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Theorycrafting the Classroom: Constructing the Introductory Technical Communication Course as a Game

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Abstract

When games are approached as a pedagogical methodology, the homologies between games and technical communication are highlighted: pedagogy that teaches people to play and succeed within certain confines; classroom assessment that provides meaningful feedback to encourage self-improvement; instructional design that incorporates gaming theory and game design principles; and usability to ensure optimum success. This paper provides an overview of these topics for instructors to consider when designing a technical writing course as a game.

Keywords: technical communication, gaming, teaching, pedagogy, assessment

Introduction

Innovative projects like the Quest to Learn program (Salen et al, 2011) and Sheldon's (2012) concept of *The Multiplayer Classroom* have led educators to explore the validity of incorporating games and gaming theory into formalized learning environments. Many of these projects, however, focus on K-12 age groups, which may indicate an implied assumption that learning through "play" ends once we become adults. In higher education, gaming frequently becomes "serious"; games research is almost always qualified with the term "serious games" as if academics were afraid to admit that people may be having fun. Furthermore, academics often forbid "fun" within the bounds of the classrooms; college students are often only allowed to learn through play as part of a computer science or gaming theory curriculum. Ian Bogost (2011) summarizes this fairly succinctly: "Hoping to overturn the idea that games are only for entertainment, *serious games* claim to offer an alternative: games that can be used 'outside entertainment' in education, health care, or corporate training, for example" (p. 5). Some educators, therefore, end up using the term "serious games" as a way to qualify their own academic or personal interests in something that others may see as mundane. It's as if some educators collectively react to the idea that they can't be taken seriously as researchers if they are having fun while doing it.

Yet in the midst of our struggle to make our work appear, dare I say, *serious*, what often get overlooked are the *pedagogical reasons* behind game-based learning: the theories and methodologies that inform sound technical communication pedagogy. Just like any pedagogical method, games shouldn't just be thrown at any curriculum; most instructors would agree that the pedagogy should always come before the technology (see for example Cargile Cook, 2005; and Ko & Rossen, 2010). However, there are some natural overlaps between gaming and technical communication that can be explored to potentially enhance the engagement, performance, and learning of our students, including: technical writing pedagogy (how to best instruct our students/players to be successful within predefined rule-based structures), instructional design (how to design learning experiences that are meaningful to students/players), and usability (how to focus on the players/students to ensure the most optimum performance in a game or classroom). I refer to this exploration as "theorycrafting the classroom," a technique that allows us to fully explore ways in which we can continually reflect upon and explore our own teaching methods through the incorporation of a game-based curriculum.

As Christopher Paul (2011) argues, theorycrafting is a strategy that evolved from the game *World of Warcraft* (*WoW*) as "a discursive construct predicated on advising players how to optimally 'play'" the game. Although the term cannot be attributed to any one person or scholar, theorycrafting may be defined as "a way of playing *WoW* that depends on work and analysis outside the game and a set of user mods and discussion within the game" (p. 1). That is, theorycrafting merges both theory and practice—both inside the game and outside of it—to determine how to best play a game. When it comes to theorycrafting the classroom, instructors can use similar techniques that gamers have honed over the years to reflect, analyze, study, recalibrate, and improve upon curriculum design and course

development in such a way as to optimize both teaching and student learning. Constructing a course as a game is the perfect way to explore such methods; the immersive and engaging elements of games allow for a flexible and reflective surface upon which to explore new methods in teaching, as well as opportunities for more in-depth student feedback on learning.

