking out and subsequent surrender to the vertigo of immersive traits of play. This could include the physical sensation that accompanies sport or the mental state that a participant in a Live Action Role Play event assumes when portraying their character.

Live Action Role Play (LARP) – style of role playing game where players become the physical embodiment of a created character. This character interacts in a community or group which is set in a fantastic setting in the real world.

Ludic – related to games (Salen and Zimmerman)

Ludus – term coined by Roger Caillios as part of the classification of versions of play and game.

Ludus, According to Caillios, is both the desire to find amusement in obstacles and in the increasing difficulty of these obstacles.

Magic Circle – to Huizinga the Magic Circle is the “sacred” mental, emotional, and social space that players enter when agreeing to play a game. The “size” of the circle changes when players decide to cheat, create house rules, or change the way a character type behaves, i.e. the hero behaves in an evil way.

Massively Multiplayer Online Role Playing Game (MMORPG) – a videogame in which thousands or even millions of players interact via created characters in a virtual environment.

Mimicry – term coined by Roger Caillios as part of the classification of versions of play and game. For Caillios, mimicry is synonymous with simulation and play in that it embodies freedom, suspension of disbelief and ignoring of the present time and space for a second reality.
Nerfing/Nerf Bat – Common slang term created by gamers, but adopted by designers according to Schell (2008) and Soell (2011), to describe a weakening of traits in items or abilities in characters by the designer of a game. This most often occurs in Massively Multiplayer Online Role Playing Games where games undergo frequent updates and changes.

Norm Referenced Achievement (NR) – type of achievement where students’ performances are evaluated in terms of a comparison with the work of their classmates. The students who perform the best and who most accurately fulfill the other requirements of the Achievements receive the award.

Paidia – term coined by Roger Caillios as part of the classification of versions of play and game. Paidia refers to a style of play that is done without rules or where rules are in a state of flux. The word most synonymous with paidia for Caillios is turbulence.

Raid – style of mission in a Massively Multiplayer Online Role Playing Game in which many people join into a group to complete a single large task that would otherwise be impossible to accomplish. The groups are often impromptu and can contain anywhere from five to forty players.

Role Playing Game (RPG) – a style of game in which players assume or define the attributes of a created character.

Table Top Role Playing Game (TTRPG) – a style of game in which players assume or define the attributes of a created character. These characters interact with other created characters via a board-game like setting. The characters’ actions are planned by the flesh and blood player; however, several polyhedral dice determine if the actions are allowed or to what extent something can be done. This game is controlled by a player referred to as the Game Master.
Limitations

There were two major limitations to the study; the first was my role in the study as a participant observer. According to Yin (2009), the role of participant observer presents a number of challenges: “the investigator has less ability to work as an external observer” (pp. Chapter 4, section 7, paragraph 6) and may have to function in ways (e.g. advocacy) that are “contrary to the interests of good social science practice” (pp. Chapter 4, section 7, paragraph 6). The investigator “is likely to become a supporter” (pp. Chapter 4, section 7, paragraph 6) of the phenomena being examined and they “may not have sufficient time to take notes or raise questions…from different perspectives” (pp. Chapter 4, section 7, paragraph 6). Several steps were taken to counteract this, such as the use of student documents, design of class time so there was time during each class in which I was able to step out of the role as participant and simply observe student behaviors, the use of Constant Comparison analysis and data driven instruction. These steps essentially forced me to cyclically monitor, reflect and compare many aspects of data as closely to the time of the observation as possible.

The second limitation was that this study involved one class during the Fall 2010 semester and a second class during the Spring 2011 semester. Optimally, I feel that if the study were executed using multiple sections of the same course or using the new course design for different courses, but within the same semester, that the researcher's ability to categorize results and findings or to generalize would have been greatly enhanced. However, case studies by their very nature are highly unique and individual, both elements of which are well suited to qualitative methodology.

Significance of the Study

This study sought to expand the understanding of how ludic strategy may be
implemented and integrated into the classroom, regardless of the age of the students. Often, games are associated with either new technology that many teachers may not be able to gain access to or they are seen as being counter-productive to learning. Yet when students complete assignments as part of the game mechanic, how the game is played, and use technology that is commonly provided for teachers (e.g. PowerPoint and methods of viewing presentations), many boundaries dissipate. Gaming technologies and strategies have the potential to enhance learning, which should encourage educators at all levels of practice to freely experiment with gaming in class and experience a new type of pedagogy.
CHAPTER 2.

LITERATURE REVIEW

The thesis of this study was not to find a simple solution to a complex problem that has been hundreds of years in the making but rather to explore one possible solution for teaching the Millennial generation and Generation 2020 it in an efficient and engaging manner. For this I have turned to many of Dewey‘s classic works, along with prominent educationists in today’s classrooms like Marzano and Daniels, who through their discussion of Best Practices or High Yield Strategies, aid educators in finding interesting and proven ways to teach children to think not just recall. These voices are mingled with those who have created videogames or studied games of all types like Barab, Gee, Koster, Farell, Falstein and Barwood, McGonigal, Schell, Soell, Squire, Steinkuehler and those who have found a way “to get them to like to learn” (Jenkins, 2005, p. 49).

Jenkins (2009), believes that the general mission of education‘s “fundamental purpose is to ensure that all students benefit from learning in ways that allow them to participate in fully in public community [creative] and economic life” (Jenkins, 2009). The current incarnation of education where the desks are no longer fastened to the floors forcing rows may be a step in the right direction, but many educators still behave as if they are and because of this are “still training autonomous problem solvers, while as students enter the workplace they are increasingly being asked to work in teams, drawing on different sets of expertise and collaborating to solve problems” (Jenkins, 2009). Meanwhile, educators using static teaching methods are not creating thinkers but are trying to fill little vases with facts, drilling them until the information can be recalled automatically. Dewey (2009) states:

Thinking which is not connected with increase of efficiency in action and with learning
more about ourselves and the world in which we live, has something the matter with it, just as thought and skill obtained apart from thinking is not connected with any sense of purposes for which it is to be used. It consequently leaves a man at the mercy of his routine habits and of the authoritative control of others. (Democracy & Education, Chapter 12, Section 1, para 1).

The inference that one may draw from Dewey’s statement is that educators are creating graduates with limitations as most do not really apply facts but merely recall them.

**The Old “Best” Practices**

Though published in 1854, Charles Dickens’ work *Hard Times*, which follows the life of Thomas Gradgrind, a school’s head master and his family, has a number of commonalities with our own American culture today. *Hard Times* seems to be a satire not only of Victorian society with its dedication to mechanism, industry and highly-flawed educational system, but of the current American society with its own dedication to high-speed automation, technology and our own highly-flawed educational system. In Dickens’ (1854) work, Gradgrind viewed students not as ever-evolving learners and people, but as “little pitchers before him, who were to be filled so full of facts” (pp. Chapter 2, para. 2).

This attitude has continued throughout much of American educational history; at one point, even the architecture of the buildings seem to be in concert with this thought (Daniels & Bizar, 2004). Desks were permanently secured to the floors of classrooms, each desk depending on the one behind it for seating, demanding almost that the rows be “ramrod” straight. Often classrooms had daises upon which the teacher's desk would be place and where the teacher would remain through the bulk of the day expounding on facts filling up the “little pitchers” (Dickens, 1854) that sat before them.
The Art of Teaching, a pre-service teacher's text book originally published in 1950, stated that “there are three main methods of communicating knowledge from teacher to pupil” (Hight, 1950, pp. 97-98). According to the author, Hight (1950), the methods are lecturing, “tutorial system” [Socratic Questioning] and “preliminary work,” followed by teacher explanation and testing on the materials. The real art of teaching is then further described as knowing which method to use and when (Hight, 1950). Even the language of Hight’s (1950) text was directed almost entirely towards the teacher's actions, only occasionally mentioning what the student should or would be experiencing or doing given the use of one of the three methods.

When not attending to the teacher’s basic lecture, students in the aforementioned common-school-era-traditional classroom participated in a curriculum comprised of “computational arithmetic, reading drill in standard phonics and rigorous homework requirements” (Van Til, Brownson, & Hamm, 1975, p. 10). Depending on the technology of the school at the time, worksheets or mimeographed dittos flooded students’ days and were the main ingredient in their curricular diet. The “skill and drill” method used what Dewey (2009) claimed is an “exaggerated emphasis upon drill exercises designed to produce skill in action, independent of any engagement of thought” (Dewey, 2009, pp. Democracy & Education, Chapter 13, Section 13, para 13).

This is not to say that the Hight text and others of its time did not share some insight into the improvement of a teacher’s craft. The Art of Teaching, while being slightly myopic as far as methods are concerned, is also filled with functional and helpful information for even current pre-service teachers. For example, there are sections on preparation of unit plans and lectures and not just improvising. Hight (1950) discussed getting to know one’s students, their abilities, and
planning course content around what is useful to them. He also covered the importance of the lecturer preparing handouts and other materials based on the knowledge level of students and even the need for teachers to be life-long learners, claiming “monotony in teaching is a fault” (Highet, 1950, p. 91). Additionally, he encouraged the reading of professional journals “as [it] is nourishing” (Highet, 1950, p. 92) since “there is a constant upsurge of discussions on new problems and points of view” (Highet, 1950, p. 91).

Though this appeared to have been and perhaps continues to be, the most popular approach to teaching a course for any age, there were those who saw more to the profession of teaching than just talking at students as a viable way of teaching. In 1935, Congressional Digest proposed using simulation with students creating a model congress and arguing the issues of the days as provided to them on a regular mail-order basis so they could “solve the nation’s problems in the same manner and at the same as the nation’s own Congress” (Advertisement, 1935, p. 223). The authors promised that students would learn “accurate and practical knowledge … by vivid and engrossing study,” thus saving them from the “grim, formal affair,” (Advertisement, 1935, p. 223) that government education was and can still be. Granted, this is a piece of advertisement; however, it proves that there were those who saw more than just lecture or drill/memorization of fact as being effective education.

In 1979, two articles were released, one by the then Superintendent of Palisades Park Public Schools, George Iannacone, and the other by Daniel Dyer, an instructor at Western Reserve Academy. These pieces challenged both the nature of education and the nature of those students in the class of 1984. Iannacone (1979) called public education “an anachronism,” (p.88), claiming that when its function was to assimilate an immigrant population “it did a fine job” (p.88), but that it is “not appropriate today” (p.88). He felt the system “dulls the edge of
creativity, inquiry, and the joy of learning” (Iannacone, 1979, p. 88) through its “unnatural” methods of teaching, restricting student communication during learning and trying to “prove the economical value of learning” (p.88).

Like Iannacone, Dyer (1979) was also skeptical of the class of 1984 owing to their paradoxical nature, which accordingly was "simultaneous [amalgam of] tribalism and individualism” (p. 1206) They come “equipped with phone, TV, stereo, and assorted audio-visual materials and they are more passive, less willing to commit to anything resembling a school activity” and “unable to attend to anything that does not snap, crackle or pop” (Dyer, 1979, p. 1206). Despite Dyer's pessimism, his ending message is nonetheless hopeful. Dyer’s (1979) pedagogical concerns seem to be much along the same line as that of Iannacone when he claimed that the teaching methods are inadequate for the current student, Dyer (1979) stated that:

Theorists have called this generation an “aural tribal” culture…kids today don't learn information from books and print as efficiently as we do, they get their information, attitudes, their values – indeed they experience the world – through media that are most directly accessible to them: TV, radio, records and film (p.1207). Dyer's (1979) concluding thought of the piece is not a condemnation of the youth culture, but advice to educators stating straightforwardly “accept them” (Dyer, 1979, p. 1208) and challenges educators to change the way they teach and encounter these young people, but not to attempt to change an entire generation that just so happens to be at the forefront of Generation X, individuals born between 1965 and 1980.

The “New” Best Practices

Best Practices in education can most accurately be described as a set of teaching techniques, methods or strategies that have consistently proven to aid students in academic
achievement (Daniels & Bizar, 2004; Marzano, Pickering, & Pollock, 2010; Pashler et al., 2007). In spite of practitioners’ consistent inconsistency with Best Practices, the idea has become a “buzz word” that many presenters like to use to attract attention at conventions or for talks; therefore, part of the difficulty in discussing Best Practices comes from the fact that nearly every educator, every school, and every educational system lays claim to the use of Best Practice without clearly outlining in what ways their claims are true. Additionally, while many have similar ideas about what these practices may be, there are stands, as of yet, no definitive listing of them or even method in how to employ them. Meanwhile, attendees of Best Practices presentations may have heard much of what these new Best Practices entail mainly because “[today’s] Best Practice teachers are heirs to what is commonly called the student-centered or progressive paradigm of teaching” (Daniels & Bizar, 2004, p. 14). These practices have been in use with varying levels of popularity with varied names since Biblical times especially if one considers apprenticeship, as experiential learning.

The three main sources that are used to discuss the types of practices that are best for the widest range of students are Classroom Instruction that Works: Research Based Instruction by Marzano, Pickering and Pollock (2010); Organizing Instruction and Study to Improve Student Learning: a Practice Guide, which was sponsored by the U.S. Department of Education and the Institute of Educational Sciences (2007) (IES); and Daniels and Bizar‘s Teaching the Best Practices Way: Methods that Matter K-12 (2004).

Attempting to support their claims with “scientific proof,” Daniels and Bizar (2004) have used varied forms of research for the basis of their understanding of Best Practices. Marzano and the researchers at Mid-continent Research for Education and Learning (McREL) conducted meta-analyses of various studies ranging from three to nine studies for each of the nine Best
Practices, or in Marzano’s case, *High Yield Strategies*. There are a handful of studies that are repeatedly used multiple times in the work of Redfield and Rousseau’s (1981) *A meta-analysis of experimental research on teacher questioning behavior*, Ross’ (1998) *Controlling Variables: A meta-analysis of training studies* and Bloom’s (1976) *Human Characteristics and School learning*. Other studies are only used when the topic of discussion is centered on the various learning strategies.

The IES (2007) report organized its findings and discussions based on *low, moderate* and *strong* levels of evidence that their Best Practices correlated to how much the strategy aided educators and students to improve learning. According to the IES (2007) report, a recommendation of “[strong] evidence … meant that it received considerable support from randomized experimental studies, both in well controlled laboratory contexts and within the context of schools” (Pashler, et al., 2007, p. 3). To seek out these studies, the IES created a panel of experts including classroom practitioners to compile and compare the results of studies from the experts’ fields of knowledge to create a “consensus panel report [rather] than a meta-analysis” (Pashler, et al., 2007, p. v).

Daniels and Bizar (2004) used several studies, mainly Fred Newmann’s various work on Authentic learning, and “bodies of research going back sixty years or more,” (p.4) and their own classroom-based research, as the main authors are teacher-educators at National-Lewis University. To lend credibility and increasing generalizability, the authors have recruited anecdotal examples of utilization in classrooms from teachers in various grades and subjects.

Though each source of Best Practices has its own listing and each version has its own strength and focus, this review will cover the three Best Practices that all three sources agree upon, namely: metacognition, interleaving though the Zone of Proximal Development (ZPD) and
non-linguistic representations. Each of the sources provided a different way of phrasing and using each concept. This review will use the more common term, the most common vision or even a hybridized version, to create a more universal understanding.

**Metacognition**

The first concept that is covered in each version of Best Practices is *metacognition*.

Flavell (1979) stated:

> In any kind of cognitive transaction … a variety of information processing activities may go on. Metacognition refers, among other things, to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in service of some concrete goal or objective (pp.906-907).

The IES (2007) believes teachers should “[conduct] regular study sessions where students are taught how to judge whether or not they have learned key concepts in order to promote effective study habits” (Pashler, et al., 2007, p. 4). Daniels and Bizar (2004) suggested that the habit of being actively metacognitive can be developed by students doing reflective assessments (Daniels & Bizar, 2004) and not just based upon teacher created assessments (i.e. traditional testing), but also after students complete an Experiential Learning (EL) task. Students should be given time to process the encounter and ask themselves questions about what they gained from the experience or how they could have gained more from it. Daniels and Bizar’s (2004) vision of metacognition is tied in with the idea of goal setting allowing students to decide how they are assessed or evaluated and how they will prepare for this assessment.

As a whole, metacognition is usually done “unconsciously,” which reduces its efficacy (Daniels & Bizar, 2004, p. 243). For metacognitive activities to have the most positive impact on students and how they study, pay attention in class or even complete assignments and
assessments, activities such as the previously mentioned ones need be to brought to the forefront and actively examined both during and after the process and, if possible, before the next unit/assignment/assessment to see where and how students can improve (Daniels & Bizar, 2004). In classrooms, this can be done in a multitude of ways. One way is to ask students, either one-on-one or in a group conference if they are happy with a grade that they have just recently earned and then discuss how they prepared for this assessment: did students use flashcards; how often were they used; did they study with a partner or alone; time of day, length of time; did the style of study match the type of assessment (i.e. flash cards are best used for rote memorization), et cetera. Students could also use a learning log where they process similar questions – however, these should be discussed or shared with the teacher to monitor the thought process. As Flavell (1979) stated, studies “have suggested that young children are quite limited in their … metacognition, and do relatively little monitoring of their own memory, comprehension, and other cognitive enterprises” (p.906).

Once students learn to monitor themselves and their progression regarding the goals of learning content and becoming more proficient using skills or advancing to higher level skills, they may also be able to take a very active part in the next Best Practices - Interleaving through the Zone of Proximal Development.

**Interleaving through the Zone of Proximal Development (ZPD)**

The second Best Practice that appeared across all three sources is the idea of alternating or interleaving “worked example solutions with problem-solving exercises” (Pashler et al., 2007, p. 4). The goal of "interleaving" is to develop independence and proficiency; as the student becomes more skilled, they are given fewer worked examples. Additionally, students should be challenged with more difficult problems to solve. These incremental changes seem to fit the
concept of scaffolding through Vygotsky’s (1978) Zone of Proximal Development (ZPD, which “is the distance between the actual developmental level … and the level of potential development…” (Vygotsky, 1978, p. 86). Marzano (2010) claimed this as part of high-yield strategy of Practice, while Daniels and Bizar (2004) advanced the notion of the “classroom as [a] workshop” (Daniels & Bizar, 2004, p. 152). However phrased, all three agree on the core of the notion that students need to practice new skills of increasingly difficult levels.

Daniels’ (2004) Workshop used the following steps:

1. Whole group mini-lesson: lecture or direct instruction – used “to help create a shared set of experiences and develop a common language for discourse”

2. Status of the class: students announce what they are going to be working on.

3. Work Time/Conferences: students work independently and teachers either help students solve minor issues or conduct conferences to ensure that students are on track with their projects.

4. Sharing: students in whole group discuss what they have accomplished for the time period.

One application of this model would be the English or even art classroom where students develop a written piece of work that would later be placed in a portfolio. However, this method would also function well in a math course where students are given a mini-lesson in long division, work independently or in small groups on various levels of problems, and use the teacher as a resource for additional instruction if needed or merely as a guide to resources, and then share their work (Daniels & Bizar, 2004). In practice situations such as these, students spend less time hearing about subjects and more time engaging in them (Daniels & Bizar, 2004). Using Marzano’s (2010) understanding of this concept, Phase 3 of Daniels’ Workshop begins
when students “adapt and shape what they have learned” (Marzano, et al., 2010, pp. Chapter 5, Section 2, para 3). Marzano (2010) contended that students in Phase 3 should not be expected to complete all examples but rather complete a few but in far more depth than would otherwise be expected in school.

Each author had a slightly different understanding of the same concept, so to merge versions into a single use of this concept, students would receive brief instructions on a skill, then after using their metacognitive skills to decide on their level of understanding, during the “status check,” they could either ask for help in smaller group from either student or teacher-led help groups, or they could choose to work independently. As they continue, students can apply their level of knowledge and ability to either a given set of problems or application to issues that appear in class, and which have importance to the students themselves (i.e. how many times each student in class can be student of the week). Finally, they would share their conclusions or even the possibility of ideas for solutions i.e. if the results end in an unequal distribution of weeks and each student was supposed to have an equal number of times being student of the week. The final practice phase, which more than the previous two, is a more concrete instructional strategy that could be used easily as a formative assessment for both students (self check) and educators alike.

Non-linguistic Representation

The only Best Practice that all three sources completely agree on is the practice of what Marzano (2010) called “Non-Linguistic Representations”(Marzano, et al., 2010, pp. Chapter 6, Section 2, para. 1) and Daniels and Bizar (2004) called “Representing-to-Learn” (p.79). The Institute for Educational Science (IES) (2007) explains this as “use [of] graphical presentations that illustrate key processes and procedures. The integration leads to better learning than simply presenting text alone” (Pashler et al., 2007, p. 4). But admittedly, the chief way teachers “present
new knowledge to students is linguistic,”(Marzano, et al., 2010, pp. Chapter 6, Section 2, para. 2) either through lecture or literature. According to Dual Coding Theory (DCT), learning and understanding “involves the activity of two distinct subsystems, a verbal system specialized for dealing directly with language and a nonverbal (imagery) system specialized for dealing with nonlinguistic objects and events” (Paivio, 2006, p. 3). However, Dewey (2009) stated “what the child gets out of any subject presented to him simply the images which he himself forms with regard to it,”(Dewey, 2009, pp. My Pedagogic Creed, Article 4, para 5).

![Image 1. Vocabulary Worksheet](image)

More often than not, students are left to their own devices to create mental or actual imagery to connect the two aspects of thought without the benefit of an educator to verify the accuracy of the images. In many states across the country, schools require students to create a Marzano Model for each word in the parish/county/state’s “Academic Vocabulary” (Garrett, 2008; Garrett, 2010). In this model, students write the term, describe it in their own words (note this is not the same as defining the word), draw a picture either depicting the meaning or associations with the word, complete an activity using the word (i.e. write a sentence et cetera.), then rate their understanding of the term both initially, and “finally,” meaning at the beginning and conclusion of the worksheet activity. The result of this “final review” is based not on teacher requirements or testing but rather on students’ opinion of their own understanding. This
personal metacognitive review could be done when completing the model, the lessons accompanying the activity, or even the unit as a whole, and would, perhaps, have more accurate results.

During the discussions of the various practices, strategies and tools, each source stated that in various methods the “instructional strategies are tools only” (Marzano et al., 2010, pp. Chapter 1, Section 4, para 3), and “should not be expected to work equally well in all situations” (Marzano et al., 2010, pp. Chapter 1, Section 4, para 3). It is up to individual educators to apply these practices, strategies and tools where they are best suited for their students and the content materials. Moreover, Daniels and Bizar (2004) stated that his Best Practices are “rigorous… recurrent… overlapping… and conceptually asymmetrical” (p.23), meaning, in large part, that these strategies should not be used in isolation of each other but in conjunction so that lessons are powerful, homework is meaningful, and the technology employed with some of them is used correctly. Marzano (2009) agreed, stating that “the entire constellation of strategies is necessary for a complete view of effective teaching” (p. 31).

**Innovations in Technology Creates Millennial Mentality**

Two innovations in technology, the Graphical User Interface (GUI) and the Internet, allowed for the computer to morph from the esoteric technology that it once was to the constant companion that it is now. This constant companion has also aided in transforming students from the “little vases” of Dickensian lore to the consumers of technology and information that they are slowly becoming. Prior to GUI, few people used computers, not only because they were prohibitively expensive, but also because the only way to interface or communicate with the computer was via typing in a technological language (i.e. Fortran, COBOL, PASCAL, C and BASIC) that not many “spoke” at the time. Even now programming remains a specialized
ability.

