ABSTRACT

SIERRA, WENDI ANN. Gamification as Twenty-First-Century Education. (Under the direction of Dr. David Rieder).

Calls for new models of education, models that take into account the changing means of producing and accessing knowledge in the information age, have increasingly focused on informal learning environments. While the elements of openness and participatory learning that characterize informal learning are valued as components of education, incorporating these elements into traditional, formal learning institutions remains a challenge. In response to these issues, I argue for gamification, the use of game structures in non-game environments, as a means of incorporating more informal learning elements into formal environments.

Current models of gamification, most commonly seen in business and marketing, lean more toward pointsification and are ineffective at achieving the level of agency and engagement that characterizes informal learning environments. This project develops a new heuristic for gamification. Because gamification has yet to be fully explored by the field of Rhetoric and Composition, this heuristic acts as a synthesis of both game design principles and pedagogical theory. Thus, I highlight and extend the game design principles of meaningful mechanics, nonlinearity, challenges, evocative spaces, and procedurality, considering how these elements have the potential to create more open and participatory learning spaces. This heuristic is modeled through the analysis of three successful gamified environments. While the objectives and constraints on each environment are different, the gamified spaces seen in C's the Day, Justin Hodgson’s Rhetoric and Serious Games course at
the University of Texas-Austin, and *BattleShirts*, demonstrate how a thoughtful engagement with game design principles opens up new learning opportunities.
Gamification as Twenty-First-Century Education

by
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To Ken and Cheri

The best support a daughter could have
BIOGRAPHY

Wendi Sierra grew up playing NES and Super NES games with her parents and her sisters. She had no idea at the time how central these experiences would become to her academic future. She completed her Bachelor’s in English at the University of Oklahoma, with a focus on modern literature. During her graduate coursework, she shifted her emphasis from literature to technology and rhetoric, and in particular video games and rhetoric. She received her Master's degree in Composition, Rhetoric, and Literacy Studies from the University of Oklahoma.

At North Carolina State University her research has focused on game design as a compositional and pedagogical process. She has co-authored the book chapter “I Rolled the Dice with Trade Chat and This is What I Got: Demonstrating Context-Dependent Credibility in Virtual Worlds” with Doug Eyman in the edited collection Online Credibility and Digital Ethos and she has co-authored “Ode to SparklePony: Gamification in Action” with Kyle Stedman, a winner of the 2011 C's the Day game. This publication appears in the Spring 2012 edition of Kairos.
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Prologue: A Tale of Two Learning Models

In the following chapters I argue for gamification as a new learning model that meets the needs of contemporary educators and students. Before addressing this primary issue, however, I first present two examples of nontraditional learning environments. This juxtaposition of these two distinctly different learning environments highlights the various issues central to education in a contemporary context. The first model, the Massive Open Online Course (MOOC) movement seen primarily in the courses offered through major providers like Udacity and Coursera, has been garnering a significant amount of attention from educators and students in a number of disciplines, as well as from the general public. MOOCs make extensive use of digital technologies, delivering courses through multimedia presentations and connecting thousands of students in a single course. However, as I argue in this chapter, MOOCs do not present educators with any new or novel pedagogical strategies.

The other learning environment, C's The Day, creates a gamified space within the annual Conference on College Composition and Communication. C's The Day is a completely non-digital learning environment that nonetheless uses innovative techniques to create a welcoming environment that encourages professionalization and initiation into the field of Rhetoric and Composition. The distinctions between these two environments will contextualize the claims made in later chapters about pedagogical values.

The Future is Yesterday: MOOCs, Openness and Pedagogy

In November 2012, the New York Times ran an article titled, “The Year of the MOOC.” In this article the author notes, though the concept has been around for a while, “this is the year everyone wants in” (Pappano). The term MOOC was first used four years
ago, in 2008, by Dave Cormier, George Siemens, and Stephen Downes to refer to a series of courses they taught in two stages. The first stage of these courses was a traditional distance education course with a standard enrollment cap offered for university credit. Following the completion of the “official” part of the course, the second stage began. This involved the opening up of course materials and platforms for public consumption and discussion, but did not offer any official university credit for participation in the now open course space. Thus, the “MOOC” designation referred specifically to the latter half of the course, which garnered participation from a few thousand people. In addition to this direct inspiration and forerunner of contemporary MOOCs, the concept of large, distance education correspondence courses is hardly new, with a history that goes back much more than four years. Technological innovations have been continuously repurposed as delivery platforms for education, as is evidenced by our educational history of courses delivered by video, telephone, and mail demonstrate.

Regardless of their long history, the claim that 2012 has been a landmark year for MOOCs certainly seems to have some merit. The Chronicle of Higher Education has posted a minimum of one article per week since May 2012 regarding MOOCs, with one hundred and thirty-eight total articles posted in the months between April 2012 and May 2013. The Gates Foundation Post-Secondary division has funded 11 schools at $50,000 each to develop remedial and introductory MOOC courses, including an award to Duke University to develop an English Composition I course and an award to Ohio State University for the design of an English Composition II course (both to be delivered through Coursera, a major MOOC provider). The Gates Foundation, in their request for proposals, explains the exigence of this
grant by claiming that “islands of reform and innovation [in education] have failed to scale or sustain their impact.” The MOOC movement, they argue, has the potential to bring high-quality learning instruction to students in a variety of socio-economic situations. Finally, the American Council on Education has recently endorsed five Coursera courses for college credit at the undergraduate level and the Southern Association of Colleges and Schools (SACS) has approved a Udacity program (partnered with Georgia Tech) for a full graduate degree in computer science. Though the vast majority of MOOC offerings are certificate-only courses that do not transfer in any way to colleges or universities, this distinction is beginning to breakdown.

While many professors are opposed to the implication that MOOCs can “replace” more traditionally delivered and administered university courses, none can argue that the phenomenon lacks appeal for a large portion of the population. As of this writing, Coursera's website claims an astonishing 1,887,146 students taking part in their courses. Udacity, a major provider of Computer Science courses in MOOC format, reported an enrollment of over 160,000 students in their fall “Introduction to Artificial Intelligence” course. These numbers, combined with the plethora of articles published both in general newspapers and in higher education-focused magazines such as Inside Higher Education and The Chronicle, clearly demonstrate the intense interest this format has stirred up in higher education. Granted, the enrollment numbers only tell us how many people have made accounts or signed up for courses. Of the 46,000 students who attempted the first assignment in an “Introduction to Machine Learning” course on Coursera, only 13,000 finished the course and earned a certificate (a completion rate of about 28%). Udacity's numbers for their first course
are even more dismal: of 160,000 students enrolled only 23,000 completed the course (a rate of roughly 14%). A recent study by Katy Jordan, done as part of an assignment for a MOOC on information visualization, finds an average completion rate of 6.8% (qtd. in Parr). Even more interestingly, her study found MOOCs that used automatic scoring systems (quizzes with graphics, essentially) had higher completion rates (7.7%) than those that relied on peer grading systems (4.8%).

Despite the relatively low completion rates and general lack of official, transferable college credit given for these courses (though, with new certification processes this may be changing), several elements of MOOCs are attractive to those outside the university system. Indeed, as official participation from major institutions and university students demonstrates, MOOCs seem to have some appeal to students and teachers within formal learning environments as well. MOOCs allow virtually any member of the global public to have the chance to take courses with world-renowned experts without having to pay for enrollment, without geographic constraints, and, generally, without having to buy materials. The promise is tantalizing: anyone with a computer and internet connection can study with the best instructors in any field. In popular news channels these “learning experiments” have been simultaneously hailed as the next generation of learning (sure to topple the bloated university system) and dismissed as little more than a flash in the pan.

The MOOC movement is indicative of a problematic trend in many educational initiatives: innovation, from a technological standpoint, coupled with stagnation (or even, perhaps, regression), from a pedagogical one. As previously mentioned, proponents of MOOCs make an important claim that should be addressed—pedagogical models must be
reconsidered because contemporary institutions are in some way deficient or unsuitable for meeting the needs of contemporary learners. Indeed, if we bracket for a moment the alleged logistical benefits (primarily the promise of cheaper education, from the perspectives of both students and institutions), the praise given to MOOCs presents a clear set of pedagogical values: student self-selection, customizability of learning environments, and (perhaps paradoxically) an elevation of the status and importance of the teacher. Faculty-to-student ratios may be exponential, but a key selling point for many of these undertakings is the quality of their teachers. Cormier summarizes these values:

The Massive Open Online Course is a response to the challenges faced by organizations and distributed disciplines in a time of information overload... The MOOC is built for a world where information is everywhere... A MOOC is a course: it's open, it's participatory, it's distributed, and it supports life-long learning... it is, maybe most importantly, an event around which people who care about a topic can get together and work and talk in structured ways. (“20 Questions”)

Cormier's description, particularly in his characterization of the MOOC as an event, echoes arguments made by a number of scholars (including Johndan Johnson-Eilola, N. Katherine Hayles, and Mark C. Taylor) about how the information age is changing the way we acquire and produce knowledge. However, the contemporary MOOCs that are most heatedly discussed in public fora do not, for the most part, follow the guidelines Cormier outlines.

While Cormier, Siemens and Downes may have designed a MOOC that acts as more of an event, Coursera and Udacity offer little more than a textbook (Krause 694). The primary means of instruction and content delivery in these MOOCs are pre-taped lectures
and texts. Students receive knowledge from an authority they cannot question and have no direct access to. After students have acquired course material, their learning is assessed through quizzes. Some MOOCs attempt to give students optional opportunities for peer discussion through class-specific fora, but the primary means of learning and assessment in these courses is a model that most strongly resembles a digital version of lecture-based instruction.

**Analog Advancements: C's the Day**

While MOOCs present one version of informal learning environments, *C's the Day*, a game run annually at the Conference on College Composition and Communication (CCCC), provides a clear example of the potentials of gamification as a pedagogical strategy.

![Illustration 1: C's The Day Cover: 2013 Edition](image)

Gamification is the use of game-like structures and principles in a non-game space, usually with the hope of encouraging greater engagement and learning. The *C's the Day* game takes
place in and around the yearly national conference, a space that can be considered an informal learning institution, not only for its role as a space for the presentation of new knowledge in the field, but also as important step both in the professionalization of graduate students and for networking across all levels of the discipline. While the conference is an important space for new scholars, understanding how to find information, navigate the conference, and get the most out of one's experience can be difficult for newcomers. Gamifying the learning space provides one route to help navigate and optimize the conference experience.

A thoughtful, theoretically grounded gamification practice considers the intents and goals of the original space or activity and maps appropriate gaming conventions on to those pre-existing objectives. For C's the Day, inspiration and game mechanics are drawn from the role-playing game (RPG) genre of video games. Earnest Adam, in his industry-respected guide *Fundamentals of Game Design*, identifies the most important aspects of RPGs as an overarching narrative and meaningful character growth. Attendees of the conference, and new graduate students in particular, are already “characters” engaged in the narrative of becoming and being academics, and they attend the conference for a sense of professional growth, making an RPG structure the ideal fit to gamify this space. Additionally, because CCCC typically does not offer free wireless access to attendees, C's the Day is designed to be entirely non-digital. Instead of utilizing new technologies, it is played through attendees’ real-life experience and guided by a small booklet that provides both game rules and a means of tracking progress.
In C's the Day conference attendees, regardless of their real-life standing in the field, are given the role of new graduate students for the purposes of the game. This introduction to the game clearly highlights how the two key features of RPGs (narrative and character advancement) create a bridge between the game space and the player's lived experience. The game dramatizes a story players are familiar with, the move from undergraduate student through the various levels of academia, and builds out from conference experiences and role-play to both simulate character growth within the game and encourage professional growth outside of the game. As they progress through the game, players complete a variety of “quests,” and they “level up” with each batch of quests they
complete. The quests in the game both enact the narrative, focusing on specific tasks at specific “stages” of the player's progression from graduate student to full professor, and provide the character growth that characterizes the game and serves the meta-objective of the game: helping new conference attendees become oriented within the organization. These quests are not tasks that participants take part in separate from the conference, but rather exist overlaid on top of and intertwined with conference activities. Certain quests ask participants to interact with other conference goers and draw on their specialized body of knowledge as academics in the field, while others highlight conference events and activities, such as attending panels, workshops, and other conference-related sessions. The 2012 iteration of the game featured over 100 possible quests for players to complete; for brevity’s sake I will highlight two that demonstrate how the C's The Day uses game design principles to enrich the conference space.

Illustration 3: C's the Day Quest: "Going Up?"

The “Going Up” quest, which players complete when they have achieved the rank of “Graduate Student” within the game, accomplishes a variety of both game and real life objectives. Within the game, the quest is a humorous role-playing situation that pokes fun at its real life analog. Quest givers time players, whose on the spot attempts to condense broad theoretical movements and ideas into a thirty second window (and appropriately name-drop
at the same time) are often comical. However, the quest also accomplishes the important goals of knowledge-sharing, networking, and professionalization, as players hear others presenting their imaginary elevator speeches, practice with each other, and finally deliver their own.

The “Publish or Perish” quest, which players can attempt when they have reached the “Assistant Professor” level in the game, like the “Going Up” quest, pokes fun at an element of academia, while introducing players to an important real life issue. Completing the quest requires players to not only attend a panel (something that they are likely doing already), but also to create a textual artifact that can, if they choose, be submitted as a possible publication in a well-respected journal. The quest clearly draws its name from the popular axiom describing the importance of publishing to academic survival, and it is situated in the Assistant Professor block of quests to highlight the importance of publication for many professors on the tenure track. Furthermore, it introduces game players to a fairly low-stakes publication opportunity that they may not have previously been aware of - reviewing conference panels.

The variety of quests encouraged through the game provide another layer of meaning for conference activities and create a sense of playful productiveness. While some of the
quests are more frivolous than others (for example, compare a quest that asks players to locate or receive a list of all publisher-sponsored parties, where free food and drink is available, to a quest that rewards players for going to three conference presentations in a row), all quests in some way comment on the field, the conference, and the roles that players (as academics) take on in real life, even as real life overlaps with gameplay. Hopefully, by the end of the conference and the end of the game, participants’ experiences of gameplay and conference attendance are so thoroughly overlapping as to be inextricable. To return briefly to the definition of gamification, it is clear that the non-gaming activity (conference attendance) has been overlaid with game features and structures (a new narrative, character advancement) that both highlight key conference events and reflect the lived experiences of participants. In addition, *C's the Day* demonstrates important characteristics of informal learning environments, which will be discussed in more detail in Chapter 1: customization and participatory learning.

*C's the Day* incorporates the principle of customizability in two ways. First, the game highlights the range of activities, both formal and informal, that take place at the conference. While the CCCC space is already a highly self-directed learning environment, new attendees may not be fully aware of their options outside of the concurrent sessions. Thus, the game features quests that highlight these other events, many of which are not listed in the program. By providing quests that encourage players to visit the *Digital Archives of Literacy Narratives* booth, the Newcomer's Breakfast, and publisher parties and receptions, the game demonstrates for players how they can customize their conference experience in very specific ways that will help them network and progress in the field. In addition to underscoring the
customization already present in this informal learning environment, *C's the Day* is itself highly customizable. Indeed, several quests are deliberately exclusive.

The above quests are the most literal demonstration of how players must make choices throughout the game, some of which close off other paths. However, in a game with well over one hundred quests, it is highly unlikely that any player will even attempt to participate in all quests. As previously mentioned, the game includes a variety of quest types. Some are more role-play oriented, some require attendance at conference events, some ask players to network with others in the field, and some ask players to take specific, conference-related actions (write a session review, for example). Many players progressing through the game will complete many of the same quests, but for each player the balance between these quest types will be unique. Ultimately, *C's the Day* encourages participatory learning by creating a number of situations for game players to assist each other, by encouraging them to expand their own networks while at the conference, and even by asking them to participate in the
construction and evolution of the game, with the ultimate goal of assisting newcomers to become connected within the field.

Of course, as a game operating within an informal learning environment, *C's the Day* does not face some of the same challenges that a gamified classroom space would. Utilizing nontraditional pedagogical strategies makes sense in the conference situation because no overarching administrative body defines the role of the game or seeks to see specific and measured outcomes from the game. Players are free to play or not, and official numbers of active players are not tracked. Nonetheless, the game provides a positive example of a gamified environment, one that goes beyond simply adding points and rewards to a pre-existing structure of assessment to further specific learning goals. For *C's the Day*, those goals include acting as a gateway to professionalization and community membership. The example of this gamified space illustrates how gamification can harness elements of informal learning environments, in particular openness and play, to create a learning institution that nonetheless has clear purpose and direction.

**A New Way Forward**

In juxtaposing these two models we can see the breadth and variety characteristic of informal learning environments, a topic I will return to in Chapter 4. In the examples of MOOCs, the only innovation for learning is strictly the number of students these businesses are able to accommodate in one course session. The pedagogical models demonstrated in these courses ignore several decades of research on learning. In many ways, MOOCs present a counter example, a model of what we as educators should *not* be doing. Much like the educational games discussed later in this chapter, the MOOC model of pedagogy seems to
ask what technology values and does well, rather than asking what educational institutions value and do well. The current lecture/textbook-like version of MOOC as “innovation” presents a novel model for the technological potentials of global networks, but a regression for educational theory. This project, which does argue for what some might call a novel approach to pedagogy, begins in a different place.

**Developing a New Model: Gamification as Twenty-First-Century Education**

As the comparison between MOOCs and the gamified conference space *C's The Day* demonstrates, innovation in learning models need not necessarily be digital. Certainly, changes in technology are often an impetus for considering educational change, but reconsidering pedagogical strategies should grow first out of a critical awareness of the values scholars and educators enact in their teaching practices. To that end, I have created a heuristic for gamification as a pedagogical model that embodies elements of informal learning contexts that are currently gaining salience and support in pedagogical scholarship, while still remaining within a traditional institutional structure. This use of gaming as instructional design has yet to be fully explored within Rhetoric and Composition. However, while scholars in teaching and writing at a university level are not currently investigating the possibilities offered by gamification, other disciplines, primarily marketing and business (Radoff *Game On*, Werbach and Hunter *For the Win*, Zicherman and Linder *Game-based Marketing*) and K-12 education (Kapp *The Gamification of Learning and Instruction*, Lee and Hammer, “Gamification in Education”, McGonigal *Reality Is Broken*), have begun to consider what the integration of gaming principles into their standard practices can offer. Though these studies demonstrate the growing interest in gamification, many of their
applications (in particular those in marketing and business) tend to be superficial. The
gamification attempts demonstrated in these fields often show a very limited understanding
of either the complexities of game design or of educational theories and practices, and this
unreflective implementation has led to harsh critiques from within the game design
community. While gamification shows great potential to create hybrid learning
environments that enact pedagogical values currently espoused in the fields of teaching
writing and rhetoric, the existing models of gamification will not help us achieve that goal.
As a response to these inadequate uses of gamification (discussed later in this chapter as
“pointsification”), I offer a new heuristic for gamification that merges discussions and values
in education and pedagogy with best practices from industry perspectives on game design,
rather than building out of existing marketing and business research on gamification.

Constructing a theoretically sound model for the design of gamified spaces requires
first identifying specific principles of learning that can be enacted through game design.
Thus, this project begins by first considering what we, as educators, value about informal
learning environments and how games have historically been incorporated into education.
Scholars in a number of fields have discussed the distinction between traditional educational
models, which are typically more rigid and hierarchical, and informal learning environments,
spaces outside of mandatory or required educational settings that learners of all ages self-
select to meet particular learning goals. Chapter 1 presents those differences and identifies
three ideals in particular that gamification can help us to incorporate into traditional
classrooms: openness, student self-selection and participatory learning. These values, offered
by critics analyzing new media as particular to informal learning environments, have a long
history in the scholarship of teaching and writing. However, while many of these values are already identified as positive values for learning, incorporating them into traditional educational environments remains challenging, and many of our best efforts to include elements of openness and participatory learning become reincorporated into the more closed and traditional system. In addition to identifying the values commonly associated with the relatively broad group of informal learning environments, I turn specifically to explore how games have often been used in an attempt to introduce elements of informal learning into traditional spaces. Historically, as the discussion of education in, with, and through games will show later in this chapter, educators have identified the value of incorporating games into curricula as an increase in engagement and immersion. These advocates of gaming in the classroom also tend to identify a greater level of agency as something gaming can add to traditional curricula. Unfortunately, many of these praises are lofty goals that educational games often fail to meet, though they echo many of the values identified in nontraditional learning environments.

Finally, at the end of Chapter 1 I present a detailed explication of the inadequacies of many contemporary uses of gamification. These applications, which are described by several game designers using the pejorative term “pointsification,” tend to incorporate the terminology of gaming while ignoring fundamental game design principles. Like MOOCs, those that engage in pointsification claim to offer new and more active models for learning and participation, while in actuality recreating highly traditional and hierarchical spaces. If we are to develop more grounded and critically aware models of gamification, we will have to turn elsewhere for inspiration.
Recognizing both the potential benefits of using gamification to engage students and create a more participatory classroom setting and the inadequacies of many current pointsification applications, in Chapter 2 I define a new heuristic for gamification, one that emerges out the intersection between pedagogical values and game design best practices. Not all principles of game design are well-suited to assist those wishing to create gamified spaces, and with the increasing popularity of gaming and new technologies that make game designing more accessible to non-professional audiences, the literature on game design is similarly increasing. I have therefore developed five main principles that will assist educators achieve the values highlighted in this chapter and avoid a superficial application more akin to what critics identify as pointsification. These principles, which focus on creating engaging spaces that blend curricular objectives with agency, include:

- **meaningful mechanics**: structures that ensure a player's ability to make choices that have a quantifiable impact on an outcome
- **nonlinearity**: both the ability for players to develop specific tactics and a design that ensures that those tactics will be useful
- **individualized and scaffolded challenges**: a structure that encourages players to first experiment within their limits, then to develop a set of skills, and, after substantial practice, signals them to demonstrate their skills
- **evocative spaces**: the creation of narrative-rich spaces rather than traditional narratives
- **procedurality**: the connection of a particular rule system to a narrative-rich space for the purposes of encouraging specific actions or ideas
While I separate out these design principles in order to talk about them productively, there is a substantial amount of overlap amongst them, as each principle represents a crucial element of a game system. Furthermore, these principles are hardly an exhaustive list of all elements of game design. Instead, these five principles are meant to highlight how games use rigid systems to encourage players to explore in ways that resemble the openness, self-selection, and participatory learning aspects praised in Chapter 1 as part of an informal learning environment.

Having discussed both the exigence for developing a gamified pedagogy and developed a heuristic for how to accomplish this, Chapter 3 offers a detailed demonstration of these principles in action through an analysis of Justin Hodgson's gamified “Rhetoric of Serious Games” course, an upper division Writing and Rhetoric Studies course offered at the University of Texas-Austin. Hodgson's course presents a radically altered system of grading and assignments, one he has designed to reflect the structure of the World of Warcraft, a popular Massively Multiplayer Online Role-Playing Game (MMORPG). In modeling his course after a pre-existing game, Hodgson arrives at a course design that manages to avoid superficial elements of pointsification and embodies the principles I set forth in Chapter 2. Furthermore, as a course that has been taught multiple times, this particular example of gamification offers a rich and well-documented space to use as a case-study. This example illustrates how Hodgson is able to begin with both his own pre-existing pedagogical values and specific course objectives and incorporate game design principles into the structure of the class. Using game design principles as a pedagogical structure creates a more engaging
environment, and one that ultimately models procedural rhetoric for students in ways that lead them toward greater critical engagement with the concept.

Finally, having developed a heuristic for creating gamified spaces and demonstrated the possibilities for gamification within a formal educational setting, this project concludes with an example that echoes the earlier demonstration of gamification using C's the Day, the physical computing project Battle Shirts. In Chapter 4 I move to bring the discussion of gamification back out of classroom practice and return to the possibilities for gamification via expansion and integration with other nontraditional learning institutions. As previously mentioned, many contemporary models of gamification do not fully explore the potentials this method presents. Using game design principles to create hybrid spaces that encourage player-participants to experience everyday environments and systems in new and novel ways has great potential for nontraditional scholarship, as well as for activist purposes. Indeed, gamification is a model that connects well with many existing tactical media activist movements. Like gamification, a central goal for tactical media activism is the construction of events and spaces that create new experiences, ones with the potential to challenge dominant structures. The BattleShirts project demonstrates how gamification can be used as new media scholarship to explore theoretical issues. As the BattleShirts sense information about the world and respond to this information in various ways, they encourage wearers and participants to consider how technologies, interfaces, and bodies interact and influence each other.
Chapter 1: Pedagogy in the Information Age

In this chapter, I provide a more nuanced discussion of the distinction between traditional and nontraditional learning models and the ways many educators (both at the K-12 and college levels) claim conventional learning institutions are inadequate to meet the challenges of a postmodern knowledge economy. Following the usage of those working at the intersection of educational studies and new media, I use the term “traditional” to specifically refer to a pedagogy that goes by a variety of names, including: the banking model, the sage on the stage, current-traditional, and the commodity model. A number of organizations, such as HASTAC (Humanities, Arts, Sciences and Technology Advanced Collaboratory) and EDUCAUSE (a collaboration between IT and education professionals), highlight a distinction between traditional, formal learning institutions and emerging informal learning environments to explore how contemporary learning in the latter is often more participatory/community-based and self-directed than in the former. Informal learning environments are spaces learners self-select, existing outside the codified educational system. This section explores the claims of those turning to such informal learning environments (including media theorists and critics like Henry Jenkins and established scholars in Rhetoric and Composition such as Cynthia L. Selfe), in particular looking at the argument that these spaces are more customizable and participatory than traditional education environments. In addition to presenting these claims, I consider how Rhetoric and Composition has already, historically, valued customizable and participatory learning environments. Despite the general acceptance, and even praise, of openness, self-selection, and participatory learning, implementing these characteristics within the traditional educational structure remains a
challenge. Many previous attempts to resist closed systems and embrace more open education forms have eventually become subsumed and re-inscribed into a more traditionalist, top-down model.

The examples summarized in the first section explain how students of all ages are increasingly going outside of formal education to supplement their learning experiences. In response to the characteristics of these informal environments that, despite their “unofficial” status, provide contemporary learners with valuable strategies, I propose gamification as a pedagogical model that incorporates elements of informal learning environments while remaining within conventional educational structures. Despite the newness of this particular strategy in higher education, there have been a number of important antecedents that lay a solid foundation for a gamified pedagogy. Thus, the second section of this chapter turns to look at how computer games have been used in education. Games in educational settings have roughly a four decade history, and in that time three distinct models have emerged, each seeking to appropriate the sense of engagement and immersion that games create for educational purposes.

Gamified spaces create hybrid environments that blend formal learning characteristics such as objectives and goals with more informal methods that incorporate learner agency much more strongly. A formal/informal hybridity is accomplished by synthesizing gaming mechanics and structures with non-gaming environments. In marketing, this is done in an attempt to create greater connections between consumers and products through the creation of more authentic experiences (Zicherman and Linder 2010, Werbach and Hunter 2012). For educational and learning applications, the value of such a synthesis is a bridging between
game structures and educational values. In this section I look first to critiques of contemporary educational systems as a means of identifying precisely what educators typically value. A substantial amount of literature on educational technology already exists across a number of fields. The focus in this section is limited to an overview of the distinction between traditional, formal educational institutions and informal learning environments. This distinction will help to demonstrate how gamification can create a hybrid space that bridges the important values and structures found in either model. While those working in fields such as Education and Media Studies present the various characteristics of informal educational environments as a recent development, many scholars of teaching and writing have already explored a number of the characteristics that define these spaces. Thus, the hybrid spaces good gamification creates already fit neatly within our existing paradigms of what constitutes “good pedagogy.”

**Institutionalized Learning**

The primary issue in defining contemporary learning institutions, as identified by those working in educational studies at all levels of education, is typically presented as a dichotomy between traditional, formal learning institutions (schools and colleges) and informal learning institutions (things and environments such as video games, *Wikipedia*, and other typically digital resources) and the pedagogies and modes of learning each type of institution supports. Cathy Davidson and David Theo Goldberg, whose work has long been to promote “postmodern” and innovative forms of learning and to move the humanities into the digital age, describe contemporary, conventional institutions of learning as spaces in which Ichabod Crane, the traditionalist teacher from Washington Irving’s 1820 short story
“The Legend of Sleepy Hollow,” would still feel comfortable teaching (8). In other words, they argue, the particulars of teaching and learning—who teaches, where learning occurs, how knowledge is transmitted, and when learning happens—remain essentially the same as they have been for centuries. Davidson and Goldberg use the term “conventional learning institutions” to differentiate the foundational elements of American education (K-12 school systems, public and private universities), from the informal, digital institutions of learning that increasingly supplement (and possibly even supplant) them. Douglas Thomas and John Seely Brown echo this concern, stating that “the kind of learning that will define the twenty-first century will not take place in the classroom—at least not in today's classroom” (17). Thomas and Brown are both closely affiliated with a tradition that emphasizes games for learning: Thomas through his role as the founding editor of the Games & Culture Journal, Brown as co-founder of the Institute for Research on Learning. Like Davidson and Goldberg, they identify a disjuncture between formalized learning environments and the methods of learning/knowledge acquisition that are rewarded outside those environments. The result of this division, they argue, is the increasing irrelevance of formal learning environments. These authors; like Cormier, Siemens, and Downes in their explanation of MOOC, identify the increasing role that nontraditional learning currently plays in society at large and indict formal educational systems for their failure to re-conceive themselves in ways that might better fit contemporary needs. However, before focusing on the benefits many see in nontraditional and informal learning spaces, values many of these authors advocate for incorporating into traditional learning institutions, it is important to understand the these authors’ critiques of formal learning institutions. While those noting the inadequacy of
formal learning institutions have a variety of complaints about pedagogies in these environments, including inadequate use of technology (Collins and Halverson *Rethinking Education*) or a crippling of learners' imaginations (Thomas and Brown *A New Culture of Learning*), the two primary critiques identified are the standardization of education and what we might call top-down learning models.