In that regard, theorycrafting the classroom is about reflective teaching and about participatory and collective learning. The instructor steps back from an expert role and allows students to take control of their own learning—and yet it goes beyond that as well. The best gamers—the best theorycrafters—take pride in their play; they work toward continually optimizing and adapting to frequently changing situations. The same is true in technical communication. Teachers of technical writing consistently adapt their curriculum based on workplace and industry needs, such as blending rhetorical studies with engineering reports, business writing with marketing analyses. Tebeaux (1985) points out that technical communication instructors must adapt to ever-changing technological situations; what instructors teach and how they teach it changes just as quickly as new communication tools and technologies are developed (p. 426). Therefore, to excel as a theorycrafter, players must be flexible as well as dedicated; players must ultimately care about results and know how to measure success. Likewise, as Mason (2013) notes, theorycrafting is intrinsically linked to technical communication practice as a system through which we learn to iteratively explore and define "rhetorical purposes" (p. 222). In the technical communication classroom, this equates to instructors who are dedicated to continually improving their own teaching methods toward the end result of improving student success rates in their courses. This means that in addition to thinking about these games as distraction, fun, simulation, serious, and the myriad of other labels that are offered, the field of technical communication can also consider game-based work as a pedagogical methodology. When games are approached in this way, the homologies between games and technical communication are highlighted: technical communication pedagogy that teaches people to play and succeed within certain confines (social, generic, institutional, and so forth); classroom assessment that provides meaningful feedback to players to encourage self-improvement; instructional design that incorporates gaming theory and game design principles such as effective narrative, interactive fiction, activities, and quest chains; and usability and user interface design to ensure optimum theorycrafting and success from both players and Game Masters (GMs). This paper provides an overview of these topics for instructors to consider when designing a technical communication course as a game.

Game-Based Technical Communication: A Pedagogical Overview

The concept of creating and theorycrafting a game-based introductory technical communication course is based on several key pedagogical principles: 1) reflective teaching; 2) user-centered/student-centered and facilitator-led learning; and 3) collective learning. The aims of these principles are to ultimately help foster sustainable classrooms where students become lifelong learners who are genuinely engaged not just in the subject matter of technical communication, but also in the process of learning itself. As Collins and Halverson (2009) argue, "We are now entering a lifelong-learning era of education," in which "people choose for themselves what kind of education they will obtain" (pp. 91-94). Therefore, a theorycrafted classroom allows students as well as instructors to make choices about learning and teaching for themselves. When instructors theorycraft a technical communication course, they are able to bring in reflective teaching, student-centered learning, and collective powers of the imagination and creativity to continually improve upon our methods both theoretically and practically.

Reflective Teaching

In his two articles, "More Than a Knack: Techne and Teaching Technical Communication" (2002) and "Becoming User-Centered Practitioners" (2004), Dubinsky focuses on the importance of reflective teaching practices in technical communication. "If we want reflective students," he argues, "we need teachers who are engaged in reflective practice and who understand the critical need for situational uses of knowledge" (2002, p. 130). One of his areas of emphasis is the understanding of rhetoric's role in technical communication, especially noting the importance of teaching as *technê*: "Aristotle points to the distinction between a practitioner and reflective practitioner, between someone who learns by doing only and someone who understands the 'why' and the 'cause' of what is being done" (Dubinsky, 2002, p. 132). Thus, just as a rhetorical situation defines how and when we should respond in any given situation, theorycrafting a classroom helps technical communication instructors reflexively respond to ever-changing elements within our courses and among our students' learning patterns and behaviors. "We ought not, in other words, to simply design our courses and curricula to replicate existing practices, taking them for granted and seeking to make them more efficient on their own terms . . . we ought instead to question those practices and encourage our students to do so too" (Miller, 2004, p. 163).

Games encourage players and game designers to think, to act, and to continually adapt to changing circumstances. Just one such example is Jonathan Blow's independent computer game *Braid*, a unique puzzle-based game in which players must adapt to constantly changing environments in order to solve puzzles and advance through levels. As players progress through the 2D environment of *Braid*, they realize that, in order to master each level, they must also master time itself, playing sections of the game backward and then forward again to manipulate time. This element of time manipulation also means that players can undo and redo sections of the game in order to approach the puzzle a bit differently. The constantly changing circumstances of *Braid*'s gameplay require players to adapt to new ways of thinking not only from level to level but also within levels as well as the game asks them to approach problem-solving in various new ways. In a 2008 interview with Chris Dahlen, Blow admitted that the creation of *Braid* also forced him to adapt to ever-changing circumstances. As he came up with ideas, they didn't always play out the way that he expected, which consistently forced him to change directions with his vision (p. 1). That is, both the experience of creating the game of *Braid*, as well as the experience of playing the game, forced all involved to continually think, build, create, and adapt to the digital world in which they became immersed. Theorycrafting can work in very much the same way: it can encourage both learners and instructors to continually adapt and transform their learning environments as circumstances change.