Technological advances in software development have made personal computers household "must haves." The GUI uses icons that are visual representations of items or programs that people sought to use (Davis, 1996; West, 1997). When seeking out files, users can look at their computer screen and search for files represented by icons. Often, individual files will be represented on computer screens as manila folders with a caption below indicating what lies inside the folder. Though far from iconic, this image is familiar enough for many to understand that if they are looking for a file it can be found in a file folder. Much like the idea of creating a non-linguistic representation to check for knowledge, this non-linguistic language, represented by icons such as virtual file folders, a sheet of paper indicating word processed documents, a musical note indicating music, has made it possible for even the youngest users to access and use the technology that once was reserved for those who had mastered the use of technological language codes.

However, it is not just the ease of accessibility and nearly intuitive understanding of how to use computers that makes them so incredibly appealing to those who are attuned to the technology, it is also the speed at which it works and the amount of information available to users. For example, the Apple II at the most high powered end only had 48 kilobytes (2^{10}) of memory, which is the equivalent of 24 typed pages (without imagery) using current technology, which means that two machines would be necessary in order to open this literature review. In stark comparison, the Library of Congress currently has ten terabytes (2^{40}) of data in its current printed collection, most of which is available to users online for free.

Aside from the creation of the GUI, there has been no one technological innovation that has changed the world more than the commercialization of the Internet. It allows people to freely
communicate on a global level. It has made information and fact finding almost instantaneous. To do an internet search for the previous data facts, it took the search engine Google only fractions of a second to find 33.9 million websites that could answer the question “how much data is that?” and allow for the comparison. Access to and rampant use of the Internet has changed an entire generation. According to the Pew Millennial Portrait, 95% of Millennial adults (18-29) use the internet on a daily basis (Pew Research Center, 2010, p. 27).

**Millennial Mentality**

There are two opposing views when it comes to understanding the Millennial Mentality. Those in the previous generations (Silent Generation, Baby Boomers and Generation X) see themselves as being and how they were raised the *correct way*, which implies that the Millennial generation has gone awry since “the natural or native impulses of the young do not agree with the life-customs of the group into which they are born” (Dewey, 2009, pp. Democracy & Education, Chapter 3, Section 4, para 6). However, those of the Millennial generation likely have an opposing view of themselves and how they function in the current society.

According to the National Educational Longitudinal Survey of **1988/1992** and the Educational Longitudinal Study of **2002/2004**, the differences between the Millennials and even the generation just before them, Generation X, are demonstrated in a multitude of ways. In 1988 and 1992, 23.5% of high school seniors who were considered part of Generation X used personal computers at least once a week, while only 2.1% played video games for three or more hours per day on weekdays. This same question was asked of high school seniors between 2002 and 2004, who are part of the Millennial generation. Their answers showed not only advancements in and access to technology, but how both have influenced them. In this cohort, 85.8% of students surveyed used personal computers at least once a week, and of those 6.3% played videogames
for three or more hours per day on weekdays. The percentage of high school seniors who watched television for three or more hours per day in the first survey was 8.6% and in the second survey, the percentage jumped to 30.6%.

The Educational Longitudinal Survey also shows a drastic climb in TV viewing, videogame playing and computer usage, although nearly every other after school activity climbed just as significantly: creative lessons went up 7.4%, while the number of student athletes remained the same; the number of athletes participating in private sports lessons almost doubled; additionally, community service, and hobbies also went up more that 6%. According to the Educational Longitudinal Survey, the only activities that students were doing less of were hanging out with friends, talking on the phone and driving. And all of these activities are in addition to homework. In the decade between the two surveys the after school lives of students have changed. Millennial students are spending less time participating in unstructured activities (hanging out, driving, and talking on the phone) and are spending more time in activities where they are learning, training or engaging in volunteerism. This is seemingly enigmatic when juxtaposed to their questionable academic reputation.

Millenials are also burdened with the popular (mis)conception that they are not as academically capable as the generations before them (Cote & Allahar, 2007; Montell, 2010; Prensky, 2010; Sweeney, 2006). This perception could stem from allegations by numerous educators that these students received social promotions in their respective school systems without having developed necessary academic skills (Cote & Allahar, 2007). In addition to the possibility of social promotions, this cohort “disturbingly, [is] not reading newspapers as much as previous generations of the same age” (Sweeney, 2006, p. 6). Hence, Millenials have been seemingly disengaged from routine avenues of knowledge acquisition, whether by accident or
design. While this is likely true, it is also true for other generations not just Millennials. These students are still reading, however, many prefer the electronic version of books or prefer to get their news from alternative methods of media such as social media, which offers a certain news-as-it-happens format. The downfall of this newer technology is that what "our" grandparents knew as solid news reporting from recognizable news personalities such as Walter Cronkite is today a thing of the past. Without the news analysts/reporters, Millennials will now have to analyze the "sound bites" of news on social media outlets for themselves, often without the maturity level and/or academic skills to do so.

Sweeney (2006) also stated:

- Millennials expect a much greater array of product and service selectivity.
- Millennials prefer to keep their time and commitments flexible longer in order to take advantage of better options; they also expect other people and institutions to give them more flexibility.
- Once Millennials do make their choices in products and services, they expect them to have as much personalization and customization features as possible to meet their changing needs, interests and tastes.
- Millennials, by their own admission, have no tolerance for delays. They expect their services instantly when they are ready. They require almost constant feedback to know how they are progressing (pp.2-6).

Combine the statistics with the other characteristics that set the Millennial generation apart from any and every other generation before them, and a picture of a generation of sheltered, team oriented, confident, achievement oriented and pressured, multi-taskers, who are tech savvy and have an attitude of entitlement and convenience, emerges (Sweeney 2006, Crone & McKay,
2007; McGlynn, 2008; McAlister, 2009; & Lippincott, 2010). However, this sense of convenience and need for instant feedback is due in part to the Internet and having access to all of the information on it almost instantly and more often than not without cost. The implications of this are obvious. In today's high-tech, internet-dependent world, humans simply do not have time to digest, discuss, or dwell on ideas or events presented as news. Hence, they can be reactive and often insecure about their thoughts on a multitude of subjects. In some instances, instant feedback not only has its limitations, it can be frustrating and detrimental to situations that require thought, deliberation, and negotiation. To put this acquisition of information in perspective, adults in the 17th & 18th century would have come into contact with the same amount of printed material in a life time that one finds today in a week's worth of the New York Times. It is little wonder that given the speed of the Internet Millennials react rather than reflect.

What is most striking about this group is that they are hungry for knowledge and tireless in their pursuits for it. Many believe that Millennials are lazy and that they no longer have the attention span required for academic success (Jones, 2009). This simply is not true as “many of these same students who don’t (sic) concentrate in school will sit for hours, totally focused on movies or video games” (Prensky, 2010, p. 2). Prensky continued by saying “it’s not our students’ attention capabilities that have changed but rather their tolerance and needs” (Prensky, 2010, p. 2). If what Sweeny (2006) said is correct and this group is “practical, [and] results oriented” (p.4) and they have “no tolerance for services that do not continuously and reliably work” (p. 4), then it is no wonder that it would appear that many of them have given up on the educational system where they sit and memorize rather than learn through experience, which is their preferred method (Cote & Allahar, 2007; Crone & McKay, 2007; Dewey, 2009; McAlister, 2009; McGlynn, 2008; Montell, 2010; Prensky, 2001, 2010; Sweeney, 2006).
According to West (1997), “we have had our schools teaching basically the skills of the medieval clerk – reading, writing, counting and memorizing texts” (p. 254); this would not otherwise be a problem as they are the basic building blocks of scholarship and functionality in society. However, as Davidson (2009) stated, “too many conventional modes of learning tend to be passive, lecture, hierarchical and largely unidirectional form instructor to student” (p. 20). What we need to have students learning in schools is “using new tools, finding information, making meaning and creating” (Prensky, 2010, p. 10). This is what games allow players to do, which is why students willingly spend so much of their time and effort concentrating on them.

**The Gaming Population**

The stereotype of a gamer is a teenaged male. He is lonely, isolated and socially awkward because he does not interact with others let alone play with them. This player, according to stereotypical descriptions, is also developing aggressive tendencies due to the violent nature of the games (Anderson & Dill, 2000). This stereotype could not be farther from an accurate portrayal of the average game or the gaming community. In their 2009 Annual Review, the Entertainment Software Association (ESA) discussed the demographics of current American players.

- Of the total gaming population, 49% of players are aged 18-49, 26% are over the age of 50 and 25% are under 18 years of age (ESA, 2010).
- Of these players, 60% are male, and 40% female (ESA, 2010).
- Women age 18 or older represent a significantly greater portion of the game playing population (33%) than boys age 17 or younger (20%) (ESA, 2010).
- 94% of girls under the age of 18 play videogames (McGonigal & Colbert, 2011).

To further shatter the image of gaming as an aggressive pastime, of the top 20 selling
videogames of 2009, 13 out of 20 are rated “E for Everyone” according to their Entertainment Software Rating Board ratings. (ESRB, 2005), and are games like “Wii Sports,” “Wii Fit,” “Mario Kart,” and “Pokemon” (ESA, 2010), all of which are non-violent, active, and family oriented. Forty Two percent of online games that are played are puzzle style or versions of board games like “Scrabble” (ESA, 2010). One of these games in particular, a perpetually popular stalwart called “Scrabble,” is now recast as “Words with Friends” and allows people to play asynchronously over their wireless devices and computers.

According to ESA, “67% of homes in America own either a console, and/or computer used to run entertainment software” (ESA, 2010, p. 2). The most recent census (2010) data claim that 129,969,653 households, or approximately 87 million homes, have at least one system on which family members and friends play videogames. Moreover, many homes have multiple home entertainment systems; for instance, it is not uncommon to have a Nintendo Wii and a computer. These numbers fail to account for the number of people who own cell phones. In 2005 almost 66% of the total population in the US (197 million) owned cellular phones, most of which are Internet capable and come with some version of a game loaded onto it, which means they are able to play games even if they do not own entertainment systems or computers (Katz, 2006). The ESA (2010) states that “42% of heads of household report they play games on wireless devices” (p. 9). Official industry reports, despite their use of statistical data and while offering sound evidence on the nature of gamers and gaming through surveys and statistical data and analyses, may not be enough in the short run to dispel long-standing stereotypes of gamers as introverted and isolated teenaged males and gaming as a dangerous diversion. Nevertheless, educators have an opportunity to harness the power and allure of technology in general and gaming in particular as important instructional strategies in the classroom
“Best Practices” and Videogames

Games in the Classroom

While the virtues and potential power of gaming in classrooms have been discussed for decades (Blumberg, 2001; Casey, 1992; Lieberman, 1998; Silvern, 1986; Squire, DeVane, & Durga, 2008), the largest obstacle to increasing the research base is that often researchers are not able to get into classrooms beyond single experimental units, so gaining undeniable proof that gaming as education is beneficial is difficult (Steinkuehler, 2011b). Many studies of games-as-education are done outside of class with varying levels of success; for instance, Blumberg's (2001) study took gifted students out of class and allowed them to play a commercial game for ten minutes focusing mainly on their attention spans. Steinkuehler's Pop Cosmopolitan study with the WoW Boys has lasted for several years and pulls students from rural areas into a city, often several bus rides away, for play sessions on Saturdays. These dissimilar studies, while perhaps interesting to educators intrigued by gaming techniques for the classroom, are not sufficient in terms of gaming-as-learning-efficacy. The broad field of education would need extended study of the phenomenon of gaming and how its mechanics can revolutionize or greatly enhance learning before sweeping changes to classroom instructional practice are altered to accommodate this new strategy.

One recent study has changed the paradigm of what it means to bring videogames into the classroom. Sheldon's (2010) unique amalgamation of game and class makes his work compelling. Sheldon's (2010) idea placed students in a game that is class and avoids the seemingly necessary conflict between teaching the curriculum and playing. Sheldon's (2010) gamified class allows learning to be the mechanic of play and play to be the basis of experiential learning. It also avoids the expense of costly equipment and software since much of his
methodology calls for a shift in perspective and not a shift in cash flow, which allows for implementation without causing so many of the controversies that videogames bring into play.

**Play is Fun**

*Play* has various definitions beyond the varied notions of acting out a scene on a stage, entertaining a new idea or alleviating boredom with a game; some of the more salient features according to Barab, Ingram-Goble and Warren (2009, p. 91) stated (1) intrinsically motivated and self-initiated, (2) non-literal and pleasurable, (3) process-oriented, (4) exploratory and active, and (5) governed by rules. This definition works only if the player chooses to start the game, and perhaps more importantly, enjoys playing it, which is an assumption that cannot always be made but should be for the remainder of the discussion in order to garner the appropriate understanding. Definitions of *play* like this, display an underlying belief that play refers to activities that are somehow “outside of life” and “not serious.” Instead Vygotsky (1978), argued that “the influence of play on a child's development is enormous…it is a novel form of behavior liberating the child from constraints” (p.96). He continued, “it is incorrect to conceive of play as activity without purpose” (Vygotsky, 1978, p. 103). This purpose is varied by both player intent and experience, but even play for fun (in the understanding of frivolity) can have meaning. In the design of any game, which shall be assumed to be fun for the player, there needs to be a sense of purposefulness or as Salen and Zimmerman (2003) called it *Meaningful Play*, which in a “game emerges from the relationship between player action and system outcome,” (p.34) and to continue, “the meaning of an action in a game resides in the relationship between action and outcome” (Salen & Zimmerman, 2003, p. 34). Meaning that “there should be intent and expectation when a player performs an action and the action should have a result that has some relevance or significance” (Farell, 2009). For Salen, Zimmerman (2003), Farell (2009) and many game designers, this meaning is situated only in the game; however, in a more pedagogical (if metaphorical) sense, if the player action could be seen as student participation in
an assignment and the system being an assignment, class, or even education as a whole, play and even doing homework has a purpose and creates meaning for the player/student. This is especially true if as Koster (2004) stated “we have fun mostly to improve our life skills” (p. 60).

It is this player/student seeking meaning and improvement in skills that lies at the heart of the study, especially when looking at matters of classroom functionality. As was shown previously, people as a whole are interested in playing games and do so with a particular sense of joy that they do not experience in other aspects of their life (McGonigal, 2010) owing to the "fun" nature of games and the concept that “fun is a process and routine” (R. Koster, 2004, p. 38) in order for the brain to achieve its goal. According to Dewey (2009), a students' interest in a particular subject “is always the sign of some power below; the important thing is to discover this power,” (Dewey, 2009, pp. My Pedagogic Creed, Article 4, para 12) both of the student and in the methodology. “The question of method is ultimately reducible to the question of the order of development of the child's powers and interests” (Dewey, 2009, pp. My Pedagogic Creed, Article 4, para 1). If the student is interested in the methodology, he or she will learn the subject matter, however, the inverse of this is not true. In fact, poor teaching methods can damage the students' interest in a subject. Put succinctly, “the point is that playing with ideas is extremely exhilarating”(Csikszentmihalyi, 1990, p. 127).

Play, other than providing an interesting method for communicating course content, allows players/students to do something incredibly important. Games teach players by allowing them to fail in a way that “minimizes risk” and helps players “to know what choices to make” (R. Koster, 2004, p. 118). However, in the end, Koster (2004) claimed that “the destiny of games is to become boring, not be fun,” because “players intentionally suck the fun out of games in hopes they can learn something new (in other words, find something fun) once they have
completed the task” (Koster, 2004, p. 118). This generally means that players move on to another game or students to another subject.

“Edutainment”

The Downside of Edutainment

As a rule, “Edutainment” was or rather is a failure on two counts. First, school systems normally purchase commercial games, but the expense of commercially produced materials for public schools is likely prohibitive for private individuals. Therefore, it is rare that individual households would own a copy for the purpose of reinforcing at home what is learned at school (Lee & Hoadley, 2007). The second is pedagogically these games are little more than high tech worksheets, which can be beneficial if used correctly; however, the games are often used as busy work and not for growth (Lee & Hoadley, 2007). Edutainment platforms were the first wave of videogames, mainly used on personal computers, which have been most readily available in classrooms. Games have been designed to be used in a kindergarten through 12th grade settings. Often these games attempted to entice students to practice core curricular skills (reading, math, science and social studies) by using cartoon characters and a sense of competition. As such, they heighten the learning process through the addition of leader boards and urgency with a timer or ticking clock.

As Edutainment games are specifically designed to practice academic skills, they give very little if any thought to the game mechanic itself. Games like “Reader Rabbit,” “Math Blaster” and several others that are still available in stores today are little more than variations on the themes of worksheets or flash cards with moving graphics. Edutainment-type games are designed for drill-and-practice lessons and rote memorization. They do not allow students to think critically about subjects, as the answers have to be provided by or programmed into the
computer. Even “Reader Rabbit,” which encourages some critical thought about the reading passages, still limits the player/student with that same flaw – the programmers had to foresee what the player's answer might be or only allows for one correct answer. These games also rarely introduce new materials to students if they are on grade level, meaning that student players while receiving practice, which many students need, are not being challenged with new vocabulary words, new math skills, or even new facts in games that promote the sciences and social studies. It would appear then that these games are meant for remediation purposes only, which leaves students yearning for a challenge. This "yearning" may indicate boredom as well as pointing the way to developers of educational materials that within the field of instructional materials, an opportunity to create exciting, stimulating, and engaging materials exists.

However, as they currently exist, these games are largely unpopular with students and unsuccessful both financially (as compared to more commercial videogames) and in their tutorial goals because they are really nothing more than worksheets or multiple choice quizzes, activities that students want to avoid.

Image 2: Screenshot from “Reader Rabbit Math”

**The Limited Successes of Edutainment**

For as much as most edutainment titles were or are dull there have been a few successes. “Where in the World is Carmen San Diego?” and “*The Oregon Trail*” are two of the most
popular. “The Oregon Trail” was designed to teach students about the trials and tribulations of the lives of those trying to cross the country. How the game is played: Each time a player began a game they were given an allotment of money and given suggestions as to what supplies they would need on their cross-country trek. Whether or not the player succeeded depended upon many factors – what time of year they left, how often they stopped for rest and supplies, if they became ill or encountered other difficulties. While this method of exposing students to the lives of those on the trail did not give players a full simulation, it was compelling enough to help them understand the nature of what future Oregonians went through and the importance of appropriate decision making. Carmen San Diego’s story was slightly different. Carmen was a thief – for each adventure she, or her henchmen would steal something different: the Mona Lisa, the Crown Jewels of England, white African Gorillas, et cetera. Either Carmen, her “henchman,” local contacts or local police would then give hints as to where she or he was going next in the form of cryptic clues so that players often had to use atlases or almanacs to look up the facts that would allow them to go to the next location.

However, while “Carmen” was literally not much more than a world geography and trivia quiz game with questions that could possibly be found on an almanac scavenger hunt, it nonetheless allowed students to apply the use of knowledge to an applied and ludic end. For example, in the first image below, the clue of “the suspect has many contacts in a former British colony” (Napostriouf, 2009). The player then has to decide from the options given, which was the correct colony. Usually there are other clues given previously throughout the level. In this particular case the clue came from another associate of the suspect who suggested that the suspect’s “eyes sparkled when he invited [him] to go to the gemstone capital of the world” (Napostriouf, 2009). If the player chose correctly (Colombo [Sri Lanka] in this case), he
or she would see the suspect run across the screen and have an encounter with the “local authorities” who would give the player another clue as to where the *henchman* could have gone.

Image 3: Screenshot from “Where in the World is Carmen San Diego?”

Image 4: Screenshot from “Where in the World is Carmen San Diego?”

Neither “Oregon Trail” nor “Carmen San Diego” utilized what would be considered outstanding graphics; the first versions of both were bordered on monochromatic and came across to players as vague shapes made of large pixels. Neither were violent. Both were highly educational and yet quotes like “BEST GAME OF MY YOUNG LIFE! (sic)” and “Loved this” can be found on the *Youtube* page where screen-captured run-throughs of this game have been posted as recently as January of 2011 (Napostriouf, 2009). In the end, the best examples of Edutainment contain similar mechanics and design as the best aspects of all games in general. Those games that fail to be more than just worksheets do so because there is little else to them.
Yet at its core, the best aspects of Edutainment are the best aspects of all games in general. They offer players the ability to make meaningful decisions and challenge students with new ideas and content and provide opportunities for innovative application of newly gained knowledge as a vehicle for the narrative.

**Commercial Games**

Commercial games are designed to appeal to the broadest audience possible. To the creators of videogames the purpose is to entertain (Schell, 2010; Soell, 2011). Entertainment could come in the form of scaring players (horror), testing or building the player’s reflexes (action/platformers/shooters), simulating an experience, telling a story, et cetera. The educational functions in games come secondary; in fact, the tutorial levels and aspects of games, where players learn how to play the game itself, are designed after the rest of the game is finished (Schell, 2010; Soell, 2011). With commercial games, learning, in an educational sense, is definitely informal and almost to the point of accidental and unintentional.

**“Best Practices” in Commercial Videogames**

**Goals and goal setting**

Vygotsky (1978) stated that “play gives a child a new form of desire” and “in play the object which is to win is recognized in advance” (p.103). Meaning that playing not only creates new goals but the need to complete or achieve them. This is true not only of children at play but of all players, because in games “there are lots and lots of different characters willing to trust you with a world-saving mission right away. But not just any mission, it’s a mission that is perfectly matched with your current level in the game” (McGonigal, 2010). While part of the appeal could be the importance of the mission and how saving the world might make any player feel, it is also that this particular goal is “on the verge of what [a player] is capable of. So [the player has to try]
hard” (McGonigal, 2010). A goal or a challenge that is almost out of reach but not quite, is also mirrored in Csikszentmihalyi’s (1990) notion of flow and the autotelic experience in which people will do things simply for the sake of doing them because the person gets pleasure or contentment from achieving expectations that have formed from the appropriate balance of frustration and success.

Though all three sources of discussion on Best Practices stated that goals are highly important to the success of students, Marzano (2001) claimed “goal setting is the process of establishing direction for learning. It is a skill that successful people have mastered” (pp. Chapter 8, Section 2, para 1).

Marzano’s (2010) rules for constructing goals are as follows:

1. Instructional goals narrow what students focus on
2. Instructional goals should not be too specific [based on]
   a. Performance
   b. Conditions
   c. Criterion
3. Students should be encouraged to personalize the teacher’s goals.

Daniels and Bizar (2004) states multiple times but in various ways, “we ask students to set academic goals” (p. 25). However, in a closer reading, one will see that these, especially in Marzano’s (2010) work are goals that the teacher creates for the student. Students should be “encouraged to personalize” (2010, pp. Chapter 5, Section 2, para 5) someone else’s goals for themselves, but not create any for themselves. What is also very interesting is that none of the sources discusses teaching students how to create goals for themselves. Students are apparently just given the requirement and expected to be able to do it well.
In games, players are not able to determine all of their own goals; often, they are charged with instructions to execute the following: defeat/terminate the bad guy, save the princess, beat their competitors, beat the clock, or other actions, depending on the game style. In many MMOs, players are able to ignore the instructions given by the quest-giving, non-player characters (NPCs) and do whatever they feel like in the world of the game including simply standing around and talking with other players. Though much work has been done on goal setting for games, Falstein and Barwood (2006) have more lucidly expressed a sound design of goals in a game setting (ludic or pedagogical):

- Provide Clear Short-Term Goals
- Provide an Enticing Long Term Goal
- Players Should See Their Goal Before They Achieve It

Goals in games are arranged differently than subject matter goals in classrooms. In classrooms, goals are really more like commands – things that educators want for students and that they are expected to deliver on. In school, there is not an autotelic experience until students get much older and are able to design their own program of study or thesis/dissertation topic. In games, goals are less about getting from point A to point B; yet, they play an absolute crucial role in creating the pleasure of a game (Salen & Zimmerman, 2003). This is accomplished by the use of long term, short term, and immediate goals. They overlap. They intertwine. They become concentric. “They never give you a challenge that you can’t achieve…there is always something specific and important to be done.” (McGonigal, 2010).