Davidson and Goldberg effectively sum up the issue of standardization by noting that schools “tend overwhelmingly to reinforce a form of one-size-fits-all education, based on standardized testing. Call this cloned learning, cloning knowledge, and clones as the desired product” (21). Such concerns about standardization are echoed by a number educational theorists, often with drastically different purposes. Henry A. Giroux, arguing for a postmodern pedagogy heavily influenced by both critical pedagogy and Marxism, identifies standardization as one of the primary ways public schooling remains firmly connected to modernist ideologies: “the dominant features of public schooling are characterized by a modernist project that has increasingly come to rely upon instrumental reason and the standardization of curricula” (353). While Davidson and Goldberg critique what they see as standardization for its inability to prepare students properly to join a networked work force (a critique that is echoed in Collins and Halverson), Giroux's concerns move in nearly the opposite direction. Far from focusing on the ability of current students to contribute to a future work force, Giroux argues that the standardization of curricula replicates problematic ideologies that ignore racial, class and gender issues, and more generally teaches students to accept information rather than critique it. James Paul Gee, whose games-based pedagogical writings will be discussed in more detail later in this chapter, critiques standardization from a
perspective similar to Giroux’s, focusing on how a standardized curriculum shuts down critical thinking, but does so without the same emphasis on hegemonic ideological structures.

As Giroux observes, standardization grows out of an epistemology that situates knowledge as an external object, one that can be commodified and then disseminated. In this way, critiques of standardization are closely tied to the other major criticism of traditional learning institutions, one which has been discussed under a number of different names, including but certainly not limited to: the commodity model, the sage on the stage, and the banking model. Cormier identifies the commodity view of learning as “the idea of learning as something that can be bought, acquired, and then completed” (512). This perspective identifies knowledge as existing in static locations (typically an expert, or an authoritative text). Learning is both finite and teleological in its progression; one simply identifies (or is told) where the knowledge is located, takes ownership of it, and the learning process is completed.

The commodity model is also connected in higher education to discussions of authority and what Allison King calls the “sage on the stage” model of learning. In classrooms based on this model “the professor is the central figure ... the one who has the knowledge and transmits that knowledge to the students, who simply memorize the information and later reproduce it” (30). King, whose work emerges out of the active learning and constructivist traditions, distinguishes between information, which can be contained in texts and experts, and knowledge, which is a state of being that cannot be transmitted. Both Davidson and Goldberg and Collins and Halverson identify the expert
model as one that, despite numerous critiques, persists as an important component in the long-standing hierarchical model of education.

Davidson and Goldberg note the only contemporary institution older than the university system is the Catholic Church and observe both institutions “bear a striking structural resemblance to what they were in medieval times” (9). While they admit some changes in the nearly thousand year history of universities, the particulars of institutionally sanctioned learning remain troublingly similar. Collins and Halverson attribute this stagnation to education's complexity as a public project. Speaking directly of the public American K-12 system, they identify it as a complex system that has, through various changes over the course of its development, found an equilibrium. This equilibrium has the benefit of, theoretically, ensuring that the system is stable; however, stability also locks it into outdated methods of communication, technologies, and pedagogies. Both secondary and higher education systems remain caught in a modernist ideology of organization and control, one which leaves them shackled to a “one-size-fits-all” and “uniform” curriculum (25). In response what they perceive as deficiencies at all levels of education, these authors note many learners turn to environments that are more customizable, developing more nuanced approaches to learning than they find in their traditional education system. Collins and Halverson note “people all around the world are taking their education out of school and into homes, libraries, internet cafes, and workplaces, where they can decide what they want to learn,” emphasizing the problematic shackling of the concept of learning to formalized education or schooling (3). They open their book, Rethinking Education in the Age of Technology, with a series of brief anecdotes demonstrating the variety of learning
environments and methods learners of all ages use to supplement traditional experiences. Traditional educational institutions, with their extensive histories, often remain wedded to the pedagogies that have historically served them well, even as those pedagogies no longer match student needs or desires. Many of these informal learning environments are built on emerging technologies and applications, giving them ample space to innovate in learning and interaction design. Thus, one first step to identifying a productive pedagogy might be to look at learning environments that are being chosen by contemporary learners, and then to explore how those environments meet those learners’ needs.

**Informal Learning Environments**

Of course, identifying what constitutes an informal learning institution and finding commonalities between these diverse environments is itself a challenge. As previously mentioned, Davidson and Goldberg identify both *Wikipedia*, a community-constructed online encyclopedia, and *Pokemon*, a role-playing strategy video game, as informal learning institutions. Collins and Halverson cite varying spaces and constructions, from video series and games to online fora and question-and-answer websites. Both sets of authors note these informal learning spaces are often self-selected, making analysis more challenging. Davidson and Goldberg introduce two primary characteristics of nontraditional, informal learning environments, characteristics that are echoed in a number of other studies of these spaces.

1. Nontraditional learning environments are more customizable than traditional ones
2. Nontraditional learning environments are more participatory than traditional ones
In addition to identifying how those working broadly between education and new media studies characterize and define these terms as they relate to new or novel technologies, I also turn to consider how Rhetoric and Composition has, in many cases, already anticipated these concerns. Making educational experiences more customizable and participatory is already something that we, as a field, value. However, as the examples below will show, achieving these goals within a traditional educational structure is often challenging.

Davidson and Goldberg identify two primary ways in which users customize informal learning environments: first by choosing which spaces they will participate in, and second by defining for themselves what the outcomes of those learning opportunities will be. Collins and Halverson extend the definition of customization to include not only when and how to learn, but also why to learn. They emphasize “the explosion of learning content” into spaces that include games, blogs, and social networking sites allows “learners to customize learning experiences in terms of personal, rather than institutional, values and beliefs” (96). Similarly, Gee emphasizes how games present players with a similar set of options for structuring how they will learn the rule-bound system that constitutes a game environment. Gee calls this the “multiple routes principle” of games based learning, emphasizing that by giving players multiple ways to progress through a system, games allow “learners to make choices, rely on their own strengths and styles of learning and problem solving” (209). Thus, customization in these informal learning environments involves not merely selecting what one will learn, but also the ability to choose how one will learn.

Cindy L. Selfe and Gail E. Hawisher's collection of essays about gamers, *Gaming Lives in the Twenty-First Century*, provides several examples of how gamers in particular
expand, redefine, and take agency in literacy practices outside traditional educational settings, precisely by using the freedom and customization made possible in these nontraditional learning environments to enrich and extend what they receive through conventional methods. The title of the collection recalls Selfe and Hawisher's previous work, including Literate Lives in the Information Age: Narratives of Literacy in the United States. In both collections Selfe and Hawisher use case studies and personal narratives to underscore dramatic changes in literacies and to explore how contemporary learners use technologies as agents of change and literacy sponsors.

The chapter “Computer Gaming as Literacy,” in which Selfe and Mareck collaborate with Josh Gardiner, a player of the popular online shooter game Counter-Strike, demonstrates the principle of customization by emphasizing the positive power of allowing learners to experience “personally-selected, cross-cultural literacy communities, the ability to enact personal choice and political agency through and with literacy practices, and the opportunity to shape identity within literacy practices” (23). Gardiner, through his online gaming activities, has been given the opportunity to select communities to interact with and literacy practices to develop. Gardiner's descriptions of his gaming practices demonstrate that, despite the dismissive stance that his parents and formal educators take toward his gaming practices, he has gained a number of diverse literacies from his experiences with Counter-Strike (including, but not limited to, gaming, technological, cultural, and linguistic practices). It should be noted here it is not the content of the game that fosters this development; Counter-Strike is a first-person shooter, not an educational game. Instead, the benefits come from Gardiner’s ability to customize the various activities that surround his gameplay, from the
technological literacies he has gained through running the game and maintaining his computer for gaming purposes to the cultural awareness that has come from playing with teammates in other countries. The authors note “today's literacy demands and the cognitive choices available to meet those demands are starkly different from those afforded by the culture in which the founders lived and worked” (Selfe, Mareck and Gardiner, 29). Thus, those in the role of mentor (parent, principal, educator, etc.) to learners often do not or cannot understand how extracurricular learning actually provides important skills and literacies, rather than being an extraneous distraction. The importance of customization in nontraditional learning environments is then as much a factor of their status as extracurricular as it is a result of “adult caretakers” being unable to identify the skills and literacies that will be most useful for modern learners (Selfe, Mareck and Gardiner 32).

In addition, customizable learning outside traditional settings is also identified as being more participatory than traditional learning environments. Jenkins notes the importance of using the term “participatory” over the commonly used “interactive”: “Interactivity is a property of technology, while participation is a property of culture” (6).

Jenkin's definition of participatory culture is as follows:

A participatory culture is a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one’s creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices. A participatory culture is also one in which members believe their contributions matter, and feel some degree of social connection with one another (at the least they care what other people think about what they have created). (3)
In this definition we see a number of components that contribute to the participatory aspect of informal learning environments. Many of these components highlight the importance of collaboration and community in nontraditional spaces, particularly the emphasis on sharing and peer mentorship. Thus, in many ways Jenkins' definition of participatory cultures echoes Cormier's description of rhizomatic learning. “Knowledge,” Cormier argues, “is a rhizome, a snapshot of interconnected ties in constant flux that is evaluated by its success in context... the rhizomatic model, in contrast to the academic one, keeps knowledge in the people and in the community rather than distilling it into a paper based product” (514). In other words, knowledge is constantly shifting and distributed, and, by extension, learning should be as well. Cormier is, of course, drawing upon Gilles Deleuze and Felix Guattari's conception of the rhizome in *A Thousand Plateaus*, a model that is horizontal, dynamic and dispersed, as opposed to an arboreal model, one that is vertical and based on fixed hierarchies. In this model the responsibility for both educating and learning is distributed “outside traditional hierarchical models and into the social realm” (Cormier, 515). Since learning is continuous and distributed across individuals of various positions, constructing and maintaining a learning community become essential elements of the rhizomatic model. Cormier's rhizomatic model, like Jenkins' participatory culture, depends on a network that shares both content production and assessment.

Jenkins' description of *The Daily Prophet*, a fictitious newspaper created by a young fan of JK Rowling's *Harry Potter* series, provides an excellent illustration of participatory, rhizomatic learning. Jenkins' work in general explores these principles and their relation to popular culture through a careful and nuanced explication of fan communities. In
Convergence Culture he explores how even narratives have begun to take a more horizontal structure, being transmitted across multiple venues and in multiple formats. In the chapter “Why Heather Can Write,” Jenkins explores how a student created online community became a powerful, informal learning institution centered on writing. Online communities must, by their nature, be inherently collaborative. They depend on each individual for recruitment, initiation, development, and community maintenance. Thus, as Jenkins explains, in online communities “the entire community takes on some responsibility for helping newbies find their way” (178). Rather than cede power to a central figure, members of online communities must ensure that each new member has access to the materials he or she will need to succeed, or risk the sustainability of the community as a whole. In the community that Jenkins describes as an example, thirteen-year-old Heather Lawver first created the site, and other children and young adults populate the community, write articles to be published in the fictional paper. Heather and other writers mentor each other, providing writing instruction and evaluation, carefully editing each submission. Potential authors are first given guidelines and advice about how to write good articles and then receive feedback and editor comments on the articles they have written. Through this collaborative, student-led initiative, “teen writers develop a vocabulary for talking about writing and learn strategies for rewriting and improving their own work... they use analytic concepts they probably wouldn't encounter until they reached the advanced undergraduate courses” (183). The knowledge of these strategies, concepts, and vocabularies is not given from a teacher or textbook to a set of students. Instead, it is dispersed amongst the participants, all of whom have an active stake in distilling that knowledge and presenting a quality product on their community site.
Identifying good writing and providing careful evaluation and useful feedback is not the responsibility of one centralized authority figure, but a community responsibility necessary for the continuity of the site, a place originally envisioned by one member but continually enriched and maintained by all.

From both of the characteristics explored here, customization and participatory learning, we see a clear set of pedagogical values. While those scholars mentioned above have different purposes and foci in describing new media and digital environments as important extracurricular learning spaces, they are united in their emphasis of how these spaces provide learners with more agency and more situated learning experiences. Informal learning environments are valued for their ability to provide learners with a number of meaningful decisions and their ability to distribute authority and information within a network.

Elements of Informal Learning and Rhetoric and Composition

Many of the criticisms mentioned about traditional educational institutions are nothing new to Rhetoric and Composition. James Berlin notes “one of the main institutional sites for resisting [the banking model] recently has been the college writing class” (416). While Berlin here is referring specifically to the works of Paulo Freire and the tradition of critical pedagogy he inspired, I turn first to a brief overview of the process movement for a demonstration of how composition has both valued and been challenged by incorporating more agency, customization, and participatory structures into the higher education classroom. The collection of theories and approaches to pedagogy that came to be collected under the
heading “process” were themselves reactionary pieces that challenged the dominant standard curriculum of the day. The process movement, which gained traction in the mid-sixties through the *Conference on College Composition* and the Dartmouth conference of 1966, responded directly to prevailing models of composition instruction that focused on handbooks, grammar exercises, and theme papers (Clark 6). Typically seen as a break from the rigid structures that came before it, these early compositionists turned to the process model for its more free and open approach to writing studies, an approach that valued the individual and idiosyncratic elements of writing and voice. Paul Kei Matsuda provides a quick summary of the popular story of the transition that captures how both movements have been characterized. The predominant narrative, he explains, is that as a field we moved from current-traditional pedagogies, characterized by their “product-oriented, teacher-centered pedagogies” to a process pedagogy characterized by “process-oriented, student-centered pedagogies” (67). Certainly this is the focus of some of the foundational texts for process—Janet A. Emig (*The Composing Processes*), Peter Elbow (*Writing without Teachers*) and Donald Murray (*A Writer Teaches Writing*). Indeed, Lad Tobin's description of late seventies/early eighties discussions of process seem in many ways to echo contemporary discussions of digital learning spaces: “you were either one of the process-oriented teachers arguing for student choice of topics and forms; the necessity of authentic voice; writing as a messy, organic, recursive form of discovery, growth, and personal expression; or you were a teacher who believed that we needed to resist process’ attack on rules, conventions, standards, quality, and rigor” (4). In this statement we find echoes of Jenkins’ and Davidson and Goldberg's emphasis on the customizable and participatory nature of informal learning
environments juxtaposed against the traditional institution's insistence on standardization and banking. The focus on student choice, recursive and organic processes, and even knowledge sharing practices such as peer reviewing all contain elements of informal learning environments.

However, despite the promises and optimism of many process narratives, the process movement itself quickly came under fire for a number of reasons. One of the most common critiques of the pedagogies inspired by the process movement was their lack of context or connection to the world outside the writer. However, for the purposes of exploring the challenges of creating classrooms that resemble informal learning environments, I look specifically to critiques of process that identify how a “process-oriented, student-centered” pedagogy became as standardized and rigid as the structure it was purported to replace. As Sharon Crowley explains, “process strategies fit quite comfortably within [a current-traditional] framework” (64). Conducting a survey of allegedly process-oriented textbooks and handbooks, Crowley demonstrates that one of the key elements of the writing process (invention) has become as highly regimented and structured as the grammar exercises vilified in current-traditional models. Following the intervention of the process movement, invention has become an entirely teleological act. Invention is no longer an opening for inquiry, but instead a directed movement, leading writers through a series of prescribed steps until they have reached a draft. Perhaps most telling, she observes invention itself now has products that are frequently assessed—most commonly the outline. Similarly, Lester Faigley, critiquing the highly modernist traditions in Composition Studies, notes that Composition's insistence on valuing process is, despite many efforts to the contrary, still often a teleological
endeavor that traces a direct line from a project's beginning to the finished product. Thus, while an emphasis on the concept of process would seem to introduce the characteristics of informal learning institutions into writing instruction, the codification of invention and drafting strategies tie it squarely to more traditional models. Geoffrey Sirc describes this issue by noting “[Composition] may have arrived, but what we've left was the joyous potential of our idiosyncratic status as anti-discipline” (265). This last critique encapsulates much of what he wants to say about Composition: on the path to becoming a more codified and demarcated academic discipline, we have lost our sense of play. Instead of exploring the unintended or expected movement within the academic system, Composition has become institutionalized as part of the system. While there are many practical and professional reasons why this institutionalization is a positive step, Sirc asks what we have lost both in the “process” of becoming a formalized discipline and through the process movement itself. His claims about contemporary composition classroom spaces are equally scathing. He describes the project of Composition as a program “to clone students into Optimal Verbal Technology cyborgs called Versatile or Successful Writers” (193). His use of the words clone and cyborg both echo the complaints of standardization that Davidson and Goldberg raise and highlight how such an over-determined structure nullifies students’ creative powers. Even when utilizing strategies that attempt to critique superstructures and dominant narratives, Sirc claims that classrooms often become spaces for replication rather than spaces for playful exploration and emergence. Indeed, he charges that to accomplish the task of creating successful writers, “we raze the student landscape... and demand they (re)produce their new (already colonized) cityscape” (193). Pedagogical models, even those that hope to be
transformative and liberatory, present foregone conclusions to students and ask them to reproduce those in their own writing. In such models there is no room for distributed or participatory learning. Likewise, Kelly Ritter notes while liberatory pedagogy has “evolved” the place of the teacher in a classroom, nevertheless "the teacher still must exist—and in many ways, takes on a heightened structural importance in the classroom, as a political voice and organizer. Such increased social value placed upon the teacher-figure inevitably leads to increased moral value as well, elevating the classroom to a status that becomes vaguely spiritual, nearly holy" (19-20). Ritter's terminology reflects the church, and Sirc's reflects the factory, both examples used previously by educational theorists as signs of the problematic standardization of education. However, as we will see, opportunities for play are created out of rigid systems.

**Play, as Education and as Rhetoric**

Uses of gaming within classroom spaces commonly cite the value they identify in harnessing play for educational purposes. Thus, before turning to consider how games have previously been incorporated into traditional learning spaces, it will be helpful to interrogate play as both a pedagogical tool and as strategy with rhetorical force. As Albert Rouzie notes, play is often conceptualized as empty frivolity and an opposed pairing for meaningful, substantial work, both in culture writ large and in educational settings (25). Play, as a concept, has been a tricky issue for scholars in a variety of fields, including not only education and game studies, but also linguistics (Wittgenstein) and sociology/anthropology (Huizinga, Caillois). Even for those who stress the value and importance of play, as Johan Huizinga does, play is still something that is very separate from other activities.
Reintegrating ideas of play within a formal classroom structure are something of an issue for many classic theorists.

**Defining Play**

Huizinga's book, *Homo Ludens: A Study of the Play-Element in Culture*, is one of the earliest modern treatments on the subject (released in English in 1955) and became one of the touchstones for early writers on video games. His five part definition of play emphasizes the separation of play from other activities: (1) play is free, (2) separated from ordinary life (3) through a difference both in time and location, (4) creates and demands order, (5) and is not connected to material interest or profit. These criteria for play, which necessitate it be separated from real life in a number of important ways, mean that it exists within a “magic circle” that acts as a sort of invisible boundary between the play activity and the real world. While Huizinga sees play as separate from everyday life, this is not by any means to imply that it is unimportant or frivolous. On the contrary, Huizinga identifies play as one of our most essential impulses and offers a strong critique of modernist society, which he sees as undercutting the primal value of play. Roger Caillois, in his equally influential *Man, Play, Games*, takes Huizinga to task for certain aspects of *Homo Ludens*, but even in his critiques he nonetheless agrees that “there is also no doubt that play must be defined as a free and voluntary activity… a game which one would be forced to play would at once cease being play. It would become constraint, drudgery from which one would strive to be freed” (125).

From these early texts, which represent some of the first scholarly texts on play and games, the separation between play and reality is brought into the scholarly conversation about games. Huizinga and Caillois present serious considerations for the implementation of
gaming in academic/educational settings. They assert the magical element of gaming, the
difficult to define concept of play that makes games so enticing for learning, is obliterated
when that play is formally mandated.

Jesper Juul notes many theorists, from Huizinga on, have attempted to construct a
boundary between reality and game-space, but the overlap constitutes a “rather fuzzy [area]
under constant negotiation” (36). In place of the criterion other theorists seem to offer,
“separate from the real world,” Juul suggests a better description for how games relate to
reality, arguing games must have “negotiable consequences” and that “the operations and
moves needed to play the game are mostly harmless” (41). The phrase “mostly harmless”
echoes Chris Crawford's argument that “the whole idea of play is to give the player an
experience without the danger that might normally accompany that experience”(30). A
situation in which poor gameplay resulted in a failing grade may not physically harm
students in any way, but neither is it entirely free from danger (as failing can have severe real
world consequences for students). In other words, for Juul, games- and by extension play-
may have real world consequences, but players must be able to choose whether or not to play
(and therefore whether or not they accept the risk of consequences). Thus, Juul's modification
makes room for activities that take place in the real world with legitimate consequences to be
considered games, such as professional sports and gambling. However, even with Juul's shift
from completely separate from the real world to simply negotiable consequences, games and
play are still commonly defined in ways that remain an important point of contention for
incorporating games into formal learning spaces. Even McGonigal, who argues that games
and game design can make reality better, continues to affirm that voluntary participation is a crucial element of gaming (21).

However, as the field has evolved, more recent studies suggest that play is much more intertwined and central experience in “real life” than concepts like the magic circle might suggest. Eric Zimmerman, game designer, scholar, and co-author of one of the most well-known collections on game design (*Rules of Play: Game Design Fundamentals*), offers us a definition of play that begins to turn toward thinking about how play can be used thoughtfully, rhetorically. Noting the variety of different ways that we use the term “play”—we play instruments, we play games, we might say that a loose table leg has too much play in it—Zimmerman observes the connecting thread between these ideas is the notion of movement in a system. Despite the difference of each of these uses, applications of the play concept can fall under the same definition: “Play is the free space of movement within a more rigid structure. Play exists because of, and also despite, the more rigid structures of a system” (Zimmerman, “Narrative, Interactivity, Play, and Games” 159). Zimmerman's definition clearly situates play as something that is not extraneous, added, or separate from reality, but an inherent part of organized systems. Likewise, Rouzie, working within the field of Rhetoric and Composition, argues for a reconsideration of play, situating it as an “unalienated, engaged activity.” Thus, play becomes an important pedagogical and rhetorical tool, one which has substantial potential as “a significant rhetorical force … play gets certain rhetorical work done” (35, “Narrative”).

Like Rouzie, Mary Flanagan argues a more nuanced and complex understanding of play through her study of Victorian doll culture. In her book, *Critical Play: Radical Game*
Design, Flanagan argues for a more socially-engaged, politically-conscious form of game design. She moves through board games, subversive art, and activism to present a picture of play that is both critical and highly subversive. Her presentation of Victorian doll culture demonstrates the problematic relationship between play and reality and explores how players' abilities to subvert systems give play an emergent quality. The initial focus of doll culture, she writes, was “not only play, but normative reinforcement” (30). Dolls were meant to reify for young girls their role in society, as mothers, caretakers and housekeepers. In other words, parents and caretakers hoped play would act as a supplemental learning tool, teaching them about culturally appropriate roles for women. However, Flanagan finds that quite often children “were resistant to, even critical of, the social roles being ascribed through doll play” (31). Children, through the dolls, broke social conventions and explored taboos. Their play, to return to Zimmerman's definition, existed within the structure of confined gender roles, and many girls enacted this play not by following the system prescribed order, but by subverting it. This rewriting of traditional narratives through play that blurs boundaries between fiction and real, is, Flanagan argues, a crucial element of critical play.

From Zimmerman's definition and Rouzie’s and Flanagan's examples, we have an understanding of play that is no longer separated out from work. Instead, play is both situated solidly within systems and organizations (instead of standing outside of them as a separate entity) and nontrivial action with clear rhetorical weight and meaning. Having addressed the issue of play, I now move to explore the varied ways educators have, either successfully or not, attempted to incorporate elements of play into their curricula using games. While games have the potential to embody the elements of customization and participatory learning
discussed above (as Josh Gardiner's Counter-Strike experiences demonstrate) the formal implementation of games into educational spaces has not always met the goals of challenging the rigidity and standardization of contemporary learning institutions.

Discussions of video games, whether from a critical analysis, media studies, or pedagogical perspective, often begins with an acknowledgment of the relative newness of the medium. Certainly when separated from gameplay writ broadly (which Huizinga notes is one of the oldest forms of entertainment) and compared against literature and even film, computer gaming is a fairly new industry. Nonetheless, there remains a substantial history both of commercial and educational games. While cultural memory typically turns first to Pong (released in 1972) as the original arcade game, Computer Space (released in 1971), is typically considered the first commercially available video game (Malliet and de Meyer 25). Regardless of which game one cites, the medium has a nearly fifty year history, and the educational use of video games stretches back equally far.

**Gaming in the Classroom: Three Approaches**

A complete and grounded theory of gamification for educational purposes needs to take into account not only current pedagogical values, but also how games have been historically incorporated into classroom spaces. While scholars in a variety of fields talk about games in the classroom as a fairly new and novel phenomena, games have been used in formal educational institutions for over 40 years. Rather than recount this entire history in a linear fashion, I look instead to three primary modes of incorporating gaming into curricula: the creation and use of educational games, the use of commercial games for educational purposes, and the use of games as models for pedagogy. Though these methods certainly
arose sequentially, contemporary arguments exist for all three means, with no single method dominating the discussion of how games can or should be incorporated into classroom settings. Indeed, the oldest method, the development of educational games, is currently one of the most popular uses of gaming among the hard sciences. Finally, it should be noted there is another use of games in the classroom that is popular within English and Media Studies (one which is not in the scope of this project)—the use of games as a text for analysis. Games are complex popular culture texts and, as such, important texts to consider. A number of scholars present excellent perspectives on the benefits of conducting critical analysis on games (Colby and Colby 2008, for instance). In the popular arena, one of the most controversial stories of 2012 in the gaming community related to a media critic, Anita Sarkeesian, intending to do critical feminist analysis of stereotypes in popular video games. Certainly approaching games as popular culture texts and valuable sites of critical analysis is important work; however, such work falls outside the scope of this research precisely for this emphasis. In these cases games themselves are the object of study, rather than being a pedagogical tool or model.

**Educational Games**

The first, and most traditional, use of gaming in the classroom involves developing new games explicitly designed for educational purposes. Indeed one of the most iconic and well-known educational games, *The Oregon Trail*, was first released in the same year as *Computer Space*, 1971. D. R. Cruickshank and Ross Telfer, writing in 1980, note that as of 1977 hundreds of games and simulations designed for classrooms were available to teachers. Their article, “Classroom Games and Simulations” outlines a number of advantages and
disadvantages to using computer games in the classroom. The advantages they cite primarily focus on the experiential nature of gaming: games provide real-world applications, allow students to solve difficult problems, create a responsive environment, etc. The disadvantages or obstacles they identify to using games in classrooms are primarily pragmatic; games are expensive, teachers may not be familiar with games, they may be less available to schools. Thomas W. Malone's “What Makes Things Fun To Learn? Heuristics for Designing Instructional Computer Games,” also released in 1980, covers similar territory and advocates for the use of gaming for the following purposes: “to teach an ordered list... to teach correspondence between two representation systems... to teach properties of items in a set,” as well as considering games as a model to teach programming (167-168). The games Malone and Cruickshank and Telfer were writing about over thirty years ago differ dramatically from those available today, however the reasons they cite for using games in the classroom echo contemporary theorists. From the beginning, then, it has been argued games have the potential “to make learning more efficient, more interesting, and more enjoyable” (168).

This first use of games in the classroom was commonly referred to under the umbrella term of *edutainment* throughout the 1980s and 1990s, an obvious portmanteau of education and entertainment. This approach to learning emphasizes the potential to increase enjoyment and engagement in learning through the use of a variety of entertainment media, including not only games but also television programs and magazines for children. However, as one might predict from the relatively simplistic, rote-memorization activities suggested by Malone, the word quickly became a pejorative term. Simon Egenfeldt-Nielsen, who has
written extensively on the history of educational games and the current possibilities for
serious games, summarizes the genre of these early educational games as containing the
following characteristics: they are generally very simple games, they use a straight-forward
delivery of content, and the in-game rewards for success are generally separated from the
content players should be learning (264-265). Egenfeldt-Nielsen uses Math Blaster!, a highly
successful educational game first released in 1983, as an example of the typical educational
game. The game is a time-based challenge to correctly answer simple mathematical
problems. In the earliest versions of this game, students could play several different modes
with space-sounding names (including “countdown,” “ignition,” and “lift-off”) that required
students to correct mistakes, fill in sums, and solve for missing variables. Successfully
completing exercises resulted in more space-themed graphics and a congratulatory message,
and (in the second and third releases of the game) unlocking short mini-games that were not
math-related at all. Math Blaster!, which Egenfeldt-Nielsen identifies as fairly representative
of edutainment games, simply “lets players perform mechanic operations” but does not
actually teach them anything about the subject. The rote aspects of edutainment games,
combined with their general lack of substantive content and lack of engagement from
students, soon led them to be heavily criticized, both by educators and by the very students
for whom they were designed.

The most commonly cited critique of educational games in the edutainment age is
they fail at their attempts to balance fun and learning. Matthew Johnson explains that “at
their worst, [educational games] have been neither educational nor games.” He identifies the
primary problem inherent in many educational games as the inability to maintain a balance
between content-delivery and gamic elements. As Johnson explains, and as Egenfeldt-Nielsen's example of *Math Blaster!* demonstrates, many educational games are not games at all, but rather quizzes with graphics. Similarly, Klopfer, Osterweil, and Salen, whose “Moving Learning Games Forward” attempts to offer a comprehensive heuristic to move the design of educational games to a more engaging and critical practice, note that many of these titles “while they may go by the name ‘games’ … usually end up bearing little resemblance to the games ... instead being little more than interactive quizzes. The resemblance to a game is meaningless when the activity is nothing more than answering multiple-choice questions and when success is measured solely as the percentage of correct answers given expressed as a ‘score’ and presented with a fun animation” (2). Both Johnson and Klopfer et al. identify the primary issue with many educational games: the focus on content and curricular goals happens at the expense of many basic game design principles. In doing so, these educational “games” often lack the very characteristics that make games enticing for learning.

Despite these critiques, the educational games movement remains extremely popular at all levels of education. In social and hard science academic circles these games often now go by the name “serious games”. Carlos Rodriguez-Hoyos and Maria Joao Gomes’ “Exploring the Educational Power of Serious Games,” a content analysis of the literature available on serious games and pedagogy, found ninety articles published between 2008 and 2010 on the topic, the majority of which (sixty out of the ninety) focused on either the design or implementation of serious games. Thomas M. Connolly et al, conducting a survey on the empirical evidence supporting games as a learning tool, found a total of 7,392 academic papers concerning the effects of games based learning. Their particular study, which was
looking for papers that reported empirical data for effects on students aged 14 or over, coded 129 papers, of which half (51) focused on educational games and serious games. While this approach seems to be more discussed and utilized in other disciplines, there are a few notable educational games directed at college level writing and rhetoric courses.