Another benefit of theorycrafting the classroom is that it means that instructors are, by definition, always thinking about new ways to approach their teaching. According to Dubinsky (2004), "Teachers who believe they have mastered a subject thoroughly will often become complacent about opening doors to new ideas or theories. This complacency is detrimental to developing a *technê of teaching*" (p. 8). The reflective nature of theorycrafting, therefore, reminds educators to be ever-changing and ever-adaptive to their classroom's rhetorical situation.

User-Centered/Facilitator-Led Learning

Technical communicators keep a keen focus on the importance of audience. Thus, retaining this emphasis on audience—on users, on students, on players—is essential to theorycrafting a game-based classroom:

> Our work involves more than teaching our students strategies or forms; it also involves asking them to consider the impact of those strategies and forms on public policy. We teach them to become user-centered practitioners, to take their audience and its needs into consideration always (Dubinsky, 2004, p. 5).

Likewise, Miller (2004) argues that we often value social constructionism as well as collaboration (pp. 25-26), and emphasizes the importance of the audiences who use technical communication documents. Therefore, in a field where instructors are consistently emphasizing the importance of users, it should not be much of a stretch to value students as users in the process as well. In a user-centered classroom, technical communication instructors can step away from the role as expert and become more of a facilitator, leaving the audience consideration to actual users rather than the instructor becoming the students' sole audience (Johnson, 1998, pp. 161-162). To that end, instructors who engage in theorycrafting their classrooms have the potential to realize that the methods for improving their courses will come not just from the instructor's perspective but also from their own users/students perspectives as well; they learn to value student input as much as their own instincts and observations.

One way to address this, at least theoretically, is to create a game-based technical communication classroom in which students interact with one another and utilize game mechanics to explore rhetorical issues of audience, purpose, and context without the direct interference of the instructor. The instructor becomes a guide rather than the sole source of knowledge. This embraces Dubinsky's (2002) pedagogical imperative that technical communication instructors become reflective, user-centered practitioners while also allowing enough room within a course for students to exercise their own critical reflection. Of course, this stems from the most ideological of perspectives; as with any classroom situation, the success of a game-based course is just as susceptible to the dynamics of the class itself, including the individual personalities and overall dynamics of the students enrolled in a course. In gaming terminology, trouble players may be seen as *griefing* or *trolling* others in the game (much like some behavioral issues instructors run across in a traditional classroom). However, learning how to navigate personality clashes, motivational issues, and varied student abilities is part of nearly every teaching scenario; instructors often will modify coursework, pacing, or assessments based on these or other factors that arise within a given class. In a game-based classroom, this merely means that theorycrafting can be put to further use: by allowing the self-reflection of both instructors and players to inform and affect the game (course) *as* it actually progresses.

Collective Learning

The concept of collective learning is about imagination, creativity, and community. Thomas and Brown (2011) assert that technological culture is "transforming the way we think about information, imagination, and play" (p. 31). This means that students are learning to use technology—and each other—to make meaningful connections that stimulate imagination, creativity, and overall engagement. Thomas and Brown call this a "learning collective:" "a collection of people, skills, and talent that produces a result greater than the sum of its parts. . . . They are defined by an active engagement with the process of learning" (p. 52). That is, students are becoming more involved with the learning process from what they want to learn to how they want to learn it, and they are doing it organically and collaboratively with, by, and from a community of other learners.