“Guilty Party,” a multiplayer mystery game, is a prime example of how goals of varying lengths can intertwine to create a flow system that pushes players to the end.

The ultimate goals of the game delivered in the opening narrative are to:
• Catch the criminal mastermind, Mr. Valentine.

• Get back Mrs. Dickens who has been kidnapped.

• Find out who will inherit the family's detective agency.

_Itermediate goals_ related through the tutorial levels and aspects of the introductory narrative

• Complete the various levels by finding the golden item that has been used as bait for Mr. Valentine’s minions.

• Correctly identify and accuse each level’s minions.

• Draw opponents off the track of the actual villain.

_Immediate goals_, again delivered through the tutorial and interstitial narratives:

• Successfully complete mini-games/interrogate suspects and witnesses.

• Collect clues.

• Break through Valentine’s various obstacles.

• Use tokens and bonus cards to lengthen your turn and gain as much information as possible (without letting your opponents get it first – only if playing competitively).

To complete any one of the _intermediate goals_ players must complete all _immediate goals_. To get to the _ultimate goals_ the player needs to complete the first two levels of goals – perhaps most crucially each successful completion of _immediate goals_ can be directly attributed to accomplishing the _ultimate goals_. “All of this happens because the human mind is goal driven” (Koster, 2004, p. 118).

The overwhelming difference between game design and instructional design is not the impact that learning or playing could have upon a student/players’ life, but the length of time students play “the game” of school without feedback or feeling that much progress has been made toward their ultimate goals. In Pre-kindergarten, children start staring down the length of
an academic tunnel that they will not emerge from until some 21 years later, assuming that they attend an institution of higher learning. There are graduations and completions in between that some would call achieving an ultimate goal, but as Csikszentmihalyi (1990) said, “the natural connection between growth and enjoyment tends to disappear with time. Perhaps because "learning" becomes an external imposition when schooling starts, the excitement of mastering new skills gradually wears out” (Csikszentmihalyi, 1990, p. 47).

Feedback, Recognition and Achievement

The notions of feedback, recognition and achievement are discussed frequently in the literature of videogame design and in that of education; as one education text book author stated, “students often learn more from assessments and feedback than they do from any other part of instruction” (Kauchak, 2009, p. 415). The exploration of feedback and recognition are mentioned in all of the Best Practices texts, though Daniels and Bizar (2004) and Marzano (2010) place more emphasis on it than the IES (2007) work does. In the IES (2007) text, often all that is said about feedback is that it “is beneficial” (Pashler et al., 2007, p. 30), which could lead some to believe that this is the biggest difference between game and classroom and where game designers have gotten it right, and where educators might be missing its power.

In addition, Marzano (2010) stated that “much of the research on teacher praise has contributed to the perception that recognition decreases intrinsic motivation. This is probably because of the ways in which teachers give praise. Too often in classrooms “praise [is] given for accomplishing easy tasks,” (Marzano et al., 2010, pp. Chapter 4, Section 3, para 4), and “can undermine achievement”(Marzano et al., 2010, pp. Chapter 4, Section 3, para 5). One example discussed in Marzano’s work is that students are often praised for “mere participation” (Marzano et al., 2010, pp. Chapter 4, Figure 4.5). Ineffective praise occurs when students are given credit
for little effort without being given an evaluation “about their competence or the value of their accomplishments” (Marzano, et al., 2010, pp. Chapter 4, Figure 4.5), which is what makes up effective praise or even feedback in general. The same could be said about negative feedback. If a student or player does not know the finer details of their errors both on assignments and in behavior, then according to Dewey “instead of operating on their own account they are reduced to mere servants of attaining pleasure and avoiding pain” (Dewey, 2009, pp. Democracy & Education, Chapter 7, Section 1, para 1) without the benefit of learning or improving.

In-game feedback comes in many different versions, from visual and auditory cueing to disembodied voices saying “Good Job” or “Game Over.” In well-designed videogames, feedback is structured as a reward “rather than to control the player’s behavior” (Ryan, 2006, p. 349). This use of feedback also “enhance[s] perceived competence, and, in turn, intrinsic motivation” (Ryan, 2006, p. 249). Daniels and Bizar (2004) stated that “feedback needs to be immediate and constant, or students can get off track, not meet expectations and lose motivation.” Games can literally give positive and negative feedback as soon as an event occurs, but according to Prensky’s (2010) assessment of timing “in [a teacher’s] case, immediately means as soon as the next class” (p. 57), or perhaps as soon as next week.

While the timing of feedback is an important factor, most classroom feedback is like an autopsy, often nothing can be done about the assignment that has been completed except to do something differently next time. This is because unlike games where players have the opportunity for iterative play, there is no iteration in the classroom. Prensky (2010) defined iteration as “putting something out there, seeing how it works and immediately changing those elements that don’t (sic) work.” (p. 57) Players can often replay failed levels for as many lives as they have stockpiled, and if they run out of lives, they can simply start the game over or go to
a previous version of the game and play up to that level again. This is not the case in classrooms or in education overall, especially in this era of high stakes testing where often failing a single exam (graduation for example) can force a student to have to repeat an entire year of education without ever having the ability to catch up with their peers again until after they leave the public school system.

The other aspect of feedback that is often over looked in classrooms but has recently become one of the most popular aspects of gaming is that players want to see “outward and visible signs of accomplishment” (Falstein & Barwood, 2006) because “gamers are so bottom-line that if an activity doesn’t give a quantifiable reward, they’ll consider it irrelevant” (Koster, 2005, p. 121) which leads players to jettison the activity. Games often create a system of reward that functions according to Gee’s (2003) “Achievement Principle” (p. 208), which stated that “for learners of all levels of skill there are intrinsic rewards from the beginning, customized to each learners level, effort and growing mastery and signaling the learner’s ongoing Achievements” (p. 208). While for many years the literature surrounding student awards systems stated that “much of the research on teacher praise has contributed to the perception that recognition decreases intrinsic motivation” (Marzano et al., 2010, pp. Chapter 4, Section 3, para 4), this does not apply entirely to the notion of rewarding students for their achievements or is the most popular trend in gaming reward systems giving “Achievements.” Marzano (2010) stated that “rewards do not necessarily have a negative effect on intrinsic motivation” (Marzano, et al., 2010, pp. Chapter 4, Section 3, para 7). However, this is only in certain situations; for instance, a “reward is most effective when it is contingent on the attainment of some standard of performance” or when rewards like placing student names on leader boards are “abstract symbol[s] [of] recognition” (Marzano, et al., 2010, pp. Chapter 4, Section 3, para 7). Rewards
like candy, money or not having to do homework, are classified as a “tangible reward” (Marzano, et al., 2010, pp. Chapter 4, Section 3, para 12) and often can be less effective. Daniels and Bizar (2004) “concrete feedback from the teacher is very important to the process of students learning from and improving performance” (p. 156). Game designers appear to be more aware of this than many teachers are and it shows in their game products.

**Connections: Abstract To Concrete To Life**

The Institute of Education Sciences (IES) (2007) and Daniels and Bizar (2004) concurred that it is essential for teachers to “connect and integrate abstract and concrete representation of concepts” (Pashler, et al., 2007, p. 15) and that the best place to connect these abstract and concrete representations is to the life of the learner and their experiences (Daniels & Bizar, 2004). Dewey (2009), an advocate for what would now be called experiential learning, stated that “information severed from thoughtful action is dead, a mind-crushing load” (Dewey, 2009, pp. Democracy & Education, Chapter 12, Section 11, para 11). He continued by asserting, “when an activity is continued into the undergoing of consequences when the change made by action is reflected back into a change made in us, the mere flux is loaded with significance. We learn something” (Dewey, 2009, pp. Democracy & Education, Chapter 11, Section 11, para 11).

Dewey (2009) offered the following thoughts regarding experience and education:

- Experience is primarily an active-passive affair; it is not primarily cognitive.
- But the measure of the value of an experience lies in the perception of relationships or it continues to which it leads up.

However, because often what adults do in life for a profession is so far removed from what it appears they have learned in the classroom, educators must use some sort of simulation to show how the classroom skills are used in a professional capacity. Koster (2004) stated that
“games are capable of modeling situations of greater richness and complexity” (p. 64) than a standard teaching model like lecture or presentation and would enable students to experience an authentic professional experience or ludic simulation (game) of one. He continued by stating that “making you feel good about yourself in a pretend arena isn’t what games are for. Games are for offering challenges so that you can then turn around and apply those techniques to real problems” (Koster, 2004, p. 134). One of the most valuable aspects of using a game as a mode of problem solving and learning is that it lowers the emotional stakes of failing (Barab, Ingram-Gobel, & Warren, 2009; Gee, 2003; Jenkins, 2009; R. Koster, 2004; McGonigal, 2010; Prensky, 2010; Schell, 2010; Soell, 2011; Squire et al., 2008; Steinkuehler, 2007) so that “even if [learners] fail practically in getting the needed control we have the satisfaction of experiencing a meaning instead of merely reacting” (Dewey, 2009, pp. Chapter 25, Section 2, para 3).

Marzano (2010), when discussing his Best Practices of educational practice or homework, states that “mastering a skill requires a fair amount of focused practice, while practicing, students should adapt and shape what they have learned” (Marzano et al., 2010, pp. Chapter 5, Section 2, para 3). The best place to do this in a way where they are able to practice, perhaps fail, and try again, but still in situations where they can witness if not experience the repercussions, which Dewey (2009) proclaimed was necessary for learning. Restated from Dewey's (2009) work, Daniels and Bizar (2004) advanced the idea that "in order to bring learning to life, it is important to get beyond the four walls of the school, using the world as a learning laboratory as well as bringing chunks of the world inside.” (p.195). This might be more easily accomplished through a game, which can inexpensively and realistically simulate “real life experiences [that] are inherently multidisciplinary and often messy. [They contain] problems [that] need to be identified, complexity needs to be faced and solutions must be found” (Daniels
& Bizar, 2004, p. 193), both in and outside of their digital play spaces.

**The Role Playing Game**

To gain a true understanding of the teaching methodology employed by Lee Sheldon (2010), a researcher whose work provides much of the foundation for this study, one must understand the basics of role playing games (RPG). There are several types of RPGs: the live action role playing “game” (LARP) like “Vampire the Masquerade;” the paper and pencil or table top (TTRPG) the most popular and controversial of which is “Dungeons and Dragons (D&D);” (D&D) and the Massively Multiplayer Online Role Playing Game like “World of Warcraft” (WoW). At the heart of all of these versions is the basic assumption that a real player (gamer) will assume an alternate persona in the form of a game character (avatar) who resides in a fantasy world. Like a real-life actor, the gamer's character acts out roles with others, such as mage, warrior, healer, or the like. The gamer assigns qualities to his or her character and makes decisions for said character based upon either expected or unexpected situations, many of which can be perilous.

Role-playing games require the same level of teacher direction and teacher facilitation as do traditional role-playing exercises in the classroom, albeit the purpose of both forms is quite different. For example, in traditional classrooms, role playing at the primary level is often used to demonstrate how another individual might "feel" in a particular situation, or more importantly, how a young child should react if approached by a stranger. Role playing, in these situations, attempt to put students either in touch with the "feelings" of others (bullying situations) or to teach young children how to evade the advances of a stranger. Students in these situations are learning behavioral strategies. In secondary schools role playing is often used to explore themes within content subject matter. For example, Riley and Totten (2002) examined role playing in a
social studies classroom where the Holocaust was the topic under study. The authors concluded that role playing in social studies classrooms required a great deal of teacher guidance as students developed attitudes and perspectives related to the topics they study in classes. In other words, role playing, particularly in social studies or language arts classrooms, can shape positive attitudes on controversial topics as well as negative attitudes. However, in RPGs, individuals focus on problem solving. They formulated a goal or goals and then developed a strategy that allowed them to reach that goal, all the while making instant decisions as occasions arise. In other words, an PRG player’s primary focus is skill mastery and goal setting as opposed to situational practice or attitude formation.

The “goal” of RPGs, regardless of the version, is two-fold: to level-up (increase) the strength of various character abilities so that said character may survive battles against characters belonging to other gamers, or to meet any number of different victory conditions. Though victory conditions (how players know they have won) can be different for each encounter (event/battle in a game). Sometimes victory is met with the defeat of enemies, other times, it may be met when all enemies encountered are vanquished, or further, victory may be achieved when one's cyber character becomes ruler of an imaginary world. Hence, victory conditions, such as those in MMORPGs, are as endless as human imagination.

**Ludus, Paidia, Agon, Alea, Mimicry, and Ilinx**

The classification of games into genres can be difficult as each new game tries to capture aspects from previous games, or in other words, build upon elements of older game systems. The franchise of “Zelda” has been popular since the 1987 release of the original game, “The Legend of Zelda,” and has since spawned 18 different games across eight consoles (both large scale and handheld). When “The Legend of Zelda” was first published, it was considered an action-
adventure game as it had aspects of both styles of games. Action games require quick player reflexes, mainly hand eye coordination that allows players to swing a sword, shoot arrows or avoid enemy projectiles. Adventure games involve solving puzzles to escape “life threatening” situations or to unlock aspects of game play or narrative, which allows the player to use new moves or access new levels of the game. As the games and technology progressed, “Zelda” ceased to be pure action-adventure. When the franchise went 3D in “Ocarina of Time,” instead of a top down camera, “Ocarina” used a 3D isometric camera, so that the players could change the views of avatars and the world in which they were playing. “Ocarina” also employed crosshair aiming that was borrowed from First Person Shooter (FPS, games in which the main function is to shoot enemies with varying levels of accuracy and different weapons). Additionally, in “Ocarina,” the avatar had jumping challenges that were included owing to the success of 2D platformer games.

Image 5: Screenshot from “The Legend of Zelda”
Over the past 24 years and with consumer demand for new and improved electronics and software, along with a large youthful consumer base for electronic devices and software, it is little wonder that the industry's research and development teams have introduced games that require increasing levels of difficulty. Using “Zelda” as an example of just one game that morphed from action-adventure to FPS/platformer/action-adventure, it becomes increasingly more difficult to classify games in a single genre based on the mechanics of play, as it seems that there are no longer pure versions of game styles.

Roger Caillios (1961/2006), a midcentury French intellectual, took a different route and instead of genre decided to take a decidedly less black and white view of games. For Caillios’ (1961/2006) classification system, he devised a spectrum from paidia to ludus and four categories (agon, alea, mimicry, and ilinix) that aspects of games, regardless of genre can be placed in. The spectrum ranges from paidia to ludus or “from turbulence to rules” (Caillios, 1961/2006). Caillios explains paidia as the “spontaneous manifestation of the play instinct,” like
a child playing with a rattle (Cailliois, 1961/2006). Ludus is described as both the desire to find amusement in obstacles and in the increasing difficulty of these obstacles (Cailliois, 1961/2006). Caillios suggested that even something like a collective hobby is a form of ludus as the rules describe what one wishes to collect (stamps) and the increasing difficulty in finding items that are rare. Where paidia is play without rules and without structure, ludus not only has rules but rules that increase the challenge of overcoming the obstacles.

The categories are easier to explain: agon, competitive with artificially created equality for all parties; alea, chance; mimicry, simulation; and ilinx, vertigo or physical disorientation. Within each of these categories the spectrum of ludus can increase or decrease as paidia decreases and increases. Games, in general, rarely ever fall into just one of these categories with varying levels of ludus or paidia. Different pieces of the mechanics of a game could draw from any one of the categories; this is especially true for videogames and it is also part of what makes them so incredibly appealing. In non-gaming terminology, games do not always fit into neat categories. For example, “Mario Kart,” a racing game with multiple franchises on the Nintendo systems, could be considered to contain high levels of both ludus and paidia. The game has players race around a predetermined track, which is an example of ludus. However, players are also able to go off parts of the track, to cheat, and are able to drive on any part of the track in order to interfere with fellow players; this contributes to its level of paidia. As a large part of the mechanic of “Mario Kart,” players are able to choose their kart and drivers who are title characters in various Nintendo games; karts have their own varied specification according to speed, weight, acceleration and top speed, et cetera, which contributes to agon. The alea is shown through the mystery boxes that randomly give players weapons to use against their opponents. The mechanic most affected by the technology is the level of mimicry available in the game. The
Wii remote employs an accelerometer, and this allows players to use it like one would a steering wheel to control the karts.

![Image 7: Vehicle selection screen from “Mario Booster Seat specifications](image)

In further discussions of the diverse forms of RPG, each will be described in terms of Caillios’ categories, which should allow for a greater understanding of the games.

**LARP**

The high level of mimicry is what sets a LARP, or Live Action Role Playing, apart from other RPGs, Role Playing Games. Players assume the roles of avatars physically; rather, they mimic their chosen avatars by "getting into character" in a theatrical fashion. The more detailed the costume or the more genuinely they connect to their characters, the better they react to
situations, and the more intriguing the game becomes. There are rules in LARP, though the social nature of game or the setting of the scenario may skew the level of ludus in the game, making it more turbulent or spontaneous. The rules mainly pertain to settling disputes between avatars. In some LARPs, foam weapons and the honor system are used; therefore, if a person is hit in the arm, the arm is “lost” and can no longer be used in game. In others, particularly if the dispute is political in nature, either rock-paper-scissors (as a form of alea) or a vote of others is used to settle conflicts.

The level of agon, competition with artificially equal opponents, is interesting because players choose what they play and how they play it, so while it is not “equal” it is “equalized,” because designers often balance out the various aspects (speed, strength, damage) of different types of characters (thieves, mages, warriors and so on). For example, while thieves are light and agile they cannot do much damage. Conversely, mages can eliminate entire groups of enemies, yet they themselves are fragile and easily killed; some would call them a “glass cannon.”

Warriors are slow, but they do a lot of damage and can endure high levels of damage themselves. In these types of games, players easily find the alea, agon, and mimicry of play, but it is not until one plays a MMORPG (Massively Multiplayer Online Role Playing Game) that the ilinx (vertigo) emerges in design.

**TTRPG**

Table Top Role Playing Games are similar to LARP as the player assumes the role of a character set in a fantasy world. Unlike in LARP, the players themselves do not do this physically. The physical representation of avatars are usually miniature models set on maps who encounter other miniatures “controlled” by a game master or dungeon master for examples, if one is playing Dungeons and Dragons. In TTRPG, more traditional elements of games are more
heavily involved, and alea (chance) plays a very important role in the game. Often in spite of a player's best laid plans for their characters or the GM's plan for the plot, the polyhedral dice and the randomness of how they land can often change the course of play. It is also this role of GM that is a defining characteristic of TTRPG. In MMORPG there is an artificial GM that thanks to modern technology can control millions of characters at a time; however, in TTRPG, the GM is not just a controller of non-player-characters but also a player themselves. The GM version of play is not involved with a dedicated individual character but to the meta-narrative. Often GMs have to change the details of an encounter based on dice rolls but still try to maintain the continuity of the narrative, trying to lead the story while still appeasing players and their needs or desires.

Table-top RPGs are just as social as both LARP and MMORPG, but they also tend to be more cooperative than the other forms. In many encounters, unless all players agree on the course of action for the group or unless they are able to interact, asking if people need to be healed or which enemy is considered the larger threat and act accordingly, none of the players' characters will survive nor will the GM’s narrative. This version too lacks a form of ilinx. Often players surrounding the gaming table are not in costume and rarely go without modern conveniences. The physical sensation of disorientation is not apparent; however, if players are able to connect to their avatars on an emotional level there may be a form of emotional vertigo as their avatars succeed, fail, or perhaps even die.

**MMORPG**

The acronym MMO means massively multiplayer online. The largest MMO is currently World of WarCraft (WoW) with approximately 12 million subscribers. Each of these subscribers can have several avatars or toons on one or more servers. Obviously the MMORPG is the least
idiosyncratic version of the RPG. It is the most easily accessed and understood of all three styles of games presented here and just WoW alone probably has more players than D&D or any version of LARP could ever hope to achieve. Almost every aspect of the MMO is controlled or limited by the design of the game. The race (human, ogre, space alien), class (warrior, thief, healer, magic user), and even basic appearance of the avatar is limited to the options the games provide. However, the adventures are limited by only two things, the level of avatar and much like in other RPGs, the imagination of the players. In many of the current MMOs, players do not have to follow the meta-narrative, they do not have to do quests, they are free to engage in whatever they want, from sewing and enchanting, to gold farming, or even “dancing for gold” in a tavern.

Much of what a player would do or perhaps even experience in LARP or TTRPG is handled by the programming and design. For example, dice rolling is done by a random number generator, and does not control the fate of the player or story. Looting is carried out, not by physically pick pocketing as it could be done in LARP, but as an automated matter of course when a foe is defeated. The players do not don their fantasy finest but their toons get new “gear” that change their appearance regularly. All of this is automated to allow for increased sociality and ilinx.

The games are designed with immersion in mind, which is what produces the feelings of ilinx both virtually and physically (Caillios 1961/2006). Music is of the supposed period of the game, or, somewhat historically linked. The dress of all characters, whether player created, or not, is related to the theme of the game. Speech and accents of characters are differentiated so that different races are distinctive (in WoW the orcs all happen to be stereotypical Jamaican). Schedules of feedback, reinforcement, and achievement are created in such a way that the player
craves the revelation of what their next title is, what new spell they can learn or what new mount they can buy. Once this is connected to sound effects (dragons screeching, blunderbuss fire, fish bubbles) and impressive graphics, the ilinx becomes part of the game as well. Gamers in this state of ilinx have been known to play these games for hours on end and lose track of time, or day, something that sadly has resulted in several deaths (Fielding, 2007; Salmon, 2010).

The increasingly social nature of MMORPGs allows players to connect with those on their servers in many of the same ways that they would in both LARP and TTRPGs. In dungeons, a group of five players must function as a team, though they have rarely ever met, and may never speak verbally but communicate through the in-game chat program. Each must perform his or her job in the team to ensure survival of all avatars. In a method of play called “raiding,” players may form groups of up to or over 40 players. The same sense of both, not knowing the teammates but still needing to function as one group stands, and can be incredibly difficult to accomplish just because of sheer human nature. In other words, the more members of a group the more difficult it is to come to consensus. It is perhaps human nature in general and understanding the nature of role playing games in particular that may allow for gaming to become a more influential ally in the classroom or in education across the board. Unfortunately, while videogames are popular, often profitable, and could be powerful tools in the classroom, but they are overlooked or discounted by educational leaders and classroom teachers as potentially important teaching and learning strategies. Resistance to technology in K-12 settings is widely known. Often teachers’ technology skills are far below that of their students; therefore, teachers can be intimidated by their lack of technological skill. Hence, highly sophisticated computer games may seem daunting to many classroom teachers, rendering games in the classroom unwelcome.
CHAPTER 3. RESEARCH

METHODOLOGY

Use of Qualitative Methods

This study could easily have been done in a far more quantitative manner – simply by transforming the teaching approach and the classroom environment from a place of play (with ideas), expression and exploration, to more of a structured and controlled learning laboratory environment. As this is neither in my nature nor in the nature of what this generation of students needs or wants educationally, thus according to the literature, it seemed natural that a qualitative study be used in order to draw out those nuances of learning and classroom engagement often unattainable with statistical data.