Both the Computer and Writing Research Lab at University of Texas-Austin's *Rhetorical Peaks* and Ryan Moeller and Kim White's *Peer Factor* offer examples of what such work in a writing or rhetorical curriculum might look like. *Rhetorical Peaks* is murder mystery game designed to teach students about the traditional rhetorical appeals, ethos, pathos, and logos, and provide them an enjoyable and low-stakes environment to play with them. Anthony Matteo explains developing a game system to teach rhetorical appeals, and particularly this game, which is a modified version of the popular *NeverWinter Nights*, is a valuable endeavor because it can “immerse students in fictional but concrete rhetorical situations in which they play particular roles and to which they must respond in appropriate ways” (63). Thus, Matteo and the creators of *Rhetorical Peaks* connect the work they are doing to the concept of case-based learning, arguing that educational games, with their ability to model complex situations and responses, provide detailed cases for students to respond to. Like *Rhetorical Peaks*, *Peer Factor* was designed to provide students with experiences and opportunities to test out skills before having to demonstrate those skills in a higher-stakes context, in this case peer reviewing skills. *Peer Factor* presents students with a variety of peer review scenarios and pre-defined responses and allows them to see how various responses aid or do not aid the writer they are reviewing. Moeller and White explain in creating a game to teach peer review they hoped to “create a learning environment in which
student players wanted to understand peer review based upon the feedback they received from the game” (“Game Pedagogy”). Drawing on the work of Gee, they attempt to create a game that allows student to explore, inductively, what constitutes effective or ineffective feedback. In both Rhetorical Peaks and Peer Factor, we can see how the movement toward the creation of educational games has kept some of the same values (the focus on engagement) while moving forward both in terms of types of gameplay and in the complexity of content.

Education through Games

As both Cruickshank and Telfer and Malone demonstrate, the emergence of educational games occurred nearly contemporaneously with the emergence of computer games. However, when gaming moved from the arcade to the living room and gained prominence as a cultural form, many scholars and teachers shifted from desiring to design their own games for educational purposes to looking at how commercially available games can be used for education or are educational in their own right. By commercially available games, I refer specifically to games designed for entertainment or recreational purposes. This definition also excludes the fairly large market for games that are designed to be educational and sold commercially to parents, looking exclusively at those games that do not have education as a primary motivation. Within the exploration of commercial games as learning machines there are generally two groups: those who look to incorporate commercial games into classroom spaces and those who look at the out-of-school education these games provide. Since the latter perspective has already been demonstrated through Selfe and
Mareck’s presentation of one Counter-Strike player, this section focuses on those who seek to incorporate commercial games into classroom spaces.

Kurt Squire and Henry Jenkins, in a 2004 study of MIT undergraduates, found students often repeat the same critiques of educational games mentioned above. While the students Squire and Jenkins polled were not opposed to the idea of using games in education, they offered one simple caveat: “if people are going to learn from the games and want to play them, they’d better be damn good games” (Squire and Jenkins 7). This is a bar, Squire and Jenkins assert, educational games consistently fail to hit; “nobody has produced an educational environment as immersive and open-ended as Grand Theft Auto 3, or a simulation as compelling and nuanced as The Sims” (26). Squire and Jenkins, along with a number of other scholars arguing for the inclusion of commercial games in education, recognize a number of values that support using games in education (including the elements of customization and participatory learning mentioned earlier). Given, they claim, the lack of compelling games designed explicitly for education, this group looks to incorporate commercial games into the classroom by using the simplified and often problematic systems games present as an opening for critical discussion and exploration. While using commercial games in educational settings is somewhat less common than the educational/serious games application, certain games have found a niche for educators in a number of fields. Some examples include using Civilization III to engage students with history (Squire and Jenkins “Harnessing the Power “) and Spore to teach science (Angelone “Commercial Video Games”). In both of these cases, the authors discussing the benefits of these games highlight the content presented and the novel format as being essential elements that make each subject
more engaging or enjoyable for students. Nonetheless, it should be observed in each of these cases the commercial game acts as a supplement, rather than replacement, for traditional education. Squire explains “the process of interpreting game play, of drawing analogies between symbolic representations in the game and their real-life analogs, is one of active interpretation, and suggests that students might benefit from systematic explanations or presentations of information” (“Cultural Framing”). Using commercial games, then, can be powerful, but also needs substantial scaffolding to help students first understand and then criticize the systems they play in.

Richard Colby and Rebecca Shultz Colby’s use of World of Warcraft in the writing classroom provides an example of how commercial games are being used in the teaching of writing. World of Warcraft, a Massively Multiplayer Online Role-playing Game (MMORPG), is currently the largest online role-playing game. Players choose a class (including warrior, priest, and hunter) which grants them certain abilities and restricts others (like the ability to use a sword, cast healing spells, or shoot a bow). They then progress through the world, gaining in strength and ability, and working with other players to complete group tasks based on their complimentary skills. Colby and Colby describe their classroom, in which the game is used, as part of a studio model of composition. The game world thus becomes an active, thriving place for students to explore and apply the concepts of rhetoric discussed throughout their classes. Their students examine questions such as “how the community constructs ethos through listing accomplishments, pathos in how they refer to other players, and logos through using game statistics” (308). Throughout the course students are asked to both study and engage with the game and the community that surrounds the
game, providing them an authentic situation and audience for their writing assignments. The purpose of using *WoW*, they explain, is to encourage students to consider “consider actual audiences, approaches, and genres” (310).

**Games as Models for Education**

Finally, the most recent approach to games and learning has been to consider how games present a pedagogical model. In this use of gaming scholars and teachers do not advocate for the use of games at all, either educational or commercial. Instead, they argue we should look to games to consider reforming classroom practices and methods of assessment based on game design. While a number of authors have noted the educational power of games (including Prensky's *Digital Games-based Learning*), Gee's 2003 *What Video Games Have to Teach Us About Learning and Literacy* is commonly cited as the landmark text for this position. In it, Gee firmly clarifies “while I talk a good deal about actual video games, I really intend to discuss the potential of video games” (9). Throughout the work Gee analyzes a variety of commercially available games; including *Pikmin, EverQuest*, and *DeusEx*; looking at how these and other games teach their players to operate within a complex system, develop skills, and master particular types of content. From this analysis Gee develops a list of thirty-six learning principles that games use to help players learn, including the “Transfer Principle: Learners are given ample opportunity to practice, and support for, transferring what they have learned earlier to later problems, including problems that require adapting and transforming that earlier learning,” and the “Discovery Principle: Overt telling is kept to a well-thought-out minimum, allowing ample opportunity for the learner to experiment and make discoveries” (211).
Gee's and Prensky's work has found traction among scholars in Rhetoric and Composition, many of whom already advocate pedagogies that resemble the learning principles Gee discusses. While a number of scholars within the field have taken on this approach, Mark Mullen's “Starter Cities: Simulation, Game Design, and the Writing Classroom” provides an excellent and succinct example of how the “games as pedagogical model” method has been approached from within the field. Mullen explains the phenomena of starter cities or areas in Massively Multiplayer Online games by looking at two games, *Tabula Rasa* and *Pirates of the Burning Sea*, and identifying how their starter cities integrate new players into the game system. The term “starter city” in an MMO refers to the first area the player encounters in the game world. This area serves an important function for an MMO, as it must quickly bring new players into the game, in a sense teaching them the customs of the new world they have become a part of. Mullen identifies ten important tasks of starter cities, including: “allow[ing] players immediate and consequential participation in the world... introduc[ing] the core gameplay systems... highlight[ing] the core progress mechanic.” Like Gee, Mullen's interest in games, and particularly starter cities, focuses on looking at what elements of them we can incorporate into our preexisting pedagogies. Thus, having identified the importance of starter cities in MMOs, Mullen considers how the “first-year writing classroom is a prime candidate to be considered as the college equivalent of an MMORPG starter city.” Acknowledging that first-year writing is often the only universally required course for undergraduates and likewise the only course nearly all freshmen will take in their first year, Mullen proposes that writing instructors consider how the functions of starter cities might be paralleled in their own courses. Familiarizing players with the game
interface becomes teaching students how to interpret assignment sheets, take notes on lectures, and develop research skills. Highlighting the progress mechanic for college classes includes making clear to students the specific skills they are being measured on for assessment.

Gamification as a pedagogical strategy draws elements from all three models, though in many ways it most closely aligns with the contemporary work that turns to gaming as a model for pedagogy. Such a focus demands a reflection on game design principles, a focus that is often not part of the discussion for those wishing to either develop educational games or adapt commercial games for educational purposes. In the games as pedagogy model scholars look closely at precisely how games teach content and attempt to reflect those principles in their own pedagogy, but eliminate the “game” element from their course design. Gamification draws on these ideals, but brings gaming itself back into the picture. The value of doing so is that, by returning to gaming, we more explicitly bring in a sense of playfulness that can be lost when the game element is divorced from games based learning.

**Gamification as twenty-first century education**

The working definition of *gamification* I have been using refers to incorporating gaming structures and principles into a non-game environment. This definition is, perhaps, deceptively simple. As the critiques discussed later in this chapter will demonstrate, meaningful gamification is more complex and nuanced than simply changing the names of grades and assignments to “points” and “quests” in a learning situation. Gamification contains two important aspects that must be carefully attended to: non-game environments
and gaming structures/principles. Stressing the non-game (real life) environments that gamification acts upon must carry important resonance for scholars working in and around games-based learning. As mentioned earlier in this chapter, many of the earliest discussions of games have stressed the separation of games from everyday life. In contrast to this separation, gamification is a process that necessitates the blurring of traditional boundaries between play and work, while at the same time never replacing the objectives and goals or outcomes of the original activity. Recognizing that gamification always takes place in a non-game environment reminds us these environments have pre-defined outcomes gamification should enhance rather than replace. The more contentious issue for those wishing to take up gamification lies in identifying the most important and applicable game structures to implement in these situations, a point of conflict for many scholars in game studies. The intricacies of game design elements will be discussed in more detail in Chapter 2, but here it might be most helpful to provide an example of gamification that can contextualize and focus the argument that follows.

From many of those studying education writ broad, we find a critique that presents “traditional” and “modernist” as negatives in the formal learning institutions. Likewise, in Rhetoric and Composition principles such as customization, participation, and collaboration are already clearly valued. However, within these calls for more customizable, participatory curricula there is an imbedded recognition of the institutional barriers to such a method in formal learning environments. Educational institutions and conventions exist as stable, hierarchical establishments, making the challenge of transitioning to a twenty-first century pedagogy even greater. As Davidson and Goldberg point out, many of our methods of
assessment rely on modernist principles and products. Students must be assessed as individual, autonomous units. The consequence of these methods of assessment is that universities and schools remain thoroughly modernist institutions. Related to this consequence, Ira Shor explains even the very materialities of classroom spaces (the positioning of the furniture, the choice of furniture itself), are set in place to reify a hierarchical classroom structure and, thus, to again draw the focus toward the instructor as expert/purveyor of knowledge. Shor contrasts the “cheap, drab, tubular aluminum/fiberform seats” his students sit in with the “noticeably different and upgraded chair” provided for him (11-12). These details, while minor, constitute an institutionalized system of power and authority, according to Shor. In the face of institutional barriers both material and immaterial, it can be challenging to identify avenues for incorporating elements of informal learning environments, regardless of their benefit for students. Thus, both in response to the call for innovative learning techniques and the critiques of many contemporary pedagogies, and in recognition of these barriers and the pressures many instructors face from their institutions, I present gamification as a learning model that operationalizes the various aspects of informal learning environments. Having introduced *C’s the Day* as a positive example of gamification in an informal setting, I now move to address the concerns leveled at gamification as practice. Many of the current and highly celebrated models of gamification fall under the heading of pointsification, a situation which demands the development of a new heuristic for gamification. Avoiding the shallow implementation of pointsification in contemporary classrooms is necessary to support the development of features of digital/rhetorical learning and pedagogy teachers of writing and rhetoric want to support.
Concerns about Gamification

Ian Bogost, a games scholar and independent game developer, critiques gamification when it serves primarily the interests of marketing. Bogost insists that this use of gamification “takes games—a mysterious, magical, powerful medium that has captured the attention of millions of people—and it makes them accessible in the context of contemporary business ... slathering on ‘gaminess’ like aioli on ciabatta at the consultant's indulgent sales lunch” (“Persuasive Games: Exploitationware”). His critique—gamification ignores the most important and interesting aspects of gaming and utilizes only the basic structures—is not without merit when considering how the concept of gamification becomes operationalized as part of the experience economy. Pervasive game designer Margaret Robertson articulates the issue Bogost identifies with the simple statement “gamification, as it stands, should actually be called pointsification.” Robertson and Bogost identify that the popular use of the term gamification most frequently refers to the addition of points and badges to a system. As Robertson notes, teachers have been using points and badges for years (in the form of grade systems and final grades), however this does not mean educational systems are already gamified spaces. Additionally, Cody Reimer explains that educational uses of gamification fail by following this simple, uncritical blueprint “Step 1: Slap points, achievements, badges, leader-boards, etc. on task. Step 2: ? ? ? Step 3: Profit.” He continues, “[i]t’s the question marks we need to be concerned with. Surface level fixes, such as calling assignments quests or grades levels won’t do anything to motivate students.” However, while each author cites a similar concern with gamification, each also has a different appraisal of the potential of the practice. Bogost is outrightly dismissive of
gamification, while Robertson suggests that both gamification and pointsification are useful practices, albeit with different principles and outcomes. Reimer advocates for gamification as a method that can be used to highlight hierarchies and structures in traditional systems, particularly educational systems.

In addition to the critique of “pointsification” mentioned above, game designer and author Tadhg Kelly critiques gamification for the assertion that “games can be cracked open and woven into daily life” (“Gamification and...”). Kelly argues that when gamification in commercial purposes attracts an audience, it does so not because consumers enjoy the game-like structures, but because they desire the deals often offered as rewards. While games are complex learning systems built to encourage player engagement and motivation, gamified business websites, Kelly asserts, achieve none of this. Instead, they force an audience to jump through hoops to receive coupons, discounts, or other rewards. Like Bogost, Kelly remains skeptical anything positive can come out of gamification, a critique that echoes Caillois’ admonishment that play to order is no longer play. Both question the ability of game-like situations to engage potential players when extrinsic motivations are the primary driving force.

To demonstrate these critiques against an actual gamified system, I turn to Robertson’s discussion of the Nike+ system. She identifies this system as an example of pointsification, a very pointed choice, as the Nike+ is often highlighted by proponents as one of gamification’s successes in popular blogs and websites, and is given high praise in McGonigal's *Reality is Broken*. McGonigal, exploring how games can be used in a variety of situations to motivate people, explains how the Nike+ system motivated her to run farther
and faster by “providing better, real-time feedback and by the promise of online
rewards”(158). She brings up this example to suggest Nike has overlayed the structure of an
MMO (massively multiplayer online game), complete with avatar, group achievements,
leveling, and rewards, over top of the interface for its running shoe sensor. These features
and the structure of the MMO put “the runner's goals into a larger social context, giving each
run more meaning” (160). Her experience with the gamified running through Nike+ had, she
argues, actually added a level of productiveness to her run. While she had previously
recognized that running is its own reward, the game structures created a feedback system that
enhanced her running and motivated her. Robertson, however, suggests that though a points
based system (the leveling, achievements and leader board features) can be motivating, it is
nonetheless not gamification. Robertson emphasizes the lack of meaningful mechanics (a
concept which will be discussed further in the game design section) as the primary reason the
Nike+ system is at best a successful example of pointsification and not gamification. Because
Nike's purpose in creating the system is to encourage users to continue to purchase Nike
products, there are no meaningful failure conditions. Players/users are rewarded for virtually
every decision, which, Robertson argues, “strips out the sense of agency and competence.”
While some people might find motivation through the community that has been created
around the Nike+ technology, the system ultimately does not provide us with a good model
for gamification, as it falls back on the incorporation of points and rewards rather than game
mechanics. Indeed, Robertson's concerns about Nike+ echo Bogost’s critique of many digital
rhetoricians, who he claims “often [mistake] subordinate proporties of the computer for
primary ones” (25). In the case of pointsification, these theorists argue, designers often mistake elements of many game systems (points, levels, quests) for game mechanics.

These indictments of gamification identify legitimate concerns with the process, and the way it has been popularly used. If, as Bogost cautions, “gaminess” is superficially overlaid, participants will likely view the expenditure of their time and energy as merely another hurdle to overcome. Furthermore, as Robertson notes with her critique of Nike+, if game mechanics are ignored, then the very elements of gaming that make gamification attractive (openness, agency, customization, etc.) are often lost. Given the potentials for gamification and the concerns about superficial applications through pointsification, I argue for a new model of designing gamified spaces, one that takes into account game design principles. By developing a design model that goes beyond merely importing vocabulary from gaming (changing grades to points, for example), gamification can be structured as an opportunity to offers meaningful inroads for a pedagogy that eschews modernist and hierarchical principles and embraces the positive elements of informal learning environments. Of course, as Bogost and others note, if gamification attempts take only the language of gaming (point systems, achievements, quests and the like), but refuses to incorporate game design structures and architectures, then moves to gamify take place in name only. Building first out of existing literature on game design grounds the gamification process in solid, well-theorized practice.

**Avoiding Pointsification**

In this chapter I have identified several concerns with conventional educational institutions, most notably their deficiency in navigating technology and preparing students
for new forms of knowledge acquisition and production. Jenkins explains the problem succinctly by arguing that “schools are still locked into a model of autonomous learning” (183). Unlike these traditional institutions, structures that Davidson and Goldberg term informal learning institutions are identified by the collaboration and participation/ability to self-determine. Selfe, Mareck and Gardiner's example of *Counter-Strike* and Jenkins’ use of *The Daily Prophet* both show how students are going outside of conventional learning institutions to learn meaningful lessons about writing and literacy. From there I move to look at how scholars in the tradition of writing and rhetoric instruction have identified similar issues related to students’ loss of agency in the classroom, and proposed means to redefine classroom spaces and invoke more “postmodern” elements into them. Finally, I propose gamification as a pedagogical strategy that has the potential to incorporate these postmodern elements into the classroom—primarily anarchy, openness, and play. However, while gamification can be a powerful tool, most often commercial uses are more similar to pointsification, the addition of point scores, leader boards, and rewards without any use of game design features or mechanics. As Robertson notes, game designers are rarely used in the pointsification process, leading to superficial implementation of meaningful mechanics and processes. Thus, in the next chapter I take up the question of game design principles.
Chapter 2: Designing New Learning Spaces

In Chapter 1, I introduce the distinction between formal learning environments, which are in many ways limited to being hierarchical structures by their need to offer accreditation and certification, and nontraditional learning environments, which tend toward more flexibility, given their informal status (though the variability of nontraditional environments will be discussed at greater length in Chapter 4). Recognizing that nontraditional learning environments often have more freedom to embrace new pedagogical modes and frameworks, I discuss several elements of these spaces that help them to constitute more networked, “postmodern,” and information-rich learning environments. In particular, nontraditional, informal learning environments are often (though not always, as the case of MOOCs demonstrates) more open, collaborative, and participatory learning environments. Chapter 1 concludes by suggesting that educators embrace gamification as a means of creating a hybrid space that integrates the most beneficial elements of nontraditional environments into the (necessarily) more rigid and hierarchical formal learning spaces. As rule-bound systems that nonetheless encourage players to participate in playful exploration, games are already hybrid spaces that merge elements of formal systems with the openness seen in more informal spaces.

In this chapter, then, the focus shifts from why educators may wish to consider gamification as an important pedagogical tool to how to effectively gamify a learning environment, looking at specific principles of game design. As discussed in Chapter 1, currently existing models of gamification, both in education and business, are ultimately more akin to the simple and reductive pointsification model. While pointsification can be
effective in certain applications, as McGonigal's use of the Nike+ website to motivate her running practice demonstrates, it nonetheless fails to incorporate the elements of openness, self-selection, and participatory learning that characterize many effective informal learning environments. Thus, in response to both the needs of educational professionals and the critiques about current uses of gamification, I have developed a five part heuristic for creating well-designed gamified spaces that meet the needs of contemporary formal educational spaces. Constructing a heuristic for gamification that emerges directly from best practices in game design not only helps scholars and educators avoid pointsification, it also helps to draw greater attention to the way that games create playful spaces within constrained systems. Before turning to the principles I identify as most applicable to our current educational needs, it will be useful to demonstrate clearly how not all game design principles are equally productive in educational settings. To that end, I introduce Video Game High School, a fictional school depicted as part of the eponymous web-series, VGHS. The show offers one example, designed by gamers, of using gaming as a model for pedagogy in formal environments. However, while the show clearly employs principles drawn from game design, the school it depicts neither a positive model nor one I would advocate implementing in any formal way. Through its excessive focus on competition, to the exclusion of all other values, VGHS demonstrates not all game design principles and environments are equally useful for restructuring educational settings.

Following the analysis of VGHS as a problematic example of game design principles in traditional educational settings, I explain meaningful mechanics, nonlinearity, challenges, evocative spaces, and procedurality as game principles that will lead to the effective
gamification of a classroom environment. This set of principles is, of course, grounded in the literature on game design, but has been assembled and defined explicitly for the purpose of creating a new model of gamification. As VGHS will demonstrate, certain elements of game design can be counterproductive in an educational environment, becoming just as hierarchical as traditional educational models. After presenting each principle, I turn back to *C's the Day*, demonstrating how the heuristic I have constructed has already successfully been used in a nontraditional environment to increase engagement and collaboration.

**VGHS: Player-designed Learning**

“You will not study physics, you will study physics engines. You will not study art, you will study the art of war. You will learn about biology by bathing in the blood of your enemies. Sound good?”

So begins the acceptance video for Video Game High School. The show is a fairly typical coming of age high school drama and, predictably, the plot focuses on a new kid at school and his struggles to fit in at his new school and win the affections of his dream girl. However, the high school that serves as a backdrop for this action presents both a curriculum and a pedagogy that radically differ from the traditional public school experience. As the name suggests, VGHS educates students in the nuances of video game skills and play, rather than the traditional reading, writing and ’rithmetic. Academic departments include the School of Arms and Marksmanship, School of Rhythm, and School of Tactics and Discovery. Instead of football teams and drama clubs, students vie for spots on teams that compete in various styles of gameplay. In addition to focusing on gaming as part of its curricular
objectives, the school also incorporates several games-inspired elements into its pedagogical practices. Because the creators of the show have envisioned VGHS as a school whose classroom practices are overlaid with gaming principles, we can examine the resulting curriculum as part of a gamified system of education. However, as this section discusses, the player-created school uses elements of gaming that are more suited for creating tension and drama than achieving elements of openness and participatory learning.

While the focus of the show is, of course, the relationships between the characters, the school and its unique pedagogical methods are frequently highlighted as an imaginary gamer's paradise. From these brief scenes that place the functionality of the school in the forefront, viewers will immediately note that VGHS’ system of student evaluation and in-class activities vary drastically from real world educational systems and clearly mark it as inspired by video gaming. Common public American high school practice is to use a traditional grading structure in which students receive marks in each of their classes at several predetermined and instructor-mandated points in the school year, through a combination of tests, papers, and projects. At the end of the school year, students are either passed on to the next grade or held back based on those evaluations. In VGHS both in-class activities and student evaluations are done through a series of head-to-head matches that pit students against each other and teachers. Students’ grades are rankings based on their performance in these matches—short competitive games that award points to the winner and detract from the loser's score. These matches can be initiated at any time, both during class time at an instructor's discretion, and outside of class on the whim of the participating students. If a student's rank drops below the acceptable minimum, he is immediately
expelled. Instead of grade records, VGHS maintains a leader board, a ranking of all students at all levels of learning, and any student or faculty member can check the leader board at any time.

This system of evaluation is interesting and distinct from formal educational systems’ evaluative practices in several important ways. Most importantly, VGHS blurs the boundary between student learning and performance inside and outside of the classroom. This blurring of boundaries is highlighted early on through a major plot point in the show. The main character, a freshman named Brian, attends a party thrown by his love interest and girlfriend of his primary rival, Jenny. While this party is a completely recreational and clearly out-of-school event, students still practice their skills and attempt to move up the leader board. A number of different students are shown competing in all manner of games, and their scores in each match are added or subtracted from their official total. For students at VGHS, learning is a process that is not simply tied to a set period of time and a predefined space, but something that happens at any time or place. This model certainly encourages students to continue their study and skill-building outside of the classroom, making any potential recreational activity an environment that may be used to advance their curricular goals. However, opening up the evaluation process also imposes harsh penalties on recreational activities. The students at VGHS are under continual surveillance for monitoring and assessment. In fact, this style of assessment violates one of the primary reasons Gee argues games should be used in the classroom: games allow players to experiment and potentially fail multiple times on the way to success without excessive consequences.
The VGHS model of a games-inspired education draws primarily from elements of first-person shooter games. These games utilize short, match-based competitions as their primary game design mechanism and use leaderboards to rank a player against her competitors. Unlike VGHS, failure-before-competency is an important part of learning in these games, as players replay the same settings hundreds of times in order to perfect their understanding of the various game mechanics. CounterStrike, the game Josh Gardiner used to develop his literacy practices as a supplement to what he learned in his public high school, is one example of this type of game. While Selfe and Mareck highlight the informal learning environment values of openness, participatory learning, and self-selection assist Gardiner's development of technological and community-based literacies, VGHS' focus the competitive elements of these games, and in particular the use of a leader board to track grades, excludes these important elements.

Thus, VGHS presents a sort of counter-example for this project. It certainly presents an interesting picture of how gamers might imagine principles of gaming translating into an educational experience. The creators of the show, gamers themselves, have drawn from the primarily competitive elements first-person shooter games as a pedagogical model for their fictional school, creating a number of scenarios in which gaming features like leaderboards and head-to-head competitions can be prominently featured. Certainly, the tension this creates makes for several exciting moments within the show. However, in focusing so heavily on the competitive element of certain games, the creators of VGHS have completely ignored many of the game design principles that have the potential to make gaming-educational hybrids a productive and engaging mix. I have already briefly discussed how the
evaluation system violates Gee's “performance before competence principle” (*What Video Games* 218). Perhaps even more striking, however, is the fact that VGHS does not present learner-players with the sort of open and participatory environment that many of the scholars discussed in Chapter 1 highlight as making games productive informal learning environments. Students’ activities and schedules, as well as in-class activities and assignments, are as rigidly structured as they would be in a traditional learning environment. While VGHS is a fictional school designed for entertainment rather than learning, it nonetheless demonstrates that not all principles of game design are equally suited for developing the kinds of learning environments teachers of writing and rhetoric value.

**Game Design Principles as a Heuristic for Course/Learning Design**

In the construction of my heuristic for gamification, I focus primarily on the elements of gaming that will help those working in formal environments incorporate particular characteristics of more informal settings. While *C's The Day, The Daily Prophet*, and *CounterStrike*, the models of informal learning presented in the previous two chapters, are each dramatically different learning environments with diverse goals and objectives, they are nonetheless united in their ability to offer participants the ability to make meaningful choices about how they participate in these spaces. Similarly, many game designers identify the importance of crafting experiences that empower players as their primary goal. Tracy Fullerton, Chris Swain, and Steven Hoffman, in *Playcentric Approach to Game Design* explain that “the role of the game designer is, first and foremost, to be an advocate for the player” (2). Games may do a number of things, including challenging players to develop new skills and allowing them to take part in narratives, but they emphasize the most important
function is to create an environment in which the player can, after an appropriate amount of progression, succeed. Similarly, Doug Church defines game design by claiming “I believe the challenge and promise of computer game design is that our most important tools are the ones that involve and empower players to make their own decisions. That is something that allows each player to explore him or herself, which is something our medium is uniquely equipped to do” (379). In each of these definitions we see effective game design is more than simply the combination of graphics, points, and stories. Game design is the creation of experiences that move the player emotionally, psychologically, and intellectually forward. Both Fullerton, Swain, and Hoffman and Church emphasize a crucial element of game design for learning spaces—gaming's ability to create spaces for active exploration within a confined system. Successful gamification attempts will focus first and foremost on players, empowering them and encouraging them to move forward. Thus, in this chapter I develop and present five principles of game design most applicable for gamification in formal learning environments, as opposed to a comprehensive summary of all possible principles or practices in game design (such an undertaking would be well beyond the scope of this project).

As identified in Chapter 1, many of those advocating for the incorporation of gaming into classroom spaces identify the values of games as providing more enjoyable, more engaging, and more situated learning. Despite this, the most vocal critiques of educational games highlight that poorly designed games do none of those things; they do not provide enjoyable, engaging spaces, nor do they create experiences that will allow students to learn and transfer content to new contexts. In many ways, the critiques of educational games
closely resemble what critics of gamification say: these situations offer the promise of games without the payoff, and their failure to succeed is directly related to their ignorance of fundamental game design concepts.

This section on game design identifies design itself as a compositional practice, and collects a set of best practices from designers working in industry and academics writing about games. Game designers, like composers in any medium, have varying opinions about how the design process should proceed. As gaming has become increasingly popular, and thus as articles and books on game design have become more common, debates on elements of good design have likewise proliferated. Nonetheless, the following elements of game design constitute both a set of principles that are generally agreed upon and a collection of the most valuable considerations for the purposes of creating a gamified learning situation that avoids simple pointsification:

- meaningful mechanics
- nonlinearity
- challenges
- evocative spaces
- procedurality

Each of these elements, which will be expanded upon in detail throughout this chapter, assists in the construction of spaces that are more open and participatory than traditional learning environments. Furthermore, as with any taxonomy, elements of each distinct
characteristic blend into others. Thus, the following list of five principles is not meant as a step-by-step checklist for designing games, but rather as a collection of principles that should be considered and reflected upon throughout the design process.

Finally, before moving into the principles themselves, it should be noted the element of choice—the concept of player agency and directed action—cuts across all five principles. While it might seem an obvious point to assert that games depend upon creating situations that allow players to be active agents who are able to make purposeful decisions about their experience, in many ways this focus echoes one of the fundamental distinctions between formal and informal learning environments (as discussed in Chapter 1). Michael Mateas and Andrew Stern, co-developers of the interactive drama Facade and designers that straddle the boundary between industry and academia, define agency in connection to gaming as “the feeling of empowerment that comes from being able to take actions in the world whose effects relate to the player’s intention” (649). This definition breaks easily into two important components: first, the player can take actions that affect the world and second, those effects are directly related to the player’s intention.

