A Gamified Learning Environment: Using the Principles Underlying Games to Engender Success in the Learning Experience

by

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Abstract

This paper examines the principles of learning identified by James Paul Gee that can be found in video games, and considers how they might be applied to learning a second language. The project was developed with the belief that providing an experience that encourages students to take an active role in their learning would help to create meaningful connections with the material. A storyline was added to the project design to increase interest and involvement with the learning outcomes. The project was created collaboratively, and serves as a reference to other educators who might be interested in understanding and using gamification as a tool for improving engagement and success in their own classrooms. Together, the developers worked to weave the elements of story with the learning outcomes to create an interactive online experience. The use of game elements such as achievements, characters, and the gradual release of assignments, provides students with an experience that both feels authentic and allows the learner to have some choice in how to engage in the learning experience. 3d GameLab was used to create the main framework because game elements are pre-built into its design and worked well with the project goals. After the project was completed, a group of colleagues with various educational and technological backgrounds interacted with and reviewed the project. Overall, the reviewers agreed that the project was engaging, but that students would need to actively involve themselves to be successful. However, without more comprehensive testing, the overall success rate of students using this project is undetermined.

Major Project url: Drive-By Gamification  http://drivebygamification.weebly.com/

Keywords: gamification, engagement, agency, James Paul Gee, Learning Principles
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“When we become more fully aware that our success is due in large measure to the loyalty, helpfulness, and encouragement we have received from others, our desire grows to pass on similar gifts. Gratitude spurs us on to prove ourselves worthy of what others have done for us. The spirit of gratitude is a powerful energizer.” — Wilferd A. Peterson.

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Chapter 1 – Introduction

Purpose of the Major Project

This project was created from a desire to examine the role that gamification could play in providing an opportunity for learners to exert a measure of control over their learning experience in order to create engagement and ultimately increase student success. I co-designed this project with the input and cooperation of Carla Wilson, a colleague from the Online Learning and Teaching Diploma (OLTD) program. Together, we decided to create a French Gamified Learning Environment (GLE) targeted at an A1 level, as outlined in the Common European Framework of Reference (CEFR). We were intrigued with the idea that the various elements in games could be applied to a learning context to promote learning. With this in mind, the intent for this project was to see if the addition of gamified content and structure could help create an engaging experience designed to help learners achieve a more meaningful understanding of the target language. In particular, the addition of narrative, a story-line in which the game is embedded, and choice, was meant to help the students experience the subject matter in an authentic and substantive manner.

The use of gamification in education existed when I first considered developing this project, but there was still considerable controversy over what exactly was meant by gamification and whether it should be an established pedagogy or whether it was a passing trend. In an article addressing both the critics and the advocates of gamification, Richard Tollach argued that confusion exists because we are unable to comprehend the full scope of what gamification means:
Rather than understand gamification as the use of game design elements in non-game contexts, it is more productive to see it as the deployment of an alternative pedagogic system developed for, and refined in, gaming, in non-game contexts. Put simply: gamification is a form of training built upon the techniques used in, and heritage of, games rather than traditional pedagogy. (2014, p 327)

James Paul Gee has helped to illustrate that gaming elements are indeed based on solid Learning Principles. Gee’s book *What Video Games Have to Teach Us about Learning and Literacy* (2003) extrapolates a list of Learning Principles that govern the self-directed learning that players undertake when learning a new game. Gamification holds an established place in business. Karl Kapp (2012), Kevin Werbach (2012), and Gabe Zimmerman (2013), are exemplary leaders, who have already established roadmaps to using the principles found in games, for creating a gamified learning environment in the business world. Yet, even these well-known individuals have only offered a small piece of their works in gamification to education. Lee Sheldon’s *The Multiplayer Classroom* begins to offer some ideas and case studies on turning curriculum into a game (2012), but much of the discussion is centered on higher education and the idea of game design itself. Matt Miller’s gamified world of Gnimmargorp (Miller, nd.) is one of the few known examples I could find of a fully developed online Gamified Learning Experience (GLE). Miller’s work was an excellent place to look when considering the kinds of elements one might build in a GLE, but as it was based on fantasy elements, I found that it did not provide enough information for the kind of GLE that I was interested in developing. Miller’s project did reinforce the power of using narrative in the design. The narrative, here used to refer to the storyline that is used throughout the learning experience, can be seen to weave together the elements of content and skills required in
mastering Miller’s programming course. Miller’s Gnimmagorp has definitely provided his students with an engaging space. Miller says that stories are impactful because, “They draw us in and take us to a place and time where we never were.” (Miller, nd.) With consideration of the narrative, Wilson and I decided to go with a mystery theme because we wanted to keep an element of realism, and allow for some real world sleuthing. In looking for examples of this kind of narrative, we could not find any stories related to second language learning. While I was able to examine some computer platform games that base their gameplay on a mystery style narrative, the truth is, very little work exists that can be seen to document the process of using narrative to create a gamified learning experience in a K-12 school setting. This is especially true for educators who teach in a region that might have more limited access to technology. Miller’s work, for example, is based on each student having individual access to a device during instructional time (one-to-one learning). The need exists, therefore, for educators to continue to provide clear examples of gamification and to document their experiences. With this in mind, in addition to designing and creating this project, we decided to document the process that we experienced individually, and collaboratively, along the way.

**Justification**

While the initial results of the online study program (ILP) that I have used in my class indicated increased student success, after continued involvement I noticed many of the students stalled, and overall engagement began to wane. An examination of James Paul Gee's principles of learning (2003) showed that video games were founded on sound educational values, that if applied to classroom lessons, could increase student engagement. I was especially interested in the idea that providing a context that was rich with authentic language experiences could create deeper connections to the material. At the same time, I appreciated that students were given
control over their learning goals. Gee noted that videogames are careful to introduce material in small segments that are mastered before continuing to the next concept. When these types of activities are introduced in a way that manages to balance the level of challenge and failure in learning new content with the amount of time given to apply the concepts, learners can be said to enter a heightened state of engagement. This feeling, which Csikszentmihalyi defines as a state of flow (1990), is thought to fully immerse the student in the learning experience. An examination of the elements of gamification described by Karl Kapp (2012) outlined the two types of gamification that I felt could achieve engagement: structural and content. The first type, structural, contains the elements that are most synonymous with the understanding of gamification. The definition ‘applying game-like elements’ to a non-game setting often induces images of points, badges and leaderboards. The advertising industry is rampant with this kind of modeling, and is the vision that caused Dr. Scott Nicholson to coin the phrase BLAP (Badges LeaderBoards and Points) gamification (2014). However, these reward structures represented what I understood to be only a surface component of structural gamification. Karl Kapp’s definition of this term includes many other elements of gameplay, such as the rules of play, the challenge and feedback to the players, and the players themselves (2012). Nicholson’s somewhat derisive vision of BLAP gamification also misses the content elements of games, which can include a compelling storyline designed to intrigue players and keep them engaged throughout. Consequently, one goal of this project was to move beyond the surface elements in gamification, and to delve deeper to encourage the Learning Principles identified by Gee.

The value of the GLE for students established, I wanted the project to be of value to other educators. Through discussions with colleagues both on and offline, I was cognizant that many teachers do not fully understand what gamification means and how it might be relevant to their
own situations. Since the target audience of this project is so specific (second language core French), consideration was taken to make the project more accessible to other educators. While the student audience might be specific, the ideas and principals involved would be applicable to any subject. The provision of a concrete example of a story driven curriculum can be useful to other teachers. For this reason, we decided to journal our experiences in a weekly blog that would allow for teachers to be part of the process, and to see where our struggles are and perhaps even collaborate on solutions. Despite the fact that a quick search of the internet will yield a ready availability of resources, the average educator does not have time to peruse and put into practice the many tools needed to develop an online resource as robust as the one contemplated by this project. The experiences documented by this project will be helpful in providing other educators a roadmap to navigate if they take on a similar project.

The lack of knowledge and ability to function online are only part of the problem that educators cite as barriers to using technology in teaching. The constant challenges and constraints encountered when choosing to include online options in the classroom are indeed daunting. Many schools and classrooms lack the devices and/or the proper infrastructure needed for consistent access to the Internet. Therefore, the project was conceived with the idea of a blended approach: the ability to accomplish certain activities in a regular classroom setting with face-to-face access to the teacher, combined with other activities that are designed for individual online completion. Including a variety of activities that can be completed in 15-20 minute blocks was another idea for helping to manage the needs of the student and the classroom. The primary objective was for the learning to occur independently, but the needs of the student and the constraints of the learning space should be considered.

Finally, an important element of the project that was not related to the design of the game
itself, but more to the process of the development, had to do with working to complete the project collaboratively. Through the OLTD program, we were introduced to the Community of Inquiry (CoI) Model adapted for online learning contexts by Garrison, Anderson and Archer (2000). The definition for a CoI Model in an educational setting is “a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding.” (CoI Model, nd.) The OLTD program emulated this idea through the design and presentation of the courses, and when the time came to plan our project, I felt that the most meaningful way to undertake this project was through living the CoI model. Wilson and I both teach similar subjects, but our unique experiences brought completely different perspectives to the project. Developing this project collaboratively allowed a broadening and reinforcement of understanding during implementation.

**Critical Question to Be Addressed:**

How can James Gee’s principles be implemented in a gamified environment in order to increase engagement and agency that will ultimately result in the successful learning of a second language?

The decision to use a gamified learning environment was undertaken, partly, as a result of the principles presented by James Paul Gee. Gee’s principles helped to clarify the critical elements found in good video game design, which could be used to increase engagement in learning. Additionally, these principles highlighted the importance of the learner’s ability to exert control, or agency, in the created context. I examined a condensed set of “learning principles that games use to hook people on learning and to engage them for the long haul in learning.” (Gee, 2013, 00:26) The abridged principles were better suited to my understanding of
the kind of program that I wished to create. I found that the new version offered improved concrete details about the principles, that were further clarified by Gee’s addition of three overarching categories used to categorize the different stages of learning: Empowered learners, Problem-Based Learners and Understanding. These descriptors mirrored what I was trying to achieve with my own independent learning program. As a result, in developing this project, I considered how Gee’s principles could be transferred into my own Gamified Learning Environment to create a solid path to engagement and success.

**Brief Overview of the Project.**

The aim of this project was to create a GLE using a narrative for the framework. The GLE involved a series of learning activities that were presented to the students as a game. Within this game the students completed a series of activities, termed “quests”, that are designed to require the demonstration of specific learning standards. As the students completed these quests they received a certain number of experience points (XP) and advanced in level as they mastered a specific standard. The project was designed to align cultural and language standards with the narrative in an attempt to give the game a meaningful context. The cultural themes and locations were chosen based on conversational paradigms that could have real-world applications. To achieve these goals, part of the process involved creating a storyboard (a gamification term I am using to describe the process of planning a GLE) of the elements that we wanted to include:

**Narrative:** A storyline designed to present the learning content in a way that motivates the student to learn, and creates tension to encourage continued engagement throughout. The proposed storyline for this GLE is styled after the basic plotline of a mystery because this
allowed us to release information in enticing morsels designed to intrigue the student and keep them engaged.

**Curriculum Outcomes:** The curriculum that was used to align language learning outcomes was a draft curriculum released in 2011. This draft was based on the Certified European Framework of Reference (CEFR), a globally accepted framework for the different levels of aptitudes that exist in language acquisition. Incorporating this framework into the BC curriculum will allow BC schools to be recognized globally in this area. The challenge with using a draft curriculum is that it was subject to unknown changes. This project began with the knowledge that a revised document was expected mid-way through the design process. However, since we designed the project with the CEFR in mind, we were confident that regardless of the changes, the project would still be relevant in a global sense.

**Rules of Play:** Games generally include a set of parameters that are important for establishing what a player can or cannot do within the game. This helps to establish confidence on the part of the player. An understanding of the expectations and freedoms allowed by the game is important for both the educator and the learner.