Millennials, with their collective penchant for entertainment, particularly in the area of video games, offer educators compelling opportunities in terms of enhancing or improving classroom achievement. Moreover, the visual and interactive learning style preferred by this group presents new frontiers for engaging students through innovative teaching strategies. Hence, this study sought to demonstrate the efficacy of gaming as a teaching strategy in this researcher's own classroom. While others have decided to use games as a tool for teaching, perhaps as a way to convey content or to allow students to practice with content, none has been so overtly ludically based; teaching students through a game format, in which they are more than just psychologically immersed in an artificial world via narrative and aesthetic, but rather flesh and blood avatars in a real world game where the classroom and life are the “game board” is at the center of this work. This study also explored “gamifying” the classroom as for Millennial students with the goal of being both intrinsic and instrumental (Stake, 1995) as there is a natural curiosity and desire to learn about the use of ludic aspects in classrooms, and as I wished to gain
“insight into [this] question by studying this particular” (Stake, 1995) teaching method for this particular generational cohort.

The study took place in the “natural environment” of both a physical classroom and one that was online. These are both a natural and habitual environment for current university students as they have been attending k-12 or pk-12 education for 14 of their 18 years of life but also an unnatural one as for many of them as they wore “two hats,” that of student and emerging teacher. Fall 2010 was their first semester of college. These environments or types of environments are also crucial for students and for the study as they were seeking to become teachers or educators themselves. These classrooms needed to serve as both a natural environment and one of transition not just from high school to college or the heavily guided environment of youth to the free environment of adulthood but also one in which they began to psychologically move from student to teacher. The transformation from student to teacher is where they must get their first inklings on how to provide the guidance to others or how they can take a classroom and make a natural learning environment out of it for their future students. For some of these pre-service teachers, their presentations marked the first time they stood on the teacher’s side of the classroom, so at times it likely seemed alien to them; however, while their role in the classroom changed, for a brief time, it remained a space where they have “always” been.

Another reason that this study was so well suited to the nature of qualitative research is that as Creswell (2006) stated, in qualitative research the “researcher [is the] key instrument” to this end, speaking mainly to Constant Comparative Method, which is the analytical vehicle for the study. In reference to the Constant Comparative Method, Boeije (2002) asserted:

There is no procedure or prescription for identifying exactly which comparisons are a fertile source for developing categories and a theoretical model. Making the right choices
in this process depends on the creativity, experience, knowledge, talents, support and sensitivity of the researcher (p.391).

Though machinery can record the audio of an interview and a voice-recognition program can attempt transcribe it, finessing the “participants’ meaning” from it takes not just a person to listen to it but the person there face-to-face with the actors to get the fullest understanding and the richest detail so that the meaning that the participants hold about the problem remain the at the heart of the study and “not the meaning that the researchers bring…from the literature” (Creswell, 2006, p. 92). This meaning and understanding of the participant’s role in the issue at large can be represented only by “multiple sources of data” (Creswell, 2006, p. 93).

Though this case study could be designed multiple ways, it was envisioned as a holistic “single-case design” (Yin, 2009). The global view of the study was naturally the length of the course. This decision was made based on the make-up of the population of the course as the group was nearly homogenous: three males, one of whom was African American, one Latin American, and one Caucasian. The other 51 students were all female and Caucasian, 18-23 years old. While creating smaller units of analysis for the handful of minority (based on all demographics not just race) students might have allowed for different themes to appear, it is my assertion that this could have also skewed my understanding of the teaching method’s viability or other perceptions of the study’s successes or failures.

**Population**

The target population for this study was students that are classified as Generation Y, or those being born between the years 1981 and 2001. The accessible population consisted of those students registered in the Fall 2010 and Spring 2011 semester of Louisiana State University’s (Baton Rouge) course titled *Introduction to the Study of Education*. The roster of the Fall 2010
course contained the names of two male students and 23 females, all of whom were aged 18-21 at the time of the study. The course's registration was restricted to students who were either Early Childhood Education (Pre-kindergarten to Third grade [PK-3]) or Kinesiology (n=1) majors for all of the students this course was a requirement of graduation. The roster of the Spring 2011 semester was more varied as far as career paths were concerned and included 35 students. Majors for these students included: Kinesiology (n=1), Communications Disorders (n=1), Business (n=1), Merchandising (n=1), Mass Communications (n=2), Pre-Nursing (n=2) and PK-3 (n= 27). The male to female ratio was still highly skewed to favoring females as only one male (the business major) was registered for the course. The age range varied from 19 – 23, and unlike in the Fall 2010 semester, none of the students were in their first semester of college.

While registration for the Spring 2011 class was not restricted to education students, no changes were made to the content, merely to the requirements of the students' practicum assignment, which allowed them to observe experiences in their own majors or fields.

The study sample of registered students fit the definition of convenience sampling as described by Teddlie and Tashakkori (2009) as human subjects who are "both easily accessible and willing to participate in [the] study" (p.170). However, the student sampling does contain an element of "randomness" as only those students who registered for the class were eligible participants. Hence, selection of subjects was entirely student generated and no attempt by the instructor/investigator participant (me) to alter the selection process occurred. The registration for courses can be difficult, so the specific students chosen for the study at large were not selected deliberately by me but by their timing and space availability. I did not place limitations around who would not be allowed to take the course, nor did I choose which course I would be teaching, rather it was assigned to me. Yet for the study to take place, a course and students
were necessary, and as I was assigned the duties of teaching the course, it did become a matter of convenience and I chose to use all registered students, thereby, excluding no one.

Though all students were given the option of not participating in the study and were informed that they would be part of a case study from the first day of class, none declined participation. Much of the data collected was tied directly to the assignments and functions of the classroom. Due to this, it would have been awkward if students had chosen not to participate. An Institutional Review Board application was submitted and approved #E5239.

**Teaching Method**

The decision to use a gamified version of a standard “lecture based” survey course with a practicum came about through a thorough examination of the literature surrounding the various aspects of game design, curriculum delivery design, and my previous experience with middle school students, as well as a mixture of traditional and non-traditional students in online settings. Initially, the idea of transforming the classroom into a game, instead of bringing a game into the classroom, is credited to Dr. Lee Sheldon, a professor formerly at Indiana University and now at Rensselear Polytechnic Institute. Sheldon created the idea of a course where the focus was on creating Massively Multiplayer Online Role Playing Games (MMORPGs), where students created the game, did a “sales pitch” of their final product to a Boss (a panel of professionals in the game design field like Jesse Schell), presented readings from professional journals, and created avatars and guilds as support and learning groups. He also set up his classroom in such a way that areas functioned like centers and focused on different aspects of design that apply specifically to MMORPGs and not just game design in general (Sheldon, 2010).

**Changes to Standard Teaching Method**

Prior to teaching the Fall 2010 course, I made some initial changes in order to adapt this
to my classes. The adaptations are as follows: creating the course in hybrid delivery mode; the language of the main events of the course were changed to mirror the language of MMORPGs; and the addition of modeling behaviors and teaching methods and the addition of Achievements.

Hybridization of Course

The first change to the course, which is not at all related to the Sheldon methodology, was to design the course in a hybrid design so that the class was split into two separate delivery methods. The first delivery method was that of a standard class, which took place during the scheduled time, the other time for the course was asynchronously distributed over Thursday through Sunday via the internet. This asynchronous time was to be spent working on the various assignments that students would not receive in-class time to work on: guild chapter presentations, practicum, blogs, and moodle questions.

Face-to-Face Class Schedule

Table 1. Class Schedule

<table>
<thead>
<tr>
<th>Time (in minutes)</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 to 25</td>
<td>Achievements</td>
</tr>
<tr>
<td>5</td>
<td>Transition to lecture or group participation</td>
</tr>
<tr>
<td>30</td>
<td>Lecture</td>
</tr>
<tr>
<td>5</td>
<td>Transition to activity</td>
</tr>
<tr>
<td>15 to 20</td>
<td>Activity (discussion/game)</td>
</tr>
<tr>
<td>5</td>
<td>Activity debriefing</td>
</tr>
<tr>
<td>10</td>
<td>Reminders or Clarifications</td>
</tr>
</tbody>
</table>

Both classes were scheduled for 10:30 to 12:00 on Tuesdays and Thursdays. As the course was taught in a hybrid mode, students attended face-to-face classes on Tuesdays only. Thursdays were reserved for students to post their initial response to the forum question in an asynchronous fashion, so as long as they posted by midnight it was accepted as being on time. After the first week of going over the syllabus, informing students about the case study, and
going over any questions or concerns they had about any topic, a natural routine emerged, though it was flexible enough to accommodate necessary changes.

Common Moodle Questions

For each course, although the daily or weekly routines were the same, I selected topics according to current events that directly affected educational policies; therefore, some topics changed with each semester. For instance, in the first semester when discussing the legal rights and responsibilities of teachers, I asked students to find two court cases that related to schools, teaching, or students: one in which a student was sued and a second that involved a lawsuit against a teacher. Students were asked to discuss the judgment and whether or not they agreed or disagreed with the judge’s ruling. In the Spring 2011 semester, a video of an Australian student who had been the victim of bullying “went viral” because he stood up to his bully in a violent way – students observed the video in class and were then asked to discuss their personal reactions to the video. They were then asked to imagine themselves in the role of a professional teacher and describe in open class what their reaction might be to this level of violence in a school setting. Additionally, students were asked to compare their personal reactions as an ordinary citizen to how they might react as a professional teacher, reflecting upon the conflicting nature of the private persona and the public persona (teacher).

For the sake of continuity and accurate comparison, if student responses to Moodle questions are discussed in this work, the comments will come from the questions those students in both Fall 2010 and Spring 2011 sessions discussed. A full listing of these questions appears in Appendix B.

Sheldon’s Method in Practice

All other changes to the standard teaching method are based on Sheldon’s (2010) method,
or more personal game-based experiences and literature. Sheldon's (2010) method, in practice, relies on changing common classroom terminology into gaming terminology. For example, the common classroom word "assignments" translates to "quests" in gaming terminology. When a non-game-design college course is taught using gaming strategies, another dimension is added to the expected curriculum that challenges both teacher and student. For the teacher who chooses to use gaming strategy as a form of instruction, he/she must examine the existing curriculum and determine which words and/or elements need to be changed in order to transform it into an authentic gaming strategy. For students, they must navigate between two worlds: the known world of traditional schooling and the sometimes unknown (not all students can be considered gamers) world of gaming. In the end, the use of gaming strategy as instructional strategy may prove more challenging than simply substituting one word for another.

Terminology Changes

The main changes initially occurred only in the terminology of the course. The nature of the assignments or functions did not change, only the terms.

Table 2. Changes made to Course Language

<table>
<thead>
<tr>
<th>Traditional Term</th>
<th>Gamified Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>Quests</td>
</tr>
<tr>
<td>In-class exercises</td>
<td>Mini-quests</td>
</tr>
<tr>
<td>Practicum/Observations</td>
<td>Raid</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Final Boss/Boss Fight</td>
</tr>
<tr>
<td>Study Group</td>
<td>Guild</td>
</tr>
<tr>
<td>Individual work</td>
<td>Solo assignment</td>
</tr>
</tbody>
</table>

The design of the course also took on the more experiential aspects of game-based learning as the students presented much of the course material. The topics that students were given to present upon included: Governance and Finance, Technology, Philosophy and American Educational History. As part of the requirements for their presentations, guilds, or study groups,
were to create an interactive presentation, which was to include activities that allowed the audience to practice or play with materials presented. This meant that many of the guilds presented a 15 minute lecture, often with a Power Point on the materials, then played a recall/comprehension game like Jeopardy or Family (Guild) Feud.

**Modifications to Sheldon’s Methods**

**Achievements**

The change that, in the end, played a much larger role than expected was the inclusion of “weekly achievements.” This was my modification to the methodology after my review of game design literature, as well as my experience with active gaming. In some video games, players receive Achievements. As I designed the syllabus for my class and for this study, I envisioned how the concept of "Achievements," in a gaming sense, might be substituted for the traditional concept of classroom assignments. The Achievements were a form of feedback that created in the player a sense of hyperludicity or “serves to clearly demonstrate the 'incontestable value' of the [earners] prowess, providing a favourable form of self-conception (“I'm the best at this”) and gratification, alongside the accompanying social rewards”(Conway, 2010, p. 137). Very literally, they were virtual awards that were announced at the beginning of every face-to-face class day (Tuesdays). Furthermore, the announcement of "Achievements” also served as a reinforcement to students in that they clearly demonstrated that the teacher/instructor was aware of who they were and the quality of their work.

Achievements, or later coined as “Chievies,” were given in recognition for student work during the online sessions of the course and focused on their weekly reflective blogs. There were two main types of Achievements, others that could most accurately be described as criterion-referenced and ones that could be termed norm-referenced. The criterion referenced
Achievements were the “Shine,” “Super Shine,” and “Mega Shine.” These awards were given for completing one to three extra Moodle forum/online discussion posts for a total of 4-6, four to six extra (7-9 total) and finally seven or more extra posts (10 or more), respectively. The posts needed to be of a substantive nature to receive any credit in the course. This requirement continued for all posts, even ones that went above and beyond the requirements. This requirement was described to the students in the first session of the course when students first receive their syllabus. Wording directly from the syllabus stated:

To earn credit for participating in forum/moodle discussions it is not enough to simply post to a class mate, “Hey Jane, I couldn’t agree more!!!!”

For a comment to receive credit it must be substantive and not just describe your opinion but also why you feel this way. Don’t be afraid to share a personal story or connect with current events or quote from sources other than our texts. There is no set minimum number of words but there is a set number of complete ideas – at least ONE.

The norm-referenced Achievements (NR) often changed or Achievements were added as the situation required. However, there were three regular awards: “The High 5,” the “Hmm,” and “The Eddie.” The “High 5” was awarded for either announcing an accomplishment (completing a triathlon) or for discussing something insightful, like when Player J decided that she wanted to be a high school teacher and not middle or elementary. “The Hmm” could often be synonymous with “student whining,” but the intention, on my part, for giving the achievement was not to reward whining but to have a starting point for a discussion. For example, when education students wear "two hats," that of student and at the same time that of teacher, they often have conflicting feelings on the same topic or event as demonstrated in the following sentence. For instance, a student, or player known as UnTaylor, discussed a professor that assigned homework
with the due date coinciding with a football game/tailgating day. In UnTaylor’s opinion “that is asking kids to not do it and get a ZERO [sic].” This led to a very fruitful discussion not only about students needing to set priorities in their lives but how as a teacher they will want to structure their classes and assignments. One player, Cinderella, noted during the discussion that “it’s like they’re trying to teach us how to be more adult and the material at the same time, kinda (sic) sneaky.”

Further, in UnTaylor’s post of that week, she stated that, “as a teacher having all your students pass and pass with A's and B's [is]… Just one of those moments when you know you have done a wonderful job as a teacher.” The class also discussed this idea and while many agreed with UnTaylor’s notion, Sarcastica boldly disagreed, coming to the conclusion that grades should be a reflection of what the student actually knows and has done and “if everyone got A’s and B’s there wouldn't be any value in them.” UnTaylor’s receipt of this achievement changed the way in which she viewed the coincidence of homework assignments and football game days. The discussion pushed her to reconsider how she perceived grades, particularly the ones that she would be distributing as a teacher.

“The Eddie” was the “most prestigious” of all of the awards to receive; “Eddie” earned the moniker because it is a play on the word education. The image most often associated with the award was that of an Oscar statuette. The “Eddie” was awarded for the “best performance in a blog.” Often “Eddies” were awarded to students who connected materials or events of their “raids” into their lives, or when they demonstrated awareness of events outside of the classroom and related those events to their impact upon education.

Another player, California, received the last “Eddie” of the course when she discussed her experience with a child she was tutoring at a local elementary school. She approached the
child's teacher for suggestions; she was tutoring a child at a local elementary school on helping the child concentrate or being a more productive tutor. California wrote:

Her [the child’s teacher] next response shocked me, "I can just give you another child to work with b/c I hate giving you a student that isn't going to make any progress." I'm pretty sure that wasn't an appropriate response and it made me lose respect for her. Of course I'm not switching students. I see it as my job to do my best at helping her learn the material. If I'm not seeing any progress atleast I tried, right? I mean HELLO?! NEA Code of Ethics anyone???? It's sad that a teacher can just want to give up on a student. I really want to ask the teacher if she knows what No child left behind means!

California received the award not for her writing style, which is highly conversational, personal, and littered with errors, but rather for her connection to our course text, which regularly discussed the INTASC principles and the NEA Code of Ethics, her connection to her own emotions and thought, and how it changed her treatment and dedication to the tutee in general.

At the onset of the Fall 2010 semester, Achievements were only symbolic. This changed half way through the Fall 2010 semester as the week after midterms I made the announcement that Achievements would add up to grade points, beginning retroactively from the beginning of the semester. I awarded students one point added to their final grade for every four Achievements they earned. Not receiving Achievements would not hurt their grades, but doing the extra work would finally have a quantifiable outcome. The value of the Achievements changed as the courses evolved as well. In the Fall 2010 semester, all Achievements, whether “Shine” or “Mega Shine,” “Hmm,” or “Eddie,” were worth one achievement point towards the tally total of the four that they needed to earn an extra grade point. At the start of the Spring 2011 semester, “Shine,” “Super Shine,” “High 5,” “Hmm” and any other additional Special
Achievements were worth one point; the “Mega Shine” and “Eddie” were worth two points.

By the end of the Spring 2011 semester, different values had been assigned as did the number of achievement points needed to earn a grade point, which had been increased to 8.

**Shines** – awarded for posting beyond the required number

- SHINE + 1-3 earns 1 achievement point
- SUPER SHINE + 4-6 earns 1.5 points
- MEGA SHINE + 7-9 earns 2 points
- ULTRA SHINE + 10 and up earns 2.5 points

**Special Achievements**

- High 5: earns 1
- Hmm: earns 1
- Good Sport: earns 1
- The Backbone: earns 1
- The Scout: earns 1
- The Eddie: earns 2 (from my syllabus)

**Modeling**

The other modification to Sheldon’s (2010) methodology was the notion of modeling. Sheldon’s (2010) intention was to teach students to create MMORPGs by letting them experience living in one, an immersion technique of sorts. However, his group was largely comprised of students with more credits than the majority of my students. Moreover, the prerequisites for his courses included several semesters of math, computer science, and even game design basics. This model would not work as well for my particular gamed classroom as many students were first semester college students and/or had never participated in courses that
required them to teach information.

With my students in mind, I decided that modeling many of the behaviors would be a far more effective, yet not as invasive, teaching method. Modeling on my part included:

- Appropriate dress for practicum
- Weekly blogging
- Pacing of lessons and activities
- Use of large, small and individual group activities based on materials

Image 9: Screenshot from Just Dance 2

Modeling is common in classrooms, often though, it is associated with behavior plans; however, videogames tend to use it far more actively and effectively. In the “Just Dance 2” image, there are not only player avatars on the screen represented by the larger costumed figures, but this is the embodiment of what the players are actually doing, while the stick figures below model what they should be doing. Through play of “Just Dance 2,” the stick figures will leave and reappear with new dance moves, but because they are merely reminders and not “lectures,” they become more effective.

These last two modifications to Sheldon’s idea substantially aided in solidifying my role
in the classroom of what could only be called the Game Master. In this role, I was not only modeling reflective teaching, providing information but also creating and molding the world of the class into a game in which the students often had as much power as I did.

**Role of Researcher**

**Researcher’s Role: Game Master**

My role in this case study was complex, not only because of the nature of qualitative research, which is often criticized by quantitative researchers as not possessing the rigor of experimental studies, but because, as both a participant and observer, I selected the type and scope of the work as well as the methodology. Additionally, as with most qualitative studies, particularly those using historical methodology, the interpretation of the data is highly subjective. Additionally, I took on the extra role of being not just researcher, participant observer, but also as teacher. A teacher, not in the traditional sense, or as Stake (1995) defined the role, as one whose goal is "to inform, to sophisticate, to assist the increase of competence an maturity to socialize, and to liberate,” (p. 92) the audience and participants, but as teacher of the course. In this sense, I am the “Game Master.” As GM, I designed not only the curriculum of the course, but also the employment of the game’s aspects. In my role as GM, I sculpted “an experience interesting enough that it hold[s] the player’s [student’s] focus,” (Schell, 2008, p. 118) through “challenging decisions and interesting surprises,” as “experiences are the only things that can change people” (Schell, 2008, p. 153). I was situated both within the game/class/study so that I could play, but also from above it or at a distance, so that I may observe.

While teachers often must choose between playing the role of the holder and distributor of fact as in Dickens’ Gradgrind, or the guide to fact, as Daniels suggested, the metaphor for the role that I chose to play in the game of EDCI 1000 was that of Game Master (GM); therefore, I
walked the line between both the distributor and guide to fact.

In a table top role playing game, which massively multiplayer online role playing games and the teaching methodology used in this study are based on, GMs both design and control what occurs in the player’s game. Game Masters function differently in a game than an educator. While the GM designs the world, the narrative, distributes the information (as it is earned), and mediates the rules – the game is all about the collective group of players of which the Game Master is only one. The Dungeons and Dragons, Dungeon Master’s Guide (2008) stated:

What a [Game] Master does is commonly called running the game. [This is] a bit of a loaded phrase, since it suggests that the [GM] is in charge, an absolute authority, and responsible for the rest of the players. This [is not just the GM’s] job but everyone’s responsibility for keeping the game moving smoothly (p. 12).

In this vein of creating the game world—meta-narrative and events that may affect individual characters—I created the assignments and requirements to complete the assignments (the game world and meta-narrative). I decided to what level of success players completed the assignments and I also designed the Achievements and awarded them when earned.

Part of the powerful allure of gaming is the sense of agency that players experience, and like in many games, what the player does remains up to them, regardless of what the GM or instructor may set before them. Players may choose to what level they participate. They also chose the schools/grades/teachers they observe, and, they chose...blogs. This method or strategy is similar in nature to contract grading in which students decide what level they would like to achieve (A,B,C, et cetera.) and then sign a contract with the teacher. For example, in this “gamified” course, students chose what to write about in their blogs. Depending on the player’s actions or reactions, as the GM, it was also my job to ensure that the game was fair and equitable
and that the players were getting what was necessary from the game. In these cases, I added to
the types of Achievements and adjusted values of each. For example, if players were able to
game the system, or me, and figure out what type of topics would get them the “Eddie,” then
additional or alternative requirements were made so that the “Eddie” would retain its value as the
highest achievement; the Achievement would still be a challenge to earn but also more fair to
those who had not gamed the system.

As a participant observer in the study, I often reflected upon the dynamics and progress
of the class, as well as my role in the project. At one point, I reflected upon the fact that games,
especially videogames, were areas that did not come naturally to me. For as much as I want(ed)
to be a “hardcore gamer girl,” I possess neither the emotional attributes of most players, like
being patient and/or have a serious competitive streak, nor do I have the physical attributes as I
lack the hand eye coordination necessary in order to play many games successfully. I have, in
fact, only ever played one videogame to fruition, either with or without the benefit of using
player guides (detailed instructions on how to successfully play games published by companies),
walkthroughs (detailed instructions on how to successfully play games written by players), maps,
or assistance from those who would be considered highly-skilled players.

Most other games have been played as part of a duo, vicariously through others, as coach
(helping others see the strategy the NPC or other opponents may be using) or limited to that of
navigator/reader of the walkthrough (as player guides are never as detailed or helpful). My main
limitation regarding game playing is my skill level, not the charge that I feel when characters
level-up, earn Achievements, or when the narrative advances. I have been teaching formally
only a fraction of the time that I have been playing videogames. Through recent consideration of
old lesson plans and reflective teaching journals, I now see various ways in which I have
attempted to gamify the learning process for both my students and myself the entire time that I have been teaching. Throughout my seven years teaching middle-school English, I often tried to garner interest in writing in what was considered by many students to be a rather boring but necessary unit by allowing students to create instructional guides (guides that discuss the mechanics or even what buttons to press for particular moves), walkthroughs, or even board/table top games, as a technical writing assignment. In this same vein, games were constantly brought up as examples when discussing character development or plot point identification, as students easily relate to video games and characters, which, after all, is their “known world.” There were also competitions or even game participation as classroom assignments or morning warm ups. These attempts to bring elements of gaming into my classroom and transform them into tools could be a bias, a limitation, and strength simultaneously.