Agency in Gaming

While those coming from an academic background use “agency” for the historical and traditional connotations of the word, many game designers focus on the importance of choice and decisions to discuss the same issue. Church, who has worked on a number of best-selling games in a variety of genres (including Ultima Underworld I & II, Deus Ex, and Portal 2), writes that the “most important tools [in game design] are the ones that involve and empower players to make their own decisions” (379). Church's essay, “Formal Abstract
Design Tools,” which was first published for industry audiences in *Game Developer Magazine* and later revised and compiled for academic audiences in *The Game Design Reader*, seeks to provide a vocabulary for game design. Thus, while he focuses on intention, consequence, and story as they relate to gaming, he underscores the primacy of choice, of agency, at every level of game design. Furthermore, as Mateas and Stern's definition emphasizes, these decisions must have a direct and predictable effect on the game world.

Greg Costikyan, who began designing games in the late seventies and has become one of the most outspoken designers in the gaming industry, echoes the focus on effects that align with player expectations by explaining that “trivial decisions aren't any fun,” and, therefore, constitute poor design (199). Trivial decisions, ones that have little or no impact on the game world, erode a player's sense of agency and purposefulness and negatively impact the feeling of accomplishment players receive from defeating challenges. Like Church, Costikyan's intention, in his ironically titled “I Have No Words, and I Must Design,” which references the relative dearth of material on game design at the time of the article's initial publication, is to provide a framework for designers. In doing so, he emphasizes games are not puzzles, which are static; they are not toys, which may be more interactive than puzzles but lack goals; and finally they are not stories, which he claims are inherently linear—a perspective discussed in more detail in the nonlinearity section. Games are, Costikyan argues, participatory in profound and essential ways. Finally, to avoid triviality and achieve Mateas and Stern's definition of agency, games are, or should be, designed to ensure that players can both “identify the consequences of their actions” and also “feel that these consequences matter” (Laramée 61). The ability of the player to make choices is thus a characteristic of
games themselves, and not, in and of itself, a design principle. The question then is not whether or not to include player decisions in a given game system, but rather how to design for choices in a way that interest and engage the player.

The remainder of this chapter discusses the five specific principles of game design listed above in detail, principles drawn from game designers and academics studying games. In the explanation of these principles I will focus specifically on traditional games as the clearest examples with which to illustrate the nuance of each principle.

**Meaningful Mechanics**

As Mateas and Stern, Church, Costikyan, and numerous other designers stress, player choice is essential for successful games. It is also one of the key components of gaming that connects it with the principles of openness, self-selection and participatory learning. Thus, the first principle I identify, *meaningful mechanics*, situates player choice within design principles. Indie game designer Charlie Cleveland uses the term “meaningful mechanics” to refer to the most basic level of providing players with choices in games. Meaningful mechanics provide players opportunities to make choices that will both define their play experience as personal and distinct from that of others’ and contribute to a player’s sense of agency by helping to create a feeling of purposefulness. For the purposes of clarity, it may be useful to break the term apart for a moment. After all, not all mechanics are meaningful; before understanding how game mechanics can be meaningful, we must first understand what the term “mechanics” means in relation to games. Miguel Sicart notes while the term is commonly thrown around in games analysis, particularly in gaming journalism, there seems
to be little consensus (either from players, designers, or academics) for what precisely the term “mechanics” covers (2008).

Andrzej Marczewski, game designer and supporter of gamification, presents a definition of mechanics that covers virtually all rules and actions that happen in a game: “consider Space Invaders. When you shoot at an alien, it is the sets of game mechanics that define how the bullet will travel, its speed and trajectory, what happens when it hits the enemy and so on. The inclusion of a shield is also a game mechanic” (“Game Mechanics and Gamification”). Sus Lundgren & Staffan Björk offer a similarly broad definition, describing game mechanics as “ any part of the rule system of a game that covers one, and only one, possible kind of interaction that takes place during the game, be it general or specific” (4).

Chris Swain's explanation of the concept introduces the role of the player, presenting game mechanics as a special kind of rule: “(a) a player makes a choice (b) the system responds to that choice (c) repeat” (218). Swain's definition, which forms the basis for the use of mechanics in this chapter, emphasizes mechanics as rules that define both the actions players are able to take in game environments and how a game will respond to player actions. If we understand games to be rule-based systems, a common component of many definitions of gaming, then mechanics are a very specific type of rule. As Fullerton, Swain, and Hoffman explain, rules do a number of important things in both computer gaming and also in non-digital games. Rules can define objects or concepts (such as the concept “straight flush” in poker), rules can restrict actions (such as the restriction to forward movement only in a Monopoly game), and rules can trigger effects (for example: if a player is offsides in football, then his team will receive a five yard penalty). An important distinction, of course, between
rules in digital and non-digital games is that players in non-digital games often have the ability to redefine or renegotiate the rules as needed (Sicart 16). Thus, while a group of casual players may agree, for whatever reason, to ignore the offsides rule, a computer football game (such as the popular *Madden* series) will always hold players to this rule.

For the purposes of this project, whose ultimate goal is to provide a heuristic for gamification, game mechanics are defined as specific types of rules that govern only player actions and system responses—a definition that is fairly common in the literature on game design (seen not only in Swain, but also in Rouse 2005 and Fullerton 2008). A mechanic can be extremely complicated, such as a “barter” mechanic that allows a player to exchange goods and gear for currency or other items. This mechanic, while governing just one type of interaction between the player and the game system, nonetheless requires a number of other rules to be set in place: there must be a rule that creates the concept of inventory and allows players to collect and store items, there must also be a rule that creates the concept of currency, and there must be a rule that triggers non-player characters (NPCs) to give the player currency in exchange for specific items. Mechanics can also be very basic, such as the mechanic “jump.” Unlike the barter mechanic, which requires a number of other rules to be set in place, jump only encompasses a set of rules that include how to jump, how high one may jump, and how far one may move while jumping. However, while the mechanic itself is fairly simple, a game designer's decision to allow or disallow jumping in a game will drastically change the environment and challenges players will meet as they progress through the game. Games that disallow jumping may be able to easily use terrain to block a player’s forward movement, but they will be unable to use such things for puzzles or secret paths (and
indeed, may frustrate players who wish to explore the game world more thoroughly). Lundgren and Björk emphasize the importance of understanding game mechanics for designers, stating that a nuanced and thoughtful consideration of game mechanics allows one to “identify, design and analyze the design space of games” (14). In essence, understanding game mechanics is the most crucial part of either interpreting or designing games. Mechanics define first the actions players can take and how players interact with the game world and also how the game world will respond to those actions.

If we can understand game mechanics in general to constitute the framework for the system of a game, the “meaningfulness” of meaningful mechanics refers to a very specific and important subset of game mechanics that emphasize a player's ability to make consequential choices. Meaningful mechanics are “rules, player choices, and other designs that have been created with intent and consequence in mind” (Cleveland 85). A number of game mechanics may govern how the player interacts with the game world and how the game world responds, but nonetheless do not rise to the level of meaningfulness because they do not represent a conscious choice on the part of the player. For example, the use of a physics engine in a role-playing game clearly creates rules that governs how objects interact in the game environment and represents a specific choice on the part of the designer. A physics engine is used to apply attributes such as weight and fragility to objects in a game world. If a player throws a ball at a wall in a game, the physics engine determines the force and direction of the throw, the weight and fragility of each object, and then dictates how the ball and wall as objects will interact. In this example the player may make a decision about how and where to throw the ball, but because there is no obvious choice for the player to
interact with the physics engine (in other words, to influence the ball/wall interaction) the player experience of the physics involved in his or her throw protocols does not rise to the level of meaningful game mechanics. However, if we imagine in the same scenario that the player has a decision between multiple balls, perhaps a golfball, basketball, or bowling ball, and if we further imagine a hoop or target for the player to hit on the wall, then the distinction between balls and the player’s choice could become meaningful. If we consider game mechanics as the smallest building block in game design, the thoughtful use of meaningful mechanics is the first and most basic grounding for player choice.

The essence of meaningful mechanics is their ability to encourage players to make thoughtful decisions about their progress through the game world. Cleveland provides a set of three criteria for identifying when mechanics are meaningful:

1. It needs to be obvious to the player that a decision can be made
2. The choices must have a direct influence on the outcome of events
3. The choice must not be trivially reversed

If we consider again the physics engine example, we can see how simply throwing a ball at a wall (something that certainly constitutes a mechanic) is not a meaningful mechanic. There is no choice for a player to make, other than perhaps the direction of the throw. Nothing has been signaled, there are no options or alternatives, and while there may be consequences based on the way the ball bounces or falls, the player has little to no control over these results. While the physics engine provides attributes to objects in the game world and clearly falls under the heading of rules that govern player/system interaction, players can no more
make decisions about how to interact with the physics engine than we can decide whether or not to interact with gravity.

Crouching, a mechanic that has become increasingly common in modern gaming, provides an excellent example of how meaningful mechanics can give players the opportunity to make decisions about their gameplay experience. Let us consider, for illustrative purposes, a role-playing game in which the player is given the option to make her character crouch. While crouching, the character’s movement speed will be reduced by fifty percent, but she will also make fifty percent less noise (and therefore become harder to detect by enemies). Thus, the crouch mechanic already fulfills the first of Cleveland’s criteria for determining meaningfulness. Players can easily identify trade-off they are being offered, speed for noise, and they must make a decision about how they will play. The crouch
mechanic also clearly meets the next part of the criteria; a player's decision to crouch will certainly have a direct influence on the events that follow. A slower character might be more easily caught by enemies, but sneaking may make it so that the character is not noticed. A quicker character, one who is not crouching, will be able to navigate the game world more quickly, and may be able to either run from enemies or choose a more advantageous position from which to attack or defend. However, by moving more quickly the character will also make more noise and run the risk of encountering more enemies than a crouching character. Finally, while a player has multiple opportunities throughout a game environment to decide whether or not to use the crouch mechanic to attempt to sneak past enemies, in each individual instance the decision, once made, cannot be reversed. Once she walks past an enemy, the consequence of either crouching or not crouching are set. Perhaps our player decided not to crouch, and in doing so alerted the enemy to her presence, placing another
decision in front of her: fight or flight. Or, perhaps our player has decided to take advantage of the crouch mechanic, and she quietly bypassed the enemy.

Like all game mechanics, meaningful mechanics govern how players interact with the game world and how the world responds to players. However, unlike other mechanics, meaningful mechanics represent a purposeful choice on the part of the player, one that cannot easily be reversed. These choices are not simply options between a correct and incorrect way to play, but options that let players have some control in determining how they wish to play. While players are, of course, always limited by the game system that enables some actions and prohibits others, meaningful mechanics allow players to experience a sense of agency in their game play. Many educational games, particularly those that fall into the category of quizzes with graphics, fail to engage learners precisely because they lack meaningful mechanics. Math Blaster!, Egenfeldt-Nielsen's primary example of this phenomenon, is one such game. Math Blaster! uses space-themed graphics to suggest a narrative, but the core mechanic of the game is the presentation of a problem and a multiple-choice answer. There are no meaningful mechanics, because players are not able to make any decisions of consequence about how they will choose to play the game. In this sense, Math Blaster! seems to have more in common with pointsification (the superficial application of gaming terminology) than it does with actual game design or gamification.

**Nonlinearity**

Nonlinearity first became a value-laden, contentious term for scholars of new media and writing in the early nineties. Johndan Johnson-Eilola and Amy C. Kimme Hea, in their 2003 postmortem for hypertext, historicize the fascination simply: “During the late 1980s to
the mid-1990s, hypertext seemed too good to be true: The simple node/link technology provided a powerful way for understanding and enacting textual structures that had long been hinted at” (416). Hypertext, they explain, challenged traditional dichotomies in interesting and provocative ways—reader/writer, theory/practice, and of course, linear/nonlinear. N. Katherine Hayles, in her own review of the phenomenon, cites George P. Landow's *Hyper/Text Theories* and Jay David Bolter's *Writing Spaces* (released in 1992 and 1990, respectively) as perhaps the most important early examples of discussions about nonlinearity. Bolter differentiates between printed texts and hypertexts by emphasizing the “linear, hierarchical” nature of the former and the “multiple and associative” elements of the later (42). Discussions quickly spread to include not just nonlinearity in writing, but also multilinearity and extralinearity. Despite this early optimism about the potential of nonlinearity to provide (or increase) agency for readers, Espen J. Aarseth notes that attempting to make binary opposites of linear and nonlinear in texts is exceedingly problematic, obscuring some elements of texts and narratives even as we try to illuminate others (47). Aarseth argues that nonlinearity, like interactivity, is an extremely ambiguous term that connotes more about the user's ideology than it denotes about a text's actual structure. While the term is certainly contested, many designers and theorists continue to insist on the fundamental nature of nonlinearity in relation to games. Game designer Costikyan provides an example of this absolutist perspective, declaring that “games are inherently nonlinear. They depend on decision-making. Decisions have to pose real, plausible alternatives, or they aren't real decisions” (194). In this particular instance Costikyan is very pointedly contrasting games with stories, which he claims are “inherently linear” (194).
While the binary Costikyan sets up here seems to reflect some of the early exaltation of hypertext (emphasizing the distinction between readers and players and strongly valuing the latter), it is nonetheless echoed in the writings of a number of other designers (most notably Chris Crawford, in *Chris Crawford On Game Design*).

Thus, despite the inherently problematic nature of declaring any text nonlinear, there nonetheless remains no shortage of claims about nonlinearity as it relates to games. Rather than become entangled in the nuance of the term, this discussion of nonlinearity is bound by the focus on game design as a frame for considering how nonlinearity applies to games. I turn to Laramée's extremely precise use of the term, which refers specifically to games that provide players with both multiple means and/or multiple solutions. Like meaningful mechanics, the principle of nonlinearity presents designers with a framework for structuring player choice and causality. Indeed, the first aspect of nonlinearity as I define it here, multiple means, is essentially the culmination of a collection of meaningful mechanics.

Laramée defines multiple means as “allowing players to earn success in many different ways” (63). However, a simpler way to explain this principle might be to say, in games that thoughtfully utilize meaningful mechanics to achieve nonlinearity, players choose from a variety of gameplay options which collectively form specific *tactics*. To continue with the example of a role-playing game that has incorporated crouching, let us assume that the game previously imagined is in fact Bethesda Softwork's *The Elder Scrolls: Oblivion*. *Oblivion* incorporates a number of significant and meaningful mechanics, individual decisions players make about their character that, when taken collectively, meet Laramée's criteria for multiple means. In addition to giving players a choice between crouching and
running, the game incorporates a leveling system, a variety of armor types, and several different weapon types. The leveling system in *Oblivion* provides players with a limited number of points at various increments, which they can use to increase various skills. The scarcity of points requires players to make decisions about which of their character’s abilities they will strengthen. Skills may include the ability to cast better spells, to get better deals in trading, to hit enemies harder with weapons, or to move more quietly when crouching. Like many RPGs, *Oblivion* features multiple armor types, varying from cloth armor to metal armors. The light armors provide far less protection than the heavier ones, but they also make much less noise as a player moves. Finally, there are a number of weapon types a player can choose from. A one-handed sword inflicts substantially less damage than a two-handed sword, but can be used with a shield. A bow is slow to fire, but allows one to attack enemies from a distance. The collection of these individual meaningful mechanics, each of which offers the player a clear choice with identifiable consequences (wearing heavy armor boots creates thunderous footsteps), creates the opportunity for a player to exercise multiple means by allowing her to select a gameplay tactic. Given the various mechanics I have described here, one means to success in the game might entail wearing heavy armor, using a sword and shield, and always running into a battle scenario. A player making these decisions will do less damage to enemies, but also have more protection, and thus be able to last longer in a fight. Another player may decide to wear light armor, use bows, and crouch at every opportunity to avoid combat. This player's character will be extremely vulnerable to attack, but also be able to do substantially more damage and hopefully avoid as many direct confrontations as possible. The aspect of nonlinearity Laramée defines as multiple means
suggests, in well designed games, players should be encouraged to develop their own tactics throughout a game.

Laramée's second criterion, multiple solutions, refers not to multiple endings (which relates more to the narrative and will be discussed in the *evocative spaces* section), but to providing alternative possibilities to players for completing tasks. In other words, the multiple solution criterion of nonlinearity refers explicitly to gameplay, and necessarily to narrative options. If the multiple means principle of nonlinearity requires that players be able to develop their own tactics, multiple solutions requires that challenges be set up to allow players to utilize their various skills. The *Oblivion* quest “Whodunit” provides an excellent example of multiple solutions. If the player decides to become a member of the assassin’s guild in the game, she will eventually be given a quest to attend a mysterious party in a large manor. The other guests have been told there is a hidden treasure chest in the house and all the guests will be locked inside until one of them finds and claims the treasure. In actuality, the player is there to assassinate each of the guests in secrecy. From a narrative perspective, the quest is fairly linear. As an assassin's guild quest, the player must kill everyone to complete the quest and move on with the story. There are no options that will successfully complete the quest without assassinating all characters, and the player is locked in the manor with her targets, meaning she cannot progress in the game without completing the quest. However, while the narrative for this quest is highly linear, there are multiple solutions to precisely how a player can accomplish the goal, demonstrating Laramée's principle of multiple solutions. If the player has spent time leveling her persuasion and speech-craft abilities, she may be able to use some investigative skills and convince the party guests to kill
each other. On the other hand, if she has spent more time working on her sneak and dagger skills, she may find attacking the guests individually from the shadows to be a better option. Finally, if the player has focused on playing a character with high defense she may be able to engage all of the party guests simultaneously. The narrative of this quest is always the same: the party guests must die; however, players are free to accomplish that ending in a number of ways based on their individual skills and abilities. Players of *Oblivion* will quickly recognize when scenarios allow them to draw on different skills, and hopefully evaluate how they can best advance based on their previous experiences.

Like meaningful mechanics, nonlinearity in games creates for players a sense of agency within a system. As their individual choices (made through the use of mechanics) collect to form player-specific tactics, the principles of multiple means and solutions ensure that players will have ample opportunity to test their tactics against challenges that value the skills they have developed. Thus, the principles of nonlinearity introduced by Laramée are, in part, a way of validating player's choices in a game system. While players must still demonstrate finesse and ability in their chosen skills, creating opportunities for them to use those skills allows them to demonstrate their competence within the game system, an important part of learning in any system.

Finally, before moving on, it should be noted that Laramée also introduces three elements of “false nonlinearity.” These principles, he argues, were often used in the early days of gaming, and some of the most iconic, classic games are clear examples of false nonlinearity. Laramée cautions designers against using them because, he claims, excessive uses of these elements often annoy players. I mention these here because quite often when
learning institutions present students with options they fall into one of these three categories. These poor game design elements are: the choice of doom, the false choice, and the run-around. Of these, the choice of doom and the false choice are the examples of false nonlinearity most commonly seen in educational settings. In games, as Laramée highlights, an over-reliance on elements of false nonlinearity can frustrate players by consistently denying them the ability to make meaningful decisions about their play. However, in educational settings this false nonlinearity can at times be a useful element in engaging students in content, particularly as my false choice example will demonstrate.

The choice of doom is a situation that, while appearing to offer multiple solutions to players, in truth contains only one viable option (Laramée 64). In a choice of doom scenario, a player might find themselves standing at a fork in the road. Either path initially seems plausible, however one path will lead the player to certain death, while the other allows her to successfully continue her journey. In a learning institution, we might consider attendance to be an example of the choice of doom. Technically, each student has an option every class meeting to decide whether or not they will attend, and indeed we often stress to college students their “choice” as adults to decide if and when they will attend. However, while attendance on a day-to-day basis may present students with a choice, nonattendance is not a tactic that learners can employ to succeed in a classroom. Excessive absences will, in nearly all courses, result in a failing grade. Certainly, students may make a decision to attend or not to attend an individual class period, but doing so does not give them a means to success in the course. Thus, presenting attendance to students as a choice is a false nonlinearity, or rather, presents them with a choice of doom.
The direct opposite of the choice of doom is the false choice. In a choice of doom, one option ultimately results in failure, meaning that in order to progress the player is required to choose the other option. In a false choice the player is presented with options which she believes will result in different outcomes, only to discover the results of all options are the same. In this case the player is tricked into thinking that there is a component of nonlinearity through the presentation of seemingly different options, however the outcome of both options has the same consequences, resulting in a completely linear structure. In the example above of a forking path, a false choice scenario would have identical tunnels that eventually rejoin each other to end in the same location. Players are presented with what appears to be a choice (take the left path or the right path), however the experience of each path is perfectly identical. Many of the options presented to students in coursework amount to false choices. An assignment prompt that allows students to select a topic, but ultimately contains the same structures and requirements, is in this sense a false choice. Presenting students with the option to choose their own paper topic may give them some sense of agency in a classroom, which is certainly a positive thing and an important part of emulating more informal learning environments. However, because all students will all be responding to the same assignment prompt in essentially the same way, in this situation the choice of a paper topic is a false choice.

As an extension of the concept of meaningful mechanics, nonlinearity is an essential part of ensuring that gamified spaces allow player-learners to make important decisions about their educational experiences. Where the criterion of meaningful mechanics demands that players are given the option to make consequential decisions about their progress through a
game system, nonlinearity extends this idea to require that players are given the option to use multiple means to solve game challenges, and that each challenge has more than one viable solution. Meaningful mechanics are individual decisions players make; nonlinearity refers to the collection of those decisions into specific tactics. Finally, gamifiers should be wary of excessive use of either choices of doom or false choices. In the example mentioned above, allowing students to chose their own paper topic, the criterion of nonlinearity is not met. Certainly, students may feel a greater sense of agency in a course that allows them to select a topic they are interested in, but because their “tactics” for completing such an assignment will not vary based on topic this remains an example of the false choice.

**Challenges**

Challenges are, as many theorists and game designers insist, one of the essential characteristics of any game, from football to *Dungeons and Dragons*. Challenges are opportunities for players to first develop and then demonstrate skill mastery within a game system. As Fullerton, Juul, and others have noted, games are essentially inefficient means of accomplishing tasks. Juul demonstrates this by considering golf: using a set of clubs to hit a ball is potentially the least efficient means of getting the ball in the hole. However, the challenge of selecting the appropriate club, judging distance, and avoiding obstacles, creates a situation in which players can first develop and then demonstrate their mastery of various skills. Given the central nature of challenges to a game's design, approaching challenge design with care and attention is of the utmost importance. Crawford explains that “[p]layers don't need to be spirited away to an exotic world; they want to face and overcome interesting challenges” (33). The implication of this statement is that amazing settings and graphics,
while potentially entertaining and eye-catching, are at best of secondary importance to gamers.

While challenges are important, good game design involves more than simply placing obstacles in a player's path. Marcin Szymanski presents the following scenario in a chapter about challenges and frustration in *Game Design Perspectives*, an edited collection offering chapters from game designers in the industry:

The warrior steps around the remains of the enemies he has just defeated, happy with his victory. He notices the treasure on the altar just ahead. Knowing that traps may abound, he pauses, and his eyes begin to scan the floor, the walls, and the pillars. Something simply does not feel right. Without warning, a huge demon teleports into the chamber. The monstrosity informs the warrior that he took too long before grabbing the treasure, and proceeds to annihilate him with powerful energy spells—game over. (110)

As Szymanski demonstrates in this example, if challenges are not presented either in an appropriate manner or of an appropriate difficulty, players will likely detach from the game. In the presented scenario, the player expected and attempted to solve one kind of challenge. Suspecting that the treasure was trapped, Szymanski's imaginary player took care to inspect the surroundings, a behavior we can assume either this game or a previously played game has taught the player to utilize in similar scenarios. Unfortunately, the player failed to recognize—or, more likely, the game failed to signal—that this was an entirely different kind of challenge, a timed event. Such a grave misinterpretation of game signals causes a
disconnect between the player and the game, which can be detrimental to a player’s motivation and desire to complete the game. Indeed, Szymanski argues that a challenge like that one may be an enjoyable surprise for the designer to design, but will ultimately drive the player away from a game, possibly permanently. Instead, designers must consider individual players as they design challenges.

A well-designed game, one with significant (though not impossible) challenges, provides players with the sense of success and satisfaction that makes games fulfilling. The thrill of overcoming obstacles is often highlighted as the engaging element of gaming. After first designing a mediocre prototype of the game and deciding to scrap the whole product and start again from scratch, the designers of the extremely popular game *Half-Life* explain how they had several important realizations about game design in the process, including: “When [players] succeed, and the game rewards them with a little treat—scripted sequence, special effect, and so on—they’ll feel good about themselves and about the game” (Birdwell 215). McGonigal explains the positive emotions games provide players in even more emphatic terms, stating “gameplay is the direct emotional opposite of depression” (28). She clarifies this statement by noting the clinical definition for depression includes a sense of inadequacy and a lack of activity. Games, she explains, are the opposite: players are highly active as they overcome challenges, and in doing so they develop a sense of confidence in their abilities (28). Therefore, the importance of challenges is clear to both designers and academics. However, a designer must still think carefully about how challenges are implemented into gaming situations. Reflecting on designing challenges for games, Crawford explains: “Your job as a designer is to define the challenge in the game and then make that challenge as clear
and precise as possible” (Crawford 40). Similarly, Fullerton, Swain, and Hoffman note in *Game Design Workshop* that good challenges are both individualistic and dynamic. Challenges are individualistic because each player will approach a challenge with a different skill set, based both on how they have interacted with this or other games previously and prior knowledge they bring to the game. At the same time, challenges are dynamic; as players build up skills and abilities during their experience in the game, challenges that seemed difficult early on should become fairly simple as they progress.

Thus, we understand three important things about challenges in game design. First, as Crawford, Salen, and Zimmerman emphasize, challenges are essential components in games. Without challenges there is no game. Furthermore, as Birdwell and McGonigal demonstrate, the positive emotions players feel when they succeed at challenges are a powerful element for motivation and enjoyment in gaming. Finally, the example from Szymanski clearly shows inappropriately signaled or scaled challenges can drive players out of games entirely. In these respects, game environments closely resemble traditional learning institutions. Both spaces place a high value on encouraging skill development and then testing development through a series of challenges that must be overcome before one can progress. Furthermore, while educational institutions may not always succeed at creating clearly signaled, well-spaced, and appropriate challenges (something games themselves fail at from time to time), these particular principles of game design align closely with instructional design.

Perhaps the most important aspect of balancing challenges is ensuring they are a proper test of skill level. As Szymanski's imaginary challenge demonstrates, a challenge that involves a monster with impossibly high skill obliterating an unsuspecting player is an
unbalanced encounter that will hardly encourage players to continue with a game. However, the opposite side of the spectrum is generally not enjoyable either. While players may enjoy defeating challenges easily for a while, challenges without the risk of failure will not provide players with the same feelings of success. Thus, challenges that are either too difficult or too easy deprive players of fulfillment. The balance is essential: “in a good computer or video game you're always playing on the very edge of your skill level, always on the brink of falling off” (McGonigal 24). Failing challenges should be a constant threat; however players should not be punished too heavily for failing. In the best games, “there is a relatively low cost of failure and high reward for success” (Gee, *What Video Games* 63). Because players learn and practice their skills and abilities through challenges, failure should not be too punishing, at least during low-stakes, early level challenges. Indeed, failing early in a game on a low-stakes challenge is often the first clue to a player that they need to learn or develop a new skill.

An essential component of designing challenges of an appropriate level is scaffolding skills and abilities correctly. This involves identifying what major skills a player will need (for example, double jumping), and then working backwards to create smaller, low-stakes challenges that lead up to major ones. Phil Co demonstrates an effective challenge design by presenting the example of a platformer, a game like Super Mario Bros. whose main action involves jumping onto and over various elements of the game world. At an early stage in a platforming game, players should be given very short jumps, and possibly even jumps with ledges under them. This will ensure that the player fully grasps how jumping works in the game system and provide opportunities for practicing the jump skill. Once several low-stakes
challenges have been presented, a good game designer will begin to increase the difficulty. In Co's example above, the first increase involves requiring players to make two jumps simultaneously. Co scaffolds this difficult challenge by first providing the player a stable platform to rest on between jumps (labeled #2 in the figure above). This intermediary challenge leads to the maximum difficulty challenge, two jumps immediately following each other with an unstable platform in the middle. Depicted as the third scenario above, in this instance the middle platform will fall as soon as a player lands on it, meaning that to overcome the challenge a player must jump immediately upon landing on the middle platform, or she will fall to her death.

In addition to being of an appropriate skill level, challenges must be clearly signaled to players. Szymanski's example presents a challenge that is inappropriately signaled to a
player. In this instance the player saw a treasure sitting along on an altar, immediately assumed this challenge would involve a trap of some sort, and then attempted to solve what she perceived as the challenge – disarm or avoid the trap. By inappropriately signaling the properties of the challenge to the player, this imaginary game set the player up for failure. However, as Gee notes, games are in the business of teaching people how to succeed. Thus, in the case Szymanski imagines, the failure is as much on the part of the game as it is the player. Well-designed games signal to players the type of challenge they will face and assist them in developing the skills they will need to overcome it.

**Evocative Spaces**

It may seem odd to some that, up to this point, I have not discussed narratives, stories, or plots as a key element in game design. Those familiar with the literature on games are most likely similarly familiar with the contention that often follows discussions of this aspect in gaming. While Janet H. Murray claimed to have “The Last Word on Ludology V. Narratology” at her keynote address to DiGRA (the Digital Games Research Association annual conference) in 2005, and Gonzalo Frasca offered some “Notes From A Debate that Never Took Place” two years previously, the tension between representational elements and procedural elements remains a topic of discussion in game studies, and is likewise an important consideration for those wishing to construct gamified spaces and events. A comprehensive discussion of all of the writing and debate around narratology and ludology is both outside the scope of this chapter and perhaps not as pragmatically useful as a description of their basic points. Thus, I'll simply provide a quick summary of the two opposing points
and their relation to game design, before moving on to the more productive middle ground of evocative spaces that Henry Jenkins proposes.