Computer games are just one example of this. Massive multiplayer online (MMO) games, in particular, help foster collaboration, imagination, and learning through experimentation of what works and what doesn't. When a group of players runs a dungeon instance in *World of Warcraft*, each player has a defined role (as healer, tank, or damage dealer), and all of the roles must work together to complete a common goal (defeating the bosses and completing the dungeon). People work within their roles and collaborate with people in other roles, and if a strategy doesn't work the first time, a group will often work together to figure out how to revise the combat strategies to ultimately make it succeed. The most patient of groups will often try this multiple times in an attempt to complete their goal, helping and learning from one another in a collective mindset. As gamers game, they practice, and as they practice, they learn, often with the help of others. Therefore, when professors create and theorycraft an introductory technical communication course, they will want to ensure that the gaming mechanics incorporate opportunities for group work, peer review and feedback, discussion, and other collaborative activities as a means of fostering this sense of collective learning among their students.

Constructing the Introductory Technical Communication Classroom as a Game

Game-based learning helps students create identities through gaming, and also encourages them to learn both individually and collectively (see for example Gee, 2007; Gee and Hayes, 2011; Thomas and Brown, 2011; and Steinkuehler et al, 2012). It also helps students develop problem-solving and critical thinking skills: "The frame of play, the context or signals that says 'this is play' gives permission to explore and experiment with tough issues. . . . Play is many things at once: a concept, process, form of relationships, state of being, and learning space" (Matthews-Denatale, 2000, p. 66). The benefits of learning through play certainly don't end with adolescence; college students and adults continue to learn through play as well.

Instructors can't merely throw games at their courses, though, and expect students to magically learn through play. Instead, professors must bridge their understanding of pedagogical theory with gaming mechanics in order to create game-based courses that are built upon learning objectives that have been designed to teach students *what the instructors want them to learn*. This is not to deny reflective teaching practices—which provide the foundation for theorycrafting a classroom—but instead to provide focus to the initial game development itself and to following one of the cardinal rules of instructional design: create and teach to learning objectives and outcomes that purposefully teach students not just any content but specifically the content we want them to learn. That is, while instructors should be open to reflective, recursive methods throughout a particular game, the initial planning of the game should be well thought-out based on predefined goals for course objectives. And while instructors understand this when designing traditional classroom courses, it's good to reinforce this ideal when thinking about how to best construct a game-based curriculum. In other words, just because it's a game doesn't mean that instructors should merely throw out many tried and true methods for course and curriculum development.

According to McGonigal (2011), good game design is made up of four elements: 1) goals, 2) rules, 3) a feedback system, and 4) voluntary participation (pp. 20-21). In the context of constructing a game-based technical communication classroom, I like to associate these elements with familiar curricular elements as follows: 1) creating and analyzing the course objectives (goals); 2) providing assignments (rules); 3) formulating assessment strategies (feedback); and 4) customizing the content of the course (voluntary participation). The following provides an overview of how these elements may interact with one another to create an introductory technical communication course as a game.

Goals: Establishing Course Objectives

According to Squire (2011), game "goals *seduce* players into pursuing them. As video game designers, it's always shocking just how much you have to lead players by the nose" (p. 7). Some technical communication instructors may feel the same way. "Did you do the readings?" they may ask. They may sigh to themselves as graded papers reveal how few students were paying attention in class. They may commiserate about the students who do well, and those who don't, and wonder why they often have to be so explicit in their instructions. This frustration is the same that many game developers feel and yet learn to overcome as they create immersive games; likewise, this is the same frustration that technical communication instructors can potentially overcome as they learn to create immersive classroom experiences. Yet even the most accomplished instructors can benefit from trying something new; experienced instructors understand that teaching to varied student populations often equates to teaching to multiple learning styles and in multiple modalities. Designing a learning environment as a game can help instructors from any experience level further engage students in their coursework by implementing classroom changes to encourage further enhancement of cognitive development. Or as Squire (2011) puts it,

> As we design learning environments, video games teach us to ask: What goals do I offer players (or learners)? Will relatively trivial goals be attained quickly? Are they clear and overlapping so that my players feel compelled to continue? Does my environment constantly advertise new, seductive things to do? Is the game designed to produce emotionally satisfying experiences? Anyone can theorize about design for learning, but good games *execute* these goals (p. 8).