**Data Management**

The management and subsequent analysis of the various data sets came almost preternaturally to me as the subject was really a culmination of what I have been seemingly leading up to for a decade. Several forms of data (field notes, blogs, questionnaire 1, questionnaire 2 and a group interview) were collected from the course and managed in various ways, which allowed for an ease of depth of analysis and preservation of student ideas as well as identities.

**Field Notes**

Field notes are an essential method or activity in qualitative research. They aid in understanding how students reacted to the course and its mechanics. Often, changes were made based on a series of actions, reactions, and class events that had been witnessed from various
students. This also aided in tracking themes and cross-checking information, reflections, or statements, revealed in other documents. Most often, notes concentrated on physical reaction or outward emotional display (smiling, blushing, facial expressions of surprise or even irritation). Other notes also discussed student interactions, classroom behaviors (i.e. checking Facebook, IM/texting et cetera), complaints about guild members, powerful/watershed/enlightening comments, or ideas that came from students that would not otherwise be found in blogs, Moodles or written assignments.

As a participant observer, I was challenged to not only observe presenters but also the reactions of other students to the presentations. Despite the obvious challenges to this dual role, I was careful to make notes based upon student reactions when students received Achievements, as well as observe and notate classroom behavior. The key to acquiring rich observation material is to carry out the duties of observer—notate and record—in an unobtrusive manner. For all other events, I created a set of notes after each class so that events and details remained accurate, and again, unobtrusive.

The documents notating activities in the Fall 2010 semester were collected in a standard composition notebook at the end of the semester and were then scanned and saved in jpg format and then converted to into a pdf file. For the Spring 2011 Semester, an iPad and application called uPad was used to record the notes. The uPad documents were automatically converted to pdf files in the application and directly downloaded from the iPad to a personal laptop.

**Blogs**

Students, regardless of major in the Spring 2011 semester, were required to post weekly blogs reflecting on what they learned in class, what they experienced as students, even what they saw in the news or on the Internet that would influence how they would approach their future
careers, and more importantly, classrooms. I modeled the behavior and types of topics for students. In modeling how to blog, I blogged about my lectures and experiences as a student and former teacher. This served to encourage them to follow suit and as an exemplar for their own blogs. My efforts to model for my students the level of work that I expected of them helped to create a positive learning environment so that the classroom experience functioned like an authentic learning community. The only time a blog topic was assigned to students was after their chapter presentations. At this point, to encourage reflective teaching practices, students were to reflect upon their presentation and then answer questions; I suggested topics such as pacing, audience involvement, audience enjoyment or engagement, successes, areas for improvement, how the guild worked together, et cetera.

Blogs were a continual assignment. The only time that students were not required to blog were weeks of major assignments, like midterms, when the write ups for their practicum were due, or weeks of University holidays (i.e. Thanksgiving, Mardi Gras, Spring Break). This resulted in approximately 780 blog entries across both semesters, not including my entries. Of these documents (blogs), the Fall 2010 semester generated approximately 325 and the Spring 2011 approximately 455 (780 total). These were read weekly for purposes of grading and assigning Achievements, although for the purposes of data analysis, were downloaded into a Microsoft Word file at the end of each semester and then sorted by hand according to themes that emerged as the semester progressed. This system allowed me to organize the data according to themes, cross themes or supporting themes, as well as student reactions/responses to the themes themselves.

Achievements

The Achievements that students could earn in this course played a major role in both my
performance as an instructor and the students‘ performance as players. Although initially just symbolic as they were names in a Power Point and served no other point (in the players‘ world) other than to acknowledge work, Achievements later became a potent source of activity when they were linked to students‘ potential grades. Achievements were tracked across both semesters according to whom, type (norm or criterion referenced), why they have received a norm referenced achievement, and the total number of criterion referenced Achievements received by the classes each week.

Open-ended Questionnaires

At the end of the semester, students participated in two optional and anonymous open-ended written surveys. Students voluntarily and “willingly [agreed] to participate” in this aspect of the study; of the 25, five students were absent on the day that the questionnaires were requested or chose not to participate. The questions emanated from the qualitative inquiries previously stated and out of the use and necessary changes to the classroom in order to accommodate this experimental/experiential teaching strategy.

Questionnaire #1:

Questionnaire #1 was given to students in the Fall 2010 semester only. Questions were based upon changes to the course design, which required students to re-orient themselves to a new format, thus likely causing some a higher level of cognitive dissonance than normal. The traditional-course-content-as-game design required students to, in most cases, acquire a new vocabulary—”Achievements,” "guilds," et cetera. I selected the questionnaire as a preferred measurement method because it would allow me to understand the affective role that gaming played in increasing motivation and/or competition.

The questions for the first questionnaire were given to participants over Moodle and
responses could be of any length; however, I requested that the responses to the questionnaire document be typed so that students could feel free to respond most truthfully without fear of being identified. The responses were later scanned in as a jpg file and then converted to a pdf file.

Questionnaire #1

- How did using the “guild” change your experience of the class towards the experience itself, materials presented and presentations? Or did it?
- Did changing the terminology of the class: learning team to guild, in-class assignment to mini-quest; change the way you felt about or experienced class?
- Does the potential of earning an achievement encourage you to work harder on an assignment or is the achievement alone not enough of a benefit?
- How did the public announcement of the weekly Achievements affect your motivation?
- Did you feel a sense of competition between classmates or guilds?

Questionnaire # 2:

Questionnaire # 2 was given to students in the Fall 2010 semester only. Questions were based upon their answers to the first questionnaire. Questionnaire #2 sought to discover more about their perceptions of themselves and more emotional reactions to changes to the standard classroom and periodic changes to the gamed class. The last question pointedly sought out the players’ advice on changes that should or could continue in the course if it were taught this way again. The second questionnaire was given in class and was completely voluntary as before, student answers were anonymous. In administering the second questionnaire, students received the questions (orally), one at a time at two-minute intervals in which to respond, with additional time at the end to fill in any gaps as they saw fit. These responses were also later scanned in as a
Questionnaire #2

- What is your previous experience with videogames? If you play, do you play all the time, just for fun, with people? How would you classify yourself?
- We used two modes of instruction/interaction in class: lecture and online discussion. How engaged or connected did you feel with each of these strategies?
- Achievements were a big part of class. Do you know how many you earned? When you did get them, how did you feel?
- If you did not get one when you felt like you should have, what type of reaction did you have?
- When Achievements became a factor in your final grade – was this incentive enough to do the extra work to get them? What would have been enough to push you to earn more?
- What changes should I make for next semester?

Interview

For this aspect in particular, the protocol I used was based upon questions created for Questionnaire 2. However, throughout the course of the conversation, many other questions arose, although not all were aimed at understanding the project at hand or in other words, some questions were off topic. The mp3 recordings made during the interviews were transcribed by hand into Microsoft Word. I selected four students to interview, both of the male students and two females. I purposefully sought out these particular four (from the total number of 25 students enrolled in the Fall 2010 semester) owing to the fact that they represented the diversity of the population.

When selecting players to participate in the interview, I sought to look at them not in the
way that an educator might view them but how game designers view players. As educators, we see students based upon multiple demographics: age, race, culture, socio-economic status, academic (dis)ability(ies), et cetera. When designing a game, most designers look at one demographic: interest/ability level (casual or hardcore) in videogames, and perhaps age (Schell, 2010; Soell, 2011), depending on the purpose of the game. Thus, the view of their players, while limited on an individual level, gives designers the freedom to create for the largest population: age ranges, both genders, and divides players according to interest or ability. With this in mind, respondents to the group interview were selected and described in terms of player type, ability or familiarity, not all of the typical demographics that are usually used.

Overall, none of the students in the course claimed to have experience playing the types of games (Massively Multiple Online like World of Warcraft) implemented in this classroom study. However, many claimed, in various conversations, that they do play different games, albeit only casually. Both of the female students, Froggie and Silence Dogoode, play the Facebook games “Farmville” and “Mafia Wars.” They also both play other causal console-based videogames that would fall into the genres of fighting, racing, and platformers (where avatars jump from platform to platform battling foes). Neither female student claimed any genuine ability to play or desire to play more than what they were engaged in at the present time, yet they possessed more experience with games than most other of their classmates.

The male participants, CountryBoy and HeavyPlanet, are also currently self-proclaimed causal gamers; they too play the occasional Facebook game and console-based game; however, they focus on sport games and first person shooters. Like their female counterparts in the above paragraph, they too they are not players of MMO’s. They both claim to be former hard-core gamers, spending several hours every day of the week playing their games of choice. So while
most of the interview selections of the participants were based on purposive intent, the logic for selecting both of the male students in the class is based on classroom gender distribution. I wanted to ensure that the study included both the male and female voice when possible, a task not always possible in some education courses, which are often over-represented by females. In the selection of these four respondents, there is also the gaming community to take into consideration (as this methodology was initially developed for their unique needs and subject matter), which is dominated by males. I hoped that by choosing informants that represented Generation Y and had some, if only limited, interest in video games, that I would be able to employ a certain "generational" lens—gaming experience among generation "Y"ers and generation "Y"ers who chose teaching as a career path as an element of my analysis.

Questions for the protocol were as follows:

- What is your previous experience with videogames? If you play, do you play all the time, just for fun, with people? How would you classify yourself?
- We used two modes of instruction/interaction in class: lecture and online discussion. How engaged or connected did you feel with each of these strategies?
- Achievements were a big part of class. Do you know how many you earned? When you did get them, how did you feel?
- If you did not get one when you felt like you should have, what type of reaction did you have?
- When Achievements became a factor in your final grade – was this incentive enough to do the extra work to get them? What would have been enough to push you to earn more?
Data Analysis

As a classroom teacher, observation and monitoring of student reactions and data from formative assessments, controlled the way that the next class or group of students encountered the same lesson. Whether students enjoyed a lesson, hated it, never quite grasped it, or even fell asleep during it, forced me as a teacher to adjust lessons from hour to hour so that students were able to encounter a better version and understand it far more clearly than if feedback and data from that first class were never examined. This method of analysis is a version of as the Constant Comparative Method (CCM) and aided in the identification and discussion of themes and substantive theories that emerged from the data of this study (Glaser, 1965). Glaser and Strauss (1967) developed CCM which “involves taking one piece of data … and comparing it with all others that may be similar or different in order to develop conceptualizations of the possible relations between various pieces of data.” (Thorn, 2000, p. 69).

According to Glaser (1965), CCM “may be applied for the same study to any kind of qualitative information, including observations, interviews, documents, articles, books, and so forth” (p. 438). It is most often “described in four stages: (1) comparing incidents applicable to each category, (2) integrating categories and their properties, (3) delimiting the theory, and (4) writing the theory” (Glaser, 1965, p. 439), with the additional rule of “stop coding and record a memo of your ideas” (Glaser, 1965, p. 440) during stage one so as to “tap the initial freshness of the analyst’s theoretical notions and to relieve the conflicts in his thoughts” (Glaser, 1965, p. 440). This is also preceded in this particular study by a review of the literature since “both use of self and the literature are early influences and, while diffuse understandings provide sensitivity, both specific understandings from past experience and literature maybe used to stimulate theoretical sensitivity and generate hypotheses” (Heath & Cowley, 2004, p. 143).
Six sources of data were used for this study. Initially, analysis focused on the literature surrounding Millennial students, Best Practices and the design and pedagogy of videogames. The efficacy of teaching substantive course content using gaming methodology or strategy became one of the first themes or developing theories of the study.

Field notes

Once the course began, participant-observations of student behaviors primarily focused on student reactions to the introduction of the format of the course (during week one). In the weeks that followed the course introduction, student reactions to receiving or not receiving Achievements during the remaining weeks of the semester preoccupied me, but I also paid special attention to how students reacted to being "teachers" of content to their peers. These observations became, as Yin (2009) stated, an “invaluable aide for understanding” (p. 110) for my students as individuals, and of their generational context, as well as the use of the teaching methodology as phenomenon.

Student Created Documents and Achievements

As the first week of the semester came to a close and the students’ first set of assignments were due, a second source of data became available for analysis—participation in the online discussion forum and performance/choice of topic in their blogs. These documents became the basis for receiving “Achievements” for excelling in both Criterion Referenced (CR) and Norm Referenced (NR) activity requirements pertaining to the forum and blog assignments. Weekly records revealed which student received each type of Achievement and the rationale for such recognition(s). Weekly analysis sessions allowed me, as participant/observer, to expand or eliminate certain aspects of play, such as creating more NR Achievements or taking notes on themes or patterns as they related to what students were discussing in blogs, or more specifically,
how they were reacting to events.

Questionnaires and Interview

Two student questionnaires were administered to students, both of which were optional and anonymous, while I supplied the content included in the development of the protocol employed in the study. Student answers to the first questionnaire, along with the emerging and evolving themes from field notes in the first semester, provided much of the content for the second questionnaire. Though much of the data examined for this study came from the student voice, I wanted to be sure to gain their perspective on the changes that they were experiencing throughout the course, and I wanted to make sure they did not feel “cheated” by the events of the game. These were topics that the students did not include or mention in their blogs so I felt that it made sense to ask in a direct fashion as the elements of change and perspective are central to the study.

The process of analyzing Questionnaire #1 was conducted in two-steps. I began by tallying responses to the question, and these tallies aided in creating the questions for Questionnaire #2 and the group Interview. Next, I examined the interview recording(s) and transcripts of recordings for patterns in student behavior, such as traditional behavior one might expect in a traditional classroom and/or new behaviors associated with changes to the course content and teaching strategies. I then looked for themes in student-created documents. In the next dimension of analysis, I analyzed interview transcriptions by matching field notes that included my observations of body language while players were speaking. I then compared the results to the answers on Questionnaire II (group interview). The methods of constant comparison, written observation records, analysis of student created documents, and responses to individual (anonymous) and group interview questionnaires generated a wealth of data and
allowed me, as participant/observer/researcher, to gain a deeper insight and understanding of the student experience throughout this study.

Visualization

Large-scale tally grids that included each form of data by semester, and in cases where direct comparison can be made numbers related to forum discussions, comparative charts were created based on independent ratios for each course, so that percentages could be compared but understood in terms of each class. To more easily visualize the changes in content or how content ranked, color coded versions of the comparative tally grids were created.

These processes were undertaken because as Glaser (1995) stated, “[in] comparing incidents, the analyst learns to see his categories as having both an internal development and changing relations to other categories…it especially facilitates the generation of theories of process, sequence, and change which pertain to…social interaction” (p. 444), which was a prominent feature in the teaching method used.

Data Verification

Questions of truthfulness, applicability and consistency are difficult to breech since both Case Study and Constant Comparison are going to create almost idiosyncratic understandings of the case and data. As Glaser (1965) stated,

Depending as it still does on the skills and sensitivities of the analyst, the constant comparative method is not designed … to guarantee that two analysts working independently with the same data will achieve the same results; it is designed to allow, with discipline, for some of the vagueness and flexibility which aid the creative generation of theory (p. 438).

The best way to increase truthfulness is to create “comparisons that are highly regarded.”
(Boeije, 2002, p. 393). Moreover, Boeije (2002) asserted that:

One criterion for qualitative research is that the researcher tries to describe and conceptualize the variety that exists within the subject under study, [which] exists by the grace of comparison and looking for commonalities and differences in behaviour, reasons, attitudes, perspectives... (p. 393).

Boeije (2002) also claimed that applicability can be achieved or assumed if “the sampling has been conducted well in a reasonably homogeneous sample, there is a solid basis for generalizing the concepts and the relations between them to units that were absent from the sample, but which represent the same phenomenon” (p. 393). This is true for the group of students observed on many fronts including demographics of age, gender, race, educational goals, and even major, but additionally, in their ludic familiarity, how much pleasure they derive from playing and even how often they play. The notion of consistency is ensured by triangulation and use of multiple data sources namely, the questionnaires, documentations, field notes and observations of students. The importance of the above data cannot be overstated as it represented the voices of the participants in their words. In some cases, the voices speak without fear of repercussion as the questionnaires are anonymous so that ideas can be shared freely and without restraint.
CHAPTER 4.

FINDINGS

This chapter presents the findings from a case study of an introductory survey of education class with ludically based pedagogy across two semesters beginning in August of 2010 and completed in May of 2011, covering the Fall 2010 and Spring 2011 semesters. The chapter consists of two main sections. First, a display and discussion of themes from the Fall 2010 semester. This is followed by a display and discussion of themes from the Spring 2011 Semester. Finally, the chapter contains a display and discussion of findings from both semesters based on student work, which will serve to understand the players independent of the game.

Throughout all sections, I, as participant/observer, interject personal observations in conjunction with the findings assembled from student-created documents. I was guided by three essential questions:

- What changes would have to be made to a college introductory survey course design to create a game-like feel?
- How would students who are traditionally not thought of as gamers react to a teaching methodology designed around ludically inspired pedagogy?
- How would the teaching method change as the classes progressed to encourage proper “game balance” and player engagement?

Fall 2010: EDCI 1000, 1st Edition

Play Space: The Classroom

The Fall 2010 semester course was held in the Math Lab room of Peabody Hall. The room itself contained six large tables for seating. Often these tables were arranged in what could only be described as being in the shape of the symbol “Pi.” This seemed to be the most
comfortable arrangement as other arrangements offered less space for group activities and gave one the feel of "cramped quarters." The classroom was used for multiple courses throughout the semester and though mainly decorated with elementary math-sense based posters, evidence from other users appeared and disappeared frequently – student created, poster-sized post notes full of information about different educational philosophies, notes on the board regarding assignment requirements and due dates, lists of student names who had signed up to present on a specific day and the like. The classroom was equipped with a whiteboard, digital projector, Elmo document reader, computer and display screen, all of which were used frequently by the courses players.

The Players: Students of the 1st Edition

The roster for the Fall 2010 course contained 25 students who participated in the course’s game, which was a traditional educational course with traditional educational content taught in game format rather than the traditional lecture or direct instruction mode. The course contained two male students and 23 females, all of whom were between the ages of 18 to 21 at the time of the study. The course’s registration was restricted to students who were either Early Childhood Education (Pre-kindergarten to Third grade [PK-3]) or Kinesiology (n=1) majors; for all of these students, this course was a requirement for graduation.

In the process of getting to know and understand the group, I found that for all but two or three students this was their first college experience. A number of students were registered for other introductory courses in other areas such as math, biology and English. And for some, EDCI 1000 was their first education course in general, while others were taking 2000 level education courses concurrently.

The students, or players as they will be referred to in this chapter, were given consent forms that explained the study and given the option of opting out of any portion of the study with
which they did not feel comfortable. While no one objected to participating in the study, several students chose not to submit their responses to the questionnaires. They were informed that pseudonyms would be used, and several suggested ones that they would like to adopt such as CountryBoy, HeavyPlanet, Cinderella and Sarcastica. Other students were randomly assigned names or in cases where quotes came from anonymous sources, names of videogame characters were used, for example: Mario, Luigi, Peach and Samus.

**Tutorial Level: Syllabus Talk Day 1**

When the first class began and before I introduced the modifications to the course, I wanted to get a feel for the students‘ understanding of games and their opinions about gamer culture. In a way, this became a litmus test for what I could expect from them as far as playing the “game” or responding to the course‘s “mechanics of play.”

Gamers and Videogames

As a whole, none of the students considered themselves to be gamers and many felt that they did not play games at all. To the combined group, videogame meant that it had to be played on a console of sorts (Wii, Play Station, X Box), and if it were on a computer, it could not be associated with a social networking site like Facebook. Many of the students acknowledged that games like “Farmville,” “Words with Friends” or even “Bejeweled Blitz” were games, though they did not fit in to the collective schema of videogames. No one could really express a substantive distinction between the categories beyond a dubious “because they’re not really violent?” The term “gamer” was considered negative. Even before the females of the group began discussing the traits of the stereotypical gamer as “nerdy,” “obsessed,” and “lonely,” those students who later admitted to being gamers, “hard core” ones at that, did not want to claim this identity.
When discussing the identity of being a gamer within the space of the classroom versus other spaces, the male students, CountryBoy and HeavyPlanet, had very interesting comments. Player CountryBoy said of claiming to be a gamer in class that he feared seeming “even more out of place” than he already was as one of only two males in the class. Player HeavyPlanet said that he wanted to “come off as cool” to his female classmates and “nerds, no matter what they say are just not cool.” However, HeavyPlanet, in a personal discussion several weeks into the Fall 2010 course, admitted to claiming this identity (gamer) at his new job and with another groups of students, which included several females who were, according to the male student, “a different kind of chick.” He claimed that with this other group, this was “how [he] got in” and “what they had in common, so it seemed dumb not to.”

Much like CountryBoy and HeavyPlanet’s repeated denial of a gamer identity, the females of the study also shared a similar self-awareness of how they related to the notion of being gamers or even gamer-girls. Though a number of them claimed not to be gamers, after a brief discussion that Farmville, Words with Friends and Bejeweled are videogames, it came to light that many of them were obsessed with playing. Their communal “self-aggrandizing” rationalization for why they were not “nerds” or “obsessed” was two-fold: the first being that everyone they knew were playing so they could not possibly be nerdy, meaning that to them a nerd is removed from the mainstream; and they were not obsessed with the game, or playing or winning, but rather, as one student put it, “I want to make sure I’m doing it right.”

It is this idea of players becoming preoccupied with playing so they can “[do] it right,” that much of the mechanics of the course is filtered through. In order to take advantage of this self-motivation element of my gaming-as-learning-educational-course, students were able to earn Achievements. Achievements reinforced desired behaviors like doing more than necessary or
reflecting on the events of a week, while the guilds allowed students to have a group to play with (learn) and not be embarrassed by the level of play that they were willing to commit to so that success was possible. Though it was never stated by a student that the course was “a game,” several students did make mention of aspects of the course as being fun or in varied ways, bringing pleasure to them beyond knowing that they would be succeeding in the course.

Rules of Play

Students then read the syllabus and viewed the accompanying Power Point followed by a brief classroom discussion. We covered the finer points of the course calling it a tutorial level in which the sages (textbooks), their quests (moodle, blogs), the raid (practicum), and appropriate dress for the raid (a large scale battle situation where up to 40 players are focused on a goal of defeating a boss or taking over a base) were fully illustrated and illuminated.

Image 10. Screenshot from Day 1 PowerPoint

Much of the time, instructional and learning time on the first day was absorbed by student concerns over changes to the classroom dress code ("getting into character" as opposed to
standard-issue collegiate attire of jeans and flip-flops”) rather than concerns over requirements outlined in the syllabus. Instead, student attention was focused on changes in the language or rather changes in terminology from classic educational "lingoese" or "edu-speak" to that of codified gaming language. While many were excited and intrigued by the idea of grade enhancement, asking about it several times well in advance of the instructional slide that outlined the evaluation format, some were “confused at first,” asking things like “What’s an avatar? You mean like the movie?” and “Wait, a what, a guild?” Their confusion was expected especially considering the conversation about gamers and videogames. The cognitive dissonance introduced through this gaming-as-learning-approach is a normal part of acquiring new knowledge or new skills. I experienced many and reacted much in the same way when I first learned to play videogames. Yet, already in that first day, I understood that a "painless" acquisition of concepts and terminology on the part of students would be essential to the implementation of the study but might prove to be difficult to execute. I reasoned that if the dissonance experienced by students regarding terminology acquisition were too great, student acceptance of the gaming-as-learning-strategy would likely fail. Conversely, if students were able to master one of these first steps to the new teaching/learning strategy, then they would likely experience a higher comfort level to both the content and context of the course. We wrapped the day up by going over the first Moodle topic, requirements for it and where to find their blogs, as well as questions regarding its purpose.