Murray's work, whose 1997 text *Hamlet on the Holodeck* was one of the first major academic works on gaming, is commonly cited as the clearest example of the narratological position (though, Frasca notes, Murray herself never uses the term). Narratology is, simply, the focus on narrative and narrative elements as the dominant expressive power of gaming and as the primary focus of analysis. Whether they identify themselves explicitly as narratologists or not, several other theorists’ work fits into this category. Likewise, several game designers stress the importance of narrative in the design process. Nonetheless, Murray's work has become the iconic example of narratology, and so I summarize it briefly here. While she repeatedly notes the distinction between storytelling in games and other media, her work remains focused on looking at the narrative potential of gaming as its highest value. Indeed, as she explains her concept of cyberdrama in “From Game-Story to Cyberdrama,” she explicitly says “for me, it is always the story that comes first, because storytelling is a core human activity” (3). Though she recognizes often in gaming “the story works against involvement in the game” (Murray, “The Last Word” 51), her focus is on seeking better, more interesting, and more collaborative ways to work storytelling into gaming.

Of course, there are also many, both in the game design community and the academic community of gaming scholars, who generally oppose the focus on narratives in game studies and in game design. Costikyan presents an argument that might be seen as an extremist version of the ludologist perspective: “To the degree that you make a game more like a
story—more linear, fewer real options—you make it less like a game... Gaming is NOT about telling stories” (194). Costikyan's opposition to stories in games, an opposition echoed by numerous other designers and theorists, is quite simply that he sees narratives as highly linear structures. He equates narrative structures with jigsaw puzzles: both consist of multiple, interlocking pieces that fit together in only one correct way to complete the structure. The obvious complaint, if we accept Costikyan's definition of narrative, is that to achieve this designers would violate the first two principles of good game design. Costikyan seems to imply that if the narrative is strictly linear with only one possibly outcome, there is no room either for meaningful mechanics or for nonlinearity in the game structure. However, as Laramée’s and Cleveland's definitions of nonlinearity and meaningful mechanics show, separating narrative concerns from gameplay elements allows even fairly linear narratives to give players opportunities to express agency within a game system. The Oblivion quest “Whodunit” provides a clear example of how individual players may utilize various skills, which they have developed through choices made in accordance with the meaningful mechanics of the game system, to complete the quest in a number of different, but equally valid, means. Thus, Costikyan's jigsaw metaphor is inaccurate in describing how gameplay and narrative elements are connected in gaming.

While Costikyan's blanket rejection of stories certainly explains the opposition some designers have to a narrative emphasis in gaming, Frasca, another academic who straddles the boundary between academia and industry, tempers this position. Like Costikyan, Frasca encourages designers and theorists to move away from narrative perspectives as the primary focus of design and analysis, claiming not doing so “limits our understanding of the medium
and our ability to create even more compelling games” (221). Nonetheless, in his 2003 presentation at DiGRA, Frasca emphasizes that there have been two counts on which he claims ludology has been misunderstood:

• The work of the so-called ludologists does not reject narrative, nor does it want to finish narrative elements in video games.

• The accusations of radicalization of this debate are totally unfounded.

He further explains that, from his perspective, the point is not to consider whether or not games are (or should be, or must be) stories. Rather, the focus should be on how we can expand our knowledge of games as a unique medium (a process he believes works best through a focus on simulation rather than narrative).

While both Frasca and Murray mediate their positions and emphasize their affinity for other arguments, they nonetheless provide a framework important for considering the focus of game design: the challenge of balancing an adherence to narrative elements against providing player agency and free choice. For our purposes in particular, designing a games-inspired heuristic for postmodern pedagogy, neither extreme is particularly useful. A gamified space overly focused on narrative detracts from the values of player agency that make gamification such a powerful tool, and likewise too heavy a focus on game mechanics can distance any learning from the original context and objectives demanded by the space. As previously mentioned, however, Jenkins offers us a middle ground between these two poles, one which recognizes “games less as stories than as spaces ripe with narrative possibility” (672). As Jenkins notes, the role of game makers is to “design worlds and sculpt spaces” (674). The trick, according to Jenkins, is to focus not on a jigsaw puzzle narrative,
but rather to consider how the spaces one designs can become evocative. The key shift being made here is a move from considering the intersection of rule bound systems and narratives as highly linear construction to identifying the space of the game world as a narrative staging ground, an architecture that will lend itself to certain actions that can be overlaid with narrative meaning. From Jenkins’ perspective, then, the goal of the designer is not to think overly much about a sequence of events, but instead to think about each element of the game world as one that contributes to an overall narrative or thematic goal. Don Carson, a show designer for Disney, describes this type of narrative construction as “environmental storytelling” (cited in Jenkins 676). While amusement park spaces do not necessarily tell a linear story, Carson explains “the story element is infused into the physical space.” Thus, in a location centered around the idea of pirates, “every texture you use, every sound you play, every turn in the road should reinforce the concept of pirates.”

The New York magnet school Quest 2 Learn, which McGonigal highlights as a positive example of gaming in education in Reality is Broken, provides an example of a gamified space that does not have a strictly linear narrative, but instead recreates the school as an evocative space. The school, whose mission is the “translation of the underlying form of games into a powerful pedagogical model for its 6-12th graders,” uses gaming structures and language to structure and articulate its curriculum. While in many ways their focus continues to rely on modernist perspectives that impede true gamification, many of McGonigal's examples suggest the school has done a fantastic job of reconsidering their physical space as an evocative, narrative-rich one. McGonigal highlights one particular
example: a student, while looking for books in the library, discovers a quest which leads to an extra credit opportunity.

As the Quest 2 Learn example demonstrates, re-considering games as evocative spaces asks the design process to focus not on linear, temporal narratives, but instead on designing thematic spaces from which narrative possibilities emerge. This focus is especially useful for the gamification of learning spaces, as it shifts us from trying to create stories that can often come off as arbitrary or artificial to students to trying to create spaces that are staging grounds for stories, with the narrative to be created in by the player in gameplay.

**Procedurality**

The first three game design principles (meaningful mechanics, nonlinearity, and challenges) deal explicitly with designing enjoyable gameplay experiences, referring to specific and individual actions and events for players to experience. The fourth principle, evocative spaces, refers to designing narrative elements by focusing on game spaces and themes rather than on temporal narratives. However, in both game design and in learning environments it is particularly important for us to think not just about rules and narrative spaces, but also about the important and powerful connections we can make between rule systems and evocative spaces. While meaningful mechanics give players the opportunity to make choices about how the navigate game spaces, nonlinearity in games ensures that their choices have meaning, and challenges provide players with opportunities both to develop skills and to test those skills, without a context to situate that situates these elements in purposeful ways learning can quickly fall flat. Thus, persuasive and educational possibilities are greatly expanded when designers carefully construct the game space to, as Bogost notes,
video games “offer meaning and experiences of particular worlds and particular relationships” (2007, 239). This connecting factor, the binding between rules and game words, I refer to using Bogost's description: procedurality.

Of course, Bogost's principle of procedurality is not the first theoretical connection between rule systems in games and their narrative elements. Jesper Juul's foundational *Half-Real: Video Games between Real Rules and Fictional Worlds*, also emphasizes the importance recognizing the vital link between fictions and rules: “the relationship between rules and fiction... is not arbitrary” (15). Indeed, Juul goes on to present the connection between rules and fictions as a cyclical one, claiming “the fiction of the game cues [the player] into understanding the rules of the game, and, again, the rules can cue the player to imagine the fictional world of the game” (163). Juul highlights this connection as essential to helping players understand increasingly complex game systems. Using *Elder Scrolls III: Morrowind* as an example, we can see both how the reciprocal relationship Juul identifies works, and also how the intersection of rules and narratives can break down to reveal system limitations.

*Morrowind* is a single-player RPG (role-playing game) in which the player takes on the role of an anonymous prisoner. As the game opens, the player is asked to define various aspects about her character (race, gender, abilities, star sign, etc.), shaping both the past and future for her would-be hero. The fiction uses the common trope of amnesia to create a situation in which the player is able to build her own character in whatever way she chooses. The rules of the game reflect the openness of this fiction: all armor and weapon types are available to all characters (something commonly restricted in RPGs), dozens of quest lines
(including some mutually exclusive ones) exist to allow players freedom of choice, and any non-player character in the game can be killed (something extremely uncommon for RPGs). Thus, the fiction of the game says to players “be whomever you want to be” and the rules of the game reinforce this. However, the last rule mentioned, any character may be attacked and potentially killed, presents something of a challenge for the fiction of the game. While the game does try, as much as is possible within the limited system of a computer game, to allow players freedom of choice, it also recognizes that players may inadvertently “break” their game by killing characters that must remain alive for certain quests to be completed.

The game resolves this tension by presenting players with the following message if they should happen to kill one of the essential characters: “With this character's death, the thread of prophecy is severed. Restore a saved game to restore the weave of fate, or persist in

Illustration 10: Tension between rules and narratives in Morrowind
the doomed world you have created.” This warning to players highlights both the reciprocal relationship Juul identifies between rules and fictional worlds (each element helping players understand the other), while at the same time pointing to the problematic disjunction a number of theorists highlight when discussing game narratives (creating compelling narratives often means infringing on player agency). Thus, I move from Juul's conception of rules and fictional worlds to Bogost's description of procedurality, which highlights how games, as systems, have the ability to connect evocative spaces and rule systems in ways that encourage players to accept particular positions.

Bogost notes that we often think of rules and procedures in negative terms, because they limit potential actions. However, he argues, rules and procedures also create expression. We recognize concepts such as “defective” or “ideal” as they relate to specific sets or rules and procedures. Procedurality, then, for Bogost, involves the thoughtful combination of rules and representational elements (he avoids, here, discussing either narratives or evocative spaces) to evoke specific behaviors (3). Bogost offers a number of definitions for procedural rhetoric/literacy throughout his primary work on the subject, *Persuasive Games*, but perhaps the most salient for considering the connection of mechanics, nonlinearity, and challenges to evocative spaces is the following: “procedural rhetoric is a type of procedural literacy that advances and challenges the logics that underlie behavior, and how such logics work” (258). In other words, through a thoughtful connection of procedures (which we might read as rules, mechanics and challenges from a game design perspective) and particular representative content (which could refer solely to graphics in the most narrow sense or be expanded to include a full detailed narrative), games are able to create systems that can both encourage
specific types of behavior and encourage critiques of behaviors. While procedural rhetoric is neither an essential characteristic of gaming, nor exclusive to only this medium, games and gamified spaces provide ample opportunities to explore procedurality.

For an example of how these various considerations play out in commercially developed games, let's consider Tetris, Dr. Mario and Bioshock. Tetris, which has been released innumerable times on virtually any machine capable of running a game, demonstrates several of the design principles mentioned above. It has meaningful mechanics, nonlinearity, and challenges. Players can rotate blocks to the left or right and can choose where in the playing field to drop the blocks the game gives them. While these mechanics are basic, the freedom to choose certainly leads to multiple paths in the game. As children, my sisters and I would play the game and, while they normally focused only on clearing a single line at a time, I quickly made a game out of trying to make only “tetris” line clears (clearing a full block of four lines at a time). The game, like many from its generation, increased challenge by increasing the speed that objects came at the player as the game progressed. Nonetheless, Tetris is not an evocative space (and, indeed, it is often pointed to as the prime example for those who critique the role of narrative in gaming). Dr. Mario, a Nintendo adaptation of Tetris, features the iconic character wearing a white lab coat and tossing multicolored pills into a bottle that contains different types of viruses. The player destroys the viruses by stacking pills of the same color on top of it. Thus, while Dr. Mario borrows a fair amount of design elements (including mechanics, nonlinearity, and challenges) from Tetris, it overlays them with a narrative and creates an evocative space that is decidedly distinct from the original Tetris game. However, it would be difficult to claim that there is
any sort of meaningful connection between the rules and the fiction of *Dr. Mario*, and therefore equally challenging to identify any meaningful instances of procedural rhetorics. The game presents little connection between the actions the player takes and the evocative space. Turning and shifting pills to land on viruses has little to do with actual medical practice, and stacking the pills is an arbitrary means of destroying the virus that makes as little sense in the game world as it would in reality.

In comparison, *Bioshock*, a first-person shooter released in 2007, presents us with a game that has meaningful mechanics, nonlinearity, challenges, is an evocative space, and makes effective use of procedurality. The game is set in an alternate past. Shortly after World War II a charismatic leader, Andrew Ryan, draws together a collection of society’s elite. His
group retreats from the three major controlling institutions of the world (Catholicism, Capitalism, and Communism), and creates their own utopia of free learning and thought. If elements of this premise sound familiar, it is because the game makers, Irrational Games, drew on Ayn Rand's theories of objectivism for the premise. Of course, as with most sci-fi utopias, the plan has gone horribly wrong, and, at the point in which the player crash lands in the ocean and discovers the hidden underwater city, Rapture, has descended into chaos. The inhabitants, who had been experimenting with extreme genetic modification, have all become violently insane. The game, which is set in 1960, uses architecture, music, character design, and other elements to create an evocative space. Throughout the game basic mechanics (such as how to use the plasmids, genetic modifications, as weaponry) are often explained through short videos specifically designed to echo Cold-War era cartoons and safety videos, further emphasizing the evocative space of the game. The most interesting example of procedurality, the connection of the evocative space to the game play elements, occurs toward the end of the game. As the player navigates the game space, she is frequently contacted over a short wave radio by a character named Atlas. Atlas acts as the player's guide, directing her through the various levels and claiming to help her escape. All of this is relatively standard fare for contemporary games. A number of games utilize the off-screen director, who gives objectives and updates the player with useful information as needed. Because this is a generally accepted convention of gaming, players may not question who Atlas is or why they should follow his orders. Doing so is simply the path they must take to move through the game space. However, at the climatic moment of the narrative in BioShock, the player discovers that she has been manipulated throughout the entire game. Prior to crashing into
Rapture, Atlas was able to condition the player's character to be compelled to complete any action if asked using the phrase “would you kindly.” In this case, the creators of *BioShock* have built meaning and purpose into the normally arbitrary quest structure, explaining to players why they *couldn't* choose another path after the quest giver gave them direction. Introducing psychological conditioning as a narrative element in *BioShock* helps to reveal the procedurally of the game system to players, encouraging them to reflect on their game play experience and question their own agency (or rather, the inherent limits on their agency).

As mentioned earlier in this section, procedural rhetoric is neither a defining characteristic of gaming (as the example of *Tetris* demonstrates), nor is it a tool exclusive to video games (Bogost identifies the best-seller *Guns, Germs, and Steel* as an example of procedural rhetoric in printed texts). Certainly, gamified spaces can be created that do not take full advantage of procedurality, just as many classic and contemporary games do not fully explore the potentials of it. However, I include procedurality in this list precisely for the opportunities it provides for educators. As the *BioShock* example demonstrates, procedurality in games can be used to encourage critical thinking, asking players to reflect on their own play experiences and to consider how operating within a rule-bound system limits what actions are available to them. As Chapter 3 will show, this critical awareness, with structuring and reflection, can be used to encourage students to think beyond the boundaries of the classroom and consider other rule-bound systems that constrain their action.

**Synthesizing Principles: C's The Day as Model Gamification**

While the principles listed above are drawn from the existing literature on game design, they are not currently recognized as crucial elements for the creation of gamified
environments. Nontraditional gamified spaces, such as the Nike+ system, often incorporate gaming terminology (identifying points and levels), but for the most part have yet to make active use of game design principles to create spaces that “involve and empower players to make their own decisions ... to explore him or herself” (Church 379). Similarly, the school depicted in *VGHS* could be considered a gamified space, but the design principles employed by the creators focus exclusively on challenges (and, I would argue, in a way that does not meet the criteria I have set forth for scaffolded, individualized challenges) to the exclusion of elements that encourage greater student agency in learning. Indeed, the procedurality of *VGHS*, the connection of the rule system to the narrative elements, can potentially be seen as conveying seriously problematic messages to students, including an extreme exaltation of capitalist principles and an “only the strong survive” mentality. In returning to *C's the Day*, which has already been identified as a nontraditional learning environment that does incorporate elements of openness and participatory learning, we can see how the implementation of the design principles I have identified help the gamified spaces accomplish those goals.

*C's the Day* incorporates elements of meaningful mechanics, nonlinearity, and challenges through a system of quests that restructures a player's conference experience around the goals of “character” advancement and achievement. In looking at the quest structure of *C's the Day* we can see how the various principles discussed here overlap and contribute to each other. The gamified space uses the concept of challenges to direct players to take specific actions: exploring the various conference events, networking with other players, and role-playing various field-related activities. Players are able to make clear
choices about how they will choose to play the game, most notably by deciding what types of
quests they complete. A player that emphasizes role-playing quests in her time at the
conference will be engaged in a much more participatory and collaborative style of play, as
she will be repeatedly required to interact with other players. A player that chooses to focus
more strongly on exploration-type quests will have a very different conference experience,
and while she might also interact with other players, her main form of gameplay will be
attending various conference events. While the challenges, presented as quests to
accomplish, are the main form of nonlinearity and meaningful mechanics in *C's the Day*, they
are also a crucial element in developing the conference site as an evocative space. Turning
the various conference activities, events that many non-player C's attendees will already be
doing, into challenges for players to overcome engages them in the narrative of becoming an
academic. The brief introductory prologue, which identifies players as a “good, no, great
undergraduate,” begins to construct an evocative space emphasizing “character” development
within the conference. The names of various quests in the game continue the transformation
of conference venue as story space, drawing on field axioms such as “Publish or Perish” and
delivering one's elevator pitch. With each new interaction, the player develops her own story
about her development from undergraduate to full professor.

Finally, through a combination of the open narrative presented by *C's the Day* and the
rule structure that surrounds and orders it, we can see elements of procedurality that both
inform new players about the process of becoming an academic within the field and offer a
subtle critique of this process. The rules of *C's the Day* tell players they must complete an
appropriate amount of measurable “work” before moving on to the next level. While the
game offers a number of means for players to demonstrate the work they do throughout the conference, a substantial number of the quests reference actual milestones in the progression from undergraduate to full professor, including quests that ask players to answer a question for their qualifying exams, recite portions of their C.V., and argue for why they should receive tenure on the spot. These quests in particular encourage players to reflect on their non-game analogues and consider the structures and systems in academia that privilege certain actions and modes of communication in favor of others.

**Conclusion**

In the previous chapter I identified the two reasons commonly cited for using games in formal educational curricula: fun and engagement. These exigences create a tension: fun and engagement are notoriously difficult to objectively define and also highly subjective to assess, yet both are typically seen as the direct results of good game design. Laramée identifies the question of fun as a central one for game designers: “where does fun come from? What must we put in a game to make it worthwhile, and what do we need to keep out of it?” (59). In other words, how can we possibly design for something we can't truly quantify? Ralph Koster provides us with a partial answer: “Fun from games arises out of mastery. It arises out of comprehension” (40). Koster's definition, which is likewise expressed from a number of others working in game studies and game design (including Gee *What Video Games*, McGonigal *Reality is Broken*, and Bogost *Persuasive Games*), succinctly explains precisely why gaming has potential for learning environments. However, while this definition tells us what fun is, it neglects to tell us how to achieve it. Furthermore, if we accept that fun is a derivative of learning and mastery, we can further ask why schools aren't
already fun. McGonigal provides us with one answer by comparing public primary and secondary schools to game spaces. The result is, predictably, not a favorable depiction of schools. She defines modern schools as “low-motivation, low feedback, and low-challenge environments... one long series of necessary obstacles that produce negative stress” (127). By refusing to incorporate the concept of choice in learning (through providing primarily necessary obstacles), schools chip away at students’ sense of agency, and therefore their motivation. The design principles described in this chapter, meaningful mechanics, nonlinearity, challenges, evocative spaces, and procedurality, have been selected precisely because they will assist potential gamifiers in creating game-like spaces that present challenges in new and interesting ways.

Finally, and equally importantly, I should note what is not included here: points, levels, quests, and other typical accoutrements seen in many unsuccessful gamification events—those that Robertson and others refer to as “pointsification”. This is not, by any means, to say that these and other characteristics cannot be included in designing a gamified space. Levels, quests, and points are all important tools in both game design and gamification efforts, but should be thought of in relationship with the gaming principles mentioned above. How do quests create an evocative space? How does the acquisition of points represent a meaningful mechanic? C’s the Day, an example I have been using to demonstrate effective use of gamification, employs both quests and levels. However, as discussed in the introduction to this project, both questing and leveling in C’s the Day connect the game to the experience of playing a role-playing game and help restructure the conference space. While the conference as a whole is a generally open and non-directive learning space, the quests
provide players with specific goals and challenges. This helps newcomers identify how they want to spend their time (nonlinearity). In addition, the leveling process (which encourages players to move from undergraduate student to full professor in the loosely defined game narrative) helps to recast the conference space as an evocative space.

Throughout this chapter I have provided a specific set of game design principles to use as a heuristic for designing gamified spaces in educational contexts. Unlike *VGHS*, which focuses on elements of gaming that increase competition, the principles listed here are meant to encourage the sort of openness and participatory learning highlighted as characteristic of informal learning environments in Chapter 1. Meaningful mechanics and nonlinearity increase the level of openness in a learning environment, allowing learner-players to make decisions that are meaningful about their education. As we will see in the next chapter, scaffolding challenges properly leads to a more participatory space, as player-learners work together to identify and answer challenges in a gamified space. Finally, evocative spaces and procedurality add depth to a gamified space, bringing in the elusive element of engagement. For clarity’s sake, I have chosen to provide examples from commercial games to illustrate how each of these game design principles operate within traditional game space. However, as discussed in Chapter 1, the important distinction between a game and a gamified space is the emphasis on the pre-defined goals and objectives in the gamified environment. *C’s the Day*, while being a game in its own right, nonetheless depends on the *Conference on College Composition and Communication* for its meaningfulness and exigence. The value of *C’s the Day* and the gameplay experiences it creates can only be described in terms of the conference that contains it.
Chapter 3: Gamification in Context

In the opening of Chapter 1, I presented the MOOC movement as an educational model that, despite recent praise and attention from both popular and academic audiences, continues to rely on pedagogical assumptions and strategies that have been critiqued in multiple fields. While Cormier, Siemmens and Downes define MOOCs as an event that does incorporate elements of openness, collaboration, and participatory learning, at present the most well-known examples of MOOCs replicate the lecture-based, skill-and-drill style learning that has been recognized as generally problematic by scholars in a number of fields. The innovative element of MOOCs is not their pedagogy but their size. Udacity and Coursera both demonstrate that the characteristics of informal learning environments that scholars in teaching and writing value are not inherent characteristics of technology, as both of these companies use technology to replicate traditional models. These particular MOOCs also show that simply being an informal learning environment does not necessarily translate into an embodiment of the principles of openness and participatory learning (though, it might be argued, Udacity and Coursera rely on traditional models precisely because they do not want to be seen alongside other informal learning environments).

In contrast to the relatively closed and hierarchical banking model that MOOCs employ as a pedagogical strategy, an analysis of scholars working around new media studies and education shows informal environments are at their best when they incorporate elements of openness, self-selection, and participatory learning. Formal institutions are, of course, bound by fairly rigid structures of assessment and progression, elements that would seem to be in direct opposition to the features of informal learning environments. While games have,
in the past, been identified as a possible point of integration between these two models, I argue current integrations of gaming into traditional educational settings are often inadequate at presenting the kinds of opportunities instructors value. Educational games sacrifice game design principles for content delivery; commercial games rarely contain the types of information students need in easily accessible formats; the increasingly popular games-as-pedagogical model movement draws on some basic game design principles, but loses a focus on play—a key element for engagement and immersion in gaming. In response to this exigence I present the hybridity of gamification as a model of learning that allows teacher-designers to balance gaming and content elements more effectively than in the previous models, while still incorporating the play element commonly seen as desirable.

Though gamification as a pedagogical method offers educators a new means of incorporating elements of informal learning environments into traditional classroom settings, the current models of gamification are highly problematic. Many, such as Nike's running application Nike+, fall under the simple heading of pointsification. McGonigal discusses her experiences with Nike+, arguing for its potential to provide additional motivation for those already interested in running. However, while the accumulation of points and the added camaraderie gained in participating with the Nike+ site are certainly beneficial, the application nonetheless dramatically limits a runner's participation with the site or ability to make any meaningful contribution outside the simple tracking of miles. Similarly, the fictional Video Game High School displays a non-educator's version of a hybrid of gaming and traditional learning environments that ultimately fails to achieve the potential benefits of gamification. The school clearly draws on elements of game design; however, the focus on
recreating elements of competitive first-person shooter games within a learning environment is problematic from a pedagogical perspective. Both the fast-paced, head-to-head matches and the leader board that records students’ current scores/grades are elements of gamification, as they are gaming structures that have been incorporated into the non-game environment of the high school. Despite this integration between game design and a formal learning environment, VGHS remains a highly hierarchical and linear system that allows remarkably little freedom to students. Returning to Zimmerman's definition of play as movement within a system, we can see how VGHS allows students very little room to play, despite its inspirations.

Thus, if games and gamified spaces have the potential to help us bridge the difference between informal and formal learning environments, they do not inherently do so (just as incorporating technologies of sharing and networking does not prevent MOOCs from falling back on a banking model of pedagogy). In Chapter 2 I presented a new model of gamification, drawn from a set of game design principles that have been selected for their ability to help educators develop learning spaces that allow for more play, more movement within the traditional system of learning. These principles are not meant to be a step-by-step guide for how to effectively gamify a space, but rather a set of best practices that will help potential gamifiers incorporate the best elements of gaming and avoid simple pointsification. I argue focusing on designing meaningful mechanics, nonlinear spaces, scaffolded and increasingly complex challenges, evocative rather than narrative spaces, and creating connections between rule systems and narrative elements through procedurality presents the most effective potential model to help gamifiers create spaces that highlight learner/player
agency. Nonetheless, it should be noted none of these principles present goals or ends in and of themselves. Gamification, to be truly successful, must remain a model that overlays game design principles on non-game spaces. The values, objectives, and goals that player-learners strive toward in a gamified space should be drawn from the original, non-game context.

In this chapter, I analyze Justin Hodgson's “Rhetoric and Serious Games” class as a case study showing one potential application of gamification to incorporate elements of informal learning spaces into traditional learning institutions. MOOCs draw far too much of their emphasis from traditional pedagogies to be innovative as informal learning spaces, while VGHS draws too strongly on competitive gaming to be effective within formal educational systems. Hodgson's gamified Rhetoric and Serious Games course at the University of Texas- Austin blends elements of game design with institutional goals and objectives to create a course space that employs openness and participatory learning within the university system. The course, which has now been offered five times at UT-Austin, provides a rich and well-documented case to use as an exploration of gamification in the classroom. While Hodgson’s course certainly predates the creation of the heuristic presented in this project, he utilizes many of the strategies I advocate for here by modeling his course after the World of Warcraft, instead of drawing inspiration from contemporary and ineffective models of gamification.

My analysis is based primarily on an examination of the main textual artifacts Hodgson has developed as the “game guide” for his course, which include assignment sheets, rubrics, and the course syllabus. Because the purpose of this chapter is to explore the ability of game design principles to create gamified spaces that more closely resemble the informal
models discussed in Chapter 1, the main focus of this analysis is on the structure of the course. My analysis of these artifacts is supplemented with personal interviews that provide insight into Hodgson's inspirations for the course. Attempts at gamification in higher education are as of yet fairly uncommon, and rarer still are applications of gamification that manage, as Hodgson's course does, to avoid pointsification. Hodgson is himself presently conducting a study to evaluate the effectiveness of these practices by considering both the work students complete in the course and student evaluations and surveys. This scope of my own project, however, is first and foremost to develop a new model for gamification, and so Hodgson’s other materials are not considered for the purposes of the present study.

Because effective gamification involves a careful consideration of the original goals and objectives of the environment being altered, I begin my analysis of Justin Hodgson's Rhetoric and Serious Games course at University of Texas- Austin by first looking at the various requirements and objectives the course must meet, as well as briefly considering Hodgson's own teaching philosophy. Using this multi-layered context as a starting point for gamification grounds the design solidly within a reflective and critically aware teaching practice. The remainder of the chapter is organized around a detailed analysis of the unique design features of Hodgson's gamified classroom, in particular his development of a multi-part quest system and his use of competitive grading. Through these and other course features, the principles of game design that I have discussed in Chapter 2 will be demonstrated.
Three Levels of Context

Hodgson's Rhetoric and Serious Games course operates as a gamified class space, one that demonstrates the possibilities for gamification within a formal learning environment. In Chapter 1 I defined gamification as the incorporation of gaming elements into non-game environments. Thus, the first step in any thoughtful gamification process is to consider the particular contexts, objectives, and goals of a learning environment or non-game space. This section contextualizes Hodgson's “Rhetoric and Serious Games” course by examining the various demands and objectives for the course in three layers: institutional demands, course objectives, and instructor goals.

Institutional Demands

From an institutional perspective, there are a number of specific demands on this particular course, both in the Rhetoric major at the University of Texas-Austin and as a General Education course which draws interest from students in majors across the campus community. Within the Rhetoric major, Rhetoric and Serious Games is a special topics class under the heading Advanced Studies in Digital Rhetoric. These courses, as upper division core electives, are expected to help students develop more nuanced and critical approaches to digital media and rhetoric. Other courses that fall under the same designation include Writing And Photography and Designing Text Ecologies. Rhetoric majors are required to take at least one course under this heading, and Hodgson notes many students end up taking multiple courses in this designation to meet other major course requirements.

In addition to meeting degree requirements for rhetoric majors, the course fulfills a requirement in the university's interdisciplinary certificate program in Digital Arts and
Media. Recognizing the increasing importance in participatory media and the changing media landscape, this program provides students with a theoretical base, encourages them to explore a focus or area of interest, and finally asks them to develop a creative project under faculty supervision. This program brings together students, faculty, and courses from a variety of disciplines and colleges within the university, including Fine Arts, Rhetoric, Computer Science, and many others. The certificate program itself, named Bridging Disciplines, signals an attempt at the university level to incorporate more elements of new learning environments into the standard university curriculum. The program’s mission highlights its focus in moving education toward a more collaborative and networked model, claiming it encourages students to “become more flexible, versatile thinkers, prepared for a professional world that values collaboration and innovation.” As part of the certificate program, Hodgson’s course contributes to the focus on interdisciplinary approaches to digital media.

Finally, Hodgson’s class is flagged as a writing intensive course. Writing courses, and in particular upper division writing courses, are a requirement for graduation in all majors at UT-Austin. The writing flag puts several demands on particular courses, including indicating what percentage of a final grade must be writing-based assignments, how often students should be writing in class, and how instructors must respond to student writing. Instructors are, of course, encouraged to implement these guidelines as best fits their disciplinary and course-based needs, nonetheless the requirements as a flagged writing intensive course play a significant role in shaping the types of assignments Hodgson is able to give his students. The combination of each of these three factors; the course’s place in the
rhetoric major, its role as part of the interdisciplinary Digital Media and Arts certificate, and the designation as a writing intensive course; all create a very specific institutional context. Furthermore, though this course in particular is an upper division rhetoric course focused on games, the nature of its place both within the major and within the university system make it an attractive course for students across campus. With this variety in university level and major requirements, Hodgson notes the course often contains a similar variety in terms of student backgrounds, interests, and skills.