**Conflict, competition and cooperation:** A good narrative contains elements of conflict designed to pique the interest of the reader. In a gaming situation, this type of engagement is further encouraged by including situations that allow the player to interact with other players.

**Character Fact Sheets** - In order to establish an authentic experience, characters that matched the storyline and the language situation would be necessary. Including fact sheets was a way to add dimension to the characters.
In addition to developing the actual GLE, we decided to document the process, progress, and implementation of the project, in an attempt to make our learning more accessible to others. As the work was designed in part to be a service to other educators, the idea of a weekly update seemed an appropriate way to catalog the growth of the project overall. Working with a partner allowed for continual feedback. Working at a distance from Wilson involved careful consideration of time and work distribution. In the initial planning phase, we needed to spend more time meeting virtually to discuss the progression of the storyline. Once the planning stage was completed, certain tasks were assigned based on the strengths and interests of the collaborators. In order to be able to collaborate effectively, the storyboard as well as other relevant information was centralized in OneNote, a Microsoft application designed for creating, sharing and storing notes online. Once the storyboard was completed, the intent was to share the link to OneNote with other educators, as part of the documentation process.

Conclusion

The purpose of the project was to increase engagement in learning and overall student success. James Paul Gee’s principles of learning offered insight into the need for learner agency in a gamified learning environment. Developing a storyboard process to create a structure for the game, and keeping a blog to deconstruct the learning and collaborative experience, was intended to provide a lens for other educators who might try this type of endeavor in the future. Therefore, the project, when finished, produced a working Gamified Learning Environment, accompanied by a detailed description of the process, including benefits and challenges of collaboratively designing such a project.
Definition of Terms:

The definitions for this paper were created collaboratively from the working list of terms that were identified by the needs of the project and will assist the reader in understanding the scope and sequence. While some of the terms were unique to our particular critical questions, Wilson and I found that working from an agreed upon list of definitions helped to remove ambiguity and confusion. As gamification is still a relatively new concept for most educators, the entire list of terms was substantial and can be found in the Appendix at the end of this paper. (See Appendix A for a full list of the definitions of terms found in this paper). The terms are divided into three categories: Games, Online Learning, and Web Tools. This division was seen as an important distinction between the different elements necessary for implementing a GLE in an online environment:

**Games:** The elements found within games that were transferred into the educational context.

**Online Learning:** The concepts related to teaching and pedagogy in an online environment.

**Web Tools:** The online applications and tools used to plan, create and implement the major project.
Chapter 2 – Literature Review

It struck me that day that the key problem of our schools… is it's full of manuals without the games. We have handed kids all the manuals without the games…. There isn't any such thing as technical, hard language. There's only language you don't know because you didn't live in its world, you didn't play its game. Therefore, in theory, we could level the playing field for the first time in…education if we brought the games to the manuals, and I don't mean a video game. If we brought the activities, the problem solving, the living in the worlds of chemistry and algebra, with making kids want to do things with them. That is, to see them as tools, to surmise new possibilities, that's the game. (Gee, 2012, 00:26)

Active Participation of the Learner

This project began with the question of how to allow second language students more control of the learning process as a possible route to increasing their engagement and, as a result, their overall success. The 2011 draft of the British Columbia (BC) French curriculum proposed conceptual changes to the way that second languages will be taught. The learning outcomes will now be guided by what the BC Ministry of Education has identified as principles of learning. In particular, I have been interested by the first principle: “Learning requires the active participation of the learner” (BC Ministry of Education, 2011, p.1). This statement raised questions for me. If this active participation requires that “a person’s intentions are engaged and the meaning of learning is configured through the process of becoming a full participant” (Lave and Wenger, 1991, p.29), then careful consideration needs to be given to how the learner would be engaged in the learning situation. Moreover, this statement did not account for the context that would be necessary to incite active participation from the learner. In an attempt to understand more about
contextual learning situations, I came across the work of linguist James Paul Gee. According to Gee “Information and facts that are hard to retain when they are drilled out of any meaningful context come to be learned much more effortlessly when learners are acquiring them as part of their own activity-based purposes and goals – when they are part of “playing the game” the learner wants to play.” (2008, p.218) This idea of situating the learner in an environment where the participation could be driven by the intentions of the learner led me to consider what it means to have agency in learning.

**Learner Agency**

What is learner agency? Beginning with the Merriam Webster definition of agency as “the capacity, condition, or state of acting or of exerting power.” (Agency, n.d.) we can understand that to possess agency the learner will have to demonstrate some sort of power over the learning situation. Agency can be viewed as something that takes place under certain circumstances and is not something of which we can claim ownership. Rather, agency is a broad term that is indicative of all the motives that a person might have to behave in a certain way, according to the situation (Van Lier, 2008). When I first began my investigation into increasing student engagement in learning I was primarily interested in the students’ abilities to have voice in what they were learning. I understood from William Glasser that meeting human needs are important to success in education. Glasser’s Choice Theory “teaches that we are all driven by four psychological needs embedded in our genes: the need to belong, the need for power, the need for freedom, and the need for fun.” (1997, p.16) If we consider learner agency as a way for students to have power and freedom, then perhaps we are half way to achieving student success. This idea was reinforced by Sarah Mercer:
Two major developments within Second Language Acquisition (SLA) have led to an increased interest in the concept of learner agency. The first concerns the prominence of the concepts of learner-centeredness and autonomy…. The second development in SLA reflects the growing recognition… of more socio-constructivist understandings of learners which acknowledge the agentic interaction between learners and their environments and learning contexts. (2011, p.427)

With Mercer’s idea in mind, I created an online Independent Learning Program (ILP) that was designed to introduce students to various second language learning programs available online. The intention was to allow the students to pursue their language study in a way that met their individual needs. The rationale was that, if provided with the necessary tools, the students would be able to move their language learning forward at a pace that was appropriate to their own goals. This system worked well initially. The students embraced the idea and each student demonstrated a measure of progress. The more independently driven students seemed to find the freedom necessary to break the grade level barrier, and I began to see a higher level of written production. Additionally, the students who traditionally required more support were able to move at a slower speed, and they began to express confidence in their recognition of simple phrases and expressions. However, once these students reached a certain level, the learning stalled, much as it had previously in the classroom. As a result, they began to disengage from the learning experience. The online tools that I chose allowed for independent study and agency in learning, but contrary to the second major development in SLA discussed by Mercer (2011), they lacked context. In a discussion titled *Learning Context and its Effects on Second Language Acquisition*, the statement is made that language learning should be “intertwined with (and so inseparable from) experiences, cultural knowledge, emotions, and self-identity.” (Collentine and
Freed, 2004, p.157) I was operating under the assumption that allowing students to have choice was enough, but I had not offered any of the personal experiences and activities that would lead the students to find meaningful connections (Nicholson, 2014). “The focus in second language studies has gradually shifted from linguistic inputs and mental information processing to the things that learners do and say while engaged in meaningful activity.” (Van Lier 2007, p.46) In order to understand what a meaningful activity might look like, a closer examination of what engagement means in reference to learning became necessary.

**Engagement**

In education the term ‘engagement’ is often floated around as a desired state for students. Surely if, as described in the 2011 draft document of the BC French curriculum, we aspire for the active participation of learners then we need to consider how to inspire students to engage in participation. Ideally I envisioned student engagement might encompass Mihayli Csikszentmihalyi’s concept of ‘Flow’, wherein the participant is so involved with an activity that all outside distractions are forgotten (2008). Csikszentmihalyi noted

In our studies, we found that every flow activity, whether it involved competition, chance, or any other dimension of experience, had this in common: It provided a sense of discovery, a creative feeling of transporting the person into a new reality. It pushed the person to higher levels of performance, and led to previously undreamed-of states of consciousness. In short, it transformed the self by making it more complex. In this growth of the self lies the key to flow activities. (Csikszentmihalyi, 2008, p.74)

Csikszentmihalyi’s vision of flow supported the idea that self is tied to engagement in learning. Yet, he cautioned that “the flow experience, like everything else, is not ’good’ in an absolute sense. It is good only in that it has the potential to make life more rich, intense, and meaningful;
it is good because it increases the strength and complexity of the self.” (2008, p.70) So what kind of activities might lead to this engaged sense of self-discovery? “Activities conducive to flow … were designed to make optimal experience easier to achieve. They have rules that require the learning of skills, they set up goals, they provide feedback, they make control possible.” (2008, p.72) Seemingly the greater the agency, that one has over the situation the greater the engagement. Having the self fully immersed in self-discovery is made more effective if the activity is designed to increase the students’ involvement with the content. Teachers have observed that “students must understand the purpose of their learning and see it as being related to their personal goals in order to engage and learn. This category moves to an orientation where student engagement in learning (evidenced by students working towards personal academic goals) becomes a strong focus.” (Harris, 2011, p.383) The role of agency therefore becomes important in the fulfilment of and commitment to developing engaged learners. Reeve and Tseng noted that students will try to foster their own goals into the learning environment as a natural part of learning:

In actuality, students not only react to learning activities, but they also act on them—modifying them, enriching them … and even creating or requesting them in the first place, rather than merely reacting to them as a given. That is, students sometimes try to get ahead of the lesson-to-come so to offer input that might potentially guide its flow toward that which will be more personalized or more enriched (i.e., more challenging or more relevant to their needs, interests, and priorities). Therefore, a fuller (and more accurate) portrayal of what happens when the teacher presents students with a …problem is that students not only react with varying displays of behavioral, emotional, and cognitive engagement, , but they also more or less act agentically to try to enrich the
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learning activity (look for an opportunity to make the task more enjoyable), modify it (make a suggestion, change the level of difficulty), personalize what is to be learned (communicate likes and dislikes, generate options), afford themselves greater autonomy (express a preference, offer input), and gain greater access to the means needed for better understanding (solicit resources, request assistance). Current conceptualizations of student engagement that emphasize only students’ behavioral, emotional, and cognitive involvement fall short of capturing the extent to which students contribute agentically into the on-going flow of the instruction they receive. (2011, p.258)

Consequently, educators need to broaden their understanding of engagement to allow for learner control as part of the learning experience. This seems to suggest that this student agency will allow for deeper engagement. Influenced by Deci’s work in Self-determination Theory (SDT) in which Deci and Gagné argue that a sense of autonomy and competence are necessary for a person to be intrinsically motivated (2005), Zepke and Leach hypothesize that “when institutions provide opportunities for students to learn both autonomously and with others, and to develop their sense of competence, students are more likely to be motivated, to engage and succeed.” (2010, p.170)

This concept of agency and engagement fit nicely into what Daniel Pink described as Motivation 3.0. Pink argues that contrary to popular beliefs which assume we must be monitored in order to be productive, “Motivation 3.0 begins with a different assumption. It presumes that people want to be accountable—and that making sure they have control over their task, their time, their technique, and their team is a pathway to that destination.” (2009, p.58) Pink states that allowing people control over these 4 T’s will lead to engagement (2009). Engagement in learning is possible when one is successful in combining the agency and the ability of the learner. My original
experiment with online learning had allowed for autonomy, but had not considered how to let students have control over their existing experiences as a way to promote engagement.