**Sequence of Play: A Typical Week in EDCI 1000**

The assignments of the first and second week (“Top 10,” “Organized and Efficient” Moodles and Blogs) served as the basis for their first set of Achievements. The “Top 10” question asked students to create a list of reasons they wanted to teach: the answers to this varied
from a serious discussion about the benefit of breaks, to very genuine comments from the players about knowing that they could be a positive force in a child’s life and future, as well as comments about the convenience of most school schedules as being excellent for having a family, children and job security. The “Organized and Efficient” question asked students to find three ideas that could either help them be more prepared in the classroom, more able to cope with stress, or how to be more than just their job.

Beginning with the third Tuesday of class and for each Tuesday for the remainder of the semester (unless Blogs and Moodles were canceled the previous week, for example, during midterms), prior to any other classroom activity students received their Achievements. I chose to start the days off by giving Achievements mainly because I wanted to avoid the chance of feedback becoming ineffective due to the fact that it was too far removed from the event in which it was earned. A delay did occur later in the semester and had serious repercussions on the class. This is also one of the tenets of giving feedback in gaming; often as soon as something is accomplished, whether it is a complete task or stages of a task, the player is informed usually with both auditory and visual cues. The first week of Achievements only three students earned the CR achievement “Shine,” though just as many earned NR Achievements: “High 5” (an acknowledgement of good work and effort in class) and two earned the “Eddie” (the highest award for the best performance in a blog).

The CR “Shine” Achievements went to those students who participated more than the required number of entries (i.e. initial response to comment and then substantive responses to two classmates). The topics and rationale for getting each of the Achievements varied greatly. Player Chilly earned the “High 5” for going above and beyond in her assignment for the week, which was to find three ideas for being efficient and organized. She identified 11, all the while
giving excellent advice to her classmates by discussing the merit of ideas like “Prevent Behavior Issues” and “Get a life.” The posts that earned “Eddies” often had an emotional theme or a certain honesty that one would not expect or a reflective quality that allowed the author to know something more about themselves. The first “Eddie” went to a nanny who, after realizing she was “grossed out” by nursing and did not want to become a “cop,” was reminded about how much she loves her job. She ended her entry with the comment, “why would I ever want to leave a job where I am needed and loved?”

Once the introductory activities of the semester ended—review the syllabus, select guild mates, name the guilds, and selection of topics for presentations—we fell into a comfortable routine that changed very little as the course progressed.

Table 3. Daily Class Schedule

<table>
<thead>
<tr>
<th>Time (in minutes)</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 to 25</td>
<td>Achievements</td>
</tr>
<tr>
<td>5</td>
<td>Transition to lecture or group participation</td>
</tr>
<tr>
<td>30</td>
<td>Lecture</td>
</tr>
<tr>
<td>5</td>
<td>Transition to activity</td>
</tr>
<tr>
<td>15 to 20</td>
<td>Activity (discussion/game)</td>
</tr>
<tr>
<td>5</td>
<td>Activity debriefing</td>
</tr>
<tr>
<td>10</td>
<td>Reminders or Clarifications of the Moodle topic</td>
</tr>
</tbody>
</table>

For the students, as much as the course could or should be considered play, they had far more to do than what they often realized. Weekly, they answered Moodle discussion questions and responded to at least two of their classmates’ posts, which was followed by a reflective blog that was due by Sunday of every week. These assignments were in addition to practicum observations accompanying papers and the chapter presentation where they presented materials on what their classmates would be tested.
Table 4. Weekly Schedule of Assignments

<table>
<thead>
<tr>
<th>Day of the week</th>
<th>Assignment(s) due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Chapter/Topic Presentation</td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>Initial response to Moodle questions (Midnight)</td>
</tr>
<tr>
<td>Friday</td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td>Responses to classmates (Midnight)</td>
</tr>
<tr>
<td></td>
<td>Blog (Midnight)</td>
</tr>
</tbody>
</table>

Ludically Speaking

Though not an intention of the change in the language of the course, which was to allow students to have a more authentic and immersive experience, there was a change in perception according to the responses to one of the items from Questionnaire 1 (Did changing the terminology of the class: learning team to guild, in-class assignment to mini-quest, change the way you felt about or experienced class?). The use of gaming terms allowed many students to approach the assignments with a better attitude and not feel as though they were forced to participate in repetitive class work, something that can occur with standing weekly assignments. The blog assignment forced them to look at similar occurrences every week. Princess Peach commented that, “Changing the terminology took away some of the stress.” Samus “felt like it makes the class environment more relaxed like it felt like a learning adventure.” Aerith said, “Class seemed more fun to do the work and made me want to get more involved.” Even Yuffie, the player who initially felt confused by the change in terminology, stated that making this one small change “made [the class] a bit more fun and helped it to stand out from the rest of my classes.”

While not all students bought into the gaming-as-learning-approach of the course or the change in terms in the same way, as Tron said “no matter what you call it class is class.” This
was true, even for those students who felt that the changes did not make a difference, their reactions—students who saw through the magic circle, like Sora claimed that “things are what they are” were still not negative toward the changes. If some were ambivalent, it did not seem to hold them back from enjoying the experience and gaining benefits from other aspects of the class. For example, Garnet stated that Achievements “definitely made [them] work harder on assignments” and for Cait Sith, earning Achievements “really helped” with their “big problem with motivation.”

**Breaking Out the Nerf Bat: Balancing Game Aspects**

In games like MMOs, designers are able to go back into the game and change the power or aspects of the game—for example make characters stronger by “buffing” or making characters weaker by “nerfing.” Being able to nerf and buff became a large part of the success of this course mainly because of the use of the Constant Comparative Method (CCM), data driven teaching, and being able to read ideas and suggestions from the students (via blogs, forums, tracking charts and field notes) without having to interrupt the natural flow of class by discussing their role in the research. Inspiration for changes in the course emerged at various points in the semester from comments that were made by players, ideas I encountered in the literature, or a gaming event myself in which I just so happened to be taking part.

The following chart and several sections represent the changes that were made and how and why they were executed.

Table 5. Fall 2010 Changes by Week

<table>
<thead>
<tr>
<th>Changes by Week</th>
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<tbody>
<tr>
<td><strong>Weeks of Course</strong></td>
</tr>
<tr>
<td>FA W1</td>
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<td>FA W2</td>
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<td>FA W3</td>
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<td>FA W4</td>
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<td>FA W5</td>
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<td>FA W7</td>
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<td>FA W10-13</td>
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<td>FA W 14</td>
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<tr>
<td>FA W15</td>
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</tbody>
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L33t (elite/leet) Speak

Leet Speak is the language of the self-proclaimed elite players of many MMOs. Not all of this language made it into our classroom and not all of the words that we began with lasted. While several terms or concepts ended up being either used only occasionally or removed entirely from the vocabulary of the class, like *avatar* and *mini-quest* (when students did their own presentations), often these changes occurred because the overall idea did not meld well with students and their understanding of the class and the game. When students were told that their blogs would help form their “future teacher avatars” the confusion set in, and past the second week of class when I brought the term up again, and found that it continued to hamper student understanding, I decided that it would be best to discontinue its use.

Similarly, instead of being able to discuss the efficacy of a groups’ interactive activity that was required for the presentation, it became a discussion reminding players about what a mini-quest was and how it should work. This seemed like in the long run it would be more of a negative distraction than a positive redirection of attention, so unless I was presenting a topic, calling an activity a mini-quest simply did not happen. Therefore, dropping terms that seemed forced or awkward made the terms that did remain more authentic to the experience and part of a natural way of referring to events of the class.
**Student Reactions to Achievements**

The players‘ (students‘) reactions to receiving the Achievements was, in general, very positive, with one very specific exception.

**Recognition is Important**

The first and perhaps most affirming finding regarding the use of Achievements in the class was that many students felt that acknowledging success has a significant positive effect on them. Shortly before the second weekly achievement announcement, *Special K* stated in her blog:

I think rewarding students-no matter what age-as a teacher is important. When you let a student know that he/she is on the right track, they will have something to strive for. She created "student of the week," which rewarded a student every Friday that she thought had the best behavior I really want to attempt to do something like this when I'm teaching. Kids need to be shown that when the do something good, something good will come out of it.

*Sunshine* mirrored this sentiment in her own blog several weeks later:

I really do enjoy them. I like that people can feel good about themselves for little accomplishments throughout the week. I also like to hear what people were reconized [sic] for and hear their opinions on different topics. No matter how old you are, you should always be self-confident and proud of the things you do. It only makes it better when othere [sic] people reconize [sic] your opinions and take interest in your view on topics.

*MightyMouse* recalled a program and its effects on her family:

In elementary school, there was another program called "Book It!" "Book It!" was [a]
program that motivated students to read books, and if you read a certain amount you
would get to receive a free small pizza from Pizza Hut. I loved doing this. My brother
and I use to have competitions on who would read the most books, so that we could go
going to get pizza. Programs like this are great because they are designed to get the student to do
more and learn more while getting rewards for doing so.

Hence, the rewards in each of the blogs reflected how different styles of rewards can foster a
positive impact on students. Player Sunshine’s post was made before my decision to allow the
Achievements to affect their grades, and still she enjoyed the intrinsic yet external motivation
that came from the weekly PowerPoint, which only showed names on the screen.

Working harder but for different reasons

At the heart of my intention of employing the Norm Referenced (NR) Achievements was
not to reward players or even to coax students into doing more work, but rather to make them put
the most into their assignments and get the most out of themselves. Often, players discussed in
their blogs that they enjoyed having their successes or ideas acknowledged, but it took asking
them directly about the effects that the Achievements may have had on their work for them to to
open up this dialogue. Questions from both Questionnaire 1 and Questionnaire 2 pointedly
asked players the following:

• (#3 in 1) Does the potential of earning an achievement encourage you to work harder on
    an assignment or is the achievement alone not enough of a benefit?

• (#4 in 1) How did the public announcement of the weekly Achievements affect your
    motivation?

• (#3 in 2) Achievements were a big part of class. Do you know how many you earned?
    When you did get them, how did you feel?
• (#4 in 2) If you did not get one when you felt like you should have, what type of reaction did you have?

• (#5 in 2) When Achievements became a factor in your final grade – was this incentive enough to do the extra work to get them? What would have been enough to push you to earn more?

As these questionnaires were anonymous, quotes are from several different players covering any or all of the mentioned above questions. The comments were as follows:

From Chun Li, “The Achievements have really made me work harder when I’m writing my moodle/blog. It has inspired me to think more deeply into what I'm going to write”

Taki wrote, “I wanted to do better and work harder knowing that I had a change of getting an achievement”

Sakura stated, “I have worked harder to earn Achievements… I think the Achievements were definitely encouraging and it made me think twice when I was answers the questions on the forum and writing my weekly blog.”

Princess Daisy exclaimed, “Oh yes, knowing that I could potentially achieve an award was definitely a motivation for me to work harder on an assignment. I want to put the extra effort to get recognized for my work”

Toadette asserted, “Each week [the public announcement of Achievements] made me want to figure out what more of what I could do differently with my Moodle reflections and posts. It made me put more time into my reflections and what I wanted to talk about.

Importance of timing

The assignments that students received Achievements on, Blogs and Moodle forum discussions (Moodle) were assigned regular due dates. Blogs had to be posted by Sunday at
Midnight in order to get credit, and Moodles had to have an initial response by Thursday night and then the minimum two responses to classmates or myself by Sunday night. As Achievements were announced on Tuesday, this was as close to the due dates that I could get to announcing winners in person. In Table 6, two columns list the number of Criterion Referenced Achievements (CR) by week per semester. While there is fluctuation in weeks two through seven of the Fall 2010 semester, there is a profound drop in the number of CRs received between week eight during which seven Achievements were earned and week eleven in which two CR Achievements were earned. This change did not occur because the students did the assignments poorly or did not merit them in other way, but because either class was cancelled or the assignments were not required that week owing to scheduling conflicts—midterms, et cetera.

Table 6. Number of players receiving CRs by week

<table>
<thead>
<tr>
<th>Week Received</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>23</td>
<td>23</td>
<td>24</td>
<td>23</td>
<td>22</td>
<td>25</td>
<td>22</td>
<td>20</td>
<td>25</td>
<td>23</td>
</tr>
</tbody>
</table>

This break in the routine of receiving the Achievements created a negative effect for students. Player *Special K* claimed that she “lost her momentum and just forgot to do it” or another explanation might be that students did not connect with the reflective topic. As one student (Player *Froggie*) put it, "there just wasn't that much to talk about other than to say ‘Oh that's a neat idea.’" Once the pattern resumed in class, the number of players receiving Achievements climbed and reached a peak of nine in the final week of Moodles. Close to half of participating students received a CR and actually this was also the week that “Mega Shine” was created as several students posted 13-15 comments (ten to twelve beyond the required three). I felt that the quality and quantity of postings deserved additional recognition. This again could
also have a lot to do with the topic of the week. In this assignment, students were asked to respond either positively or negatively to the idea that technology is becoming a hindrance to people both socially and in their skill base.

Presence/attendance is essential

The downside to awarding Achievements is that not everyone can earn the highest rank of NR or have their thoughts acknowledged; sometimes students were not as insightful as their classmates, or there simply was not enough class time to accommodate everyone. Question 4, of the in-class questionnaire, asked players about their reaction to instances when they did not receive an Achievement, but felt as though they should have.

Table 7. Q4 - When I didn't get one but "should have"

<table>
<thead>
<tr>
<th>Comment:</th>
<th>Tally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trusted instructor to be fair</td>
<td>4</td>
</tr>
<tr>
<td>Didn't happen</td>
<td>4</td>
</tr>
<tr>
<td>Didn't bother me too much/Got over it</td>
<td>7</td>
</tr>
<tr>
<td>Needed to work harder</td>
<td>4</td>
</tr>
<tr>
<td>Someone did better</td>
<td>2</td>
</tr>
<tr>
<td>Didn't care</td>
<td>1</td>
</tr>
<tr>
<td>No big deal</td>
<td>1</td>
</tr>
<tr>
<td>Shocked</td>
<td>1</td>
</tr>
<tr>
<td>Sad</td>
<td>1</td>
</tr>
<tr>
<td>Disappointed \textit{bc} [sic] I tried</td>
<td>1</td>
</tr>
<tr>
<td>Discouraged</td>
<td>1</td>
</tr>
<tr>
<td>\textit{Disinspired} [sic] for next week</td>
<td>1</td>
</tr>
</tbody>
</table>

Player reactions to this type of activity indicated that for as excited as they were about receiving this approval, not receiving the Achievements had serious repercussions for them, particularly if they were discouraged or uninspired to continue to work hard because they were not acknowledged. Even the perception that a student's work is not praised or effort
acknowledged had serious repercussions. One player in the at-home questionnaire was bordering on anger because she did not receive an Achievement, to her knowledge, during the course of the semester and claimed, “[the Achievements] did not motivate me at all because when I felt I had done a good job I never got one. [The presentation] just wasted the first 20 minutes of class every week.” Reading this I was puzzled and distressed. Her obvious disappointment forced me to go through my roster to see who this student could have been. As it turned out, all students earned at least two Achievements during the semester; however, if they were not in attendance the day of the presentation, they may have never found out, in spite of the presentation power points being posted on the class’ Moodle page every Tuesday before class began. This player was discouraged because she was not in class on the days her Achievements were announced. She was a less enthusiastic player because she was unavailable on the days her Achievements were acknowledged, so it stands to reason that in cases such as this while the social aspect of achievement (Gee’s Affinity Group Principle) is valuable, it does not hold as much importance to the student/player as witnessing or being present for the receipt of the achievement in the first place.

**Spring 2011: EDCI 1000 2nd Edition**

As with many games, future editions often contain changes in mechanics, narrative, and often, characters. With EDCI, the game is no different.

**Play Space: The Classroom**

The play space for the second edition of EDCI 1000 was a classroom on the second floor of Coates Hall. The design of the classroom with its parallel rows of chairs set perpendicular to the front of the room was much more traditional and arranged more for a lecture style classroom with individual seating, as opposed to tables, which would accommodate group work (guilds) in
the Peabody *Pi* room. The classroom had two doors on the right-hand side meant for easier access to both the back and front of the room. However, with the rows constantly shifting and posing a barrier to the back door, the door itself seemed quite superfluous. In the back of the room closer to the wall (actually a wall of windows), there was a third door, which was not labeled like a closet but rather numbered like a classroom. Occasionally, the desks surrounding that door and on the way to the back door would be scattered and skewed leading the players and me to wonder what was in there and why the person that needed it would not put the desks back in place. The classroom was used by other instructors throughout the week. Often when the players and I arrived, we found a row of desks facing the class at the front of the room, or cryptic scribbling on the white board. Though this classroom had the same technical display equipment in the form of a digital projector, Elmo and computer, instead of using a rolling desk for the computer, this room used a lectern and podium set up so that teacher-centered lectures are almost necessary.

**The Players: Students of the 2nd Edition**

The roster for this course (Spring 2011) was different from that of Fall 2010. The number of students in the Spring 2011 course numbered 32, of that number, 27 were in education, PK-3, and kinesiology respectively. This time, students from other majors were also enrolled in the class, one student each from Business, Communication Disorders, Mass Communications, Merchandising, and two from Pre-Nursing.

The students, or players, were given consent forms that explained the study, and were given the option of opting out of any portion of the study with which they did not feel comfortable. No one voiced an objection to participating in the study. They were informed that pseudonyms would be used, and several suggested ones that they would like to use such as
HeartBreaker and OoLooLoo. Other students used assigned names or in cases where quotes emanated from anonymous sources, names of videogame characters were used, for example: Mario, Luigi, Peach and Samus.

Tutorial Level

Again, I chose to start the class with a discussion of what videogames and gamers meant so that when I introduced the modifications to the course I would have a better understanding as to what the students prior knowledge and attitudes were.

Hero and Heroine of Gamers and Videogames

When I asked students about their prior experience with gaming or gamer knowledge, two students openly admitted to playing multiple types of games. Their answers started a completely different conversation than that of the previous semester as it seemed that the students of the Spring 2011 semester expected HeartBreaker, a male, to play games, especially first person shooters (games that focus on eliminating enemies, collecting ammunition and health and completing missions but where the camera view is that of through the avatar’s eyes) and sports games. What the class seemed to be surprised by was GamerGrrl’s devotion to shooters. The difference between the two is that HeartBreaker is male. The general opinion of most students, and perhaps most aficionados of videogames, is that females were not supposed to play types of these games (first person shooters). The collective opinion of this class seemed to be that girls play "real" games (games that might earlier have been board games). Moreover, games like “Farmville,” “Words with Friends” and “Bejeweled” are not even the most popular according to the class, but instead, games on the Wii console are considered among the top favorites. Though not many of them own one, those that do, used them mainly for exer-games (“Wii Fit,” “EA Active,” “Zumba,” et cetera) or for the social games like “Mario Party.” To the
majority of the females in the Spring 2011 course of EDCI 1000, there was a certain level of masculinity that went along with playing many types of videogames and the more outwardly violent the more male-centric they believe it is. Player Stepford claimed “if they wanted me or other girls to play it don’t you think they would have more female characters or not have them look like…” She then blushed and held her hands out in front of herself to simulate the grossly exaggerated physical proportions of the stereotypical female videogame character.

HeartBreaker then interjected with a rebuttal about “Samus,” a character from a game called “Metroid,” which has been around in various incarnations since the mid 1980s, claiming “well of course girls in videogames look like.” He too held his hands out in front of himself but did not blush and said, “when guys are saving the world they want something pretty to look at, seriously, look at commercials for makeup, you want some plain chick selling you makeup?” Stepford made a face of both compromise and understanding ending the conversation with, “You have a point.” Many of the ideas were not as confusing to this class; the idea of Achievements as additional grade points charged the room with energy.

Rules of Play

Some of the aspects of the game had changed since the first time I introduced the game to the last set of players. I chose to drop some of the terms, such as avatar and mini-quest, from the content and context of the course, although they remained as part of my vocabulary in PowerPoints, simply because I felt that this was the most appropriate term for my presentation but would be unnecessary for theirs. As I would later uncover, the most influential change was the announcement on the first day of the course that Achievements would be accumulated into grade points. The values had increased on the “Mega Shine” and the “Eddie;” both of those would now be worth two points, everything else would be worth one point – to balance this out
students would have to accumulate five points.

**Sequence of Play**

There were fewer changes to the mechanics of play in this version of game. In spite of numerous changes, based on suggestions from students, guilds were both a blessing and a bane to the students of EDCI 1000. The other major changes included the value of Achievements.

Choosing the Guilds

In the previous semester, students chose their guild mates on the second day of face-to-face class. Many of them did not know each other and simply chose their guilds based on who was there and who was sitting closest to them. This led to myriad problems in the course not just with the work that the groups were supposed to produce but for the individuals themselves. In Questionnaire 1, one pointed question about the guilds asked: How did using the “guild” change your experience of the class towards the experience itself, materials presented and presentations? Or did it?

While several students found solace and comfort in their guilds, like *Sophitia* who stated that having a guild “made teaching our presentations easier because you had your guild with you when you presented and not just standing up there by yourself, “ or like *Cammy* who “liked the guild idea. It was a way for me to connect with my classmates and also work together to teach the class.” Then there was *Froggie* who remained in contact with most of her guild mates and studies with them on a regular basis. However, there were also those students who were not fans of the guilds. For example, one student called her guild “pointless and ineffective.” *Froggie* discussed both in conversation with me and in her presentation reflection blog that she “hated trying to meet with [GLa-DOS],” claiming that her guild mate was “late, argumentative, hard to work with and sent never-ending power point slides that she then just read off the screen – which
we all agreed not to do.”

When the topic of guilds and guild members were brought up in the interview, several of participants suggested that we have an anonymous rating of guild mates, which could affect their grades negatively like Achievements affect them positively or that their rankings should affect their participation grades. I did not implement this suggestion, though I did implement one student suggestion about delaying the selection of guild mates.

Instead of students selecting guild mates (study groups) in the second week of class, they selected their guild members in the fourth week after doing several “ice breaking” activities each week. Ice breaking activities, such as playing "alliterative name game” (students find an alliterative adjective to go along with whatever name they chose to be called, “Jazzy Jenn,” then going through trying to name everyone who announced their name before it), helped students identify other students they might want to work with in study groups. They also played “silent sorting” where without speaking they had to communicate different facts about themselves like majors, ages, number of siblings, where they live et cetera. We also submitted and read interesting facts about ourselves and had to try to guess to whom each fact belonged.

Despite the promise of "ice breaker" activities, they did not change how guilds were chosen. As before, students simply picked students sitting close to them that day in class, and much like the previous semester, students had many complaints about their guildmates. In accordance with class rules and MMORPG design, one group event went so far as to vote two girls out of the group since they did not respond to requests to meet and did not appear in class often enough for the students to meet their guild mates.

Although some students are not fans of group work, several commented in blogs and in their responses that attending such a large university had left them feeling alienated, “lonely and
depressed.” GamerGrl said the guilds helped them out by allowing them to meet their classmates and develop friendships, which could be the difference between striving for success or failing.

Table 8. Spring 2011 Changes By Week (Spring 2011)

<table>
<thead>
<tr>
<th>Spring 2011 Changes By Week</th>
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</thead>
<tbody>
<tr>
<td>SP W1</td>
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<td>SP W 2</td>
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<td>SP W 4</td>
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<td>SP W 5-8</td>
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<td>SP W 9</td>
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<td>SP W 10-13</td>
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<tr>
<td>SP W 14</td>
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<tr>
<td>SP W 15</td>
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</tbody>
</table>

**Buffing: Getting the Designers’ love**

Just as CCM influenced certain aspects of the mechanics in the first semester by nerfing, weakening traits, in this semester buffing, strengthening the Achievements, allowed the Achievements to aid students not only in terms of participation in class but to feel more connected as people.