**Course Objectives**

In addition to identifying the institutional context of the course, the objectives for the course itself are an important part of the context of the course as a gamified space. After all, the final course design Hodgson has developed for this particular class emerges as a synthesis of institutional needs, course goals, and pedagogical values, with particular elements of game design most suited to these purposes. Given the varying backgrounds and goals of the students in the course, and also the requirements Hodgson must meet as a studies in rhetoric, writing intensive, cross-disciplinary course, his course objectives are divided into two discrete groups: subject-specific learning goals and broader goals. On a subject-specific level, students learn to “navigate, identify, and critically engage norms, rules, and guides for a social media gaming environment or gaming community,” and to “analyze, articulate, and critically respond to issues related to game content, game experiences, and game communities.” Hodgson’s syllabus identifies the increasingly important need for critically aware players as gaming grows as an entertainment industry and as a advertising and advocacy medium as well, noting “a need for us to critically and creatively consider the
rhetorical possibilities emerging with games.” However, Hodgson underscores that, despite the title and these specific objectives, games are also artifacts that can be used to understand rhetorical concepts in a number of other contexts. “By the end of the class,” he explains, “we'll have discussions about general media representations; do they follow procedures, do they follow order, do they ask for certain kinds of engagements over others?” Thus, the course also focuses on more broadly-based objectives: “to develop rhetorical discourse through multiple methods/modes of communication: oral, textual, visual, and multimedia” and “to extend theories of play to include rhetorical and cultural consideration.” As Hodgson explains the broader objectives for the course, he concludes ultimately this course, like all courses in the Rhetoric major, is about learning to critically engage and analyze the structures that surround us. Games and gamification are both means toward this end.

**Teaching Philosophies**

The last, but perhaps most crucial, element of context for the learning environment of Hodgson's Rhetoric and Serious Games course is his own personal pedagogy and teaching philosophy, which he attempts to build in to all of his classes. He explains that when considering the dramatic restructure of this course he first asked himself “What do I already do? What pedagogical things do I already believe in and agree with?” The answer, for him, was rooted in the philosophies that have emerged from both the Critical Pedagogy and Active Learning movements. First and foremost, he explains, he believes in theories that center around student empowerment. “The more opportunities you can give [students] to take charge of their learning,” he argues, “the more likely they are to succeed.” Hodgson identifies Paulo Freire and Ira Shor as important figures to his personal teaching philosophy.
Gamification, which emphasizes player agency as a key element of game design through its focus on meaningful mechanics and nonlinearity, is a natural fit with these pedagogical philosophies. Similarly, Hodgson emphasizes “the integration and interaction of knowing, doing and making as an active and experience-oriented learning method.” In both the Rhetoric and Serious Games course and other courses he teaches, Hodgson emphasizes the importance of composing, and particularly multimodal composing, as an epistemic act. Using a gamified model for his course allowed Hodgson to explore these concepts through gaming elements.

Examining the objectives of Hodgson's course from each of these three levels, we can see that the “Rhetoric and Serious Games” course has a complex set of obligations, but at the same time presents an ideal space for gamification. At the institutional level, the course attracts students with varied backgrounds and goals. To meet major objectives it must provide a thorough study of rhetoric in digital media, but as part of the interdisciplinary program and as a flagged writing intensive course it also attracts non-majors that may not have given much study to rhetoric. At the course level, it must cover both subject-specific content (the persuasive and rhetorical use of games), and help students develop strategies that will allow them to be critical of rhetoric and systems from a broader perspective. Finally, Hodgson's own pedagogical goals demand students be able to take ownership of their learning and to engage not only in criticism as a form of communicating knowledge, but also through the rhetorically aware and engaged production of alternative texts.
Course-Gaming: Rhetoric and Serious Games

Given the objectives for the course and Hodgson's own personal pedagogical leanings, the gamified “Rhetoric and Serious Games” course incorporates two significant redesigns of typical course structures and several minor changes. These will be explained below, and analyzed for their connections to game design. Chapter 2 detailed five game design principles useful for thoughtful implementation of gaming elements in non-game situations: meaningful mechanics, nonlinearity, challenges, evocative spaces, and procedurality. Though I have separated them out for the purposes of definition and explanation, each of these elements ultimately overlap each other. Rather than attempt to artificially divide these elements as distinct principles in relation to Hodgson's gamified course design, this section will be structured instead around the particular elements of the course, with descriptions of how each element incorporates the various principles. Furthermore, it should be noted just as these principles overlap into each other, they are not equally applicable to every situation. Hodgson’s course, we shall see, emphasizes the first three elements (meaningful mechanics, nonlinearity, and challenges) much more strongly than the latter (evocative spaces and procedurality). This emphasis grows out of his own pedagogical style.

Quest Structures

While elements of self-selection and openness do exist within universities, they are typically seen at the institutional level, diminishing greatly within a program and becoming nearly non-existent inside individual courses. At the institutional level students may select between a wide array of majors, minors, certificates, and specialties to customize their
educational path. At the program level, choices are relatively restricted, to ensure continuity within the program, yet again options exist to allow students the ability to shape their studies. However, within individual courses a student's ability to exercise choice and self-selection is, at best, typically offered in the form of false nonlinearity, as discussed in Chapter 2. Hodgson reintroduces the elements of openness and self-selection into his course through the design of multiple quest lines.

Reflecting on *WoW*, Hodgson observes how that game “lets you do what you want, when you want... for the most part, players can play at their own pace, and they can move how they see fit.” Recognizing the power such choices give to player-learners, Hodgson’s first major change to the typical classroom structure was to replicate the freedom of

*Illustration 12: Questing in World of Warcraft*
movement *World of Warcraft* grants players by creating more assignments than his students could possibly complete.

Hodgson's quest structure for the course contains roughly fourteen major course projects. Incorporating this amount of possible work ensures each quest line truly represents a substantial, meaningful set of options for students to choose from and not a false choice. The principle of false choices, as Laramée defines it, refers to an option that seems to allow a player to select from a number of different choices or paths, only to have all options provide an identical experience. Hodgson avoids this characteristic tactic of false nonlinearity by incorporating a number of assignment types and composition structures, allowing students to customize their educational experience while still achieving both institutional and course objectives. The class incorporates a total of seven possible quest lines, with the following focuses:

- Image, which emphasizes visual rhetoric and the construction of persuasive images;
- Video, which encourages students to learn the basics of video-editing/authoring and develop complex multimodal projects;
- Presentation, which uses the classical concept of oration to help students develop a greater engagement with course materials;
- Character, which asks students to think creatively about gaming narratives and their own game narrative, as well as focusing on the role of identity in digital spaces;
- Research, which follows the most traditional assignment sequence and requires students to produce a standard academic written text;
• Achievement, which tracks students' progress in-game in the *World of Warcraft*;

• Assigned Work, which includes day-to-day in class activities and homework assignments.

The first five options present students with focused, scaffolded assignments that encourage them to approach the broad topics of rhetoric, digital media, and gaming through particular lenses. They are the frames through which students will complete their major course projects, and course projects vary drastically based on which path students choose. The final two quest lines, the Achievement and Assigned Work categories, provide structure for the required course assignments. Though it is essential for student-players to make clear and meaningful choices about their own learning in a gamified environment, designing these quest lines as required helps to ensure a base level of shared knowledge and understanding that will both ensure productive in-class discussion and help students develop required basic skills needed to tackle the more advanced challenges presented through each of the optional quest lines. The Achievement line requires that students complete a basic level of *World of Warcraft* activities, while the Assigned Work line asks them to demonstrate a basic engagement with course readings and materials (shown through critical response papers and class daily assignments). While these two lines represent significantly more structured elements of the course design, Hodgson has nonetheless included elements of choice within these two lines. Both the Assigned Work and Achievement quest lines allow students have substantially more autonomy to decide how they will progress within them, as compared to the more rigid structure of the optional quest lines.
As the distinction between required and optional quest lines already shows, an essential element of designing game-like spaces is balancing when to provide options to player learners and when to provide limitations that force them to develop new skills and strategies. In *World of Warcraft* there is significant autonomy given to players from a very early level, but the game also restricts players from access to certain areas, abilities, or quests until players have reached a high enough level. In doing so the play experience is structured in such a way that, in theory at least, players will constantly develop skills and abilities that will prepare them to encounter new situations and environments. Hodgson has drawn inspiration from WoW’s questing strategy, which allows players a fair amount of agency in their gameplay, while at the same time utilizing gating techniques to prevent players from attempting advanced quests before they have completed basic quests. Each of the five optional quest lines (Image, Video, Presentation, Character, and Research) has a four part structure. The first two quests are open to any player-learner and described thoroughly in the course syllabus, though they must be done in the sequential order—the first one must be completed before the second can be attempted. First quests are generally introductory and fairly low-stakes assignments, while second quests often require more nuanced engagement with course materials. For example, in the Image quest line the first quest asks students to make a trading card for their *World of Warcraft* character. This quest is fairly simple and designed to be relatively easy for all students in the course to complete. In addition to encouraging students to become more invested with their new digital avatar, the quest introduces students to several basics of image-editing, skills that will be important in later
quests. Making the trading card will require students to develop a basic familiarity with image manipulation software, a necessary skill for success with other tasks in this quest line.

SAMPLE TRADING CARD:

*Illustration 13: Sample Image Quest #1 Trading Card*

The second quest in the Image line asks students to make a visual argument using terms drawn from a course text, Richard Lanham's *A Handlist of Rhetorical Terms*, and then to write a process statement reflecting on both the design choices they made and on how the rhetorical term they’ve chosen works in their image. Thus, the second quest builds on the
basic image manipulation skills developed in the first quest and extends them by asking students to critically apply course concepts in a visual argument.

The third and fourth quest for each line, quests which require students to display greater mastery of content and engagement with course principles, are not revealed to students until they have completed the first two quests in that particular line. In the Character quest line the third quest is revealed to students after they have already both written a background for their World of Warcraft character (quest #1) and written a learning-based quest line for other students in the class (quest #2). This quest requires students, in groups of 3-5, to make a four to eight minute machinima (games-based video) that offers meta-
commentary on an issue related to gamers or gaming. The project consists of multiple parts, including a proposal, distribution plan, and reflection (in addition, of course, to the video itself). It requires students to carefully and thoroughly reflect and react to class material, composing a response from within the game space. Similarly, the fourth quest in the Research quest line requires students to take a research paper, which they have developed in stages throughout the entire quest line, and develop it into a multimodal composition for a scholarly audience. Students are directed toward online scholarly journals, including Kairos, Xchanges, and The Journal of Undergraduate Multimedia Projects, for examples of multimodal scholarly writing.

**The Meaningful Mechanics of Questing Structures**

The quest structure system, which Hodgson has used to allow his pedagogical beliefs in student agency and empowerment to be realized within the assignment structure of the course, provides an excellent model of how the game design principles of meaningful mechanics, nonlinearity, and evocative spaces create a hybrid learning environment that embraces openness and participatory learning models. My framework begins with meaningful mechanics, which form the basis for many of the other elements of game design. Meaningful mechanics, in gamified spaces, refer to a player’s ability to take actions and make choices about their play. As discussed in Chapter 2, Cleveland’s three part criteria for the meaningfulness of a mechanic appropriately summarizes the concept:

- It must be clear that a choice can be made;
- The choice must have a direct influence on the outcome of events;
• The choice must not be trivially reversed.

Mechanics are rules that structure a play experience and define player actions; meaningful mechanics are those that provide players with important choices that shape their particular play experience. Students in Hodgson's Rhetoric and Serious Games course are faced with a number of important and meaningful choices throughout the semester. Of course, not all of these options are tied to the quest structure. For instance, the class requires students to begin a *World of Warcraft* character and level that character up during the semester. The type of character a player chooses to play (characters in the game are typically grouped into ranged damage-dealing, melee damage-dealing, healing, and tanking) will impact the groups a player can join or will be invited to, and may have a substantial impact on the player’s enjoyment of the game and willingness/eagerness to progress through that aspect of the course. Furthermore, many of the in-class activities from the Assigned Work quest line and a number of the major projects in other quest lines rely on students discussing or reflecting on their play experience. Thus, the incorporation of a student's *WoW* character into other elements of the course makes the character selection a meaningful mechanic.

While there are a number of less important mechanics that shape and guide students’ progress through the course, the questing element is the most substantial, and the clearest indication of how meaningful mechanics operate in gamified spaces. Since none of the five optional lines are required, the work each student does (while always focusing, of course, on rhetoric in digital media) may take drastically different forms than the work their peers do. Thus, the primary meaningful mechanic found in Hodgson's course is the optional nature of the quests and quest lines. In addition to simply introducing an element of choice in
assignments, Hodgson’s use of gated quests ensures that the decision of which quests to complete will have a direct result on events and that these choices cannot be trivially reversed. First quests in any line, as previously mentioned, are not meant to provide substantial engagement with course material, but they do provide students with an introduction to the specific types of skills they may develop in any given quest line. Second quests, however, generally require more significant commitment and engagement with material, requiring multiple steps and typically including some form of reflective activity. Given the time constraints inherent in a semester long course, and also because students are not given details on a quest #3 assignment until they have completed the first two quests in any line, decisions about which quests to complete in the course clearly meet the criteria for meaningful mechanics:

- It is made clear to player-learners the quest lines in the course present distinct options for how they will structure their learning.
- The final projects students must complete will vary substantially based on which initial quests they chose, as will the skills they acquire throughout the course.
- While students may complete as many quests as they like, practical time constraints mean that once students have made their choices about prior quests, it will be difficult for them to choose another path.

Hodgson has embedded within his gamified class structure the basics of player agency by borrowing design elements from WoW’s questing structure, a structure that mixes foundational and required quests with a number of options on how to customize the play
experience. On the level of a single action we can see how a student’s choice to pursue either the first quest in the Image or Video line is a meaningful decision, one with weight and consequences for the future. As the choices in Hodgson’s class collect, they begin to demonstrate the principle of nonlinearity.

**Tactics and Nonlinearity**

Nonlinearity, as I have previously discussed in Chapter 2, is essentially the collection of a series of choices made through meaningful mechanics into individualized and particular strategies and tactics. Having presented an explanation of how the questing structure presents player-learners with a series of meaningful choices about their educational experiences in his class, I move to analyze how these choices collect to become examples of nonlinearity within the classroom. My working definition of nonlinearity in connection to game design comprises two parts: multiple means and multiple solutions. Multiple means I have defined as the culmination of a series of meaningful mechanics, the ability of a player to develop her own tactics within a game system’s given a set of options. Multiple solutions refers to the principle that players should be given the opportunity to employ their tactics throughout a game and as a major component of game completion. In Hodgson’s class, the different quests available, as well as the different skills students will learn through completing each quest, allow player-learners to develop different tactics for the course.

In the course materials as presented to students, there is no clear and preferable path through the course. All optional quest lines contain valid and varied possibilities for students' final projects based on different aspects of rhetoric and digital media studies. The required lines of Achievement and Assigned Work present a number of options within them for how
to complete these particular requirements. Finally, while students might only be able, due to time constraints, to attempt one sequence's quest #3 and #4, they are free to mix and match among the quest #1 options in whatever manner they choose. However, having taught the class for several years, Hodgson has observed two primary tactics students tend to take as they make decisions about what content they will engage and which skills they will acquire. In many ways, this strategizing reflects the meta-game conversations many *WoW* players have about their skills, abilities, and gear: “most students learn they can pair quests together to maximize their efforts.” He highlights two specific strategies that students have developed, without his intervention or encouragement. These strategies demonstrate the level of nonlinearity the course structure provides, by encouraging each student to develop their own means and solutions for how to complete the game/course.

Given the grading structure and amount of work students must do for the course, most end up delving deeply into no more than two of the five optional quest lines. Devising a plan for how to select and complete course materials is the primary demonstration of multiple means in Hodgson's gamified course. The first tactic students have developed synthesizes the Character quest line with the Image quest line. Character quest #1 asks students to research the lore of the fictional world of *WoW* and “translate that research into identity development and textual (fictional) writing” by requiring them to write a background for the *Warcraft* character they have started for the class. Completing this demands students think critically about what types of sources exist for digital media and pop culture objects and introduces them to the complexity of the fan-created secondary source material on the game. To compose a successful character background, students must synthesize the research they have
done on the various traditions and histories of the *World of Warcraft* universe and produce a piece of writing that demonstrates that synthesis. Image quest #1, which has been previously discussed in this chapter, asks students to make a character trading card. Each semester students tend to quickly realize that these two quests can be fairly easily combined, with the text produced for Character quest #1 becoming (with some revision) the information on back of their character trading card for Image quest #1. Completing these quests together also begins to build a set of complementary skills: the ability to identify a specific genre through research and then produce one's own artifact based on that genre. Hodgson notes a common path through the course is for students to complete Image quests #1-3 and Character quests #1-2 as their “A eligibility” requirements (a feature of the grading system that will be discussed at length later in this chapter). This path through the course emphasizes more nontraditional writing and the development of new media authoring skills, as students create fictional stories, quest lines, and visual arguments. While the later quests in each of these lines do not build off of each other as directly as these first two, the skills students acquire through each line do.

Interestingly, the other most common means or tactic students utilize in the course focuses on the two more traditional quest lines: the Presentation and Research lines. Just as with the Image and Character quests, students have found synergy between the Research quest line, which encourages students to “explore a particular issue or argument within the intersections of rhetoric and games in significant depth” and the Presentation quest line, which is designed to “help students not only learn about rhetoric and serious games, but to help them develop rhetorical abilities in presenting arguments, exploring issues, and/or
demonstrating what they have learned.” The first quest in the Presentation line asks students to “identify a current issue or 'hot topic' for games studies, the gaming industry, rhetoric and games... and to explore those implications.” Students research at least three sources that help to identify and contextualize the trend and give a 4-6 minute presentation to the class explaining both what the trend is and why it matters. The first quest for the Research line asks students to write a proposal for a researched academic argument about an issue related to rhetoric and games. Hodgson gives detailed requirements for this proposal, including that students identify ten possible scholarly sources that will contribute to the argument. With a bit of careful planning students are able to use the overlap between these two foci to develop a focused research agenda, building from the presentation on an issue to a paper proposal about the same issue. In this tactic, quest #1 in the Presentation line becomes the planning, exploring, and pre-writing that will help students complete quest #1 in the Research line. While they still compose in different formats, students that combine quest #1-3 of one line with quest #1-2 of the other in this pairing both focus on the modes of delivery that will likely be most familiar to them, academic papers and classroom presentations, and develop a substantial base of knowledge about their particular topic.

An important aspect of Laramée's definition of nonlinearity includes three examples of false nonlinearity: the choice of doom, the false choice, and the run-around. As noted in Chapter 2, often teachers' attempts to build choice and agency into classroom spaces end up falling into one of these three categories. Hodgson avoids these elements of false nonlinearity in his gamified course by providing a substantial number of meaningful and legitimate choices. The choices presented to students within the quest lines are not choices of doom, in
other words, because each one can lead to successful completion of the course. Furthermore, they are not false choices—students who choose to pair Image and Character quest lines will end up with a very different course experience and set of skills than students who choose to pair Research and Presentation quests, or any other possible pairing. There are certainly constraints on player-learner agency in the course; certain things must be completed in a particular order to progress, a minimum number of assignments must be completed to pass, and students must turn in quality projects in order to earn the correct percentage of attempted points; this is true of any game. Playing a game requires players to tacitly agree to some limitations on their agency and to meet certain levels of competency in order to progress and ultimately succeed. Hodgson's course models these constraints in his detailed quest structure.

**Building in Narrative Elements**

As the preceding analysis and Hodgson's own teaching philosophies underscore, his primary purpose in creating a gamified course space is to provide students with ample opportunity to modify, customize, or otherwise make meaningful decisions about their educational experiences within the classroom. Thus, the course design he has settled on focuses to a great extent on elements of meaningful mechanics and nonlinearity. The narrative potentials of the space he has designed are far less evident, and perhaps less important, given his objectives for the classroom. Despite the lack of focus on traditionally defined narratives, using Jenkins' concept of evocative space as a model reveals some elements of narrative play within the classroom. Jenkins presents game design as a constructive process that builds evocative spaces, environments “ripe with narrative possibilities” (672). While some gamified spaces explicitly state a narrative for players,
Hodgson’s gamified course structure does not contain anything so overt. However, within the quest structures he has presented to students there are opportunities for identity play.

By creating multiple quest lines with different emphasis and assignments, Hodgson encourages students to take on the role of expert within the classroom. Each quest line encourages students to engage in different forms of rhetorical analysis and textual production, creating play opportunities that also encourage critical awareness of these particular forms and their value in particular systems and communities. The quest structure demands that students determine their own assignment sequence, something that will almost certainly be completely foreign to college students. Because Hodgson is challenging students' notions of how classrooms are managed, expectations which undoubtably include a more teacher-centered model, the optional and required quest lines do the important work of guiding students through this re-imagined space and helping them to take on the role of active participant in their own learning. As they chose which of the multiple paths they will take through the coursework, students are actively constructing their own identities in the gamified space.

**Competitive Grading**

In order to allow students the opportunity to make meaningful decisions about their educational experience, as well as to support the quest system he has developed, Hodgson has also introduced a radically altered grading system in this course. This modified grading system helps illustrate to students the challenges and structure of the gamified class and introduces an element of procedurality into the course. Echoing *VGHS* and the use of a leader board as a grading technique, Hodgson has introduced a competitive grading system into his
course. Like many other courses, the class uses a points system, with each quest activity being given a greater or lesser point value based on the rigor of the assignment. However, unlike other courses that use a points system, Hodgson gives his students no top value for the maximum number of points in the course. Instead, the student with the maximum point total at the end of the class has his or her total become the 100% marker, and all other student grades are assessed against that total. At the beginning of each class period Hodgson writes the current maximum point total on the board—no further information, simply the current high score in the class. Providing this information to students on a regular basis allows them to situate their own progress and their work in course in relation to the constantly shifting target and without violating student privacy concerns. To ensure a basic engagement with course content and to protect against students attempting to ”game the system” by either prioritizing quantity over quality or by collectively agreeing to not turn in work, Hodgson provides minimum eligibility requirements for each letter grade. The requirements for ”A Eligibility” are listed below.

To be eligible for an A in the course, students must:

1. Complete and/or satisfy the requirements of 8 of the 9 quests in the Assigned Work quest line
2. Earn at least 250 course points from the Achievement quest line
3. Complete any quest #3 on any one of the optional quest lines:
   1. Image quest line
   2. Video quest line
3. Presentation quest line

4. Character quest line

5. Research quest line

4. Complete any of the following:

1. Complete any 3 additional optional quest lines quest #1s

2. Complete 1 additional optional quest line quest #2

3. Earn 900 course points from the Achievement quest line (this 900 includes the 200 from the previous requirement)

5. Total Points Earned must be above 90% of Total Points Attempted or of Highest Point Totals Earned in the course

The eligibility requirements structure the class in such a way that Hodgson is able to blend the values of openness and self-selection, seen through his use of meaningful mechanics and nonlinearity, with the university requirements that ensure students demonstrate a basic competency to earn credit in course and his own objectives for students related to subject-based knowledge and skills. For the purposes of creating eligibility requirements the two low-stakes assignment quest lines, the Achievement quest line (which refers to in-game activities) and the Assigned Work quest line (which refers to both in-game and in-class daily activities) are considered required. In addition to the low-stakes course content, the A eligibility requirements demand that students complete at least one major project (the quest #3 from any optional quest line) and all the scaffolding work that supports it (which students
must do to even see what the quest #3 assignment is). Students wishing to be A eligible must also either complete a number of introductory quests, thus gaining a basic level of knowledge about a variety of modes of expression, or choose to further specialize by completing the first and second quest in another quest line. Finally, by emphasizing that students should have earned at least 90% of the points they have attempted, he discourages students from repeatedly turning in substandard work in order to quickly advance in points. All passing grade requirements for the class contain a minimum number of points in the required lines and require students to complete one quest #3, ensuring they must attempt at least one

Illustration 15: Competitive grading example

brief examples:
Highest Point Total Earned by a Student in the Expert Grouping: Student J - 6500
6500 becomes our 100% value for Expert Group.
Example 1: Student X meets A eligibility requirements and earns point total of 6037
6037 / 6500 = 92.87% → 93% Final Grade: A-
Example 2: Student Y meets A eligibility requirements and earns point total of 5844
5744 / 6500 = 88.36 → 88% Final Grade: B+
Note: Even though student Y is "A eligible" his/her percentage grade is only a B
Example 3: Student Z only meets B eligibility requirements and earns point total of 6037
6037 / 6500 = 92.87% → 93% Final Grade: B+
Note: Even though student Z's percentage is in the A range, his/her eligibility is only at the B level.

major project in order to pass. While the assignments students must complete for the class, and thus the questing structure, constitute the actual challenges in the course, the competitive grading system does the important work of signaling to students what the challenges are and giving them feedback on their standing in relation to the ultimate challenge of the course.
Scaffolding Challenges

Challenges, considered by many game designers to be the most essential part of gaming and game design, are one of the places in which games and education most clearly overlap. Just as games use challenges to first encourage players to develop specific skills and then to test their abilities at those skills, education is filled with challenges designed to evaluate student learning and progression. The distinction, as Gee might argue, comes in how challenges are signaled and scaffolded for players in games differently than they are for students in many formal educational environments. As Gee notes, education frequently relies on a “skill-and-drill” model of presenting students with challenges—providing them first with content and then with a written test to assess their mastery of that content. While Rhetoric and Composition as a field has distanced itself from “skill-and-drill” models of presenting challenges, signaling to students precisely how the challenges they face in a classroom are scaffolded remains an issue. The competitive nature of the grading system and the relatively open-ended aspect of it (with students never knowing the final point total until after their work is completed) forces students to recognize coursework, both in this and other classes, as a clear set of challenges that they must overcome. As Shor has remarked, reflecting on his experiences incorporating elements of liberatory and critical pedagogy into his college writing classrooms, students can often be resistant to dramatic changes in classroom structure. And indeed, he suggests, who can blame them? By the time college students enter their classrooms they will have been socialized into very particular ways of engaging with educators, with course content, and within the physical space of the classroom. Dramatically altering the conditions they are familiar with destabilizes their understanding of
what constitutes “challenges” in a classroom space. Thus, Hodgson's grading system, while a significant part of the altered gamified structure, is also essential in helping to signal challenges to students.

The competitive grading scheme helps recast the standard process of assessment for students, encouraging them to become more reflective. Hodgson has stated the course doesn't seem to work without the competitive grading element. In the early years of teaching his gamified course, Hodgson gave students the option of following either a standard grading practice or participating in the competitive version. He reports that in those first classes, when the majority of students chose to be evaluated on standard grading practices, the engagement with course concepts and the willingness to experiment with the various quest lines was much lower than in later courses (when all students were required to participate in the competitive grading system). While there are numerous reasons why an activity or structure that succeeds in one class might fail in another, including a substantial number of reasons beyond the control of the instructor, I would posit that by allowing students to follow a standard grading system, the game design principle of challenges became much less apparent to them. Indeed, as Gee notes, grades in all classes represent challenges, but often those challenges are not signaled in a way that causes students to identify them as such.

Other Course Elements

The changes to the assignment structure and grading system are certainly the most drastic elements of gamification and game design that Hodgson has incorporated into his Rhetoric and Serious Games course. However, there are a number of other, less drastic, ways that he has incorporated the basic principles of meaningful mechanics, nonlinearity, and the
rest, into his class. This section discusses these features, which Hodgson explains as essential to his gamified course experience. In particular, Hodgson has built in collaboration and negotiation as essential elements of the course.

**Group Questing: Collaborative Coursework**

Hodgson explains the collaboration component of his class by reflecting on his personal experience as a *World of Warcraft* player: “as I increased in levels as a player I realized there's so much in *WoW* that's overtly collaborative.” Indeed, while *WoW* has in recent years increased the options for solo players at max level in the game, the majority of the end game content (game play only available to those who have achieved the maximum level in the game) remains group based: players compete in small or large player vs player groups and/or in small or large player vs environment situations. Drawing inspiration from the priority *WoW* gives to group activities, Hodgson has encouraged students to participate in collaborative opportunities through his gamified course in two key ways. The first and most overt way is that three out of the five optional quest lines require students to work in a group for their major project. Quest #3 in the Image line requires students to work in groups of 3-4 to collaboratively create a series of posters, and quest #3 in the Video line requires students in groups to create a machinima, as does quest #3 in the Character line (mentioned above). Of the two quest lines that do not require collaboration in the third quest, Presentation and Research, the Presentation line requires collaboration in quest #2: students must lead class discussion either with a partner or in a group of three. Given that A, B, C, and D eligibility requirements *all* require students to complete at least one quest #3 on an optional quest line, Hodgson's structure ensures most students will work collaboratively at least once on a major
course project. The only quest line that allows students to avoid collaborative work on a major project is the Research quest line, which requires students to write a traditional academic argument of between 3,000 and 4,000 words.

While the various quest #3 assignments ensure students will be collaborating on major projects, Hodgson also builds in mechanisms for more low-stakes collaboration. The primary form of low-stakes collaboration in the course is the option for peer review. Students are never required to peer review for one another, but they are provided with an extensive peer review guide and given the opportunity to peer review all projects in the optional quest lines. Both completing and receiving reviews is, of course, limited. Hodgson provides a cap on how many points for peer review students can earn per quest line and also mandates students may only have each project reviewed for credit twice. Even with these limitations however, there remain a substantial number of points available to students for earn from giving quality, thoughtful feedback to each other on their projects and from taking that feedback into consideration when moving projects toward their final forms. As with the major project collaborations, it is entirely possible that, if she chose to, a student could complete the entire course receiving an A and never completing a peer review or having another student review her work. The choice of whether or not to peer review is an option for students that Hodgson strongly encourages but never forces. Interestingly, Hodgson notes, similar to the two quest paths that a number of his students have independently identified, the structure of peer review in this course has led to a number of students developing something of a tactic. He explains each semester it seems a small group of students “quickly form into little peer review enclaves and take advantage of this option.” These small and self-chosen
groups, typically no more than six to eight students, attempt to peer review everything possible. As the principles of meaningful mechanics and nonlinearity might suggest, certain students have looked at the structure of the course and clearly identified that (for whatever reasons) peer review will not be an important art of their overcoming the ultimate challenge of the course and others seem to have found it to be a crucial tactic. Thus, while some students chose not to take advantage of the peer reviewing option, others attempt to go about it systematically and enthusiastically.