Therefore, the first step in constructing the technical communication classroom as a game is to establish clear goals and outcomes. I think of this as establishing the course objectives, those goals that instructors would like their students to achieve. When teaching an introductory level technical communication course, these goals may already be outlined for the instructors. At Texas Tech University, for example, there are an established set of seven goals (course objectives) that any introductory technical communication course must aim to achieve:

1. analyze the audience, purpose, and context of technical communication;
2. create technical documents to solve practical problems;
3. write effective technical prose;
4. design convincing, effective, and usable technical documents;
5. practice ethical technical communication;
6. create technical documents for users in other cultural contexts; and
7. collaborate on technical communication projects.

When constructing a game-based curriculum according to required course objectives, then, instructors at Texas Tech must think of how to first create a game that will allow students to work toward these overlapping goals in ways that are both meaningful and immersive.

Regardless of what a course's objectives may be, they must be clearly outlined before an instructor begins construction of a course as a game. This is because the course objectives will define not only *what* is taught but *how* it is taught, and will help formulate the contents of the sections below to round out the class. For example, if an instructor's institution doesn't provide standardized outcomes for introductory technical communication courses, then those instructors would want to start by brainstorming and then mapping out the skills that they would like their students to achieve in the course.

Rules: Planning the Assignments, Quests, and Achievements

Once the goals have been mapped out for the game, instructors may then begin plugging in the game's individual assignments or "quests" that will help players (students) meet those pre-determined goals. This may encompass the inclusion of achievements as well, which can help students track their progress in the course. Here is also where instructors will set up the points and grading structures for their courses, which they may decide to refer to as experience points or XP. In this, instructors may choose to construct games with a series of stand-alone quests and activities, or they may choose to create complex quest chains with starting activities that lead to more difficult tasks as the course progresses. I prefer to mix the two types of activities: longer quest chains (smaller assignments leading up to larger more project-based assignments) with stand-alone, "daily" quests (small, repeatable assignments such as

discussion forum posts) as a way to foster individualized and customized learning opportunities. However, much of this decision on how instructors construct their own classes, of course, depends on their individual goals system (course objectives).

Assignments (quests) and achievements, then, become the game's rule-system, upon which students understand how their behavior and performance in the course (game) affects their overall progress (grade). As Björk and Holopainen (2006) put it, rules are the foundation of game design. Rules dictate "what the game elements are, how they behave, what actions players can perform, and so on" (p. 416). It is at this point, then, that instructors (GMs) will define what expectations they have for students (players) to fulfill the course objectives (goals). This could be in the form of longer quest chains, shorter dailies, building and making activities, and so on. In technical communication courses this will likely include such activities and assignments as readings, writings, multimedia viewing and creation, document designing, peer review, and even usability exercises—each of which may be designed to be completed individually or in a group and could be further defined based on whether the classroom experience is delivered traditionally (face-to-face) or online. These activities, assignments, and exercises—as well as the modes and genres they operate within—form the basis for the rules of the game-based technical communication classroom.

Feedback: Forming an Assessment Strategy

Once goals have been established, a feedback structure will need to be formulated based on the assessment strategies that instructors choose to employ. One summative choice for assessing student work in a game-based technical communication classroom is the use of portfolios. Much in the manner that gamers work toward crafting gear and supplies throughout an MMO game, students in a game-based technical communication classroom can work toward small, overlapping goals in *crafting* various artifacts in order to construct an end-of-the-course portfolio. That is, instead of using portfolios as a way of directing a course and its deliverables, they can be used as a way for students (players) to practice, construct, and improve upon materials that they create and then ultimately self-select and combine into an end-of-the-game artifact. Formative assessment strategies may include student reflection, peer review, or the pass/fail completion of smaller tasks (perhaps labeled as "quests") that students may choose from. In that regard, constructing a game-based introductory technical communication course at the assessment level may not differ too much from traditional course planning. Instead, formulating these steps now—how, what, and why you want to measure with regard to player achievement—will help direct the game creation in later steps, as the game itself is built.