In the first semester, the study students were excited by the idea of earning Achievements. As was previously discussed, specific aspects were crucial to the success of
 Achievements: players feeling recognized, allowing them to work for Achievements but for their own reasons, (i.e. it was never a requirement for them to get an achievement), timing is critical, as is being present when being recognized. There was an additional aspect to the player’s relationship with the Achievements that has yet to be discussed, the buffing of the Achievements.

Halfway through the Fall 2010 semester, I noticed that while students were still earning Achievements, those not striving for Achievements appeared obviously disinterested in them in them as evidenced by texting or checking Facebook. At the same time, I encountered a quote by Raph Koster (2004) that stated, “gamers are so bottom-line that if an activity doesn’t give a quantifiable reward they’ll consider it irrelevant” (p. 121). It was at this point that I decided that students were going to be able to accumulate points from their Achievements and add them to their final grades in an effort to regain interest in the discussion portion of the Achievements, even when they did not earn them. I made this announcement during week eight of the semester; however, the benefit of this was superseded by either Moodle or class being canceled for the following three weeks.

For the Spring 2011 semester, I announced in the beginning that Achievements would do more than provide quality feedback, they were value laden and would actually boost student grades in the course. Owing to their early awareness regarding the value of Achievements, there was a greater push from them as players to earn Achievements. Several weeks prior to the announcement of the multiple values of the Achievements, several players became aware of exactly how much more effort they were putting into earning the various levels of the CR Achievements. Perhaps this was due to as Stepford claimed, the “wonderful Spring 2011 weather,” and that many students claimed in dozens of blog posts that they, like Lulu, had “senioritis (for the third year in a row)” or like Tifa who “just [hated] being cooped up when
[she] could be feeling the sun on my skin.” Or it could have simply been my telling them repeatedly how impressed I was with the groups consistent surpassing of my expectations. Whatever the truth, there was a decidedly greater effort on the part of students to strive for the extra points. Soon afterwards, many players were making comments about how they thought that a “Mega” should be worth more than a “regular” “Shine,” which it was, but it was also three times the work and a “Super Shine” was of the same value as a “regular” “Shine,” but was twice the work. A very brief class discussion ensued and ended when players agreed that the reward should be commensurate with the effort. It was difficult for me to argue against this, as often I agree. While an authentic game master (GM) might respond to this discussion with "be thankful that you are getting anything," I felt as though this would be contrary to the goals of the game and spirit of the environment established in the classroom.

To accommodate the player's desires, and in the spirit of the CCM, I decided one final time to change the mechanics of the games. In chart below, the shaded weeks are times when I issued announcements to students about the values of their Achievements.

Table 9. Percentages of Students receiving CR Achievements by Week and Semester

<table>
<thead>
<tr>
<th>Percentages of Students receiving CR Achievements by Week and Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall 2010 Semester</strong></td>
</tr>
<tr>
<td><strong>Week</strong></td>
</tr>
<tr>
<td><strong>Percent</strong></td>
</tr>
<tr>
<td><strong>Spring 2011 Semester</strong></td>
</tr>
<tr>
<td><strong>Week</strong></td>
</tr>
<tr>
<td><strong>Percent</strong></td>
</tr>
</tbody>
</table>

Although the final announcement did not significantly raise the grades of the students of the Spring 2011 semester, it did allow them to feel that they had negotiated a better price for their efforts, which was a victory on its own. The initial announcement was obviously the most
important for this group and allowed them to consistently be aware of the benefit of doing the extra work, and as a whole, they earned more Achievements than the Fall 2010 2011 semester.

**Chat Channel: Themes from Students in Their own words**

In an attempt to gain a more generalizable view of this generation of students, I sought out themes that emerged from both courses. The topics of the blogs were not dictated and so revealed more of the issues then the students were organically encountering, at the time the posts were created.

**Blogs**

The reflective blogs were one of two assignments that students were to complete on a weekly basis. The actual purpose of the assignment was to help them become more aware of how others teach and how this could influence their teaching styles in the future. While this was a topic students discussed at length over the two semesters, they generated far more written responses, posting approximately 780 blog entries over the two semesters. As the specific topics were not prescribed, the topics of the blogs often veered onto more personal subject matters. Three themes were selected for analysis. Additionally, topics, such as aspects of other people’s teaching style that students did and did not want to emulate, came across in their own declarative statements of how they wished to teach or run their classrooms. Blog posts also crossed topics on many occasions. Often, when students discussed disliking a specific class they also mentioned how they would not emulate a professor or how they needed to find a better balance between school and social life.

The themes that emerged that seemed to be most important to the students, as they were most frequently discussed, were those of desired future teaching style, stressors, and self-discovery. The main thrust behind looking at these comments was not only to seek insight into
the students as people, but to draw greater connections to between who the students are/want to be and what they need from their educators. From these connections educators may be able to see patterns in and which teaching strategies can be adopted from ludic pedagogy into a personal Best Practice.

Desired Future Teaching Style

Based on their experiences either in the classroom as “teachers” (many students taught in daycare centers, summer camps or have other jobs that allow them access to activities with younger children) or experiences as students, they posted approximately 52 comments, many of which had ideas that were repeated across the semesters. For those ideas that were repeated, entries were coded and tallied using a broad interpretation of each idea.

Table 10. Comments on Future Teaching Style

<table>
<thead>
<tr>
<th>Comments</th>
<th># of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>I will be open with my students and listen to their ideas about the class</td>
<td>7</td>
</tr>
<tr>
<td>I want to make learning fun as well as have a sense of sternness</td>
<td>4</td>
</tr>
<tr>
<td>I will relate to my students by taking interests in them as people</td>
<td>4</td>
</tr>
<tr>
<td>I want to love what I do</td>
<td>3</td>
</tr>
<tr>
<td>Thanks to my students, I have realized that teaching is a learning experience</td>
<td>3</td>
</tr>
<tr>
<td>I will never just lecture</td>
<td>3</td>
</tr>
<tr>
<td>We need to help our &quot;children&quot; find themselves and their inner winner</td>
<td>3</td>
</tr>
<tr>
<td>I love the idea of having a &quot;star student&quot; of the week</td>
<td>2</td>
</tr>
<tr>
<td>I have realized that you cannot be boring when teaching anything because no one will be interested</td>
<td>2</td>
</tr>
<tr>
<td>I would like to get involved in organizations to help children cope with sexual abuse</td>
<td>2</td>
</tr>
<tr>
<td>I think I will give lots of bonus opportunities</td>
<td>2</td>
</tr>
<tr>
<td>As a teacher, I will do my best to always be fair and not give leniency just because they are &quot;baseball boys&quot;</td>
<td>1</td>
</tr>
<tr>
<td>I believe in the [Ursuline] ideas and principles</td>
<td>1</td>
</tr>
<tr>
<td>I don't think that ability grouping is a very good idea.</td>
<td>1</td>
</tr>
<tr>
<td>I hope I can find a way to be informed and organized with the [504] information about my students and their special needs</td>
<td>1</td>
</tr>
<tr>
<td>I like the idea of giving positive choices to deal with behavior problems in the classroom</td>
<td>1</td>
</tr>
</tbody>
</table>
(Table Continued)

<table>
<thead>
<tr>
<th>Comment</th>
<th># of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>I realized how important outside play time is for not only children, but also for the teacher's sanity</td>
<td>1</td>
</tr>
<tr>
<td>I think nap time is a wonderful invention. It helps the students relax and calm down. It also helps the teachers do the same.</td>
<td>1</td>
</tr>
<tr>
<td>I think when schools are going through budget cuts, it motivates teachers to be the best they can be</td>
<td>1</td>
</tr>
<tr>
<td>I want to be a professional teacher.</td>
<td>1</td>
</tr>
<tr>
<td>I want to bring life in to my classroom by letting students learn via experience.</td>
<td>1</td>
</tr>
<tr>
<td>I want to keep my personal life at home and my professional life should be the only thing at school</td>
<td>1</td>
</tr>
<tr>
<td>I will explain things to my students so that they don't freak out, like me!!!</td>
<td>1</td>
</tr>
<tr>
<td>I will have different areas for the kids to play or be active in</td>
<td>1</td>
</tr>
<tr>
<td>I will keep my classroom civilized and maintain peace</td>
<td>1</td>
</tr>
<tr>
<td>I will make sure that my students and I cover the materials before each test</td>
<td>1</td>
</tr>
<tr>
<td>I won't gossip, I will be faithful to my students</td>
<td>1</td>
</tr>
<tr>
<td>It is important for me to establish good relationships with the people that I work with</td>
<td>1</td>
</tr>
<tr>
<td>We need to stop asking children to grow up so fast</td>
<td>1</td>
</tr>
</tbody>
</table>

Stressors

Stress was a theme that students discussed frequently. This stress ranged from school work to health to inter and intrapersonal issues. As many of the students were freshman and many of them in their first semester of college, most issues could easily be consolidated into issues of learning, independent time management, or even dealing with issues of transitioning to adulthood. As topics arose, some would be collapsed into an overarching category and then additional comments were categorized and tallied. The exception was found in complaints about specific courses, which have been collapsed into one comment as students had no compunction about naming professors and instructors who did not fulfill their needs.

Table 11. Comments on Stressors

<table>
<thead>
<tr>
<th>Comments</th>
<th># of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>I hate my (generic) class. Why are we taking it? I'm never going to use it.</td>
<td>12</td>
</tr>
<tr>
<td>Scheduling for next semester</td>
<td>9</td>
</tr>
</tbody>
</table>
In both semesters (2010/2011), there were specific events that sent many students into panics, and at the same time, being absolutely excited about their futures. For the Fall 2010 semester class, the most panic-causing event was the PK-3 advising meeting. While there were only five blog comments about the advising meeting, the face-to-face conversations in the classroom were impassioned. For the Spring 2011 semester class, this event was a milestone or accomplishment, and for others this was terrifying.

Self Discovery

In both semesters, students often came to conclusions about themselves or their lives as
reflected in their blogs and many times it seemed as if the conclusions were a surprise. There
was only one item that really became repeated across the semesters and this was the negative
reaction of strangers to the students becoming teachers. Occasionally, students would discuss
how they should react, or wished they would have, or wanted to have a better retort for this
“look.” For all of the other comments, the ideas appeared only once in the blogs, however, could
be seen mirrored in their behaviors in class, reactions to others in forums, and in their formal
assignments of observation and chapter presentations.

Table 12. Comments on Self Discovery

<table>
<thead>
<tr>
<th>Comments</th>
<th># of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>You're crazy for teaching look</td>
<td>15</td>
</tr>
<tr>
<td>Gender inequality balances out if you want it to</td>
<td>1</td>
</tr>
<tr>
<td>I want to go into both nursing + teaching</td>
<td>1</td>
</tr>
<tr>
<td>Adults needs to learn to find middle ground</td>
<td>1</td>
</tr>
<tr>
<td>Completed two legs of triathlon</td>
<td>1</td>
</tr>
<tr>
<td>If taught would want to be history</td>
<td>1</td>
</tr>
<tr>
<td>I was a bully</td>
<td>1</td>
</tr>
<tr>
<td>I still giggle at words like * kinky*</td>
<td>1</td>
</tr>
<tr>
<td>It’s not how you Fall 2010, it’s how you pick yourself up</td>
<td>1</td>
</tr>
<tr>
<td>There is balance in life. I want to find it</td>
<td>1</td>
</tr>
<tr>
<td>I was offended by someone being a jerk to someone else</td>
<td>1</td>
</tr>
<tr>
<td>If there is something you need to do today - DO IT</td>
<td>1</td>
</tr>
<tr>
<td>My brother was bullied and it enrages me.</td>
<td>1</td>
</tr>
<tr>
<td>Life isn't about a perfect choice, it's about committing to a choice</td>
<td>1</td>
</tr>
<tr>
<td>Not ready for real world</td>
<td>1</td>
</tr>
<tr>
<td>Place where I grew up not homogenous</td>
<td>1</td>
</tr>
<tr>
<td>If not busy living then you're busy dying</td>
<td>1</td>
</tr>
<tr>
<td>I like putting thoughts down</td>
<td>1</td>
</tr>
<tr>
<td>Live life to fullest</td>
<td>1</td>
</tr>
<tr>
<td>Need to be more organized</td>
<td>1</td>
</tr>
<tr>
<td>Want to read for fun</td>
<td>1</td>
</tr>
<tr>
<td>Not good at taking notes</td>
<td>1</td>
</tr>
<tr>
<td>Constructive criticism</td>
<td>1</td>
</tr>
</tbody>
</table>
Summary

A large number of students stated that they enjoyed the blog assignment, though at times during the semesters, they would complain, try to convince me to let them out of it, or even though it was beneficial, they would forget to do it. Overall, I believe that much can be learned from this particular group of students, not just in the sense that educators can find out who the students are, but more what can be done to make them better students and more successful after graduation.
CHAPTER 5.

DISCUSSION

This study provided a qualitative examination of the reaction and reception of a gamified college course. Using the framework of best practices to find exemplary ways or examples of outstanding teaching practice that resulted in high levels of student achievement, I examined a variety of games, namely Massively Multiplayer Online Role Playing Games (MMORPG) and Table Top Role Playing Games (TTRPG), whose goals and strategies were designed to motivate players to reach high levels of achievement through a rewards system in which to implement in my college classroom. My limited experience with online videogames convinced me that the gaming environment could be transferred to the classroom and might open up new avenues of teaching and learning for both my students as pre-service teachers and later their students as they assume their roles as professional teachers in public schools. Therefore, in implementing a "gamified" version of my traditional subject matter, I selected elements of each of these game styles and redesigned my assigned college course in order to make it decidedly more game like.

My proposed study lasted over the course of two semesters with two different groups of subjects. Owing to the fact that the methodology for this study was participant/observer, I was able to evaluate the efficacy of the "gamified" courses on several levels:

- Through weekly engagement with students/subjects/players in a classroom setting, and
- Through course work, which was a central element in the "gamified" course mechanic.

As I transformed those courses that I taught for the length of semesters, I was able to examine and describe the students/players reactions both emotionally and physically, evidenced in field
observations, but also academically through their course work, which became part of the game mechanic.

By identifying common reactions to changes in course functionality and themes from the blog course assignment, I was able to modify course functionality to be more effective and identified flaws or potential problems with using a ludic teaching method. The data gathered from this study provides: (1) up-to-date information on student reception to forward-looking teaching methods and (2) a clear understanding of pre-service teacher perceptions by Millennial students regarding their future roles as professional teachers, their stressors, their stressors as college students, and their emerging and ever evolving discovery of self.

Discussion

Reactions to “Playing Class”

This study actively displaced students from their preconceived notions of what a class is or could be. This was accomplished with several important changes. The first step in "gamifying" my college course was to change the vocabulary from that used in a traditional college classroom to vocabulary used in a gaming environment. In introducing a new vocabulary of learning into my Fall 2010 course/s, I selected gaming terms such as "quests," "raids," and "guilds." These corresponded respectively to the traditional educational terms of assignments, practicum, and study groups. In the second step to "gamifying" the classroom, I assumed the role of Game Master or GM. The Game Master's role in a game is to facilitate, mediate, and to "keep the game moving forward." This translated in a classroom setting to initiating Quests (posting assignments), awarding Achievements (immediate feedback at first, then feedback with value points later), supervising Raids (practicum), and mediating among the Guilds (study groups). In the third step in transforming a traditional college course into a
"gamified" version, I introduced "Achievements" or "Chievies" for short. "Achievements" were awards given to students each week for exceptional participation or performance.

Language and Class Functionality

The first and most obvious change, one that followed the original methodology designed by Lee Sheldon, a game design professor, was the change in language. As was previously mentioned, assignments were quests; the practicum or field experience was the raid; learning groups that were formed for presentation became guilds; and activities in class became mini-quests. The change from educational terms to gaming terms had both negative and positive effects on the functionality of the class. On the negative side, the language often became a distraction for students especially in the beginning and if they had little prior experience with the new terms from earlier gaming experiences. In fact, all but a handful of students had no acknowledged experience with games. Each semester of the study, I needed to explain to students that their understanding of gamers was inaccurate. Often students associated games with isolated teenage males who played violent games on consoles and did not see their casual gaming habits as something that could identify them as gamers, or at least, casual gamers.

Since gamer identity or knowledge of gaming culture was a missing factor for in this re-designed college course, many students were confused by words like “avatar” and the idea of going on a “raid” or even why such terms were used. The level of student confusion was such that I decided to reduce the number of gaming terms, although students were exposed to the eliminated terms when they viewed instructional PowerPoint presentations that I had designed for the course. Initially, I wanted them to think of themselves as role playing their future selves. They were to be teachers and so the presentation quest was to simulate the role of classroom instructor. This simulated role assumed by students was their avatar. Despite my best efforts,
students were unable to embrace the concept of the "Avatar." At this point, I chose to exclude this element as part of the "gamified" version under study but continued with the other elements (changed terms).

Other terms were dropped, not by me or even by conscious choice, but rather by the students themselves. I used the term mini-quest in reference to activities that we did in class while I was modeling class/lecture structure. For example, when discussing the ideas of creating a schedule for a school day, we did a mini-quest in which students were to either remember a schedule they experienced in high school or how they would like to structure a day in an elementary class. Several groups did activities similar to this; however, they did not use the name mini-quest, instead, they just called it an activity or simply did not label it all. Again, this term was not essential to the function of the class so it was simply eliminated. To avoid the focus of the class being on terms that students were not comfortable with and would not be necessary as part of their teacher education, I down played their importance. This allowed the gaming-as-teaching-and-learning element of the class, as well as the conveying of course materials, to proceed more smoothly. In modeling how one makes curricular decisions based upon student needs, interests and abilities while still challenging them, was something that I hoped my students would internalize as a positive teacher trait.

Confirming claims made by game-based learning scholars (Barab et al., 2009; Davidson & Goldberg, 2009; Farell, 2009; Gee, 2003; Jenkins, 2005; McGonigal, 2010; McGonigal & Colbert, 2011; Ryan, 2006; Squire et al., 2008; Steinkuehler, 2011a) many students felt that they were able to see assignments in a different light simply by changing what they were called. According to student comments, assignments seemed less like “drudgery” and more like fun, so they were willing to put in far more work than was expected of them. This expanded or more in-
depth amount of work could also be attributed to the Achievements that students received for their blogging and participation in the weekly Moodle discussions.

Guilds

The use of guilds seemed natural, yet in my mind, this was just a change of language. Students had frequently used study groups for other courses. While many of them disliked the use of the guild, one student called her guild “mostly useless,” just as many found them comforting in the face of their presentations, saying that it was reassuring “having someone up there to back [them] up.” The challenge of dealing with multiple conflicting schedules, conflicting personalities and teaching styles proved to be burdensome for students, even those who had good interpersonal relationships between guildmates.

The guild took on a new role in the courses as the Boss Fight/Final Exam became a group effort at a student suggestion and class-wide vote. The rule for this fight was simple: for a final to be accepted and graded, all students in the guild had to agree on every answer posted.

It was in this activity that students used varied approaches to prepare for the exam. Two guilds split up the chapters/topics and each student became the expert on their chapter and when questions pertained to those topics that student answered. One guild decided they would “double up” so each topic had two experts in the group – this occasionally led to a handful of disagreements in the taking of the exam. The tactic most frequently employed was that students just studied as individuals from the study guide and came together only at the time of the exam. These guilds, those that were teams of individuals, had the greatest number of disagreements while taking the exam and almost predictably also had the lowest scores.

Many of the students enjoyed taking the group final because it took a fraction of the time that they assumed a 50 question multiple-choice exam would take, and their scores were higher
than they expected. An unanticipated but still enjoyed benefit was that as only five exams had to be graded each semester, students did not have to wait for their grades on the exam or for the course final grade. During both semesters, each class had their final grades posted before the end of the designated exam time.

The use of the group final seemed to fall neatly into what Millennials desire most from education – nearly immediate feedback and update grades, being able to take a co-leadership roles, as each student in the highly functional groups had areas of expertise but were still able to rely on others when necessary (Cote & Allahar, 2007; Crone & McKay, 2007; Jones, 2009; McAlister, 2009; McGlynn, 2008; Montell, 2010; Prensky, 2001, 2010).

Achievements

Many of the changes were based on the original work of Sheldon (2010); however, the addition of weekly Achievements was a creation of my own and was based on my experiences playing MMORPGs and research into game design and Best Practices. Both Game Design theory and Best Practice theory require frequent and specific feedback. The Achievements and changes made to them over the course of the study presented a number of interesting findings, the most important being that students want to be recognized for their work and that timing is crucial.

According to Marzano’s (2010) work, often students or participants receive awards simply for showing up or simply for participating in an event, which, in all actuality, renders the achievement meaningless. To avoid this, only students who did extra work (Criterion Referenced Achievements) or performed better than others in common work (Norm Referenced Achievements) received the Achievements. This acknowledgement of effort or skill made them more valuable to the students on an intrinsic level, but that Achievements influenced grades the extrinsic value increased as did the number of those student receiving criterion referenced
Achievements. This affect was most apparent when the courses were compared to each other and students of the Spring 2011 semester were made aware of the influence Achievements had on their grades from the first day, whereas the Fall 2010 semester students only found out halfway through the course. During the Fall 2010 semester, the highest percentage of students who received criterion referenced (CR) Achievements was 36% and this is still lower than the lowest percentage (37%) of students who received them in the Spring 2011. This also affected their average weekly performance in which only 20.8% of students in the Fall 2010 semester and 45.6% of the Spring 2011 class earned CR Achievements on a weekly basis.

Moreover, timing of feedback is critical. Game designers (Conway, 2010; Falstein & Barwood, 2006; R. Koster, 2004; McGonigal, 2010; Salen & Zimmerman, 2003; Schell, 2008, 2010; Soell, 2011), and Lewin (1995) stressed that feedback must come as close to the inciting event as possible. This recommendation, along with Prensky’s (2010) idea, that timing could mean as early as the next class may certainly account for the diminished number of CR receipts in the Fall 2010 semester. At one point, there were three weeks during which students did not receive Achievements due to class or assignment cancellation; before this break in their routine, the number of students receiving CRs and, therefore engaging in extra work, was climbing steadily. After the three-week break, the number of students receiving CRs was at an all-time low, and this was also the week when the highest number of students did not do the assignment at all. This could, if Lewin (1995) and Prensky (2010) are correct, be attributed to the fact that there were no announcements of any Achievements during those weeks. While I can observe and try to understand what the students are thinking and feeling, the best way to know and really understand is to examine what the students are claiming in their own words.
Chat Channels

The blogs were weekly assignments that allowed or required students to process what they were experiencing both in their lives and with the course materials. Students were permitted to discuss any topic they were interested in as long as it related to education or course materials. Over the weekly examination several themes emerged, from pondering what their future teaching styles might be to the stress levels some were experiencing, as well as illuminating moments of self-discovery.

One of the most prominent themes that appeared was the notion of the students’ future desired teaching methods. They often echoed Dewey’s (2009) ideas that education should not be focused on drill and rote memorization rather it should be based on experience and mental experiment. Many students also harkened to Daniels and Bizar (2005) when they discussed the ideas of student-directed instruction and strategies. However, contrary to their words and literature on Millennial students, when they (the students) were asked to teach aspects of course materials, all of their respective presentations were based on “teacher” centered lecture with power points that were often only read from the large screen. The presentations also included game-like activities that involved memorization and recitation of definitions without any type of experiential learning or the inclusion of student-guided methods. The students-as-teachers were on auto-pilot, and in spite of what they desired of themselves in the future, they reverted to what they have experienced as K-12 students themselves, yet loathed as “appropriate instruction.”