**James Paul Gee**

In my search for a way to create this blend of agency and engagement in education, I found myself returning to the works of James Paul Gee, the linguist who originally captured my interest with his thoughts on learning in context. In an attempt to understand a game that his son was playing, Gee discovered that games held valuable learning lessons. *What Video Games Have to Teach Us About Learning and Literacy* contains Gee’s often cited 36 principles of learning (2003). These principles have not influenced me because they value the use of games in teaching, but rather because of the observations that Gee has made about the kind of learning experiences that happen in games versus the kind of learning experiences that we often see in school:

> If the principles of learning in good video games *are* good, then better theories of learning are embedded in the videogames many children in elementary and high school play than in the schools they attend. Furthermore, the theory of learning in good video games fits better with the modern, high-tech, global world today’s children and teenagers live in than do the theories (and practices) of learning that they sometimes see in schools.” (2007, p.5)

Additionally, much of what Gee had to say in his Principles of Learning coincided with what I understood about agency in learning. Gee proposed that two kinds of learning are important. The first, active learning, involves “experiencing the world in new ways, forming new affiliations, and preparation for future learning.” (2003, p.23) This kind of interactive learning experience requires an additional step to become what Gee terms critical learning. “The learner needs to
learn not only how to understand and produce meanings in a particular semiotic domain, but, in addition, needs to learn how to think about the domain at a “meta” level as a complex system of interrelated parts.” (2003, p.23) Creating an environment that allowed the students to experience the learning outcomes in a situated context, could encourage the learners to construct a bigger understanding of the overall concepts and perhaps leverage them to produce new understandings. “Authentic activity, as we have argued, is important for learners, because it is the only way they gain access to the standpoint that enables practitioners to act meaningfully and purposefully. It is activity that shapes or hones their tools.” (Brown, Collins, & Duguid, 1989, p.36)

**Principles of Learning**

As mentioned, Gee initially divided his points into 36 Learning Principles but in a paper he released in 2004 he spoke to a specific core set that he narrowed into three overarching terms: Empowered Learners, Problem Based Learning, and Deep Understanding. While not a complete record of his original principles, Gee suggested using this more accessible version “as a checklist: The stronger any game is on more of the features on the list, the better its score for learning.” (2004) Gee used the word ‘game’ here but we could easily replace the word ‘game’ with ‘lesson’. Thus, according to Gee, the more features from the list that a lesson might contain, the stronger the chance that the student will experience successful learning. As I examined Gee's list I decided to put my online ILP up against the checklist.

**Empowered Learners.** Gee’s notion of empowered learners defined how “all aspects of the learning environment…are set up to encourage active and critical, not passive learning.” (2007) Gee discussed four underlying principles under this heading:

1. Empowered Learners
   a. Agency
b. Customization

c. Identity

d. Manipulation

The first principle, Agency (Gee, 2004) examines how the learner interacts with the environment. Gee stated that we connect more with learning when our choices, decisions and actions have meaning. In my ILP, I had given my students the choice of which activities to pursue, but the activities in and of themselves were not connected to anything that might encourage meaning. The students could choose to learn grammar or vocabulary but their choice held very little relevance to them as individuals. According to Gee, I had not addressed the second principle, customization (2004). Customization is related to learning styles. The choices that we make should allow us to approach problems using a variety of strategies or difficulty levels or to try on a new identity. When I introduced the ILP to my students, I had them take a learning styles quiz as a way to stimulate conversations about how to choose activities best suited to their individual learning needs. I had them reflect on this, but I didn’t take it any further. Thinking about this concept in terms of having choices within an environment, I could see that I actually provided the students with very little ability to customize their learning experience in terms of choice or identity. Identity, the third element to creating empowered learners, allows the learner to decide what kind of learner he/she is going to be upon entering the learning context. Gee points out that games create low risk environments because they offer “a learning space in which the learner can take risks where real-world consequences are lowered.” (2003, p.62) Creating a character upon which one can project a new identity allows the individual to come to the learning situation with a clean slate. In the real-world, the learner might not be comfortable taking risks, but if a potential superhero identity could be fashioned to
experience those risks for the learner then the perceived risk could be lowered. I had considered this when I developed the ILP and I had my students create an avatar and identity to fit their learner profile. Yet because the avatars played no real role in the learning context beyond the initial introduction activity, these identities soon lost value to the students. Without a context for my students to customize or to enact agency the avatars were indeed redundant. Gee’s **Manipulation** principle (2004) can be seen as an extension of Glasser’s essential needs (1997). The ability to manipulate the environment helps the learner to feel like they are an essential piece of the learning context. “It also recognizes the dynamic nature of learners’ agency as agency emerges from its interaction with contextual structure.” (Gao, 2010, p.28) Overall, in terms of empowered learners, the ILP offered little more than a choice of prescribed activities. Once the students reached the end of the introductory activities, they no longer had any dynamic interaction with the learning. The framework for the ILP did little to create any tangible learning situations. At this point I realized that if I was to continue with Gee’s checklists as a measure against the value of the ILP, I would need to go beyond the framework and examine one of the online language programs they could select for study. I chose to use Duolingo as a point of measure in the following sections because this was the program consistently chosen by students and I felt it would add continued context to the next few sections. The framework of the ILP was lacking in terms of Gee's empowered learners’ principles, but I was confident that Duolingo contained some measure of opportunity for agency. According to Louis von Ahn, one of the developers of the Duolingo website, “the basic idea is people learn a new language for free while simultaneously translating the Web. And so basically they're learning by doing.” (2011, 12:25) In a study regarding the effectiveness of Duolingo for learning a second language, results showed the improvements were substantial (Vesselinov & Grego, 2011). Duolingo appealed as a
learning tool because students could learn about language while contributing to something bigger and “with Duolingo, people are actually learning with real content. As opposed to learning with made-up sentences, people are learning with real content, which is inherently interesting.” (Von Ahn, 2011, 13:17) The students in my class who chose Duolingo as their method for learning had a chance to exert agency as they worked to learn a second language. In Duolingo, the learner can take part in real-world discussions about, and ultimately have input into, the translations that will inform future accepted usage. The framework of the ILP may have failed to create agency, but Duolingo allowed my students some measure of power in their learning experience.

**Problem-Based Learning.** According to Gee however, creating a culture of empowered learners was only one part of keeping students engaged in the learning process. “At a deeper level… challenge and learning are a large part of what makes good video games motivating and entertaining.” (Gee, 2005, p.34) The way that the content is structured in a lesson is also an important part of engaging students. Gee’s principles of Problem-Based Learning operate on the premise that games create good tools for problem solving, rather than just delivering the facts. This way of organizing information is what Gee calls his seven principles of Problem-Based Learning (2004):

1. **Empowered Learners:**
   a. Agency
   b. Customization
   c. Identity
   d. Manipulation

2. **Problem-Based Learning**
   a. Well-ordered Problems
b. Pleasantly Frustrating

c. The Cycle of Expertise

d. Just-In-Time

e. Fish Tank

f. Sandbox

g. Skills as Strategies

Ensuring that learning outcomes are presented in a way that encourages mastery and understanding is an essential piece to building a successful experience for the learner. Gee’s first principle under Problem-Based Learning is **Well-Ordered Problems** (2004). Information should be set out for the learner in increments that range from easy to difficult in order to allow the learner to build and learn on previous experience. Each stage can be developed to incorporate the set of concepts taught in the proceeding stage. “Scaffolding provides support, functions as a learning tool, extends the range of the learner and permits the accomplishment of tasks not otherwise possible” (Donato 2012). The importance of scaffolding on learner engagement is closely related to what Gee terms the **Pleasantly Frustrating** principle (2004). Keeping within this range of ability allows the learner to stay challenged and to stay engaged. This is in line with the work on flow by Csikszentmihalyi and expanded by Daniel Pink in his book *Drive*:

The relationship between what a person had to do and what he could do was perfect. The challenge wasn’t too easy. Nor was it too difficult. It was a notch or two beyond his current abilities, which stretched the body and mind in a way that made the effort itself the most delicious reward. That balance produced a degree of focus and satisfaction that easily surpassed other, more quotidian, experiences. (2009, p.62)
Staying within this zone creates the balance necessary for engaged learning. This balance can be sustained by the notion of what Gee terms the cycle of Expertise principle (2004). According to this principle, the learner is given the opportunity to practice a new skill until it becomes mastered and is no longer challenging. At the moment of mastery, a new skill should be introduced and the cycle from challenge to practice to mastery is repeated. This cycle not only allows for sustained engagement, but helps to increase the students’ self-confidence.

As students develop analytic and information transformation skills, they may be less inclined to hesitate and over-monitor their performance on complex problems, which again could lead to increased self-efficacy and favorable performance attributions for tasks previously considered beyond their capabilities. (Corno & Mandinach, 1983 p.100)

As the learner gains confidence then we can trust in his/her ability to move on to the next skill to be mastered. Another principle under the umbrella of Problem-Solving became one of my favourites: The Just-in-time or On-Demand principle (2004). In his video on gaming principles, Gee tells a story of a game he once played (2013). When he first purchased the game, he intended to learn to play by reading the manual. However, he soon realized that the manual was full of terms that held no meaning for him. So being unable to comprehend the instructions, he decided to jump into the game with no training. Gee’s progress in the game was slow, but he eventually began to understand how to play. At this time, he picked up the manual again and found that all the terminology which had previously been foreign was now completely clear.

From this experience, Gee deduced that certain information should not be given to learners until it is requested. With the inclusion of Duolingo in the ILP, I had also experienced this principle. When I first began teaching French, I taught language using a grammar approach, much as I was taught when I went to school. Recently, I moved away from overtly teaching grammar during
my face to face (f2f) time in the classroom. My students instead complete much of their structural language practice via Duolingo. The grammar approach is based on using grammar mastery as a way of reconstructing language. However, when a concept was applied to writing and conversation the majority of the students were unable to transfer the concepts. This changed when the students learned with Duolingo. Instead of being prescribed grammar, students began to come to me and request explanations as to why certain sentences were structured in a particular way. In context, I was then able to provide the grammar explanation at a time that was relevant to their learning. The students were seeking clarification because it was relevant to them at that moment and not because I forced it on them out of context. Gee explains that these kind of situated meanings are at the heart to understanding what problem-solving is all about. (2007). In addition to creating meaning, this kind of learning contributes to stronger agency. “It is agency that underlies the learners’ dynamic strategic behaviour as they constantly transform their strategy use to pursue their goals in response to contextual changes.” (Gao, 2010, p.21)

Gee’s principles of using Skills as Strategies fits with this idea. Gee notes that unlike in rote memorization or practiced drilling of skills, learners will get more out of learning if they can see it as a way to achieve something bigger (2004). In this instance, I found that Duolingo was only effective for the students who took part in the areas that went beyond the practice offered in the vocabulary and skill based lessons. Some of the students discovered that they could import new documents into Duolingo to be translated by other learners. They enjoyed getting credit for adding to the project, but they also began to understand how the skill lessons fit into the larger picture of learning and translating a language. In the development of critical thinking skills, learners need to be able to build on previous learning and apply it in new ways to unique situations.
Gee’s final principles in Problem-Based Learning involve the type of environment provided at each stage and the amount of time devoted to exploring it. In the **Fishtank** principle, much like with the idea of scaffolding, Gee suggests creating a different contextual environment for each level of the learning experience (2004). Providing the learner with information in smaller chunks is important, but equally so is ensuring the environment is not too overwhelming in details when they are first starting out. Gee mirrors this principle as analogous to the way a person would set up a new fish tank. The initial environment is set up to resemble the larger ecosystem, but with less features. This allows for time to understand the individual elements without being overwhelmed by the entire ecosystem from the start. More fish and different types of plants can be added as the owner becomes more familiar with each element. According to Gee, games are successful because they use this principle at the start-up of a game. (2007). “They put the player into simplified versions of the game so as to not overwhelm them. Within the fish tanks, players can separately learn different facets of the overall experience.” (Bossler, 2014, p.4) In Duolingo, the items that students are given to translate are very simple, basic sentences. Students do not begin to translate larger documents until much later, and generally only as they feel ready to participate in this area. Likewise, Gee’s **Sandbox** principle allows the learner to play with low risk and to explore an environment that has an easy to more difficult progressive structure (2004). In terms of second language learning this is especially important. “One can argue that all second language learning requires learners to take risks, but situational variables and learner characteristics can render some tasks riskier than others for a given learner.” (Vann & Abraham, 1990, p.184) Sandbox environments have been shown to promote risk-taking and creativity. “A “sandbox” approach to instructional development can encourage emergent phenomena to flourish.” (Warger and Dobbin, 2009, p.13)
Deep Understanding. In his previous categories, empowered learners and problem-solving, Gee did much to create agency and engagement (2004). Provided that the learner had created an identity and used it actively, he/she would be able to engage in the learning context for as long as was needed to practice skills and create mastery. The learner had all the potential building blocks for critical thinking. Gee’s final two principles address the ultimate goal of good teaching: Deep Understanding.