Finally, Hodgson has worked to build overlap between some of the quest lines that will encourage collaboration on low-stakes assignments beyond the optional peer review. For example, as a part of the required Assigned-Work Quest Line, one quest requires that students complete a *World of Warcraft* quest designed by another student. This quest is, of course, optional. Students need only complete 8 of the 9 Assigned Work quests to be A eligible, and there are certainly reasons why students may opt not to review another's quest. If they should choose to complete this quest, they must draw on a student completing another quest line, as the assignment to develop a learning-based quest is quest #2 in the Character quest line. As part of that quest, student designers must get two players to test out their quest and provide feedback. For the student designer completing the Character quest #2, collaborating with students is also optional. The quest merely requires feedback from two other players, *not* two other students. Should a student not wish to collaborate with others in the course (or run out of time to have other students complete the review, or have one of any number of other reasons for not drawing on in-class collaboration), they may still complete their own quest using the assistance of other players within the *World of Warcraft*. Just as
with the optional peer review and quest #3 elements, including the assignment in the Assigned Work quest line for students to seek out others, working on quest #2 in the Character quest line does not require students to collaborate to be A eligible, but it does make it such that students would have to actively design their learning experience to avoid collaboration in class.

**Play within the system: Negotiating course policies**

The last important structural change Hodgson incorporates into his gamified class is negotiation. Given that a crucial part of the course is for students to learn to recognize and critique institutional structures as rule-based systems, Hodgson gives his students the opportunity to negotiate certain class policies based on how their rule-based system (the classroom) does or does not reflect institutional values and goals. He notes two important examples of when students have negotiated an important change to the course mid-semester. The first refers to how academic honesty and dishonesty, as concepts, translate into game space. Because an essential portion of the course takes place within the game world of *World of Warcraft*, Hodgson has traditionally required students to follow the standards of the game's terms of use agreement. This requirement then becomes an opening for the class to discuss the concept of academic dishonesty and its place both in this particular class and in the university as a whole. This conversation also scaffolds Hodgson's ultimate goal, encouraging students to look at the institutional structures around them as rule-based systems (like games) and to consider the procedural elements of those systems. As part of this conversation, students typically decide following the user agreement in *WoW* does equate to academic honesty (and thus violating it in any way becomes academic misconduct);
however, in one iteration of this course that understanding was challenged. The student raising the challenge pointed to the common practice of buying in-game gold for real world money, something which is against the user agreement in *World of Warcraft* but does not, he argued, violate university codes of conduct. Buying gold gives a player greater access to high quality gear within the game (armor and weapons that can be bought from an in-game auction house) and, though not conferring on the player any additional skill or ability, will nonetheless make it easier to progress through game content. Given the in-game focus on developing one's skills and earning one's gear, the game's user agreement for *World of Warcraft* strictly prohibits either buying or selling gold. Players caught violating this agreement are banned from the game, often permanently. Thus, from the perspective of game designers and players of *World of Warcraft*, using outside resources to get ahead is a punishable offense.

The protesting student, recognizing the purpose this prohibition serves in the game world, argued that in colleges we have a slightly different set of standards. While one would certainly be guilty of academic dishonesty for buying a paper or project, an act which presents someone else's skills as one's own, this is not a direct equivalent for gold buying, which simply gives one additional tools to demonstrate his or her skills. Instead, the student argued, buying gold is more equivalent to having a nice computer in a media production class, having access to expensive design programs other students may not, or even hiring a tutor to help one with a math class. In these examples, as with gold buying, the student *is* using her money to gain tools that will help her succeed in the course, but she *is not* using it to represent another's skills as her own. This discussion lead to a detailed conversation amongst the students about their university's academic honor code, the values that code
enshrined, and how *World of Warcraft's* user agreement did or did not match those same values. Interestingly, the decision this particular class came to was that gold buying would not represent academic dishonesty, which allows students to use their money to purchase tools that will help them succeed, but may still carry grade-related consequences for the class. Should a student be caught buying gold and thus have her character banned, she may find herself unable to complete the minimum number of points on the Achievement quest line. As this example demonstrates, Hodgson's gamified course presents students with opportunities to negotiate specific course policies, with the hopes that doing so will encourage them to become more critical and reflective about university policies as a whole.

In addition to negotiating course policies, Hodgson notes he once had a student negotiate for the addition of an entire optional quest line. The change ultimately added almost 1,000 additional points to the maximum attemptable points in the class (raising it from just over 6,000 attemptable points to roughly 7,000 possible points). The student, who had been an avid *WoW* player prior to the class, noted there were almost no points in the class in which the competitive nature of gaming was critically reflected on. Doing so clearly meets several of Hodgson's objectives, which include asking students to “navigate, identify, and critically engage norms, rules, guides for a social media gaming environment” and “to extend theories of play to include rhetorical and cultural considerations.” Thus, in consultation with Hodgson, the student developed an entire quest series meant to critically engage with the concept of competition in gaming and to reflect on complex role competition plays in rule-based systems. The quest line developed by the student required a mix of play experiences, oral presentations, and research and experience based writing formats. Once
Hodgson and the student reviewed the quest line and ensured it both extended specific class objectives and required roughly the same rigor as the other optional quest lines in terms of final projects, it was released to the class as one of their options in the course. The experimental student-designed quest line was ultimately completed not only by the student-designer himself, but also by seven other students in the class. Hodgson reports that he is in the process of revising the prompts so that he might make the line available for continued use in future versions of the class.

In games like *World of Warcraft*, redesigning the game and developing new content are a constant process. Many of these redesigns are drawn directly from the player community, as players employ user-created mods to customize their gaming experience. The system of negotiation Hodgson has built in allows his player-learners the opportunity to customize their game and interpret certain rules as they see fit. Of course, as with any game their opportunities to negotiate are not unlimited, and certain rules are non-negotiable. Hodgson notes many of these are department or university policies that he has no control over: the attendance policy, the time and location of the class, using a plus/minus scale for grades. In addition to these university policies, Hodgson notes a number of his own policies are also not up for debate. The game the class will play is set, and while students have tried to argue for other games in the past, he explains the entire gamified space is based on the structure of *World of Warcraft*. He fears using another game as their shared game text (possibly the only contemporary game some of his students will play) might make it more difficult for students to connect what they are learning about games with other spaces, creating a transfer issue. Additionally, the basic assignment structure and grading policy are
also not available for negotiation. Hodgson notes while he has made some significant changes to point values between semesters based on students' comments about the weight and depth of each assignment, these changes never happen during the semester. As in traditional classes, the point values of all existing assignments are set and, though additional assignments may be proposed, those values will not be changed. Outside of this basic structure, however, students are free to introduce new ideas and issues, and to help shape the course in meaningful ways. In addition to adding quest lines, Hodgson reports students control a certain number of class sessions toward the end of the semester, in which they can either request additional readings on a specific topic of interest or address particular games based on their relation to key rhetorical concepts developed earlier in the course. In allowing students these freedoms to shape either game or class experience, Hodgson underscores their abilities as active agents and encourage them to reflect critically on their learning experiences both inside and outside of his class.

**Critiquing systems: Procedurality in action**

Through the construction of questing structures and a competitive grading system, Hodgson has incorporated the game design principles of meaningful mechanics, nonlinearity, challenges and evocative spaces into his Rhetoric and Serious Games course. Discussing procedurality in relation to a game system depends on first separately analyzing both the rule system (as seen through challenges, nonlinearity, and meaningful mechanics) and the elements of evocative spaces. From looking at the connection between the two, we can see how procedurality has been employed in this class space to guide students toward particular modes of analysis and actions. While procedurality in games is most often discussed as an
element of persuasion, a better definition for this purpose, drawing on Juul, Sicart, and Bogost, will be to consider how a particular game system (through a use of rules and design elements) leads players toward certain actions. Games can, of course, limit player actions so dramatically that players must take only the actions designers wish them to; however, well designed games will use a variety of rules and mechanics to suggest players make certain decisions, leading them more indirectly to conclusions. In a sense, the procedurality of Hodgson's course is itself an argument for procedurality as a mode of critical assessment. As demonstrated particularly by his class's discussion of buying gold and academic dishonesty, using his course as a model of a complex rule-based system helps lead students into a more critical engagement with other rule-based systems they encounter on a daily basis. In Hodgson's course his students are given his list of course goals and objectives. In his syllabus he includes a section on teaching methods that clearly state his pedagogical philosophies and values. While “playing” the class, students can see how the values, goals, and philosophies that Hodgson declares in his syllabus are enacted through the structure, rules, and mechanics of the game space.

Game (re)Design

Just as most instructors do in traditional classroom spaces, Hodgson is constantly engaged in the reflective process of reviewing and revising his course design. Throughout his five year tenure teaching this course he has tweaked a number of different mechanics, in pursuit of a more effective and engaging course design. Most of the changes Hodgson notes focus on becoming more confident at what he calls an experimental design. This revision process has included moving competitive grading process from optional to making it the
standard for the course and adding “checkpoints” (a common concept used in games noting intermediary goals and accomplishments) to keep students on track throughout the duration of the course. These changes take place on a semester-by-semester basis, and for the most part reflect what many teachers considered to be effective course design. However, unlike many instructors in traditional spaces, a key element of Hodgson's gamified course involves providing students with the ability to define their own rules of play. This means Hodgson, in collaboration with his students, is also making changes to the course design as the semester is in progress.

A common question, asked often in relation to all of the models of games and education I have discussed, is how non-gamers will respond. Hodgson explains that while he often has a substantial number of students in his course that don't self-identify as gamers, the majority of these students do play games and are in fact are very familiar with gaming structures through casual games—things like cell phone games and social media games. In five years of teaching this particular course, he reports only once having a student with no experience playing electronic games. In this case, the student began the class anxious about her own abilities and concerned that other students would have an advantage based on their previous experiences, but eager to learn about the course topics. Similarly, she had no experience in the media production elements of the course. However, Hodgson explains that, like any other class, success in his gamified course is based entirely on student engagement with course material and demonstrations of learning: “people [who] have no knowledge of this stuff can actually do well in the class.” The student who came in with no experience in games or media production completed the course with the second highest point total, due to
the commitment and energy she brought to the course and to each of the projects she completed. In general, because gamified situations are spaces that blend the objectives and goals of a non-game environment with design principles and structures of a game system, players do not need any sort of familiarity with gaming systems to succeed in them. Certainly students in Hodgson's course who are avid gamers may anticipate design features or be more highly critical of the gamified space based on their previous experiences with game systems; however, because the learning goals, projects and assignments, and assessment are all drawn from the original non-game activity, this additional information provides students no more additional benefit than would be expected in a college level course.

While Hodgson is, as a whole, overwhelmingly positive about his experience teaching Rhetoric of Serious Games and the unique course design he has developed for it, in the years since beginning to teach this experimental design he has not proceeded to gamify any of his other classes. When asked about his plans for future courses, he responded he hasn't yet found a good model for other courses. World of Warcraft is, as many scholars have noted, at this point a world-wide phenomenon. It is the largest MMO game of any type, and while numbers have fluctuated throughout the years, its in-game world has been home to 12 million players all over the world. In addition to the game itself, there are numerous online sources related to Wow that provide additional lore about the world, guides on how to play, and statistical analysis on ideal play tactics; novels that dramatize and add depth to the fictional game world (nearly twenty so far); and numerous examples of fan engagement through machinima videos, comics, and crafts. It is the complexity of the game, as well as its force of cultural impact, that Hodgson feels makes his gamified course a success. By
reflecting game design through his course design, Hodgson is able to encourage students to look at institutions as rule-bound structures with their own elements of procedurality, restrictions, and affordances. The connection of game to course helps students develop a meta-awareness of these issues that, ideally, will be transferable outside the course experience.

**Conclusion**

In the opening of this chapter I noted several specific contextual forces that have shaped how Hodgson redesigned his Rhetoric of Serious Games course into a gamified environment. Of particular importance are Hodgson's own philosophies (tied closely to Critical Pedagogy and Active Learning) and the focus on helping students develop a critical understanding of procedural rhetoric that can be applied to environments both inside and outside of games. Particularly in the elements of nonlinearity and in the challenge of the competitive grading system, we see Hodgson's own desire to have students take charge of their learning emerge. The nonlinearity of the quest system allows each student to define which aspect of the course will be most suited to their own goals and needs. As previously mentioned, the course (as an upper division writing flagged course and a component of the interdisciplinary certificate program) attracts students from different majors, with different skills, abilities, and expectations. The multiple options for projects and research allow students to determine for themselves the best way to engage with course content, while still meeting the objectives Hodgson has set forth. Similarly, the structural aspect of scaffolded challenges presented through the competitive grading system both destabilizes students' sense of the classroom (which, naturally, has been developed through more traditional
classrooms) and also helps to structure and orient them within the new gamified space. Finally, by making evident for students the connections between rules and fictions (or, as is more defining in a classroom space, between grades and assignments), Hodgson helps broaden their growing understanding of procedural rhetoric. The structure of the class itself becomes an essential part of learning to identify, understand, and critique systems-based logics.

I have already mentioned the role that considering goals and objectives plays in designing gamified spaces, and indeed in any instructional design. While Hodgson's goal of encouraging students to take ownership of their own learning is one that can apply at a variety of different levels of education, the way this is implemented in the structure of this particular class seems best suited for fairly advanced students. Hodgson's course requires students to demonstrate a substantial amount of autonomy, both in a very practical sense and in relation to developing key skills. From a practical perspective, Hodgson's focus on encouraging player-learners to do “what they want, when they want” as players do in World of Warcraft puts a great deal of pressure on students to develop time and project management skills. Other classes with more direct systems of assigning and receiving course work take this pressure off of students by presenting them with a strict schedule to follow. This design element, which is a benefit in the more recreational setting of WoW, has caused some issues in the past with students desperately trying to complete work toward the end of the course. This issue is compounded by the number of group projects seen in the later quest lines. Students that do not manage their time well may find themselves in a difficult spot, needing a group to proceed but unable to find one. Hodgson has attempted to address this issue by
instituting a checkpoint system. He now requires students complete at least one quest #2 by the midpoint in the semester. This additional requirement imposes more structure on students, but also helps to ensure that they have at least seen the requirements for a potential quest #3 and prompts them to begin forming groups for major projects earlier in the semester.

The course structure also requires significant autonomy on the part of students in terms of the “making and doing” parts of Hodgson's focus on active learning. While Hodgson does provide some basic instruction to the various software programs students may use as part of their major projects, the variety offered in the quest lines results in a limited amount of class time devoted to discussion of any one type of project. Success in the course requires students to think more critically and reflectively about the abilities they already have and the skills and models of production they wish to learn in this class than they may be used to. Indeed, it may be this particular challenge to students that causes many of them to choose the most traditional assignment forms in the questing system, the Presentation and Research quest lines. As mentioned in the nonlinearity section, both of these quest lines present students with assignments that will likely seem familiar and comfortable to them.

Likewise, the relatively open course structure allows students to focus on elements of the course at a level that suits them, rather than to an amount that Hodgson determines. Of course, as the one who designs the system, Hodgson could easily add more regulation to various activities, but each level of regulation detracts from students' ability to develop tactics within the course. Hodgson identifies two elements that have, thus far, remained problematic. As mentioned above, a significant proportion of students in the course tend to gravitate toward the Research and Presentation quest lines. These assignments, oral
presentations and research papers, are not the modes of composition that Hodgson typically focuses on in his digital media and rhetoric courses. In fact, he explicitly mentions these assignments as two that were not in the original, pre-gamified version of the course. Thus, while Hodgson has hopes that students will engage more deeply with multimodal composing, as many as a third of the students that take his class elect to avoid these assignments. Similarly, though Hodgson might prefer more even levels of participation, the extent to which students engage with peer-reviewing in the course varies wildly. Hodgson himself recognizes the value of peer-review and has assigned a fair number of possible points to encourage students to participate in the activity. Despite this considerable number, many students simply avoid this element of the course and find other ways to keep their point totals high. Again, it would be possible for Hodgson to move the peer-reviewing activities into the Assigned Work quest line and force students to complete at least a minimum amount of reviewing, but doing so again takes away from students' ability to shape their path in the course.

The example of Justin Hodgson's Rhetoric of Serious Games class is included here not as an exemplar for gamification in all spaces and for all purposes, but rather as a demonstration of good game design principles, coupled with a clear focus on objectives and goals, with the potential to increase enjoyment, engagement, and, as Hodgson notes, transfer. In many ways Hodgson's course presents an ideal opportunity to gamify: the course objectives lend themselves to an in-depth consideration of procedurality, the course will likely attract students that will be amenable to gamification as a model, and Hodgson's own pre-existing pedagogies echo many of the key tenets of game design. None of this, however,
undercuts the drastic re-imagining of assignment structures and grading systems Hodgson has made the central element of his course. While Hodgson employs elements that have been linked to pointsification—in particular the use of points and levels—he nonetheless avoids pointsification through his focus on player-learner agency. Hodgson does not just re-name his assignments, changing “paper #1” to “quest #1” in his files, he completely re-structures his process for assigning classwork. This focus leads him to the design of meaningful mechanics, multiple means and solutions to problems, scaffolded and signaled challenges, and an evocative space that helps students recognize the role procedurality plays in institutional settings. In this example we can see how gamification has lead to greater engagement not only with games, but with critical rhetorical analysis as a whole.
Chapter 4: Gamification Outside the University

The preceding chapters have focused primarily on gamification as a strategy that can be effectively used within the confines of a formal system. In this chapter, I turn to consider the potentials for gamification as a possible tool for digital humanities and digital activism. I do so by presenting my own digital project, BattleShirts, as an example of gamification as scholarly production and tactical media activism. There are two important components to this example. First, designing BattleShirts has played an important role in my own exploration of the various theoretical issues that the game engages with and has helped me to refine my understanding of game mechanics and procedurality. In many ways, the designing of BattleShirts, in combination with my work on C’s the Day, became the motivation and inspiration to develop the principles discussed in Chapter 2. Thus, the BattleShirts project highlights the production of gamified spaces as critically engaged scholarship. In addition to my own experiences as learner and designer, the project has been deliberately constructed to be used as a tactical media-style performance, one that will engage participants and create a space for critical play. Just as the BattleShirts project itself blends material production and scholarly critique, this chapter blends discussions of theory and scholarship with narrative accounts of the design process and purpose.

However, prior to shifting my focus toward more nontraditional forms of both learning and scholarship, I briefly return to the binary I have presented thus far between informal and formal learning environments. A dichotomous characterization, which is presented throughout the literature on new/digital media and learning, is often used to underscore differences in structures and values between various new media learning spaces.
and traditional educational systems. While productive, this presentation necessarily oversimplifies both traditional educational institutions and informal spaces. I have already demonstrated how, within Rhetoric and Composition, the pedagogies presented as characteristic of traditional learning institutions have been thoroughly critiqued. Certainly classrooms and other spaces that might fall under the heading of traditional learning institutions generally have a stronger sense of goals, objectives, and hierarchies than more informal spaces. As the process movement and subsequent developments in Rhetoric and Composition demonstrate, attempts to bring elements of informal spaces into traditional institutions have been occurring for quite some time, though they tend to become more rigid and formalized within their overarching structures. Similarly, informal learning environments, while generally more open than their formal counterparts, are not a monolithic group and display great variety in the extent to which they demonstrate the principles of self-direction, openness, and participatory learning.

**Reconsidering Informality**

Reconsidering some of the examples of informal environments discussed in the first chapter illustrates the wide range of within this categorization. Informal spaces vary dramatically in terms of their goals and objectives, and thus in the structure of their learning models. In Chapter 1 I presented three examples of informal learning environments that have been used to demonstrate the various characteristics these spaces often embody. Now, I return briefly to *The Daily Prophet, C's the Day*, and *Counter-Strike* to demonstrate the range present in them. The most formal, yet still informal, model used to identify characteristics of informal learning is *The Daily Prophet*, Jenkins' example of participatory learning outside of
a classroom context. *The Daily Prophet* is a fictional online newspaper run primarily by middle-school aged children. Jenkins uses the site to demonstrate principles of participatory learning, by looking at the structure for peer review, and to display how effective self-chosen learning environments can be. *The Daily Prophet* can certainly be considered an informal learning environment because it operates as an extracurricular activity outside any officially sanctioned learning institution or program. However, while it is separate from formal education, *The Daily Prophet* has a fairly strict set of goals and objectives, and procedures for achieving those goals and objectives. The rules and frameworks for when and how to respond to others' writing are all community-written, and certainly the community works hard to assist newcomers and support all members (a point Jenkins highlights as part of participatory learning). Maintaining a fairly rigid system in terms of reviewing and revising potential articles for publication in the newspaper is a necessary part of ensuring the site puts out a quality product in a timely manner. I highlight these levels of formality and rigidity seen in the practices of *The Daily Prophet* not to reduce its power as an example of informality, but rather to demonstrate how even typically informal environments can be highly structured and less open than a strict informal/formal dichotomy might suggest.

If *The Daily Prophet* might be seen as the most formal of the informal learning environments presented here, given the more structured nature of participation and more clearly definable goals and objectives, C's *The Day* presents something of a middle case. While the game does have a specific goal for players, assisting them in navigating the conference space and providing networking and professionalization opportunities, this goal is more esoteric and less measurable than *The Daily Prophet*'s objective to put out a quality
newspaper on a regular basis. Because the goal for *C's the Day* is generally less specific and more dependent on individual experience, the ways that members can engage with the system are more open for *C's* players than they are for *Prophet* contributors. The game system, not having the same mandatory final product as part of its objective, is able to offer players a wider array of experiences and levels of engagement. The large number of quests the game provides, and the different actions these quests ask players to take, allows each individual player to customize her game experience to her own needs and desires. Furthermore, though the game does have an official conclusion, players are free to begin and end their play as they see fit. The objective of the game is to introduce a sense of playful productiveness and enrich a conference goer's experience, goals which naturally lead to a more open-ended system.

Finally, Josh Gardiner's experience as a *Counter-Strike* player, which Selfe and Mareck use to demonstrate how games can function as important extracurricular learning tools, presents the most informal learning environment of any I have discussed thus far. While players may certainly learn a number of different things from their experience with both the game system and the community that surrounds it, none of this is part of the intent or primary function of the game. Because *Counter-Strike*, an online first-person shooter game, is designed strictly for entertainment purposes, any learning that emerges from the game will be highly context-dependent and individual. Selfe and Mareck note several different ways in which Gardiner's experiences have contributed to his literacy development, focusing primarily on his exposure to foreign languages and his technical ability with computers. The game system makes these experiences possible by providing a general frame in which they might occur, but the particularities of Gardiner's own experience are highly
unique and in no way represent the “typical” experience of playing Counter-Strike. Furthermore, Gardiner's connection with people across national boundaries, which led to his greater appreciation of and interest in foreign languages, is not so much a result of the specific game system but a factor of any online multiplayer game. Similarly, the technical proficiency he gained from keeping his computer system upgraded to play Counter-Strike is not a feature particular to this game but a general consequence of playing any computer game. While Counter-Strike provides a space where various types of learning may take place, the game itself presents no goals or objectives directly related to learning, making it the most informal learning environment.

Using a focus on objectives and goals, or, perhaps more accurately a division between intrinsic and extrinsic objectives and goals, we can see how informal learning environments are substantially more varied in their methods and priorities than the simple split between informal and traditional learning environments might initially suggest. The distinction between these two forms of education continues to be important, as traditional learning environments are also charged with assessing and certifying learning in ways that informal environments are not.

Gamification, Critical Play, and Tactical Media Activism

However, gamification outside the classroom is an equally powerful tool, and one that can be a crucial part of constructing bridges between institutions and publics. Currently most non-academic uses of gamification focus on marketing, though McGonigal's Reality is Broken provides a number of examples of gamification used productively in non-academic settings that do not include marketing. These applications tend more toward the problematic
practice of pointsification, adopting the vocabulary of games but not the structure. In this chapter, I turn to consider more critically engaged uses of gamification as a possible means of connecting with a number of digital activism movements. Gamification uses design elements to create engaging experiences, while keeping those experiences solidly grounded in a real world context, making it an ideal tool for digital activism.

As a demonstration of the possibilities gamification holds for learning in nontraditional or informal settings, I present a wearable technology project of my own design, BattleShirts. This project uses a variety of sensors and feedback mechanisms to add a competitive element to mundane activities. Doing so incorporates elements of productive and critical play in an informal environment, potentially transforming any space into an exploratory learning environment. The BattleShirts project is in many ways the most esoteric and experimental demonstration example of gamification presented here, and uses game design principles as a provocation, rather than to convey a particular argument or achieve a particular learning objective. The project uses gamification's ability to create hybrid spaces, environments that employ game design principles to restructure individual experiences, while remaining firmly rooted in real world contexts, as a tool to engage with elements of posthumanism and post-modernism. In BattleShirts we see a reflection of Flanagan's definition of critical play, and also elements of tactical media activism.

Critical Play

The use of games for activist purposes has grown increasingly popular as various technological advances make it increasingly possible for those outside the commercial games industry to create and widely distribute games. Mary Flanagan, whose Critical Play: Radical
Game Design explores both the creation of activist-inspired games and transgressive play practices in more traditional games, identifies a number of headings under which these games are often discussed: serious games (here used to be distinct from the learning games movement of the same name), games for change, social impact games, and persuasive games. For simplicity's sake, and to avoid the various connotations associated with each particular movement, I collect these games under the heading of activist gaming. While each title is favored by a different group or discipline, this collection of games often suffers from the same issues that plague traditional learning games. Flanagan highlights design issues as the challenge to “retain all the elements that make a game enjoyable while effectively communicating [the game's] message” (249). Flanagan's identification of the challenge in designing activist-inspired games clearly recalls the many critiques of educational games, most notably Klopfer, Osterweil, and Salen's observation that many learning games either sacrifice content for game design or vice versa.

Despite the challenges of creating well designed activist games, Flanagan argues games can be ideal sites for activist interventions. Defining subversion as “an action, plan, or activity intended to undermine an institution, event, or object,” Flanagan explains that as rule-bound systems inextricably bound to play, games are “particularly ripe for subversive practices” (10-11). Zimmerman's complication of the term play, presented in Chapter 1, helps to demonstrate how the play element of games lends them to subversive or activist purposes. Play, Zimmerman argues, is “the free space of movement within a more rigid structure” (159). Through play we learn to identify boundaries and borders, but we can also use play to
transgress those boundaries and borders. It is this subversive potential in play that helps activist gaming practices connect the broader movement of tactical media activism.

**Tactical Media Activism**

Tactical media is a broad category, more focused on the procedural aspect of how a particular media is used than on any individual medium itself. Rita Raley offers the following broad definition: “the intervention and disruption of a dominant semiotic regime, the temporary creation of a situation in which signs, messages, and narratives are set into play and critical thinking becomes possible” (6). Raley emphasizes the ephemeral nature of tactical media, which uses the tools at hand to create a particular experience. While Raley's definition centers more on the function of tactical media and its ability to create events, David Garcia & Geert Lovink's “ABCs of Tactical Media” offers a definition that incorporates more contextual elements: “tactical media are what happens when the cheap 'do it yourself' media, made possible by the revolution in consumer electronics, and expanded forms of distribution (from public access cable to the internet) are exploited by groups and individuals who feel aggrieved by or excluded from the wider culture.” Garcia and Lovink emphasize the connection to ubiquitous computing and other advances in media that have made it more possible than ever before for consumers to participate and shape media messages.

In these definitions we can clearly see how the practice of gamification fits smoothly into a tactical media framework. Raley's definition emphasizes that tactical media activism involves the creation of a temporary event or performance that allows designers to use various tools to create an experience that shapes participant's perspectives on a particular
issue. Gamification works in a similar manner, using game design principles to alter a player's experience of real world environments and situations. If, as Zimmerman argues, play can be defined as movement within systems, then an essential connection from gamification to tactical media activism is the possibility gamification presents for exploring the boundaries and limits of particular systems. Already we see some suggestion of this possibility through Justin Hodgson's gamified classroom space. His students, through the gamified environment, learn to recognize not only their class but the entire university as a system can be examined, critiqued, and understood through its rules and procedures.

In *Tactical Media*, which she notes is meant to be more of an overview of tactical media's potentials rather than any sort of encyclopedic or historic text, Raley does explore how games can function as tactical media. However, Raley's classification of activist games (which, interestingly, adds games with an agenda, games with a conscience, political games, and consequential games to our already lengthy list of possible titles) draws on Bogost's articulation of procedural rhetoric to explore how game mechanics make arguments. Raley draws on some of the most iconic activist games, including *September 12th* and *Dead-in-Iraq*, to demonstrate gaming’s potential for anti-war rhetoric. While I agree that the increasing ability for average players to create and distribute short persuasive games has created a unique opportunity for the creation of activist games, I argue that gamification shares more in common with performance-based demonstrations of tactical media. While games like *September 12th* are able to create models of situations many audiences cannot directly experience (in this case a small unnamed village somewhere in the Middle East), gamification provides new meaning and context for a player's direct experiences. The
BattleShirts project demonstrates this by using game mechanics to encourage wearers to consider the boundaries of technologies and bodies in any environment.

**BattleShirts**

**Design Journal**

As with many projects, the idea for the BattleShirts came as sudden flash of inspiration, an unexpected moment when several seemingly disparate aspects of my work collided. My research interests were gradually moving from a focus on the commercially released games that I had grown up with and played in my spare time, to a new interest in the emerging phenomena of Augmented Reality Games (ARGs) and gamified spaces and events; games that, according to McGonigal, “you play to get more out of your real life, as opposed to games you play to escape it” (125). In addition to my growing interest in these nontraditional forms of gaming, I also began learning more about the maker movement and experimenting with physical computing through a variety of projects constructed with the Arduino microprocessor. Despite only possessing skills I would even hesitate to describe as novice level in coding, I quickly found myself able to produce interesting interactive objects using the Arduino microprocessor, a device that was designed for the particular purpose of making hardware more accessible to nonspecialist markets. Finally, and most importantly for the ultimate design of the shirts, I was co-chair of a major national conference (Computers and Writing) and found myself focusing more intently than ever before on the unique space an academic conference creates and the variety of ways participants interact (or do not interact) with that space. As an increasing amount of my time became focused on considering how conference attendees would participate in the spaces we designed, I began to consider
academic conferences as special temporary environments, spaces that altered the normal experience of an environment, privileging certain types of communication and often eliding others.