The other important step in forming an assessment strategy for game-based classrooms is defining methods for students to receive consistent feedback. Church (2006) refers to the feedback process in games as "perceivable consequence" or the "clear reaction from the game world to the action of a player" (p. 373). When players are given real feedback, directly linked to their actions in the game, then they "are left feeling in control and responsible for whatever happens" (p. 374). The same is true in learning; students can receive both formative, ongoing feedback on how they're doing based on their success rates of clearing a certain level of the game and how often they need to replay or revisit certain parts of the game, as well as summative feedback on their overall success in completing the game. Unlike "failing" a course—for which students often don't get second chances—"dying" in a game allows players to determine that they're doing something incorrectly and then gives them ways to restart and try again. The continual feedback that can be built into a game-based classroom, therefore, allows students to regroup and try a task again—an opportunity that doesn't always present itself in traditional classroom environments.

Feedback is an important key to gaming in that it provides players with ways in which they can course correct and try again. According to Collins and Halverson (2009), it is also a proven way to help foster learning: "when learners are given feedback on their actions they are much more likely to learn what to do correctly" (p. 19). Games have the ability to provide immediate feedback to learners based on trial and error. And while a game-based curriculum will have some activities that will naturally take more time to provide feedback (such as larger "quests" or assignments), it's important to think of assessment strategies that will provide learners with quicker, shorter, and more frequent modes of formative feedback throughout the course. Ideas for this include: peer review, discussion boards, blog posts, wiki entries, reflective writing activities, and other peer-negotiated and self-assessment strategies. Using these techniques within the concept of a game allows students to customize their learning, interact with other players, and even compete for different rankings in the course based on their expertise. For example, students who rank the highest on a particular quest or assignment may earn the ability to advance to a special level that allows them to earn points by helping other students in the course with things such as peer review, discussion forum monitoring, and document

editing. I call this the "mentor" level, and those students are given extra opportunities to earn additional experience points (XP) by participating more in-depth with the feedback process. Regardless, a well-planned feedback loop can encourage participation and community within a classroom by providing more opportunities for students to both achieve individually and collaborate collectively.

Constructing a rules and feedback system for a game-based curriculum that incorporates multiple modes of assessment also helps increase the validity of the course design (see Haswell and Wyche-Smith, 1994). The more ways that instructors can collect data about the progress of their students' work, the better they can adapt to changing rhetorical situations within the classroom and the better those instructors can theorycraft future projects and iterations of the course. As Walvoord (2010) argues, the assessment information collected from students can inform the actions instructors take in the future; it can help determine how to best use the data "to improve student learning" (pp. 3-4). Furthermore, although instructor instinct and student feedback can go a long way toward theorycrafting a course, assessment data is a quantitative methodology that can help validate future changes in teaching methodologies. In gaming terms, the use of varied assessment strategies, such as instructor-rated assessments (exams, projects, papers, and assignments), student-rated assessments (peer reviews, discussion forum posts, and chats), and even computer-rated assessments (quizzes and diagnostics), can help us determine how and when to release new game patches and hot fixes to address bugs, imperfections, and balance issues within the structure of our game.

Practice: Creating a goals and feedback loop for ongoing learning. One of the reasons that gaming pairs so nicely with formalized learning is the way in which both often require the same types of efforts and with similar goals. In both games and learning, Gee (2007) argues, the gamer/student,

> must be enticed to *try*, even if he or she already has good grounds to be afraid to try . . . must be enticed to *put in lots of effort* even if he or she begins with little motivation to do so . . . [and] must *achieve some meaningful success* when he or she has expended this effort (p. 58).

To achieve such success requires practice, something that once again both games and learning have in common (p. 65). Practice activities—akin to gaming mechanics or crafting or farming—can also help provide students with formative feedback and performance-based guidance. According to Murray (1997), "In computer games we do not settle for one life, or even one civilization; when things go wrong or when we just want a different version of the same experience, we go back for a replay" (p. 155).