1. Empowered Learners:
   a. Agency
   b. Customization
   c. Identity
   d. Manipulation

2. Problem-Based Learning
   a. Well-ordered Problems
   b. Pleasantly Frustrating
   c. The Cycle of Expertise
   d. Just-In-Time
   e. Fish Tank
   f. Sandbox
   g. Skills as Strategies

3. Deep Understanding
   a. System Thinking
   b. Meaning as Action Image
The first principle of Deep Understanding is the System Thinking principle: “People learn skills, strategies, and ideas best when they see how they fit into an overall larger system to which they give meaning.” (2008 p.22) Again, Gee emphasizes that the learning context is important to fostering a strong sense of agency. When the learner is able to understand how his/her unique identity works within the environment the learner is better suited to taking control.

The second understanding principle and the final principle on Gee’s checklist is the Meaning as Action Image principle. Rather than gaining understanding through an arbitrary set of words and definitions given without context, learners are more likely to “make the meanings of words and concepts clear through experiences.” (2004) Experiencing learning in a physical manner is much more authentic than the disembodied way that is often carried out in lectures. The learner can achieve engagement much more quickly because they are embroiled in and living the experience. Being comfortable with the rules of the context, combined with control and a strong sense of identity, while engaging in a real experience can easily promote the sort of engaged practices that lead to learner agency. The inclusion of Duolingo in the ILP offered the students many ways to work on critical thinking and problem-solving skills, but the overall framework still lacked the authentic experiences necessary to develop meaningful agency in real world settings.

Gamification: The pathway from agency to engagement

After examining Gee’s Principles of Learning (2004), I began to consider how I might best employ them in my classroom. “Instruction must be situated in an authentic context that resembles that of the classroom teacher to enrich their learning process by providing realistic experiences that more easily transfer.” (Willis & Cifuentes, 2005, p.43) the skills needed. In my case, the learner needed to be an active participant in second language learning. Deciding on the right framework for building a situated learning environment that would allow for agency and
create engagement required some investigation. Even though Gee maintained that he was not promoting videogames in teaching, I was still intrigued by the idea. The idea of employing games as a possible teaching method was reinforced when Jane McGonigal pointed out the implications of raising a community of gaming virtuosos:

So, consider this really interesting statistic; it was recently published by a researcher at Carnegie Mellon University: The average young person today in a country with a strong gamer culture will have spent 10,000 hours playing online games by the age of 21. Now 10,000 hours is a really interesting number for two reasons. First of all, for children in the United States 10,080 hours is the exact amount of time you will spend in school from fifth grade to high school graduation if you have perfect attendance. So, we have an entire parallel track of education going on where young people are learning as much about what it takes to be a good gamer as they are learning about everything else in school. And some of you have probably read Malcolm Gladwell's new book "Outliers."

So, you would have heard of his theory of success, the 10,000 hour theory of success. It's based on this great cognitive science research that if we can master 10,000 hours of effortful study at anything by the age of 21, we will be virtuosos at it. We will be as good at whatever we do as the greatest people in the world. And so, now what we're looking at is an entire generation of young people who are virtuoso gamers. (2010, 6:49)

McGonigal’s talk described what she considered to be the strengths of these ‘virtuoso gamers’, but what resonated for me was the idea that today’s young learners already have experience with a gaming environments. Creating a game for my students to play, therefore, meant asking them to enter what was already a situated context, one that held positive feelings of success for many. Rules of play in games are known to most of us, whether we are ‘virtual’ gamers, ‘sport’ gamers,
or we just enjoy a good game of cards. In a case study from Lee Sheldon’s *The Multiplayer Classroom*, when a participant in a case study asked the question of why one should choose a game format as a model for a class, the response was: “well-designed games provide integrated assessment and contextual feedback; they are good at keeping players motivated and in flow; they incorporate established pedagogical techniques including scaffolding instruction, variable ratio reinforcement and social learning.” (2012, p. 84). The question for me then became about how I could create a game-like experience in my f2f classroom. I examined the idea of game-based learning, but I rejected it as a solution because of the following factors: I could not find an existing game to meet my student’s needs, the infrastructure of my district could not support this kind of learning on a full-time basis, and I am not a game-designer. However, Karl M. Kapp (2014) argued that the answer could be found not in games themselves, but in the elements found in games. Much as Gee pulled out the Principles of Learning, Kapp pulled out the elements that were necessary for creating a great interactive learning environment. Kapp says “the addition of game elements on top of traditional learning environments is a way of leveraging the power of engagement and imagination.” (2014, Preface p. xxii) Gamification, not games, seemed to be the pathway to achieving the agency and engagement in learning.

**Definition of Gamification.** In order to clarify what I considered to be the essentials of gamification I included the definitions that have most influenced my understanding of the concept. Kapp said that “gamification is using game-based mechanics, aesthetics and game-thinking to engage people, motivate action, promote learning and solve problems.” (2012, p.23) This definition is consistent with the Gees principles of empowered learners, problem-solving and deeper learning (2004). Both take into the account the necessary involvement of the learner as a means to achieving learner success. Other definitions of gamification emphasize that...
gamification should be applied to what would regularly be a non-game setting. In the case of the ILP, the setting was a second language classroom. Dr. Scott Nicholson, director of Because Play Matters game lab, added that these design concepts should be used to create an authentic experience that separates the learner from real-world. (2012). This distinction highlighted the importance of setting up a context that would allow learners to experience learning similar to real world experiences, but within the classroom context. Many more definitions exist with further distinctions and clarifications applied to the current understanding of the word gamification, so much so, that what is abundantly clear is gamification is gaining momentum in education.

“Games and gamification experiences are not going away. The engagement achieved through games means that gamification is a concept that needs to be part of every learning professional’s tool box” (Kapp, 2012, Page Intro). Kapp tells us that “This is not a waning trend.” (2012, p.22). As he says “traditional methods of learning are losing favor” and “gamification provides another layer of interest and a new way of weaving together those elements [points, corrective feedback, encourage collaboration etc.] into an engaging game space that both motivates and educates learners.” (Kapp, 2012, p.12) Dr. John Orosco in his recent doctorate dissertation echoes the sentiments of both Kapp and Gee: “The fundamental idea behind this is simple: games are fun and engaging. So, why not take elements from successful mainstream games and apply them elsewhere in order to increase long term user motivation and engagement.” (2015, p.23). This kind of engagement seems intricately woven with the idea of agency. Nicholson insists that to develop meaningful gamification, the developers must consider the choices and actions that will be required by the learner:

To create a play-based gamification experience, the designers and funders of the system must recognize that it needs to be a system that the users choose to engage with and are
not forced to engage with. This may cause some points of conflict with gamification in the workplace or school where the participants are forced to engage with the system. One way to soften a required engagement with a gamification system is to ensure that the system allows for exploration. (2015)

With the ILP, I attempted to allow the students choice in their learning. However as mentioned, the choice was really only superficial. The students had very little autonomy in the areas assigned. They could choose Duolingo or try their hand at a more complicated online learning environment. Without exception they all chose Duolingo, and while the majority enjoyed the experience, they could only interact with Duolingo under the constructs of the program. The idea of creating a context where the students could explore different areas fit in well with the cultural learning outcomes mentioned in the proposed BC French curriculum. Throughout the different mastery levels of the draft curriculum many areas of culture and language are encouraged as topics of study. Using real-world cultural experiences as inspiration would help to create the kind of situated context that is essential for achieving a successful gamified experience. If the context is designed to create the kind of engaging flow that promotes an agentic experience, we can expect even the weakest learners to be successful.

**Structural vs. Content Gamification.** The pathway to gamification, Kapp (2014) reminds us, is not an easy one. It is a myth to think that creating a gamified environment is an easy task. He says instead “Development efforts for interactive learning experiences require long hours, multiple interactions of the learning experience, and a careful attention to detail.” (2014, p.13) When a game is easy to play and intuitive, the process to ensure these features are included is usually involved and complex. The next step, then, was to identify what elements of successful games were the ones that marry best with James Paul Gee’s Principles of Learning.
To begin with, Kapp (2014) divided the types of gamified experiences prevalent in education: Structural and Content. Structural Gamification involves “no alteration or changes to the content. The content does not become game-like, only the structure around the content does.” (2014, p.56) The predominant elements of structural gamification are points, rewards and social-sharing (2014). Content Gamification on the other hand involves “the application of game elements, game mechanics and game-thinking to alter content to make it more game-like.” (Kapp, 2014, p.56) Kapp’s two definitions suggested that Structural Gamification is an important element, but that it is only part of the overall process and should be applied to the more game-like content gamification. Among the most common elements of Content Gamification identified was story (Kapp, 2014). This component stood out for me as being an important starting place for building a gamified environment. Perhaps adding a narrative to the ILP could have given meaning to the identities that I encouraged my students to make? With a story, these students created avatars could have embarked on a journey into the second language learning context. Duolingo could still have been leveraged as necessary training for their new identities, but the story could have been designed as an authentic experience in a culturally rich learning environment. These narrated activities could have provided the embodied experiences that are necessary to evoke meaningful learning (Gee, 2007). The authentic learning space would provide a context for the students to actively engage and authentically experience second language learning. To make sure that I create a gamified framework that was both engaging and based on sound pedagogy, I plan to consult Gee’s Principles as a guidepost. Both Gee’s Learning Principles (2008) and the Learning Principles proposed by The BC Ministry of Education (2011) emphasized the importance of active student participation. Gamified experiences inspire
students to participate more actively and the use of Gee’s principles provide solid grounding for creating agency leading to second language learning success.
Chapter 3 -- Procedures & Methods

Major Project Design

The Major Project stated simply, was developed to work as an independent online offering, that could be utilized as a complement to either, a distance learning (DL) course, or as in my case, a face to face environment (f2f). The use of online elements in a f2f class created a blended approach intended to maximize the benefits of both DL and f2f. To achieve this, an interactive storyline was created to arouse interest to align with provincial learning standards. The major project was developed in order to address the critical question:

Can James Gee’s principles be implemented in a gamified environment in order to increase engagement and agency in learning that will ultimately result in successful learning of a second language?

As I deliberated the design of the project and how it might address the Critical Question, I developed a series of leading questions which I felt were important in demonstrating my understanding:

1. What is gamification and where does James Gee fit into this definition?
2. What do I mean by agency in learning?
3. What do I mean by engagement?
4. What makes Gee's information (principles) significant to online/blended education?
5. Why gamify?
6. What do I want to achieve?
7. What is the best way to implement the principles to achieve individual learning?
8. What is the best platform for implementing the project?
9. Who will be the target group?
I began by determining what I meant by gamification, agency, and engagement. Gamification, as discussed in Chapter Two, uses the elements of games to enhance the presentation of non-game situations. My desire in creating this project was applying these game elements to encourage students to more actively involve themselves in the learning journey. Therefore, I was interested in using gamification as a vehicle to increasing the amount of student investment. Adding story elements and creating a gamified environment, seemed the most direct way to give students control of their learning experience, in a way that motivated them to become active participants. The independent level of engagement, or agency, that the students exerted would be an indication of how successful the gamification framework had been.