Out of the connection between these three very separate parts of my work as an academic, I began to wonder if there were some way that I could, through the use of game design principles and wearable technologies, encourage the conference participants themselves to reflect on their own experiences of both space and technology. Thus, the original design sketches focused primarily on creating a shirt that could be used as a sort of interactive performance at the Computers and Writing conference. As the project has developed, however, I have increasingly considered how the shirts have the potential to transform any environment into an opportunity for critical play. Like other examples of tactical media activism, discussed below, the BattleShirts are used to create performance spaces that invite watchers and observers to participate. Thus, though the shirts are designed with the affordances and limitations of an academic conference as the primary frame of reference, they are also easily modified to be suited to a number of other environments.

**Functionality**

The central purpose of the BattleShirts project is to encourage player-wearer to participate in conversations about bodies, technologies, and interfaces, by creating an experience that will allow them to explore their own understandings of these concepts. In this section I will explain, in limited detail, the design of the BattleShirts and how they enact some of the game design principles defined in Chapter 2. Because the focus for this section is
to provide a basic overview rather than a point by point construction guide, details on software and hardware will be kept at a minimum.

A BattleShirt is a T-shirt containing a number of sensors that monitor how the wearer is interacting with the physical world around him or her. As a player moves through the world, the shirt collects various bits of data, things like light and temperature readings, and displays that information to the wearer in the form of lights, buzzers, and other elements of sensory feedback. The sensors sewn into the shirt are selected for how they quantify a player's engagement with the world around them. Light sensors identify general conditions, but may also signal that the wearer is facing away from or toward a light source. Temperature sensors indicate whether a player is being more or less active, inside or outside, facing the sun or away from the sun. Motion sensors literally measure how active a participant is in a setting, but may have a figurative meaning as well. A player's only option for interacting or influencing the way a potential battle will play out is to recognize and change in some quantifiable way her mode of interacting with the world. The shirts collect all data to generate an overall activity score. This score is kept hidden from players, and is used to determine the player's strength for battle.

In addition to light, temperature, and motion sensors, the shirts contain a small wireless module that senses when another shirt is near and transmits data to nearby shirts. When a BattleShirt senses the presence of another, using a sensor to determine proximity of other shirts, both shirts initiate a battle sequence. The activity scores for each shirt are broadcast, and the shirts compare scores to determine a winner. Speakers on the winner's shirt play a victory fanfare, while speakers on the losing player's shirts will play a loss theme.
Shirts will then delay thirty seconds before seeking another battle. During this time the shirts continue to collect data, and players may attempt to change the way they interact with their environment in order to win their next battle.

The game design elements of the BattleShirts project, while simplistic when compared to the other gamified spaces mentioned here (C's the Day and Justin Hodgson's Rhetoric and Serious Games course), are in part based on classic role-playing games (RPGs). In many RPGs, including both video games such as the Elder Scrolls series and non-digital games such as Dungeons and Dragons, the abilities and power level of a player's character are recorded according to “stats.” These stats identify how good a character is at a certain
ability or how often she has used that ability. Sample stats include strength, charisma, and intelligence. A player who most often solved a problem or challenge through melee combat would, throughout the course of a game, improve her strength stat, whereas one who used her charm and wit to advance would improve her charisma instead. *BattleShirt* borrows this concept, using the sensors in the place of stats to measure the player-wearer's interaction with their environment. The primary meaningful mechanic for the *BattleShirts* project, then, is identifying one's interactions with the environment and modifying those interactions as needed.

While the prototype shirts default to defining the “high” position (bright light, warm temperatures, high activity) as a better score, the shirts can easily be modified to encourage
more or less transgressive activities in a given space. Indeed, the shirts were initially conceived of in connection with an academic conference; most activities in academic conferences take place in fairly low-light, low-temperature, and low-movement environments. For this situation, encouraging players to seek out high-light, temperature, and motion challenges their typical interaction with the conference space. In another environment, programing the shirts to value different stats may offer a completely different experience.

Just as the shirts do not themselves contain an overt or explicit commentary on boundaries between bodies and technologies, they also do not, exclusively of the context they are situated in, contain elements of evocative spaces. The shirts, divorced from a lived experience and presented in isolation, are simply flashing and buzzing pieces of clothing. However, when they are worn, they are able to create evocative spaces by creating a stage for narratives to be played out. The BattleShirts ask players to bring a greater sense of awareness and intentionality to the way they interact with the environment. The novelty of this concept is, while the shirts ask players to do nothing outside the ordinary, they nonetheless alter the way wearers experience space.

Finally, as a prototype for an ongoing project, there remains one important feature that has yet to be worked into the design of the shirt. Early in the design process I had intended for each individual shirt to have a unique Twitter account, which could be both as a means of assessing one's current “stats” and to report on the results of battles. In this version of the BattleShirts design, players would be able to learn about their shirt's condition by watching its Twitter stream. A shirt that valued brightness might complain about being in the
dark when the light sensor hit a certain low value, or perhaps to tweet about its boredom if the wearer is not being active enough according to the motion sensor. Once it is operational, the functionality of the tweeting will provide an additional feedback mechanism for players who, in addition to observing the various outputs contained within the shirts, will be able to monitor their shirt's Twitter feed.

**Context**

From a technical perspective, the *BattleShirts* project is only possible because of the increasing accessibility of wearable electronics to a non-specialist audience. This availability not only makes their creation possible, but also makes it possible for new users to create and customize their own *BattleShirts* to engage other, unique environments in particular and meaningful ways. Similarly, we can see how *BattleShirts* create an environment “in which signs, messages, and narratives are set into play” to encourage the wearers to think critically about their actions within a particular space, as well as to consider what it means to play.

*BattleShirts*, a wearable technology project designed to gamify any space with two or more participants, offers an example of how gamification can be used, outside of the more formal spaces of the classroom or even the relatively straightforward case of professionalization, to experiment with experience. These shirts use the blurring of boundaries that wearable technologies offer to engage wearers and encourage participation in conversations about posthumanism, human/computer interfaces, and body studies. The project, while designed out of a critical consideration of these issues, does not comment on them directly. Rather, the shirts create situations that allow wearers to experiment and develop their own understanding of these conversations. Thus, wearable technologies provide
opportunities to utilize gamification as a tactical media-style project that connects to postmodernism and posthumanism.

Anne Cranny-Francis, in her history of wearable technologies and the metaphors that have described them, notes the meaning of the term has changed substantially in the three decades of critical research and discussion. “In the 1980s and 1990s,” Cranny-Francis writes, “the term 'wearable technology conjured up Virtual Reality (VR) applications” (366). While there are still certainly studies of VR technologies, Cranny-Francis argues the strong connection to military applications caused discussions of VR as wearable technology to fall out of favor, both in popular and academic circles. Thus, contemporary uses of the term “wearable technology” refer specifically to “applications developed using new, 'smart' materials—nanotube fibers, electronic fibers that are strong, durable and weavable—that are used in textiles’” (366). Cranny-Francis' definition is accurate in describing common usage, nonetheless using the term “wearable technology” conveys the mistaken impression clothing is not already a technology. Joanna Berzowska, a scholar in computational arts and digital artist, reminds readers that clothing is already wearable technology. She writes clothing is “one of our most intimate and personal technologies; it functions as protection, disguise, and interface to the world” (16). Clothing is already a tool, a modification to our environment, that helps us to solve a particular set of problems. Indeed, as Berzowska emphasizes, the functions of clothing already range well beyond simple protection, having clear social implications as well.

Berzowska emphasizes the technological aspect of clothing to underscore how “textiles have a uniquely intimate relationship with the human body” (15-16). Berzowska's
focus on the intimacy of textiles echoes Susan Kozel's claim that wearable technologies are the closest convergence between flesh and computing. Kozel, whose *Closer: Performance, Technologies, Phenomenology* uses phenomenology to explore the boundaries between body and technology through digital and performance art, explains that focusing on biotech and penetrating the skin to achieve closeness with technology “is based on maintaining a divide between inner and outer, on the assumptions that skin still acts as a barrier and that flesh or tissue needs to be physically opened up in order for there to be an ultimate convergence” (269). Kozel argues biotech and other more invasive bridging between body and technology are based on a logic of subsumption, one that continues to reinforce inside/outside and flesh/technology boundaries even as it crosses them. In contrast, wearables offer “the convergence of computational systems with corporeality” (269).

The convergence Kozel identifies, and its attendant blurring between physical and technological, is a central focus for wearable technology design and scholarship. Anne Cranny-Francis and Cathy Hawkins, in their introduction to a special edition of the *Visual Communications* journal focusing exclusively on wearable technologies, write “underpinning the engagement of critical cultural theory with wearable technology is the notion that the body is a negotiable (and constantly negotiated) flexible, permeable frontier” (268). This blurring makes wearable technologies an ideal context from which to explore elements of postmodernism and posthumanism, particularly as they relate to gaming. Thus, I turn to a brief discussion of these concepts. The focus of this short overview will not be to offer any definitive explication of postmodernism (a problematic task in itself) or posthumanism. Instead, I merely seek to situate the conversations the *BattleShirts* project participates in.
Mark C. Taylor, who presents complexity theory as the contemporary postmodern
turn, explains modernism through its dominant metaphor: the grid. This metaphor suits
modernist thought as a system that “[maintains] stability by simplifying complex relations
and situations in terms of a grid with clear and precise oppositions: East/West, left/right,
communism/capitalism, etc” (23). The role of the grid system, as Taylor explains it, is to
support the rational focus of modernism: “straight lines and the grids they form both
represent and impose the strict discipline through with the rule of reason is secured” (27).
Extrapolating from the list of oppositions that Taylor supplies, we can already see how
Kozel’s and Berzowska's use of wearable technology presents a clear challenge to
modernism. These project blur and bridge between inside/outside and mind/body
dichotomies. Kozel notes that often we feel both attraction and repulsion to wearable
technologies. We are seduced, she argues, “by the potential expansion of our senses,
intellects, and imaginations, of how we engage with the world, how we communicate, how
we remember the past and project into the future” (269). Despite this seduction, we are
simultaneously repulsed. Wearable technologies ask us to question the very nature of our
selves, problematizing understandings of “who controls, owns, or has access to our bodies”
(269). If these dichotomies define subjectivity in a modernist paradigm, creating projects that
blur these boundaries also disturb commonly held notions of self. The subject that exists and
is defined as individual primarily through its relationship to these boundaries and in its
separation from other nodes in the grid will come to uncomfortable questions when faced
with wearable technologies.
N. Katherine Hayles, like Taylor, reacts against the strict and structured boundaries of modernism. However, Hayles does not entirely dismiss oppositional pairs as Taylor does, but rather complicates them. In response to these boundaries Hayles introduces her concept of the posthuman, “an amalgam, a collection of heterogeneous parts, a material-informational entity whose boundaries undergo continuous construction and reconstruction” (3). Thus, the traditional modernist dialectic, presence/absence, retains importance when we reconsider what it means to be human. However, presence and absence alone cannot describe the complex changes in information and subjectivity. Rather than abandon them, Hayles adds pattern/randomness to create a matrix. Placing the four terms on opposite sides of a square, Hayles calls the resulting diagram a “crude map” of “the axes along which the posthuman is unfolding and the deep issues the posthuman raises” (247). Between these four poles, presence and absence situated across from each other/pattern and randomness likewise opposed, Hayles meditates on how these terms interact and modify each other. The deep issues of the posthuman, for Hayles, are materiality, information, hyper-reality, and mutation. These terms modify and intensify the others. For example, mutation, Hayles claims, “testifies to the mark that randomness leaves on presence” (249). Through the posthuman, she claims, we have “the exhilarating prospect of getting out of old boxes and opening up new ways of thinking about what being human means” (285).

Similar to Taylor's complex systems, Hayles describes a concept (the subject) that is in constant motion, that has fluid boundaries and is neither explicitly human nor explicitly other. The importance of the posthuman concept is not to consider literally the blurred boundary between human and machine (though many building off Hayles do take this
trajectory), but rather to consider how information, seen as being without body, flows and moves between embodiments. Likewise, Catherine A. Jones explains the value of the posthuman: “distributed intelligence and collective knowledge is the new name of the game, within bodies as well as between them” (21).

**BattleShirts as Gamified Space**

Having explained both the “play” that *BattleShirts* encourages and the theoretical issues the project will engage players in, it may be useful to return briefly to the heuristic presented in Chapter 2. While the *BattleShirts* project is a far more experimental and informal example of gamification than either *C's the Day* or the gamified “Rhetoric and Serious Games” course, it nonetheless incorporates all elements of the heuristic I have presented for thoughtful gamification.

The *BattleShirts* project, as an extremely streamlined game system, has only one meaningful mechanic—a player's ability to alter her means of interacting with her environment. As the shirt is meant, in part, to encourage critical reflection on how one is engaging with the environment, this simple mechanic is the driving element of the gameplay. As a player receives feedback from her shirt, in the form of various lights, she is able to make decisions about her movements in space. Through a trial and error process players are able to increase their score, a crucial element to winning the “battle portion” of the gameplay.

Because the only meaningful mechanic for players is their ability to in some way change their engagement with their environment, a player's ability to develop tactics as part of the *BattleShirts* project is based entirely on the physical setting that a player finds herself
in. Thus, the element of nonlinearity is entirely context-dependent, and each player's tactics will change based on how they choose to navigate through space. Purposefully facing a particular light source, using exaggerated movements, and situating one's self either in direct sunlight or perhaps in purposeful proximity to air conditioning vents are all possible tactics. Furthermore, as the central component of the game system is the battle sequence, which initiates when another player is nearby, strategically planning when (or, more precisely, where) one is pulled into “combat” could likewise be an effective tactic. While the shirts give players suggestions on what constitutes high or low scores, players must think strategically about their environment and their actions within that space in order to either maximize their own score or attempt to minimize an opponent's score.

The balance between achieving the highest score one possibly can while trying to ensure that opponents have a lower score (ties result in a loss for both players) leads us into challenges. As mentioned earlier in this chapter, the inspiration for the BattleShirts project was drawn from a careful consideration of the typical spaces and privileged modes of engagement found within an academic conference setting. These environments, which typically privilege darkness, coldness, and stillness, create a challenge for players hoping to achieve a high score on a shirt that values brightness, warmth, and movement. As discussed in the “Functionality” section, the shirts can be easily altered to value different inputs. The level of challenge presented by the performance-play of the shirts can also vary by including a greater or lesser number of player-wearers in a given environment. Environments with fewer player-wearers will give each individual a greater chance to optimize their score or
strategy, while a greater number of player-wearers will make battles more frequent, thus minimizing the amount of strategizing between battles a player is able to do.

The relative simplicity of the *BattleShirts* design restricts, to a point, the elements of narrative that can be incorporated into the project. The evocative elements in the game are limited to the interface itself, the shirts, and the various outputs. Because the primary intent of the project is to encourage critical reflection on the boundaries between self and technology, the interface of the shirt is left exposed. The sensors, primary microprocessor, and circuitry are all clearly visible on the exterior of the shirt. The flashing lights and tinny music coming from the small speaker embedded in the shirt likewise underscore the imposition of the technology into a typically “neutral” zone, the player’s body. Finally, the title of the project itself, *BattleShirts*, emphasizes the primacy of the technology. Though the player-wearer may do what she can to impact the score of her shirt, it is the shirt that initiates, engages in, and resolves any and all battle sequences.

In Chapter 3 I define procedurality as the meaningful connection between the fiction or evocative elements in a game system and the rules. I use the phrase “meaningful connection” rather than persuasion because in many gamification attempts the objective is to develop skills and knowledge, and not necessarily to persuade. Certainly, as Ian Bogost, Simon Ferrari, and Bobby Schweizer demonstrate in *Newsgames: Journalism at Play*, procedurally can be effectively used in persuasion. However, for the purposes of gamification I use procedurality to refer to designing important connections between the actions a particular rule system allows, the fiction developed or suggested by evocative spaces, and the objectives of the game or gamified space. In the *BattleShirts* project this
connection can be seen in how the sensors encourage or discourage particular actions within a given context, and how the battle sequence adds a level of competitiveness to ordinary actions.

**Conclusion**

In this chapter I have turned from more traditional, formal definitions of education and learning to consider informal environments, such as those created through tactical media activism, as spaces that can also benefit from gamification as a model to engage participants in direct learning. Gamification is a model with the ability to make explicit rules and systems that might not be obvious, or that have become naturalized for participants. In Hodgson's Rhetoric and Serious Games course, he uses gamification as a means to make more evident to students the system of higher education that they are already a part of. By using a gamified model he first exposes the rule system of his own classroom, and then encourages his students to use their understanding of rule systems to critically analyze rule systems in other institutions. Similarly, the *BattleShirts* project is designed to be played in virtually any environment, adding an awareness and sense of intentionality to one's actions within an everyday space. The feedback loops the shirts create, from action on the part of the player to response given through various outputs by the shirts, privilege certain actions and conditions (in the current design activity, warmth, and brightness). The increased awareness this attention brings will, ideally, encourage wearers to become more critically aware of how the technologies around us are consistently, and more subtly, engaged in a similar system of encouraging certain activities and responses while devaluing others. Like Hodgson's course design, this project is not presented as an exemplar for gamification as digitally-engaged
scholarship or activism, but rather as one possible model of how the unique hybrid gamification offers us can be productively used.
Chapter 5: New Learning Models

In the first chapter of this dissertation, I introduced the distinction that a number of scholars studying new media and pedagogy identify between pedagogical styles common in informal learning environments and those espoused in traditional learning institutions. In brief, informal learning environments; spaces that include video games; collaborative websites, and social networking; are increasingly important to both students and adults. Students often turn to these informal environments to develop new literacies and competencies they are not learning about in their traditional education. Adults, on the other hand, often find themselves needing a re-vamping of their skills to maintain their place in new information economies. Informal environments tend to be more open and more participatory than their traditional counterparts. Informal learning environments emphasize elements of self-selection more strongly and generally place a greater responsibility on the individual learners for structuring their learning.

Many of these values are presented as stark contrasts to traditional models of pedagogy, models which include banking, sage on the stage, and current-traditional, among others. However, within the field of Rhetoric and Composition, we already tend to acknowledge a number of the so-called informal values. Indeed, the process movement, several decades old now, echoes many claims made about informal learning environments. While the successive movements, including the social-epistemic and post-process movements, pushed process theories to a greater awareness of social and political concerns, characteristics such as participatory learning and student agency continued to remain an important part of pedagogical discussions. However, as Sirc laments in *English Composition*
as a Happening, maintaining elements of openness within a closed system is a challenging proposition, and one that we as a field often struggle with. Crowley, using invention as a model, demonstrates how even well-intentioned attempts at openness in a classroom setting often become re-inscribed back into more rigid and structured formats.

Computer and video games have been seen by many educators across a variety of disciplines and at all levels of education as a potential means to reincorporate elements of play into classroom spaces. From the earliest uses of computer gaming in educational settings, instructors have been touting increased engagement with material and greater immersion in the learning process as support for introducing games in the classroom. While it is true the games players elect to play outside of formal learning environments are certainly engaging and immersive, bringing these benefits into traditional spaces has proven quite challenging. Given the complex and various ways that gaming has been incorporated into formal curricula, I separate the most common applications into three distinct groups. The educational (or serious) games movement often offers students little more than quizzes with graphics, games that focus so intently on conveying content to students that they tend to ignore game design’s best practices. Of course, using commercial games for educational purposes often presents precisely the opposite problem. Commercial games typically do not cover the sorts of content students need to learn, and when content is covered, it is generally done so in a way that minimizes or simplifies the complexity of a particular issue or practice. The most recent movement to incorporate games into educational contexts has been to advocate not for gaming in the classroom, but for games as a pedagogical model. This group, which is variously referred to as games-based learning and games-inspired learning, tends to
focus on the design elements of gaming, but advocates for detaching them from game systems. Scholars in this group, of which James Paul Gee is the most influential and well-known in Rhetoric and Composition, argue that classes can incorporate gaming principles without actually using games in their curriculum. While these attempts do hope to bridge between formal and informal environments, they do so without the element of play, a crucial part of the engagement and learning originally cited as a motivating factor for using games in education.

In this dissertation I have developed a model of gamification in direct response to these issues, the call for more open models, the challenges of incorporating them within a formal system, and the problematic application of gaming into formal learning environments. Rhetoric and Composition has yet to critically examine the possibilities of gamification, and many of the previous models presented in both K-12 education and business are inadequate to address the issues I raise above. These examples, which include the Nike+ system and Quest 2 Learn, are more aptly described as pointsification. Pointsification can certainly be beneficial in providing more play opportunities and increasing motivation, but it does not increase openness or create more participatory models. The heuristic of five principles I have developed is designed to do precisely that, creating open and participatory learning environments with the ability to work within hierarchical systems. Games themselves are rule-bound systems that nonetheless offer players with a variety of meaningful choices and are often presented as informal learning environments. Gamification allows educators to create hybrid environments that draw on the values seen in informal learning spaces and maintain the more highly regulated structure of formal learning institutions. In Chapter 2 I
synthesize current game design practices and use them to present a new heuristic for developing gamified educational environments. Many current models of gamification do not explicitly draw on game design for inspiration, and as a result represent only a shallow understanding and application of game design features.

The principles presented in Chapter 2 draw from literature on game design, but the focus is specifically on those that will help potential gamifiers to develop spaces that incorporate open, participatory learning environments. As the example of *VGHS* demonstrates, not all game design principles are equally applicable for this purpose. Meaningful mechanics and nonlinearity in particular emphasize structuring learning so that player-learners are given options that allow them to make meaningful decisions about their education. Creating individualized and scaffolded challenges, generally something most educational environments already aspire toward, helps player-learners to first recognize opportunities to use skills, then to develop skills, and finally (only after these steps) to demonstrate their skills. While the place of conventional linear narratives is a problematic concept within games studies, the creation of evocative spaces allows player-learners the opportunity to explore new roles within a system and to try on potential identities. In both examples of gamification presented thus far, designing evocative spaces has allowed players to take on the role of professional or expert, playing at the position before they are required to take it on professionally. Finally, gamification can make use of procedurality, the meaningful connection between rule systems and evocative spaces, to offer powerful critiques of structures and ideologies.
The design principles I have identified as most productive for gamified spaces are ones that have been drawn from my own experience as a designer on both the *C’s The Day* project and the *BattleShirts* project. However, for an analysis of how these principles can be productively applied within a formal educational environment, I turn to Justin Hodgson's Rhetoric of Serious Games course as a case study of gamification within a the higher education system. Hodgson has taught his gamified version of the class a total of five times, each time refining and restructuring elements of the class in an attempt to move closer to the goals of engagement and immersion, which makes this a robust and well-documented case to analyze. Through the questing system and the competitive grading system he has developed, we can see the five principles in action. The course is certainly not as open as an informal environment might be; Hodgson does have a number of course objectives and goals that he must meet at both institutional and course levels. However, by using *World of Warcraft* as an inspiration, he has been able to design a gamified environment that balances the concerns of his institution and the needs of students in his classes with his own teaching philosophy, which itself leans toward more open, participatory, and self-directed learning.

Hodgson's model is not presented here to be an exemplar for all gamified courses in higher education. Instead, I use Hodgson's class and the detailed discussion of his context to demonstrate how gamification is a strategy that can be modified to fit within particular pre-existing spaces. The course that Hodgson has developed is heavily influenced by a number of factors, including the demands upon his course both as a major elective and as a General Education requirement, his own personal pedagogy, and the material the course must cover.
Finally, in Chapter 4, I shift my focus on gamification from within the bounds of a formal educational system to consider how digital humanities and digital activism can make effective use of gamification in informal settings. While gamification is, in fact, already quite popular among marketing and advertising researchers and practitioners, these are precisely the examples that have led to the dismissal of gamification by many scholars in games studies. Marketing applications of the process are generally those which fall more accurately under the heading of what Robertson calls “pointsification,” superficial uses of gaming terminology that ignore game design principles and thus (like educational games) fail to achieve the very sense of engagement and immersion that made them attractive to begin with. Instead of considering these functions, which have little to do with gamification or gaming and even less to do with learning, I present BattleShirts as a model of gamification that creates an informal learning environment and builds out of movements like tactical media activism. The BattleShirts project, a work-in-progress, uses gamification as a lens through which to explore issues of posthumanism and postmodernism. Using game design principles and the affordances of wearable technologies, the BattleShirts project encourages players and observers to consider how they interact with technologies and environments, and how certain actions are privileged or discouraged by the interfaces they interact with on a daily basis.

The project is also the most “informal” example of gamification presented in this dissertation. Like other examples of tactical media activism, the BattleShirts project creates a performance space that encourages participants to reconsider previously held assumptions. The objectives and goals of this project are to create an environment in which critical play
can take place, rather than to dictate precisely what participants will learn from the experience. As the designer of this project, my own goals are stated above: a critical reflection on how technologies and bodies interact with one another. Through a careful use of meaningful mechanics and evocative spaces, I have attempted to build elements of procedurality into this project that will encourage participants to consider these issues. However, as Flanagan highlights through her discussion of Victorian doll culture in *Critical Play*, designers are ultimately unable to do more than suggest directions for play. Flanagan explains that dolls, though meant to reify traditional gender roles, were often used by children as a means of exploring the possible subversion of these roles. Thus, players, through their interaction with game systems, often experiment and develop their own critiques of play culture that exist outside of any design directives. As an example of gamification that more closely resembles open play, due to the intentional lack of rigid goals and objectives, an important and interesting part of observing the shirts in action will be looking to new and emergent play possibilities created by players interacting with the system I have designed.

**Potentials for Gamification as Educational Strategy**

In this dissertation I have presented three positive models of critical gamification, each with drastically different purposes, audiences, and methods. The first example, *C's The Day*, presents an opportunity for conference goers and young scholars to productively engage with a new environment, meet and collaborate with other scholars, and begin to take on new roles related to their future in the field. Bringing gamification into the conference environment helps players to structure their experience and provides a set of goals and
objectives to help them maximize their time at the conference, while also creating a playful space that invites them to join the community. Thus, though the gamified space is an informal learning environment, it nonetheless uses game design principles to impose structure and create goals for players.

Hodgson's Rhetoric and Serious Games course, while also employing the mechanism of questing, presents us with a very different model of gamification. The class certainly incorporates elements of openness, self-selection, and participatory learning through a utilization of the design principles of meaningful mechanics and nonlinearity, but the context of Hodgson's course requires a much more rigid and structured game system. As a university course, elements of assessment, tracking, and completion are much more important for this example of gamification, as Hodgson's recent implementation of checkpoints demonstrates. While the most interesting and significant part of C’s The Day is its use of quests and leveling to allow new players the opportunity to role-play in meaningful and productive spaces (a positive element that emerges from the creation of evocative spaces), Hodgson's gamified course design focuses much more strongly on creating opportunities for nonlinearity within the otherwise rigid classroom space.

Finally, the BattleShirts project, as the least goal-driven example presented, has more freedom to experiment with procedurality than either of the other examples. The BattleShirts, like other examples of both tactical media activism and wearable technologies, creates a particular experience that directs wearers to question the intersections of technologies, bodies, interfaces and experiences, while never directly determining how the experience should be interpreted. Instead, the procedurality of the experience, the linkage between how
the mechanics of the shirt interpret player actions and the evocative space that recasts
ordinary experiences as competition and privileges certain types of movement or activity
over others, invite wearers to take up their own discussions that consider how technologies
and interfaces condition us to privilege certain experiences, activities, or motions.

In the prologue I noted that the inspiration for the *C's the Day* game and mechanics
was drawn from the role-playing game (RPG) genre of video games. This inspiration is most
clearly seen in the emphasis on character advancement in the game. *C's the Day* presents
players with a number of quests, and as they complete the quests players “level up,”
advancing from beginning graduate student to full professor over the course of the game.
There, of course, are a number of different genres of gaming, each with a slightly different
emphasis and mode of game play. While one of the defining features of the RPG genre is
character advancement, other genres more strongly emphasize puzzle-solving, resource
management, team cooperation, or competition. *VGHS*, which I have identified as a
problematic example due to the excessive focus on competition, draws its design principles
from first-person shooter (FPS) games. It is interesting to note, then, that all three of the
positive examples I have presented in this dissertation draw on RPGs as a primary model.
Justin Hodgson identifies *World of Warcraft* as his primary design model, an inspiration that
has helped him avoid falling into pointsification. In Chapter 4 I have identified one of my
own models for the *BattleShirts* project as *Dungeons and Dragons*, a classic role-playing
game whose system for combat and character advancement has inspired many video games.
The design principles I have developed in Chapter 2 are not by any means exclusive to this
genre, and could certainly be used in combination with different genres of gaming. At the
present applications of gamification that avoid pointsification and critically engage player-learners in informal or formal learning environments are relatively uncommon, meaning that there are very few examples to analyze. An interesting project for future study may be to more thoroughly examine the RPG genre in detail, considering why this particular genre seems to be most heavily relied upon by those wishing to gamify both informal and formal learning spaces.

Throughout this project I have been careful to note gamification as a potential model for incorporating principles of informal learning environments into other spaces, whether those spaces are traditional classrooms, professional development activities, activist movements, or any other situation where learning in experiential ways can be valuable. I hesitate just short of advocating gamification either as the definitive mode of education or as the only way of bringing the various principles I have discussed into learning spaces. As a hybrid model that merges non-game spaces with game principles, thoughtful application of gamification in any context requires a careful consideration of both the goals and objectives already in place and the ideologies and assumptions that game design principles bring with them. Games are completely and permanently wedded to the notion of playfulness. While play, as Rouzie, Zimmerman, and Flanagan argue, can be use thoughtfully as a rhetorical strategy, it also invariably signals a certain loss of control for the game designer. Certainly designers play a strong role in directing players toward some actions and away from others by shaping rules, structures, and challenges in a game system. However, once a player enters a game system the ability of the designer to influence the choices that player makes is significantly limited. As Hodgson notes, reflecting on how many of his students choose to
ignore peer review, building elements of openness into more typically regulated spaces gives players the options to demonstrate values that differ greatly from the designer's. Nonetheless, when openness, participatory learning, and play are elements that are valued and desired in the learning process, gamification is a pedagogical model that can help us reach those goals.
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