The same can be true for game-based classrooms: instructors can provide students with activities and assessments that provide opportunities for practice by way of *grinding*, also known in some games as crafting, farming, or daily questing opportunities. In this instance, students may be given the opportunity to perform things such as peer review exercises, editing activities, discussion posts, reflective essays based on coursework, class experience, or external activities such as attending events or watching videos, and the like. Such daily opportunities may be constructed within a course's rules and feedback system as formative methods of assessment that will provide students with ongoing opportunities for trying, failing, and then trying again within a relatively low-risk framework. Likewise, an instructor may choose to set up a crafting or farming system in which students seek out, barter for, or create artifacts throughout the course that lead up to a type of final course portfolio. In that case, daily or weekly farming and crafting opportunities would allow students to gain skills and create artifacts piecemeal throughout the course that they can then use to compile and compose at the end of the semester. Examples of such artifacts include resumes or CVs, cover letters or personal statements, instruction manuals or video walk-throughs, blog posts, emails, memos, proposals, rhetorical analyses, online presentations, and more, with each assignment completed being chosen by the player from a handful of forked storyline options. Players would then self-select their best work and revise it for inclusion in a final portfolio meant to demonstrate their mastery of the course objectives that they've met throughout the game. Therefore, the game construct of such a course would continually build toward that final portfolio.

Voluntary Participation: Customizing the Course Content

In many ways, user-centered learning and game-based learning equals customized learning. That is, a primary element of gaming a classroom or assignment is to customize the curriculum. This also incorporates McGonigal's (2011) concept of voluntary participation, in that students can choose how and when they would like to contribute to their own learning experiences. Much like when choosing a character in a game—whether selecting a token for *Monopoly* or customizing an avatar in a massively multiplayer online role-playing game—when students are given the choice to customize their experience, learning begins to happen. This means that assignments often branch, allowing students

to complete a particular course objective in one or more ways, while assessment—much like in games—happens frequently, and with plenty of room for students to use the feedback they receive to try again and improve. This iterative method for practice and feedback that is so inherent in gameplay is also a key attribute for sponsoring a partnered learning classroom. (Just one more thing that games-based learning and student-centered learning have in common.)

For example, all technical writing courses at Texas Tech require students to complete a standardized set of projects, the first being some sort of job search correspondence. Most instructors teach this by having their students create a resume and cover letter. However, I approach this same assignment through customized, games-based learning. First, students choose an origin, based on either an instructor-generated assessment quiz or simply based on students' own interests and career goals. Although I have tried this in a few different ways, the students' options often look something like this:

- **Warrior:** the warrior hacks and slices and survives their way through college to get a job upon graduation and then battles their way up the corporate ladder;
- **Mage:** the mage learns and crafts and uses magical prowess to earn their way into graduate school, where they continue to hone their mastery of the magical arts of academia;
- **Druid:** the druid creates and nurtures and inspires others through their artistic design portfolios, which they use to plant seeds of imagination and creativity in fields such as interior design, art, and architecture; and
- **Rogue:** the rogue slips through the night and observes from the shadows, using the information they learn to ultimately keep their options open.

Assignments for each class (warrior, mage, druid, or rogue) are customized based off of the students' ultimate career paths. So, a warrior might create a resume and cover letter, a mage might construct a CV and personal statement, a druid would craft a biographical statement and design portfolio, and a rogue would create a combination of any of the above, based on a target internship, job, or graduate program that they research and ultimately select. Activities that work up to this assignment include instructors acting as coaches and guides by providing questions that students can use to guide their research; that is, all of this functions via a user-centered pedagogy. Instructors may ask students to research industries, companies, schools, and individuals from fields they're interested in; they may have them target a specific audience via a specific job ad or graduate program, asking them to analyze the needs of their audience; they may ask students to research *themselves* (and this may be especially true for the undecided rogue class)—via personality quizzes, career assessments, and so on. Ultimately, the instructor guides while the students discover their own sense of empowerment to make the assignments most useful to *them.* This opportunity for course customization is not only empowering for the students, but also becomes a way for students to opt in or out of various aspects of the learning experience, therefore making the ultimate learning that occurs much more personalized—and in the long-term more meaningful.