Secondly I considered where James Gee fit into this picture of gamification and resulting agency. I was interested in how Gee’s *13 Principles on Games and Learning* (2013) could transfer to education, particularly in a face to face (f2f) environment that was supported by online learning. See Appendix C: *Principles of Learning Mind Map*. Understanding Gee’s principles was important, and provided a solid foundation for my project. Each of his points was founded in pedagogy based on solid learning principles. The definitive goal of the project was the overall success of the learner in terms of second language acquisition. This led to considering what is the best way to implement the principles to best achieve student success? Throughout the Online Learning and Teaching Diploma (OLTD) program offered at VIU, I examined various schools of thought, directed at examining the different theories of learning. Two of the most influential included Self-Determination Theory (SDT), and Backwards Design (BD). Like Gagné and Deci, I felt that learning could be more meaningful when the student was able to exert some control over the learning experience (2005). While considering the direction that the project would take, I often considered how this kind of learning agency
might be achieved. With a clear understanding of what I wanted to achieve, I decided that it
would be easier to implement my goal of learner agency by determining what I wanted the
students to ultimately achieve in terms of learning standards. According to Wiggins and
McTighe,

> Teaching is a means to an end, and planning precedes teaching. The most successful
teaching begins, therefore, with clarity about desired learning outcomes and about the
evidence that will show that learning has occurred. Understanding by Design supports
this view through a three-stage “backward-design” process used to plan curriculum units
that include desired understandings and performance tasks that require transfer. Specific
lessons are then developed in the context of a more comprehensive unit design. (2011)

Understanding the standards and what that might look like in terms of student production was an
important link in determining how the final project would appear. My research and interest in
the theories behind game learning had led me to gamification as a means to actualizing the final
product. As mentioned, gamification allowed me to build on Gee's principles because well-
designed games already embody good learning pedagogy. Gee’s Learning Principles (see
Appendix B) do not necessarily presume the need for a game, but that is what is appealing about
gamification. Gamification is based on a similar understanding that we are using the principles
and elements of games to teach non-game content. The parallel exists because, as Gee so
eloquently mentions, the Learning Principles in good games are already built in: empowerment,
learning and understanding (2013). I was not looking to turn my class into a game. I was looking
to increase agency, engagement and ultimately success. The elements of games appeared to
already have what I wanted, built in.
Having decided, therefore, to gamify, I needed to choose a target group. I chose an entry level grouping because the concept of gamification would be new and pairing it with students that were primarily new to second language learning, seemed like a natural fit. Therefore, with the what (CCQ), the why (why gamify?) and the who (beginner level) established, I began to consider the how. How might I implement Gee’s principles in order to achieve what I considered to be the overarching purpose of this project: Leveraging gamification to increase successful learning of a second language?

**Major Project Development**

At the point where I began to consider how to leverage gamification, I decided to collaborate on the Major Project with my colleague Carla Wilson. We discovered that we had similar critical questions, and a similar objective -- to gamify our courses. Since we both taught beginner level French, we decided that our project would be best served by collaboration. Our familiarity and knowledge of both the curriculum outcomes and the concept of gamification, made our discussions more meaningful. Our suggestions to each other did not require explanation, and we found that we could determine potential pitfalls more quickly and make resulting decisions more effectively. While our Critical Questions were different, Wilson’s and my overall purpose was the same: to achieve student success. With a collaborative team in place, Wilson and I began to look towards project design.

As indicated by the literature research in Chapter Two, the main component that everything hinged on in our product design, was the storyline. In the beginning, Wilson and I decided that we would need to develop a storyline that would increase tension and engagement, as the story progressed. After researching some plot lines that worked well in games, we decided on a mystery/spy plot genre. What we liked about this framework was that we could gradually
release information to the learners. The plot line of a mystery, by nature, often involves the incremental release of clues designed to reveal a greater truth and allowed for the type of gradual release of information that fit the framework being developed.

Once we had done research, and looked at examples from existing mystery and spy storylines, we looked for some real world situations to create an authentic framework. I wanted the students to feel as if they were entering into a situation which might actually occur. In my investigations, I came across a news article about drones that had been seen flying about many of the major tourist landmarks in Paris. I began to think about the natural mystery built into the news article. After pitching the idea to Wilson, we knew that we had a story. With a mystery in mind, the next step was to create a storyboard. As described previously, the storyboard had several sections, including, creating the plot, developing characters, aligning curriculum and choosing activities.

During this process we spent considerable time in direct collaboration. We decided to use Microsoft OneNote to begin the storyboard process because we felt it served our purposes best. With OneNote, we were able to contribute to a joint document, as well as, keep our ideas both organized and synchronized. With the ability to link to the document, our work in OneNote also served as a document to share with other educators, who might want to look at our process more closely.

As we constructed the plotline, we continued to ensure the learning standards, based on the CEFR were being addressed, and that Gee’s principles were also being covered. For the standards, we periodically examined the quests to ensure that we had a balanced amount of reading, writing, listening, speaking and cultural quests. For the latter, I created a list of the thirteen principles and I began to note which principles were covered naturally, which ones I had
covered by adding and which ones still needed to be addressed. Wilson and I consulted with each other regularly to facilitate the process and to balance the workload. Collaborating on the project, and learning from each other was one of the ways that we intended to produce a high quality project. Originally, a concern existed about how we would define our individual roles in the collaboration process. However, as we soon found, we worked best when we could call on our strengths. Wilson and I made a solid team. During many of our collaboration sessions we would have different windows open, one of us might be narrating a thought while the other one captured it, and then we would switch. At the end of the sessions, we assigned ourselves a series of tasks to complete. Once the basic storyline was established, we were able to determine the tools needed to implement the project. We had already begun using Microsoft OneNote as one of our major tools for collaboration, but we also relied heavily on some of the Google tools. Google Hangouts was important for helping us to collaborate in real-time. We found that combining OneNote and Hangouts was an effective way for us to plan and discuss the project during the planning stage.

The most important decision was how to host the project. Since we wanted to create a game-like atmosphere, we decided to use 3dGameLab. Wilson and I already had experience with the platform, and we knew that the tool was both robust and easy to use. “In 2010, professors at Boise State University Dr. Lisa Dawley and Dr. Chris Haskell built a game-based learning management platform to begin testing the quest-based learning approach (Haskell, 2013). 3dGameLab was created with the idea of course gamification in mind and was developed with feedback from other educators. As a result, the built-in gamification features such as awards and badges worked well with the aims of our project. Additionally, the platform allowed for the release of the assignments at a determined time and place of the storyline. We looked at
other platforms, but found them either too complicated to undertake given the project timeline, or lacking certain elements. In creating the project, we found that while 3d GameLab did have certain limits, it seemed to be the best product fit for our proposed design. The other tools that we used in creating the project were chosen based on their ease of use, ability to be interactive and their overall perceived attractiveness.

**Major Web Tools:**

**3d GameLab** - online site that we used to host our project. 3d GameLab functions much like a learning management system (LMS) but contains built-in gamified elements

**Google Hangouts** - online communications tool used to conduct our collaborative meetings

**Quizlet** - online interactive vocabulary revision tool used in the assignments

**Microsoft OneNote** - online tool for collaborative document sharing

**Voki** - interactive avatars that were used to provide communication of information from all non-player characters

**Weebly** - for the hosting of our websites and the landing page for our students’ production

**YouTube** - for videos that we might embed

Once the tools were chosen to host and create assignments, additional thought was given to student acquiescence and adequate training of the technology necessary to get into the game. Also, parent permissions had to be received first before we could enroll students online. Both considerations were built into the development of the Major Project. As Wilson and I began to design the Major Project, we considered a timeline that might fit in with the natural beginning of the public education school year, the startup of September classes. The timeline was developed therefore, to be completed in a reasonable timeframe that worked within our schedules and the beginning of September, where we would naturally implement the Major Project.
Timeline:

July:
- Research, Story Development and Curriculum Alignment.
- Creation of Weebly blogs to document our learning and progress
- Weekly collaborative meetings using Google Hangouts and Microsoft OneNote to plan and create project

August:
- Blog updates, elaborating on process and progress.
- Transfer of quests into the Template spreadsheet design for 3d Game Labs
- Create quests for first two levels in 3d GameLab
- Simultaneously run test in student mode to check for bugs
- **September - December**
  - Implement the course in classes - Target group - Language Level A1 (CEFR)

September /October
- Blog updates on implementation/ feedback
- *Implementation of Major Project - adaptations made as necessary
- Obtain feedback from peer groups

November/December
- Blog updates on implementation/feedback
- Continue to adapt and make changes to quests as necessary

**Major Project Delivery/Implementation**

The collaboration and project design happened throughout the summer, in order to be ready for September implementation. Once the episodes were completed, Wilson and I each
created a test student that we ran through the quest chain, to ensure that the steps would run smoothly. After, we discussed any hiccups that we encountered, and made changes accordingly. As mentioned, the Major Project was aimed towards a beginner core French student. Thus, when implementing the project, I chose French 8. The background of the students is such that I have to assume they have had no prior French training. The choices provided throughout the Major Project allow for both basic training and the ability to fast track certain activities when less training was required. Additionally, with both the learning standards and Gee’s principles in mind, the quests were built on the premise that material is offered in small manageable pieces and then adapted to move forward.

For my part, I worked with my school librarian to obtain some consistent computer lab access time each week. My experience had shown that students followed through more when I established certain elements of my class as a routine. Wilson and I agreed to confine our beta testing to episodes one and two. The first two episodes fit into our timeline but also allowed for a decent amount of time and sample content on which to base our conclusions. Additionally, we presented the project to some interested peers and received some anonymous feedback. Based on our own observations of students and the feedback from our peer evaluations, we planned to make adjustments throughout the beta testing period. The anecdotal information also allowed us to draw conclusions, and make recommendations for further implementations of the project.

The Major Project was implemented with students, but our conclusions in this area were based on their general actions and how well the project seemed to move forward, when actual students were involved. Even though, students reflected in an anecdotal manner as part of the quest progression, we were careful not to use this information as formal data collection for research.
Methods and Process

The beta testing for the project was conducted along two paths. First, colleagues were asked to try out the 3d Gamelab program and give impressions of what they experienced in terms of the presentation of information, aesthetics and ease of use, and the amount and quality of information presented.

In order to increase the relevance of the feedback, colleagues of differing curriculum and computer experience were given the opportunity to engage in the gamified learning experience. In addition, participants were directed to a site that listed a brief overview of the course objectives and instructions on how to join and navigate the 3d Gamelab site. Embedded on this site was an evaluation form, designed to provide anecdotal feedback on the user experience. The feedback form contained a few guiding questions about whether the user felt engaged or whether the presentation of the information felt comfortable or too overwhelming. At the same time, student experience informed improvements in the project. Students were not asked to give official feedback, nor does this paper provide observations of specific students. Instead, where conclusions are drawn about student interactions with the project, they are based on observations of the group as a whole.

Many structural changes made throughout the beta testing were based on the anecdotal feedback from colleagues, as well as the issues that arose in the implementation of the Gamified Learning Experience (GLE). For example, the assignment approval requirements were removed from the demo group, in order to facilitate the ease of the review process. As a result, the reviewers did not experience the project’s built in assessment points. Consequently, the reviewers observed that some students might be tempted to rush through assignments, and
wondered how we would control this issue. Despite these approval checkpoints, this was indeed an issue that we noticed during the initial release of the project. Some assignments were submitted without the full completion of the tasks required. However, since the 3d GameLab framework easily allowed for approval on any of the quests, the project was designed to require approval of all major learning outcome and production lessons. The beta testing confirmed that this precaution was necessary for any assignments that required student output.