The second theme that appeared was that of stress and what caused the most stress. Occasionally, students mentioned that they missed home and friends, as is to be expected of any student that is away from home for the first time. However, several complaints appeared to be a function of their membership as part of the Millennial generation. The comments for this
particular theme could be combined into larger schema. The remaining comments were based upon four sources: exams and coursework, scheduling for the next semester, most commonly “meaningless” courses, and professor behavior.

These students often and "angrily" discussed problems with scheduling of examinations and larger requirements of their course work. Many felt that “dead week” (the week before finals when students were not supposed to be assigned additional work) was “never dead” or that assignments were due at similar times from different courses and so they were unable to complete them. This was particularly true for students who had additional responsibilities outside of school like family or jobs. These comments are typical of Millennial students. Several theorists (Cote & Allahar, 2007; Crone & McKay, 2007; Jones, 2009; McAlister, 2009; McGlynn, 2008; Montell, 2010; Prensky, 2001, 2010) claim that students of this generation seek not only a greater work-life balance than previous generations but also require greater flexibility in their schedules and expect it of their educational institutions as well.

Students blogged frequently about scheduling for the following semester, often they complained of the system not working or not being able to register for courses that they needed because as freshmen they were the last to be able to register. These ideas are in concert with Millennial theory (Cote & Allahar, 2007; Crone & McKay, 2007; Jones, 2009; McAlister, 2009; McGlynn, 2008; Montell, 2010; Prensky, 2001, 2010), which claims in part, that this generation is particularly incapable of dealing effectively with systems (technologically based or otherwise) that do not function correctly. Also, they see education as a service they are purchasing and as such should have equal access to all services (or courses) as any other group.

Millennial theory (Cote & Allahar, 2007; Crone & McKay, 2007; Jones, 2009; McAlister, 2009; McGlynn, 2008; Montell, 2010; Prensky, 2001, 2010) states that this
generation of students desires knowledge insatiably; however, this hunger is not for all knowledge or just for the sake of knowing information, but rather it is on specific topics and usually only what can benefit them the most. Students of both semesters complained not just in their blogs but also in conversations with me and their classmates about courses in which they failed to see value; for example, course work in geology. Instead, these students wanted to take courses that would aid them either in teaching (like a classroom management course) or something that they were more interested in like astronomy. While many students saw the purpose of a core curriculum or in having a well-rounded education, they were offended by the idea that their time and money was being wasted on courses that they were certain to “never use again.” Remember, Millennials believe they are not being educated but rather that they are "buying" an education. Therefore, as a consumer of education, Millennials feel they should be in control of the product, which in this case, is education.

The professors of previous generations seem to be one of the greatest sources of stress for this group of students. Often complaints ranged from professors being unorganized and rambling on tangents rather than focusing on the topic at hand. More often the loudest complaints were that professors did not communicate. This communication complaint involved answering Email in what the students felt was a timely fashion or giving enough feedback in grades to be able to have it be helpful. Students often claimed that Email and phone calls went unanswered even (or seemingly especially) if it was a request for additional help with assignments or understanding feedback earlier received from a professor. This speaks to two areas of theory, both Millennial and Best Practices. In Best Practices (Daniels & Bizar, 2004; Marzano, 2009; Marzano, et al., 2010; Pashler et al., 2007), educators should be giving enough feedback to aid students in improving their work, this includes specific problem areas and it should be done in enough time
to benefit the student for the next assignment. Millennial theory (Cote & Allahar, 2007; Crone & McKay, 2007; Jones, 2009; McAlister, 2009; McGlynn, 2008; Montell, 2010; Prensky, 2001, 2010) explicates this idea that this feedback is one of the services students are purchasing and so they should be receiving that for which they have paid. More often than not when this communication is not received it hurts students academically and leaves them angry and frustrated.

**Implications**

If a handful of gamers was able to solve one of the great mysteries surrounding AIDS research in only a matter of days with a game engine called "Foldit," what might an entire generation of pre-service teachers educated in ludic pedagogy and practice be able to accomplish with the millions of students they will one day teach? What is clear from the literature regarding gaming is that philosophically it is a problem-solving endeavor and problem solving is a high-order activity that requires creative thinking. In order to unlock the inherent creative spirit of the human mind, our teachers as sages need to skillfully implement teaching and learning strategies in American classrooms that harness the power of gaming for the purpose of learning. The promise of gaming as problem solving is clear, thanks in part to the latest results heralded by AIDS researchers. Now it is time for professional teachers to embrace game strategy for the classroom and open the doors to new possibilities in the areas of science, math, social science, languages, physical education, music, and other subjects studied by today's Millennials and will be studied by subsequent generations. How is this accomplished?

Ludic pedagogy can be used by teachers to create rich learning environments for students of the Millennial generation. While this pedagogy includes practices from what is more commonly known as Best Practice and more experiential or Progressive Era learning, it also
allows for a more playful/fun/game-like environment that allows students to be at the center of the learning experience. Furthermore, this study adds to the literature surrounding ludic pedagogy, game-based learning, Millennial theory, with a perspective on traditional classroom functionality, and Best Practices in classrooms.

As the students‘ assignments functioned as the main game mechanic, many of the implications emerged from the analysis their work. The gamified atmosphere of the face-to-face classroom combined with the hybridization of the course allowed students the freedom (perhaps anonymity) to be far more open than one might normally expect on a compulsory assignment. Students freely shared both academic and personal thoughts ranging from complaints about courses to feelings about delicate topics like mental health and past history. Being permitted entrance into the students‘ worlds through the game mechanic makes me believe that the analyses of the thoughts shared in these assignments and play are crucial to understanding the benefits of structuring courses in a ludic framework.

The implications for teacher practice focus on pre-service teachers, their instructors, and practicing educators who already employ ludic pedagogy. Many of the implications derived for pre-service teachers came from my analysis of their thoughts and struggles that they were able to express in their blogs, their behaviors as instructors and my instruction of them. Numerous blog posts were made by the students that stated their clear dislike of direct instruction, yet all of them used it in their presentations and this contradiction never appeared in their post-instruction reflective blogs. This leads me to believe that pre-service teachers need to be exposed to and experiment with a larger variety of learning environments, especially ones they can emulate later in their classrooms. This dislike of, yet use of direct instruction/lecture format, is an indication these students are not aware of or comfortable with any other classroom format than teacher-
centered, which, as the literature of Millennial theory claims, is simply not working for this generation of students. Through analysis of student documents for this study, several themes reveal the students' personal preferences for student-centered learning, experiential learning, and hands-on learning. However, they are unaware of ways in which they can create this type of environment. Therefore, the implications are clear: pre-service teachers must engage this new pedagogy during their teacher preparation programs. However, few professors or instructors in schools or colleges of education actually know how to implement this. Thus, one of the first steps to reforming pre-service teacher education is to educate the professoriate through widespread publication of ludic pedagogy and its relationship to education, as well as other themes that would advance knowledge of game theory for educational purposes.

The potential reason for absence of discussion regarding the contradictory teaching methods employed could be centered around students being afraid to point out their flaws in teaching, assumingly because it could negatively impact their grades or they do not see the error in their teaching methods because they do not know better, or even more simply that they are not thoroughly examining their behaviors to be aware of the contradictions. To become more effective teachers, as students they need to be taught how to reflect and how to examine their learning environment and begin to form concrete understandings of how they want to function once they become classroom teachers.

Thirdly, though the purpose of courses outside of the students' declared major of education is intended to make them well rounded students – often these courses alienate and cause high levels of stress for education students because they do not see the application or function of the course in their program of study. Perhaps courses could be approached in such a way that the application is made apparent or electives could be offered to students from
education faculty so that the application of information is more transparent.

The final implication for pre-service teachers and their instructors is that Millennial students appear to have different needs than what the current professorate and educational institutions are ready to accommodate. Professors should perhaps take not just their needs into account when designing a course syllabus and due dates but allow for greater flexibility so that students are more able to complete assignments. There also needs to be an increase of feedback on assignments and communication about these assignments so that students are able to be more successful in courses. Remember, studies on Millennials show that they demand immediate gratification and feedback in their activities out of school, so it makes sense that they would expect instant gratification and/or feedback during their in-school hours. Colleges and universities should be able to allow students greater access to systems that the students require for success in schools without creating undue amounts of stress on them.

To successfully implement this style of pedagogy, one needs to be either pre-equipped with gaming knowledge or be willing and or able to develop it as the course proceeds. Instructors using a ludic pedagogy like the one for this study need to have or cultivate a willingness to adapt and change the game as necessary while still maintaining the core mechanics of play. At several points in this study, the language used, the meaning of Achievements, and importance of assignments changed frequently. My understanding for what needed to be altered came directly from my use of data-driven teaching and weekly examination and analysis of student work. I believe it was the analysis that made the “game” as successful as it was.

**Limitations**

This study had a relatively small number of participants in a large college and
representing a very large generation. To enhance the possibility that this study may be informative in other contexts, I attempted to provide rich descriptions of the students both by my observations and in their own words and experiences.

To avoid questions about the trustworthiness of this research and data, I implemented the use of student documents, organization of time and assignment that allowed me to step away from the role as participant and simply observe student behaviors, further the employment of Constant Comparison analysis and data-driven instruction, which allowed me to cyclically monitor, reflect and compare many aspects of data as closely to the time of the observation as possible.

**Reflections and Future Research**

Throughout the process of the research, I found myself wishing that I would have had the insight to do work like this with younger Millennials and even Generation 2020 students as a K-12 classroom teacher. In my classrooms, I tried different ways of incorporating games. For instance, I allowed students to create a walk-through as a technical/expository writing assignment or used story lines to discuss plot development. At times, my use of gaming in this way was very unsuccessful both for the students, as many were not gamers so did not see the significance in the plot development, and for myself, as many times administrators did not see the value in such assignments in this No Child Left Behind era. In spite of the fact that I witnessed students becoming better classroom writers as they worked on their recreational gaming projects (like writing D&D campaigns), I never made the connection to make the content of the course and the assignments the game.

In thinking of my previous position as a classroom teacher and of my former colleagues who lamented frequently about their lack of understanding of their students, I wonder if they
were to use ludic pedagogy, or even just aspects of it, would it allow for those not invested in various forms of media, such as video games, to bridge the gap and reach students who are so vastly different from them? Would the necessary shift in perspective for non-gamer teachers and administrators be more difficult to attain and making aspects of the game not as successful because the educators do not buy into the process so the students cannot be kindled by it.

While many of the players in this study enjoyed the game, I believe an examination as to how they would have reacted to participating for a full year would be in order. Key questions to ask would be:

- What changes would have to be made to maintain the student and even educator interest in either gaining Achievements or continually working more than what they were required?
- What would need to be modified further still to gain the interest of those students who are not swayed by Achievements to do work or to otherwise involve the apathetic or uninterested?
- How I can modify assignments like the “raid” to make them even more ludic. i.e. how can trying to coordinate the abilities and schedules of so many to accomplish one seemingly overwhelming goal?
- How I could create hyperludicity and make successes or additional efforts or practice (if a student is below average) in to a beneficial “super power?”
- Would taking on a full year of work like this with students allow for a greater amount of meaningful learning and not just rote memorization?

This work also leads me to question my opinions on single gender education. As most of the students were female, 57 out of the total 60, the classes were frequently all female. Before this
study, I was convinced that co-educational experiences were necessary to allow students to get the most out of their education. However, after seeing the females of the class flourish in the competitive situations that arose in class, while the males never achieved to the level that the females did, though they were both participatory and academically successful, I am apt to question if the women were more comfortable being driven students when the social expectations that often accompany co-educational classes were missing. Further still, this makes me wonder about the role of competition in the life of the female in general. How can educators create an environment that fosters positive and driving competition in girls when many girls are taught that to be competitive and driven is wrong?

I wish that I would have continued the examination of the metaphor of the Avatar and pushed for the understanding of it. This could probably have been best done by examining images of teachers either in pop culture or even in the personal lives of the students and then viewing these images through the lens of the current state of public education. I believe it is the sensationalized reality of the average K-12 teacher that leads many people outside of the field of education to give those in education a look that telegraphs “you must be crazy for teaching.” The participants often commented about the “crazy for teaching” look that many of them received when they discussed their intentions to become teachers with those outside of the field. This look often weighed heavily on the students and several class discussions were even held on the topic when one of the students had a particularly emotional reaction or excellent response to someone who gave them “the look.” However, I feel that the identification of a strong, positive image or gaining a greater understanding of why others may be giving “the look” could help students overcome their intense reaction to receiving this look. The Millennial student often looks for approval from both those closest to them and media at large, and the decision to become a
teacher for many students is difficult because not only are they aware of the circumstances of the teaching profession in many states but then the decision to enter this profession is often derided by those from whom they are seeking approval. As a pre-service and classroom teacher, I often got “the look,” though this has recently stopped since taking a faculty position at a university, and the range of emotions that felt seem to be magnified in this generation of pre-service teachers. I feel a great sense of relief and reassurance can be developed by students if instructors would take the time to help students examine and deal with it.

As my experiences with the blog assignment were so successful in ways that I did not expect, like students sharing themselves with me and each other so freely, I believe that a personal Best Practice has emerged from this study and has changed the way I will use blogs and reflection. For me, it is absolutely necessary to take the time to allow students to further process the ideas with their classmates and to take the time to connect to the reflections and the students on an individual basis. It is this connection and processing/debriefing that is a large part of what made the methodology successful. Students’ efforts rarely went unnoticed and many felt that because I called positive attention to their work and allowed others to do the same that I saw them as people or as individuals, which could have had a great amount of influence on why they were willing to do additional work or share their experiences when in other places they may not have been willing to do so.

**Future Research**

Though the use of game-based learning is becoming increasingly popular, the use of overtly ludic pedagogy has been more limited to Lee Sheldon and his acolytes. It would be worthwhile to continue to explore and expand the use of ludic pedagogy even in a different form. Additionally, more research needs to be conducted with groups of secondary and primary school
students from both Millennial and post-Millennial students. Also, a study of this and other ludic methods should be carried out with students older than Millennial students (Generation X, Baby Boomers, Silent Generation). Future research should be conducted with teachers who are not “gamers” and potentially not as comfortable with playing the role of the Game Master to confirm or disconfirm the importance of the role of the instructor in the gamified classroom.

Ludic pedagogy could also aid the discussion on gender difference and competition, from both the perspective of single gender classrooms and how to inspire meaningful positive competition by girls who are frequently taught that they should not or cannot compete.

Finally, future research should be considered that allows students to create the game mechanic itself or to be more integral to the design of the game. Students in this study were introduced to a pre-designed game and not aware when changes were going to happen to the mechanic. Students could be granted the power to function as Game Master or designer of the game and class. Therefore, in order for them to readily embrace a new learning format, the students’ input might be a key component to acceptance and to even improve the ludic qualities of the game/class. Usually players are able to decide what type of game they are playing and even develop skills that transfer from one game to another which allows them to be more successful in later games. Hearing the student voice concerning the design of the course game made this study’s game stronger, educators taking the players’ needs or desires into account should positively impact the ability to use the aspects of Ludic pedagogy that would have the greatest effect on the players’ enjoyment of the game and students' success in the class.

Perhaps one day, teachers equipped to employ gamified versions of traditional subject matter may just educate the next group of gamers who unlock the secrets to terminal illnesses, hereditary anomalies, or even the source of the fountain of youth—the reversal of aging.
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APPENDIX A

SAMPLE ACHIEVEMENT POWERPOINT

Names have been changed in keeping with student confidentiality
APPENDIX B

MOODLE TOPICS

# 1

Why do you want to teach?

This seems like a pretty simple question but I really want you to think about it. If you're going to be spending the next several years studying the art/science, and then years after that - you might want to have a couple of reasons why you are doing it.

I have a top 10 list that I'll share it later, but first I want to know why you want to teach.

# 2

I have found that part of being a good teacher is that you need to be efficient and to be so you must be organized...

I would like you to some research -- look on the internet, as a teacher you know, think about what makes you feel efficient and organized.

Share 3 of your ideas with your classmates. Describe why you think it's going to help you to use these methods.

I can't wait to see what you come up with.

# 3

Take this learning inventory and figure out what your learning style is:

http://www.personal.psu.edu/bxb11/LSI/LSI.htm

Do you think that it is better to teacher each type of students according to their own learning style or is it better to make them use all types?
# 4

Navigate to http://www.schoolmatters.com and locate the district you live in or want to work in. Browse either district or school-specific data regarding SES status, then complete the following:

- Identify the name and location of the school or school district you're investigating; include this information in your response.
- Locate and record information that would indicate SES of the school or district (such as household income, students eligible for free/reduced lunch fee program, education level of parents, and so forth).
- Locate and record information that would indicate student achievement (such as performance on standardized tests).
- Compare and discuss actual student achievement scores with your expectations based on your observations of SES. Did your observations match your expectations? Explain why or why not.

# 5

This week I would like you to do some light research on some of the philosophies presented in class or in either of the two links below (the last one is a quiz and kind of interesting)

http://en.wikipedia.org/wiki/Educational PHILOSOPHIES (You can also look up Vygotsky or any one not mentioned here but that you find interesting)

http://www.conti-creations.com/PHIL.htm
What philosophy rings truest to you and who you want to be as a teacher? Why? How do you think you would best go about becoming this type of teacher or what type of experiences do you need to be this?

If you can't find one or decide on one...which ones do you know that you AREN'T and why? (Knowing what you aren't helps you figure out what you are.)

# 6

This week for your Moodle topic - I want you to find a time line of American education. I want you to pick the event (only one please) that is the most significant to you and discuss it in some detail sharing why its important to you.

- What happened?
- Why is it important historically?
- Why is it important to you?

These events don't have to be positive they can be - removal of prayer from public schools, NCLB, Columbine/VA Tech et cetera....

However, if there is something wonderful that has changed the face of education for you you can talk about that - I know that without the Clinton Student Loan laws I wouldn't have been able to go to college in the first place.

#7

I would like you to consider some situations that I and other teachers have been put into and I would like you to discuss to whom you should speak when you encounter them.

Remember like in many other places the chain of command is highly important to some people.
1. You are a young teacher with a penchant for odd hair colors, dressing differently and even piercings. One of the assistant principals in the school comes and talks to you about the appropriateness of your appearance and claims that parents are complaining.

2. You have a student placed in your class who is twice exceptional (both gifted and ld) their disability happens to be in your class' area (dyslexia for English, dyscalculia for math, either for history or science), the parents start to complain that their child isn't receiving enough help or special attention to compensate for the disability. Your principals call you in for a little 'chat' about what you are or can do for this student.

3. You enter an assistant principal's office and begin discussing a topic when the principal becomes angry and starts yelling at you.

4. You are working with the curriculum department of your parish, writing experimental lesson plans which you are to test out in your class. Your principal finds out that you are not in alignment with your "curriculum map" and starts writing you up and tells you that you cannot do the plans.

Ok guys - you don't have to discuss all of these - pick one or two and discuss how you think you would handle it or with whom you should talk about these events with.

-- Yes you must still respond to others...offer advice more than say that you like what they've said. Remember the devil's advocate will be out in force.

#8

I want you to think about the subjects you were taught in the grade that you want to teach (so if you want to teach 2nd grade -what were you taught)
Judging from what you saw in your observations what if anything has changed? Was the change positive?

When you get your own classroom - What would you prefer to teach? (ELA/Math/Social Studies/Science) Is there something you don't want to teach? What would you be most comfortable with? Least?

If you have to teach a subject that you are either opposed to (evolution or sex ed) or really dislike (for me it would be math), what would you do?

#9

"I like my new telephone, my computer works just fine, my calculator is perfect, but Lord, I miss my mind!"

So here is the assignment below is a chart with everyone's name: (NOT INCLUDED)

Yay side you agree with the statement above (i.e. technology is great but is making us dumb).

Nay side you believe that technology is awesome and is only making us better.
APPENDIX C

QUESTIONNAIRE 1

HI EVERYONE

As you know, you’re part of my research here at LSU. What I would like for you to do is write up your responses to the following questions and bring them in to class next Tuesday.

PLEASE type this

PLEASE do not put your name on it

PLEASE be as honest as you want to be. I want your real opinions and ideas not just what you think I want to hear.

- How did using the “guild” change your experience of the class towards the experience itself, materials presented and presentations? Or did it?

- Did changing the terminology of the class: learning team to guild, in-class assignment to mini-quest; change the way you felt about or experienced class?

- Does the potential of earning an achievement encourage you to work harder on an assignment or is the achievement alone not enough of a benefit?

- How did the public announcement of the weekly Achievements affect your motivation?

- Did you feel a sense of competition between classmates or guilds?
APPENDIX D

QUESTIONNAIRE 2: TWO MINUTE WRITE POWERPOINT

2 MINUTE WRITES

1. What is your previous experience with video editing? Do you feel confident in using it? If so, how do you rate your skills?

2. Would you like to edit the video yourself?

3. Are you a part of this group? If so, how many people are involved? When you get them, how do you feel?

4. If you did not edit, when you felt like you should have, what type of solution did you have?

5. What achievements are a factor in your experience in video editing? What would have been your plan if you had to push you to earn more?

6. What hobbies do you have related to this? Sum it up.
APPENDIX E SAMPLE

FIELD NOTES

Names have been blacked out in keeping with confidentiality
APPENDIX F

CONSENT FORM

Gaming the Classroom: EDCI 1000
Louisiana State University and Agricultural and Mechanical College
The following investigators are available for questions about this study,
M-F, 8:00 a.m. - 4:30p.m.
Jessica Broussard 703-395-5677
Jbrou84@tigers.lsu.edu

The purpose of this research project is to determine whether the use of themes and concepts common to videogames are viable in a classroom setting.

Individuals between the ages of 18 and 65 who do not report psychological or neurological conditions.

Number of subjects: 30 or less

Data will be collected in a variety of ways: observation by instructor/primary investigator (PI) and informal group discussion between participants and PI both online using Moodle/email and in a face to face setting.

The study may yield valuable information about pedagogy and use of videogame pedagogical methods in a standard classroom.

The only study risk is the inadvertent release of sensitive information. However, every effort will be made to maintain the confidentiality of your study records. Files will be kept in secure cabinets to which only the investigator has access.

You may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which you might otherwise be entitled.

Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators.

If you have questions about my rights or other concerns, I can contact Robert C. Mathews, Institutional Review Board,(225) 578-8692, irb@lsu.edu, www.lsu.edu/irb.

I agree to participate in the study described above and acknowledge the investigator’s obligation to provide me with a signed copy of this consent form.

Subject Signature: ___________________________ Date: __________________
APPENDIX G

CLASSROOM LAYOUT

FALL 2010
VITA

Jessica Erin Broussard was born in Fairfax, Virginia, in May of 1978. She is the only child of Richard Strohbach and Ruth Brannigan. She graduated from James Madison High School in 1996, where she was a slightly above average student but did over 4000 hours of community service with the Girl Scouts to compensate for her lackluster Grade Point Average.

She attended George Mason University for one year before transferring to Temple University where she earned a Bachelor of Science in secondary English education in 2001.

Jessica then moved to Las Vegas, Nevada, where she began her teaching career in earnest by working for Clark County at a middle school and experimenting with differentiation and game-based learning. After a year of too much sun, she moved back to Virginia where she realized her dream of working for the school district in which she was educated. Shortly after starting in Fairfax County she found three of her greatest passions: gifted education, her husband Corey, and their daughter, Zelda.

Jessica began working on her master’s in education focusing on gifted education and found that it was time to move to Louisiana. Shortly after moving to Louisiana and finding that she wanted to do more than teach seventh grade, Jessica began working on her doctorate at Louisiana State University, which will be conferred at the December 2011 Commencement Ceremony.

She is currently employed at Auburn University Montgomery and is enjoying every moment of it.