Making It Work: User Experience and Interface Design

Throughout this process, instructors need to ensure that the game-based classrooms we construct work well for our player/users (students). As Unger and Chandler (2012) point out, usability testing is important so that instructors can "break away from what you think they know—and find out how [users] think" (p. 279). This begins with testing a theoretical concept with a target group of users, exploring potential mock-ups of the game-based course, and then determining how and what you want to test (pp. 280-292). In the case of a game-based classroom, and in the spirit of theorycrafting, instructors may want to extend such usability testing to all stakeholders; that is, not just the students they'll be teaching but also to other potential instructors who may be interested in teaching their technical communication courses as games. At the very least, the responses instructors get will help with theorycrafting and self-reflection as they prepare for current or future iterations of a game-based technical communication course. At the most, they may end up gaining additional departmental support for game-related pedagogical goals.

If instructors are looking to get user feedback with a particular element of their courses, they may also consider conducting formal usability tests with a group of random representative users (perhaps recruited through a university's listserv or announcement board) that either measures qualitative or quantitative responses to a specific element of the game. If, on the other hand, instructors are more interested in discovering user "*desires, motivations, values*, and *first-hand experiences*" with regard to the game as a whole, focus groups may be the best way to get feedback. Kuniavsky (2003) argues that focus groups are often done at the start of the design process to get a feel for how users will react

to certain concepts (p. 203). Therefore, it may be helpful to set up a focus group of users (ideally, undergraduate students who might potentially fit the demographic for the course) and get their feedback on the course design once the basics of the course have been established (goals, rules and feedback system, narrative and lore, and basic quests and achievements). Their responses can help shape how to ultimately deliver course content and set up a game-based class.

Conclusion

What ultimately separates the discussion in this paper from other research relating to the gamification of curriculum and/or the inclusion of serious games in higher education is the significance of pedagogical consideration and the importance of theorycrafting. Throwing games or gaming language at an existing academic structure will not likely create any real change in the technical communication classroom. Instead, the theoretical background and practical suggestions outlined in this paper are meant to be a guide toward reflective pedagogical practice that has the potential to ultimately revolutionize how instructors approach teaching technical communication. It is a user-centered practice designed toward encouraging students to further explore methods of collective learning via imaginative play.

This is not to say, however, that I pretend to have all of the answers on how to make this work. On the contrary, each rhetorical situation—each university, each department, each instructor, each course, and each and every student population that makes up the classes—will individually define the best practices for adjusting our own pedagogical methods. In addition, theorycrafting calls for further exploration into game-based technical communication curriculum, with a need for further studies and academic collaboration among instructors and institutions. To that end, as technical communication instructors begin constructing their courses into a game, there are several questions that I believe can begin to inform future studies:

1) *How might instructors translate gaming terminology and mechanics into a higher education classroom?* There should be a step beyond merely gamifying the curriculum by putting game terminology onto traditional modes of pedagogy and instead determine how the *actions* of gaming can begin to translate to our methods of teaching. This will also help instructors continue to move forward toward legitimizing their fields of research, perhaps even allowing them to move past the need for the term "serious games" when discussing research relating to fun and play.
2) *How effective is curriculum customization on student success?* That is, how do they measure the assessment of game-based and gamified curricula? How can they tell whether, and how, a game-based educational intervention is affecting student success in the technical communication classroom?
3) *What are the best methods for assessing student work in a "gamed" environment? What best practices might be identified in creating a classroom as a game?* The more classrooms that employ game-based teaching methods in the technical communication classroom, the more instructors can identify what works—and what doesn't—and then adjust accordingly.

Answers to these questions will come from further study, as well as related reports on reflective teaching and assessment practices resulting from studying how to teach introductory technical communication courses as games.

Like gaming, technical writing research doesn't happen in a bubble. Theorycrafting occurs among gamers as they learn to navigate new game mechanics together. Choontanom and Nardi (2012) argue that it "is the art and science of investigating game mechanics that cannot be discovered through ordinary play. With experimentation and logic, players analyze, discuss, argue about, interpret, and theorize game mechanics" (p. 186). To that end, instructors who theorycraft needn't do so alone; the best way to reflect and re-theorize the mechanics of a game-based classroom is to do so with other instructors who are attempting similar educational interventions. In other words, let's game *together*.

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