Peer feedback was also utilized to consider certain design choices. Some of the reviewers suggested that content might be too simple for students, but admitted to not being sure of the overall picture without seeing the students interacting with the content. This was a question that I struggled with while developing the project and I welcomed the opinion of other educators. In consulting the introductory assignments that were included to establish the overall story, I considered the intent of the project, which was to provide content in a way that capitalizes on the Learning Principles that James Paul Gee first identified in *What Video Games Have to Teach Us About Learning and Literacy.* (2003). Gee emphasizes that learning should be offered in small and simple pieces that students can begin to use, much like the early stages of a new video game experience, and that too much new information should not be added until students have demonstrated mastery of the initial concepts. So while in this case, I did not feel that the feedback given by peers warranted a change in the overall design, the question in the form helped to validate the pedagogy behind the original choices that I had made.

Together, the anecdotal feedback from peers and the implementation of the program in my classes, served to identify the challenges and successes of the Major Project design. As I considered both feedback, and my general observations, I continued to consult the overarching question and purpose of the Major Project: Can James Gee’s principles be implemented in a
A GAMIFIED LEARNING ENVIRONMENT

gamified environment in order to increase engagement and agency that will ultimately result in successful learning of a second language? This question, and Gee’s principles, played an important role in how I filtered the comments of peers, and the results that I observed.

Findings of Beta Testing

The intent of the project was to allow the students some agency in their learning, in order to encourage a deeper investment from the learner. Agency, defined here, refers to the student having some control over the content in a way that might shape the path of learning, in order to create a more meaningful and engaging experience. As design considerations led to discussions on how to allow students meaningful control over their actions in the project, we found that providing user control of the sort available in games turned out to be more difficult to achieve when applied to a classroom situation. The storyline provided an engaging way for the students to create an alternate identity, but deciding how to give the student agency through choice required considerable thought. Discussions centered on what choice would look like, in terms of assignments versus storyline progression, and whether or not students would actually perceive themselves as truly having a sense of control. The resulting structure provided the students with optional assignments, as well as a variety of ways to produce the assignments. Reviewers appreciated the breadth of options available to students when completing the missions. In oral production assignments, for example, the students were able to record their voices, video their performances, or simply speak to the course facilitator directly.

Additionally, by choosing a storyline that asked the student to take on the role of an undercover agent, students were given plenty of opportunity to be involved in the personal creation of identity. As the beginning missions (assignments) involved training the students to become undercover agents, the students were directed to truly create their own characters. The
ability to project a new identity onto a character allows the individual to separate personal
identity from the situation. James Paul Gee notes that this is particularly important in learning
because the learner feels more comfortable taking risks and making mistakes if the situation is
not tied to their personal sense of worth and identity (2003). The students quickly adopted the
agent roles provided by the story construct and, to some extent, seemed to roleplay the character
of agent outside the computer setting. The reviewers equally enjoyed the role play demanded by
the project and admitted to enjoying the feeling of having an active role in the project.

Most reviewers felt that, after an initial period of learning how to navigate the online
environment, students would have little difficulty with the technology. This appeared to be the
case when implementing the Major Project. Colleagues agreed and felt that the technology would
serve to enhance the learning experience for the students. However, while trying to present a
captivating piece, while also trying to present the curriculum standards, some of the quests
became inundated with information. Due to certain constraints within the 3d Gamelab
framework, the quests had to be presented in a scroll down format. As a result, many of the
original missions needed to be divided in order to present the information in more manageable
pieces. In dividing the assignments, some reviewers felt that some of the quests did not contain
enough information. The shortness of the quests was, in fact, purposeful, due to the length of
time available for students to work on the project at any given time. The intent was that in a
thirty to forty-five minute timeframe, a student could successfully complete some of the quests
and feel a sense of accomplishment. Additionally, some quests were informational only, and
designed to move the story forward, rather than to teach a particular concept. This structure was
based on game design. Often, after the successful completion of an objective in-game, the player
will be treated to a small movie clip that is visually appealing, designed to entertain, and to
provide lore related to the main storyline. To further support this thinking, I observed that when the assignments required too much time or commitment, some students seemed to disengage or become overwhelmed with the amount of information presented.

Another concern was that completing the feedback required at the end of the shorter quests could be more time consuming than the tasks themselves, which seemed to be counter-productive. As part of the 3d GameLab design, a feedback window opens up at the completion of each task, and the student was asked to rate the quest in terms of how engaging they found the quest to be, and how much time was taken to complete the assignment. While this might seem like a problem, the feedback offered via these screens is important to helping students properly manage their time in class. In my classes, I discussed the importance of providing feedback to other users. This feature of the program allows the students to share their expertise with others who have not yet completed the tasks. However, if students truly felt that completing the feedback became a hindrance to their learning progression, the feedback screens could be bypassed with a simple click on a “no thanks” link provided in the feedback window.

The most common question from reviewers centered around how the project would be evaluated. They were unclear as to how completing the mission quests would transfer into a grade. Certain assignments contained rubrics for larger production items, but others did not. The assessment used in the course was not evident to the reviewers because they did not have access to the final outcomes of the project. The different aspects of the assessment were explained on the project web page, but without seeing the students go through the project, the overall picture was difficult to imagine. When presenting this to a class, students were given an explanation of the feedback process. Anecdotal feedback would comprise a large part of the evaluation. The purpose was to create an ‘assessment for learning framework’, whereby students
received feedback and help that they used to make improvements in their work and was designed to create a mastery of the learning objectives. However, individual assignment grades would only be applied to the major production pieces included in the students’ online portfolio, to be submitted at the end of the course. The students would create this portfolio in the guise of a ‘spy journal’. The spy journal would be given a more formal assessment at various points of the course. The students would be supplied with a rubric that indicated how they would be assessed. Furthermore, throughout the course, students would be periodically evaluated on progression, meaning that an emphasis would be placed on active involvement and skill mastery, rather than on the number of assignments completed. Evaluations would be based on a holistic scale, and if students were not progressing, then further investigation into their situation was required by the course facilitator. In the event that the problem was based on comprehension or lack of understanding, the student in question could be pulled from the activity for a more personal lesson. Given the short timeframe of the review period, many of the reviewers who offered feedback were unable to experience the bigger picture of the evaluation piece and required an explanation, as the evaluation structures were not made apparent by a simple review of the project design.

Some of the reviewers who were not familiar with video gameplay did not immediately understand the purpose and role of experience points and levels. At the completion of the different assignments, the 3d GameLab framework is designed to award a certain number of experience points (XP). These XP points help to give the students a sense of accomplishment when they have completed an assignment and are a classic element of the gamification process (Kapp, 2012). Some instructors use the XP points in place of a traditional grade. Lee Sheldon, in his book, *The Multiplayer Classroom*, explains that this kind of grading allows students to
gradually build their grade in a positive way that allows for students to be able to continue to master the subject and actively earn a grade (2012). The completion of quests does play a role in helping me to determine the overall progression of the student in terms of understanding and ability, as the amount of XP that a student has amassed is a general indication of the amount of material that has been mastered. However, these points do not indicate an overall grade at this time. The intent was to increase the value of these points in future builds, by including them as part of the formal grading process. However, as described, at the time of the Major Project build, the main assessment was based on course progression and the student portfolio page. The role of the XP therefore, played an aesthetic role as part of the storyline experience.

In terms of the overall aesthetics, while some reviewers felt that the format of the 3d GameLab framework was not appealing enough and wished for a more visual format, others were intrigued by the blend of visuals offered. Each quest incorporated an interactive talking character that provided relevant information orally, and many of the quests contained pictures and videos to help add an aesthetic appeal. Most reviewers felt that the talking characters and the videos would help to focus the attention of the learner. However, they felt that the scroll down design of the 3d GameLab framework allowed for some of the relevant information to become lost. This format is another reason that the quests were designed to present only small pieces of information at a time. The 3d GameLab framework did contain further restrictions, such as the inability to add interactive flash applications, but overall, the reviewers did not seem to mind the visual presentation. I did not receive any complaints from students, but formal feedback would be necessary to further determine their own preferences in this area.

Finally, the feedback form asked the evaluators to consider the effect of the Major Project on the increase of student engagement. The evaluators were hesitant to offer strong conclusions
in this area without seeing students actually engage in the material. The general consensus was that like most lessons, some students would be highly engaged, while others would not be impressed with the manner of presentation. However, many of the evaluators did admit to being drawn into the storyline and game-like feel of the quest progression. The reviewers agreed that the storyline was a good hook for drawing in the attention of the students, but were concerned that the amount of work involved, once the quests began to progress, would overshadow the storyline.

The balance of curriculum and gamified elements was an important consideration when planning the project. One way that we attempted to achieve this balance between lessons and story, was to add a section of ‘side-quests’. These optional side assignments allowed the students to leave the main storyline progression and concentrate on completing Duolingo language lessons. Since they were designed as further agent training missions, they remained loosely tied to the overall story framework. In the long term, the language training could be applied to the overall mission, but in the short term the lessons immersed the students in the already game-like feel provided by the Duolingo application. However, as the reviewers only experienced the shell of the assignments, they were somewhat ill equipped to see the bigger picture of the project. For example, an evaluator might see the Duolingo missions, but not understand that these particular assignments were optional. While not strictly attached to the plot line itself, the side quests were intended to provide the students with a measure of choice as they progressed through the overarching mission. If the evaluators had fully completed the entire episode, they would have been able to better experience the full depth of the storyline.

Overall, I found that the reviewers had very similar concerns to the ones that Carla Wilson and I had discussed while preparing our Major Project. In terms of student engagement,
they felt that the project would help to increase student interest, and depending on experience, the students would engage at different levels. The reviewers mostly felt that the design of the quests allowed for some differentiation for learning styles and individualized choice for the students. The general observations of the students seemed to substantiate these comments. Concerns, if any, were directed to how individual students might have problems in navigating and completing the quests. Some reviewers felt that support would be needed for the students as they completed the quests. Finally, since the group of reviewers represented a diverse level of experience, several of the comments represented an incomplete understanding of the project goals. This was especially true in terms of assessment. The evaluators wanted more transparent information concerning the evaluation of the project as a whole, which was not evident in a cursory review of the student questline.

Despite the concerns, the overall opinion supported the original objectives of the project. Reviewers felt that the project would help to increase the engagement of the students. The presentation of the material, with verbal and visual cues, was displayed in a manner more easily learned by students. While the reviewers were not necessarily aware of James Paul Gee’s work with learning in video games (2003), they did highlight that the gradual release of information helped to create a supportive learning environment. Feedback from colleagues suggested the project was well designed to enhance student success.
Chapter 5 – Conclusions and Recommendations

Conclusions

I had been interested for some time in the idea that the tools provided by the internet could be leveraged to increase success in learning. Early studies indicated, that while web tools provided opportunities for teachers to transcend the walls of the classroom, and began to bridge the gap between the digital world of students and the established institution of education, success was not guaranteed without careful structure and guidance by a higher authority (Lukin et al., 2009). With this in mind, I made my first attempt at creating a structure that would support online independent study. I provided opportunities for students to explore online language tools with the express purpose of creating a space where they might be able to explore their learning individually, and at their own pace. However, when I implemented the program, I realized that it fell short in certain categories. First, students that were not independent learners were often not successful. Secondly, even the independent learners seemed to lose interest in the endeavor over the duration of an entire course. I found that even when students were directed to specific online web tools, without some support and constant monitoring, the students were not as successful as I had originally hoped. As I searched for ways to engage students more fully in the program, I became interested in gamification, the idea of using the structures underlying games to provide motivation to non-game like situations. I applied many of the surface elements of games that were identified in Karl Kapp’s book, The Gamification of Learning and Instruction (2012), such as giving points and adding a sense of competition to my classes. I had hoped that these fun, game-like structures would motivate students to continue pursuing their language learning. At first, adding these game strategies worked because students seemed to find renewed interest in their learning. Yet, after the initial excitement wore off, the students seemed to revert to their
original learning habits. I recognized that including only the basic elements of games to my classes was not going to be successful. In order to motivate students to take control of their learning over the long haul of the course, I needed to reconstruct the program to include some of the more fundamental concepts of gamification. In reading James Paul Gee's book *What video games have to teach us about learning and literacy*, I discovered a set of Learning Principles outlining the pedagogy that existed at the core of good games (2003). While Gee originally identified 36 learning principles, he later refined them to a list of thirteen, with three overarching categories: empowered learners, problem-based learning, and deep understanding (Gee, 2013). These categories were important to my understanding of the Learning Principles necessary for creating a successful independent study program.

Above all, I was interested in what steps would be necessary to create an educational space where the learner was both willing and capable of undertaking a learning experience that would endure past a single lesson and, perhaps, beyond the confines of the course. Gee’s idea of **empowered learners** suggested that to be successful, the learner needed to have a feeling of personal involvement and choice in order to find meaning in the learning standards. (2013). Gee explains that “all deep learning-- that is, active critical learning-- is inextricably caught up with identity in a variety of ways. (p. 54, 2003)” I came to think of this kind of active, meaningful experience, as learner agency. Determining how to add this kind of agentic learning experience to my existing ILP, became the basis of the critical question for this project:

How can James Gee’s principles be implemented in a gamified environment in order to increase engagement and agency that will ultimately result in the successful learning of a second language?
Part of the project was designed to create opportunities for the students to exert personal choice and involvement. For example, the narrative framework of becoming a spy allowed for the creation of alternate identities. Adopting these identities offered the students an interesting, yet plausible situation that required the learning and application of language. My expectations were that the project could provide a way to help the students develop personal connections to the learning material. Basing the narrative on a real-life chronicled event helped to authenticate the learning paradigm. The framework then allowed students to immerse themselves in a language experience that was tied to the successful completion of a training mission, rather than to the success or failure of the learner as an individual. In this regard, the project reviewers agreed that the project was successful in creating a context that would engage and involve learners in a meaningful learning experience.

The second category of Gee’s learning principles that I included in my project was Problem-Based Learning. In successful games, Gee notes that “once the game proper starts, the first episode (sometimes several early episodes) is almost always something of a training module.” (2003) The project narrative was essential in creating this training framework. In one of our early quests (game assignments), the students are sent to a training facility to begin their instruction as an undercover agent. The missions immediately immerse the learner into beginner language lessons. This kind of design, where the learner is given information in small accessible pieces, is identified by James Bruner as instructional scaffolding (1960). My collaborator, Carla Wilson, and I felt that 3d GameLab, the online platform used to host our project, provided an excellent avenue for scaffolding the learning outcomes. Wilson and I were able to present the lessons in a gradual release format. Learning standards had to be completed in a chronological order, predetermined by the design of the project. Additionally, Wilson and I
had the ability to approve and/or return assignments before the learners could proceed with the next lesson. Having control over the order and amount of information provided in each lesson was essential to ensure that students were not overwhelmed.

Gee’s final category of Learning Principles emphasizes how the use of identity and the presentation of learning must be applied to create **deep understanding**. Gee is clear that words and concepts are meaningless if the learner does not understand how they fit into the larger picture (2003). In the context of our project, by having the students interact in situations that required them to involve their created identities in real world situations, they would be able to transfer the concepts to similar real life situations. Unlike a regular language class, where I often asked students to role play language scenarios, here the students were required to have their character react to situations in the context of the storyline. The difference is that the learner is reacting to a situation in role, rather than creating a situation for a role that has no meaning to them.

When the project was reviewed, those taking part did not have a chance to fully experience the storyline and how the roleplay might affect student perceptions. Neither the reviewers nor the students were officially assessed for their understanding of the language learning outcomes covered by the project. Therefore, I was unable to make any concrete conclusions about the degree to which the use of story and identity might play in overall student success. However, I was confident that the pedagogy underlying the project choices remained solid.

The project focused on creating an experience that helped to intertwine language and learning with the emotional pull of relevance and meaningfulness. As part of the critical question, I examined how the use of Gee’s principles could be used not only to improve learning,
but also to create engagement. Over the past few years, I had noticed that even when provided with opportunities for online learning, many students became disengaged at some point during the course. Therefore, when I designed the project, I considered what kind of activities might be included to increase student interest and interaction. Creating relevant, meaningful experiences seemed to be a pathway to more than just deep understanding, but also to creating engagement in the overall course.

In developing this project, I had hoped to engage the students that I had previously been unable to reach with my original Independent Study Program. I felt that the addition of a storyline would help to weave together the choice and success that would propel student learning. Those who reviewed the project agreed that the storyline added depth to the project. In general, I observed that the students seem to enjoy the process, the characters, the storyline and the missions. Although the project was presented in an online format, I had the benefit of supporting the students with face-to-face assistance and in-class lessons. This blended classroom format proved to be a positive way to present the material. I found that I was able to identify areas of concern, and to support students accordingly. If this project was offered to a fully online grouping, I would have to recommend creating missions that involved more online support. Additionally, I would consider simplifying the task directions.

I noticed that some of the reviewers were unclear in the beginning regarding how to proceed with task completion, I had to consider that the students might also have difficulty understanding the requirements. Upon reexamination of the instructions, I recognized that the instructions might need clarification. Originally, I had designed the assignments to include a written summary of completion tasks at the end of each activity. I assumed a written summary was enough to ensure clarity. However, if I were to revisit the project, I would consider
embedding an audio summary of the tasks they needed to complete, into each lesson online. As the reviewers seemed to enjoy initial information presented by interactive talking characters, the inclusion of audio directions at the end of each assignment might help students to better understand expectations. Additionally, the issue of improper task completion might be due to the reading level of the beginner level French student. While the level of French that we included seemed appropriate, some of the language employed in the written instructions might have been beyond the reading level of students. After determining that this might be an issue, I reviewed the clarity and simplicity of the instructions given. The language used to teach the lessons and convey the instructions proved to be an integral part of the process not considered in the original design of the project.

Overall I felt confident that the project was a success. The addition of a storyline helped create more meaningful connections for the students and provided a framework for sustaining authentic language experiences for students.

**Recommendations**

When developing this project, I spent considerable time researching what work had been done in the area of gamification and instruction. While the field is expanding and many educators are currently experimenting with gamification, a need exists for educators to provide clear examples of their experiences. The project was meant to hold value for students by helping to achieve and raise success rates, but also for educators who might be looking at gamification as a possible route for their own educational directions.

As anticipated the process was rigorous. The scope and breadth of this project was huge and I would recommend adding narrative to a smaller project before undertaking such a large task. The project development required more time than was originally anticipated, and a major
challenge included balancing storyline with the learning outcomes. Wilson and I needed to take time to identify the learning standards before beginning, and we devoted a considerable amount of time to creating activities that matched both storyline and standards. Unexpectedly, we discovered that in order to offer authentic and meaningful learning activities, the language lessons sometimes overshadowed the storyline. This was substantiated by what the reviewers noticed. While the majority of reviews received, indicated that the program design would be engaging for students, some evaluators were concerned that, over time, if not enough storyline continued to be woven into the process, students would begin to disengage.

Conducting actual research with students might be a next step. The general observations that were made as I implemented the program helped substantiate some of my hunches. The students seemed to behave and react much as I had anticipated. However, without actually getting feedback from different student groups, the observations remain general and still biased more in favour of my educational research, and less on actual student experience. Despite a lack of direct student research, I can still make recommendations from my findings: I entered into the project with the belief that using a storyline would be an excellent way to increase the personal experience and engagement from students. At this time, I have found nothing to suggest that this is not an excellent path to success. The reviewers admitted to having been drawn into the process, and appeared generally interested in knowing how the events would eventually be resolved. This kind of narrative could be applied to any subject area. I think that the creation of this project and the accompanying documentation, serve to explain the important role of narrative in providing a path to engagement that allows for learner agency. If educators continue to create and document ideas for storylines related to gamification, I think more educators will be able to envision a narrative that might further enhance their own teaching
experience. For this reason, an important goal of the project, outside of fostering student success, was to provide documentation of the process for other educators.

During the design process, I devoted considerable time to sharing my experiences. I was pleased with the product that I established with my website, but I found that I spent less time blogging about the experience than I had originally anticipated. I plan to continue my work with the project, and the website is one area where I intend to invest more time in the future. I believe that the information that I have already shared indicates the breadth and level of the commitment required to undertake this sort of project and, in that regard, I feel that I was successful in communicating the information to other educators who might be interested. I maintain that not enough documented information exists in this area, and there is still much to consider.

As a part of sharing my findings, I found that being able to collaborate with a colleague really helped to add depth to the process and the project. A considerable number of hours were spent discussing ideas and creating plans for moving forward. I do not believe that the project would have been as successful if we had each attempted the process alone. I considered this to be one of the most important successes of the project. Carla Wilson and I learned more from working together than we might have alone. The collaborative experience required us to truly understand why we were creating assignments, and encouraged a constant reevaluation of both the project goals, and the lessons that we were creating for the students. We often brought our own unique perspectives to the project, only to find our ideas enhanced and improved after a collaboration session. The joy of sharing our vision also increased our own investment in the project. The courses that I took in the Online Learning and Teaching Diploma program (OLTD), prior to creating this project, had convinced me that the path forward for educators lies partly in sharing and collaborating with other educators. Our unique experiences and knowledge can only
add to the strength of our understanding when we work to collaborate on joint projects. The tools available online have made the type of collaboration that Wilson and I undertook much more accessible to educators. Microsoft OneNote and Google Documents became essential tools for helping us organize our information together. We were not limited by our geographical distance. Together, Wilson and I took our singular critical questions and applied them to a collaborative project. I recommend more projects of this kind in the future for educators. I began the project with the idea of improving an educational experience for students, and I ended up improving my own educational experience. I found value and meaning in sharing my knowledge, ideas and learning with Carla Wilson every step of the way.

More research and time would be needed to determine actual student success in terms of language learning. I think that the idea of gamification, especially the addition of a storyline, continues to hold merit and I plan to continue leveraging this idea in future builds of the project. I agree with the project reviewers that the storyline could play a more integral part in the overall project. However, one of the limits of trying to include content was that balancing content for engagement and content for learning and mastery was difficult to achieve. This is an area that I felt required further investigation that was not possible within the timeline and parameters of the project. The preliminary findings of the project suggested that the storyline was an integral pathway to creating the kind of engagement and agency that would result in the kind of meaningful learning that ultimately leads to student success. I am confident that the project addressed my critical question of whether Gee’s principles could be applied via gamification to increase student agency and engagement.
References


Appendix A: Definition of Terms:

Definition of Terms:

The definitions enumerated below were created collaboratively from the working list of terms that were identified by the needs of our project and will assist the reader in understanding the scope and sequence. While some of the terms were unique to our particular critical questions, we found that working from an agreed upon list of definitions helped to remove ambiguity and confusion. As gamification is still a relatively new concept for most educators, the list of terms is substantial and stands more like a glossary.

Games

Avatar is the name generally given to the picture or in-game character that a players are given to represent themselves in game. Avatars can refer to the player of the game or characters that a player encounters throughout the gameplay.

Badges are a reward in many games or gamified environments to recognize certain achievements.

Experience points (XP) designate the points players receive for successfully completing quests. When a player achieves enough experience points, he or she will advance to the next level.

Game Elements are the parts of the game. Rules of play and game narrative are two important elements when designing a game.

Guild is a group of people in an online game that work together in defeating creatures or other mobs that cannot be done alone. Most online games now support guild chat, which allows guild members to talk to all other online guild members.

Guild Site refers to a central site for players to share learning and insights. Can be social in nature.
Leaderboard is a term typically used in the video gaming industry to signify rank among people who play. Players can be ranked against other players on their number of kills, items collected, or some other metric. Leaderboards can provide an incentive for players to improve as they give many a sense of superiority or accomplishment.

Narrative is the element of the game that weaves the action together and is designed with the intent of giving purpose to the actions of the player.

Player is the person who is playing the game.

Player Levels describes the overall status of a player. For example, in games that use level as a ranking method, all players start off at level one. As the player gains experience, they level up, acquiring new abilities and access to new content.

Quests are the activities that players may choose to undertake in order to increase levels, earn experience and gain reward items.

Educational and Online Learning

Agency is being used in this project to define the player’s ability to exert control and have a role in determining the action of the game. Our purpose is to use agency as a possible means to increasing engagement and ultimately success.

Blended learning is a formal education program in which a student learns at least in part through delivery of content and instruction via digital and online media with some element of student control over time, place, path, or pace and at least in part at a supervised brick-and-mortar location away from home.

Brick and Mortar School is a traditional school where students attend face to face in a building as opposed to an online or virtual school.
Common European Framework of Reference (CEFR) is a standard that is used to describe the different levels of language ability. The DELF test is meant to test what level a person understands a language.

Community of Inquiry Model is an educational community of inquiry is a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding. (CoI Model, nd.)

Diplôme d'études en langue française (DELF) is the name of a test that is globally used and accepted as a gage of a person's language ability.

Distributed learning (DL) is used to refer to a course that delivered online. The instructor generally does not have f2f contact with the student as content is delivered online.

Engagement refers to the quality of effort students devote to educationally purposeful activities that contribute directly to desired outcomes.

Face-to-Face (F2F) are considered to be traditional classes in a bricks and mortar building.

Gamification is the use of game elements, mechanics and game design techniques in non-game contexts to engage and motivate people to achieve goals.

Gamified Learning Environment (GLE) is a term we coined to describe learning environments which incorporate game play, inclusive of narrative, to enhance learning.

Independent Learning Program (ILP) is a clearly planned and developed program which encourages students to work at their own pace in a more independent manner.

Learning Management System (LMS) is a software application for the administration, documentation, tracking, reporting and delivery of electronic educational technology (also called e-learning) education courses or training programs.
Online Learning and Teaching Diploma (OLTD) is a graduate program offered completely online through Vancouver Island University. OLTD can ladder into an online Masters of Education and Leadership.

Principles of learning refers to the principles that James Paul Gee first identified in his book *What video games have to teach about learning and literacy* (2003).

Scaffolding in education refers to a variety of instructional techniques used to move a student progressively toward stronger understanding and ultimately greater independence in the learning process.

Web tools refer to web applications that go beyond displaying individual pages of static content by allow a community of users to interact with the site and or each other by creating, adding or updating content.

Various Web Tools

3DGameLab is a gamified content creation and student tracking platform where teachers can design and share quests and badges to create personalized learning for their students. Students “level up” through the curriculum, choose quests they want to play, and earn experience points, badges, and awards.

Edmodo is a web-based platform that provides a safe, easy way for teachers to have their classes connect, collaborate, share content, and access grades and homework in a walled, safe environment.

Moodle is an open source learning management system (LMS) popular in many DL schools.

OneNote is a free Microsoft based application and web tool that is designed to help you organize and capture your notes across devices.
Quizlet is a web tool for students that uses flashcards, study and game sets to help students memorize material.

Voki is a web tool that lets you create personalized avatars to use on your wikis, blogs or websites. Voki avatars have the ability to use text to speech.

Weebly is a web-hosting service featuring a drag-and-drop website builder.
Appendix B: The Original 36 Learning Principles (Gee, 2007)


<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Active, Critical Learning Principle</td>
<td>All aspects of the learning environment (including ways in which the semiotic domain is designed and presented) are setup to encourage active and critical, not passive, learning.</td>
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<tr>
<td>2. Design Principle</td>
<td>Learning about and coming to appreciate design and design principles is core to the learning experience.</td>
</tr>
<tr>
<td>3. Semiotic Principle</td>
<td>Learning about and coming to appreciate interrelations within and across multiple sign systems (images, words, actions, symbols, artifacts, etc.) as a complex system is core to the learning experience.</td>
</tr>
<tr>
<td>4. Semiotic Domains Principle</td>
<td>Learning involves mastering, at some level, semiotic domains, and being able to participate, at some level, in the affinity group or groups connected to them.</td>
</tr>
<tr>
<td>5. Metalevel Thinking about Semiotic Domains Principle</td>
<td>Learning involves active and critical thinking about the relationships of the semiotic domain being learned to other semiotic domains.</td>
</tr>
<tr>
<td>6. “Psychosocial Moratorium” Principle</td>
<td>Learners can take risks in a space where real-world consequences are lowered.</td>
</tr>
<tr>
<td>7. Committed Learning Principle</td>
<td>Learners participate in an extended engagement (lots of effort and practice) as an extension of their real-world identities in relation to a virtual identity to which they feel some commitment and a virtual world that they find compelling.</td>
</tr>
<tr>
<td>8. Identity Principle</td>
<td>Learning involves taking on and playing with identities in such a way that the learner has real choices (in developing the virtual identity) and ample opportunity to meditate on the relationship between new identities and old ones. There is a tripartite play of identities as learners relate, and reflect on, their multiple real-world identities, a virtual identity, and a projective identity.</td>
</tr>
<tr>
<td>9. Self-Knowledge Principle</td>
<td>The virtual world is constructed in such a way that learners learn not only about the domain but about themselves and their current and potential capacities.</td>
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<tr>
<td>10. Amplification of Input Principle</td>
<td>For a little input, learners get a lot of output.</td>
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<td>Principle</td>
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<tr>
<td>11. Achievement Principle</td>
<td>For learners of all levels of skill there are intrinsic rewards from the beginning, customized to each learner’s level, effort, and growing mastery and signaling the learner’s ongoing achievements.</td>
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<tr>
<td>12. Practice Principle</td>
<td>Learners get lots and lots of practice in a context where the practice is not boring (i.e. in a virtual world that is compelling to learners on their own terms and where the learners experience ongoing success). They spend lots of time on task.</td>
</tr>
<tr>
<td>13. Ongoing Learning Principle</td>
<td>The distinction between learner and master is vague, since learners, thanks to the operation of the “regime of competence” principle listed next, must at higher and higher levels, undo their routinized mastery to adapt to new or changed conditions. There are cycles of new learning, automization, undoing automization, and new reorganized automatization.</td>
</tr>
<tr>
<td>14. “Regime of Competence” Principle</td>
<td>The learner gets ample opportunity to operate within, but at the outer edge of, his or her resources, so that at those points things are felt as challenging but not “undoable.”</td>
</tr>
<tr>
<td>15. Probing Principle</td>
<td>Learning is a cycle of probing the world (doing something), reflecting in and on this action and, on this basis, forming a hypothesis; reprobing the world to test this hypothesis; and then accepting or rethinking the hypothesis.</td>
</tr>
<tr>
<td>16. Multiple Routes Principle</td>
<td>There are multiple ways to make progress or move ahead This allows learners to make choices, rely on their own strengths and styles of learning and problem solving, while also exploring alternative styles.</td>
</tr>
<tr>
<td>17. Situated Meaning Principle</td>
<td>The meanings of signs (words, actions, objects, artifacts, symbols, texts, etc.) are situated in embodied experience. Meanings are not general or decontextualized. Whatever the generality meanings come to have is discovered bottom up via embodied experiences.</td>
</tr>
<tr>
<td>18. Text Principle</td>
<td>Texts are not understood purely verbally but are understood in terms of embodied experiences. Learners move back and forth between texts and embodied experiences. More purely verbal understanding comes only when learners have had enough embodied experience in the domain and ample experiences with similar texts.</td>
</tr>
<tr>
<td>19. Intertextual Principle</td>
<td>The learner understands texts as a family (“genre”) of related texts and understands any one such text in relation to others in the family, but only after having achieved embodied understandings of some texts. Understanding a group of texts as a family of texts is a large part of what helps the learner make sense of such texts.</td>
</tr>
<tr>
<td>20. Multimodal Principle</td>
<td>Meaning and knowledge are built up through various modalities (images, texts, symbols, interactions, abstract design, sound, etc.) not just words.</td>
</tr>
<tr>
<td>21. “Material Intelligence” Principle</td>
<td>Thinking, problem solving, and knowledge are stored in tools, technologies, material objects, and the environment. This frees learners to engage their minds with other things while combining the results of their own thinking with the knowledge stored</td>
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<td>Principle</td>
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<tr>
<td>22. Intuitive Knowledge Principle</td>
<td>Intuitive or tacit knowledge built up in repeated practice and experience, often in association with an affinity group, counts a great deal and is honored. Not just verbal and conscious knowledge is rewarded.</td>
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<tr>
<td>23. Subset Principle</td>
<td>Learning even at its start takes place in a (simplified) subset of the real domain.</td>
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<tr>
<td>24. Incremental Principle</td>
<td>Learning situations are ordered in the early stages so that earlier cases lead to generalizations that are fruitful for later cases. When learners face more complex cases later, the hypothesis space is constrained by the sorts of fruitful patterns or generalizations the learner has found earlier.</td>
</tr>
<tr>
<td>25. Concentrated Sample Principle</td>
<td>The learner sees, especially early on, many more instances of fundamental signs and actions than would be the case in a less controlled sample. Fundamental signs and actions are concentrated in the early stages so that learners get to practice them often and learn them well.</td>
</tr>
<tr>
<td>26. Bottom-up Basic Skills Principle</td>
<td>Basic skills are not learned in isolation or out of context; rather, what counts as a basic skill is discovered bottom up by engaging in more and more of the game/domain or game/domains like it. Basic skills are genre elements of a given type of game/domain.</td>
</tr>
<tr>
<td>27. Explicit Information On-Demand and Just-in-Time Principle</td>
<td>The learner is given explicit information both on demand and just in time, when the learner needs it or just at the point where the information can be best understood and used in practice.</td>
</tr>
<tr>
<td>28. Discovery Principle</td>
<td>Overt telling is kept to a well-thought-out minimum, allowing ample opportunity for the learner to experiment and make discoveries.</td>
</tr>
<tr>
<td>29. Transfer Principle</td>
<td>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.</td>
</tr>
<tr>
<td>30. Cultural Models about the World Principle</td>
<td>Learning is set up in such a way that learners come to think consciously and reflectively about some of their cultural models regarding the world, without denigration of their identities, abilities, or social affiliations, and juxtapose them to new models that may conflict with or otherwise relate to them in various ways.</td>
</tr>
<tr>
<td>31. Cultural Models about Learning Principle</td>
<td>Learning is set up in such a way that learners come to think consciously and reflectively about their cultural models of learning and themselves as learners, without denigration of their identities, abilities, or social affiliations, and juxtapose them to new models of learning and themselves as learners.</td>
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<td>Principle</td>
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<tr>
<td>32. Culture Models about Semiotic Domains Principle</td>
<td>Learning is setup in such a way that learners come to think consciously and reflectively about their cultural models about a particular semiotic domain they are learning, without denigration of their identities, abilities, or social affiliations, and juxtapose them to new models of learning and themselves as learners.</td>
</tr>
<tr>
<td>33. Distributed Principle</td>
<td>Meaning/knowledge is distributed across the learner, objects, tools, symbols, technologies, and the environment.</td>
</tr>
<tr>
<td>34. Dispersed Principle</td>
<td>Meaning/knowledge is dispersed in the sense that the learner shares it with others outside the domain/game, some of whom the learner may rarely or never see face to face.</td>
</tr>
<tr>
<td>35. Affinity Group Principle</td>
<td>Learners constitute and “affinity group,” that is, a group that is bonded primarily through shared endeavors, goals and practices and not shared race, gender, nation, ethnicity, or culture.</td>
</tr>
<tr>
<td>36. Insider Principle</td>
<td>The learner is an “insider,” “teacher,” and “producer” (not just a “consumer”) able to customize the learning experience and domain/genre from the beginning and throughout the experience.</td>
</tr>
</tbody>
</table>
Appendix C: James Paul Gee’s 13 Principles of Learning (Gee, 2012)