

Video Games as Vehicles of Learning:
The Use of *Assassin's Creed 3* as a Developmental Tool

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Introduction

The abilities to think critically and to solve complex, multi-faceted problems remain two of the intended outcomes of mainstream educational systems, but who says that these educational goals must be attained within the confines of a schoolroom between the hours of 8 a.m. and 3 p.m. with 30 other students? In today's fast-paced, technologically focused society many other educational mediums exist outside of the typical school. Ever-developing media, such as the world of video games, allows users to develop their mental capacities and continually prove to have a growing effect on learning and the educational process. Although games can fit into a multitude of genres, such as action-adventure or first-person shooter, many of them are effective learning tools. Games such as *Assassin's Creed III* are good vehicles of learning, and can be utilized to develop skills such as critical thinking and problem solving.

Assassin's Creed 3 (further referred to as *AC3*) is an action-adventure game released by Ubisoft in 2012 for multiple consoles, including PlayStation 3, Xbox 360 and Wii U, as the fifth installment in the *Assassin's Creed* series. From a third-person perspective, the player uses characters such as Desmond Miles, Haytham Kenway, and Ratonhnhaké:ton to explore both modern day and Revolutionary-era America. The expansive world in which the user completes his objectives is highly interactive and greatly varied in paths, strategies, and gameplay situations. Many of James Gee's principles of learning are prevalent within this historical action-adventure game, unknowingly improving the user's skill sets through missions, mini-games, and a multitude of other tasks. Due to its application of Gee's principles, such as Information 'Just In Time', Co-design and Systems Thinking, Ubisoft's *Assassin's Creed 3* is a good vehicle for learning, allowing users to develop critical thinking skills to solve multi-faceted problems along their interactive, historical quests.

Theory

Gee proposed that there are thirteen principles of learning embedded within games that are considered to be good vehicles of learning. These principles are further grouped into three categories – Empowered Learners, Problem Solving, and Understanding – and are essential for games to possess in order to be considered both stimulating and beneficial to the users' learning process (Gee, 2005). Games that include these principles not only help the users learn, sometimes overtly and sometimes discretely, but they also make the process of learning entertaining. Although it is not necessary for each game to include every principle, they can each be included to varying degrees. Gee believes that these principles “could and should be applied to school learning,” and he wishes to bridge the gap between the conceptual learning of video games and the scripted, factual learning processes that occur within schools. Quality video games that employ many, if not all, of Gee's principles, such as *AC3*, are a step in this convergence process. *AC3* contains each of Gee's principles, but I focus on one from each of his categories to demonstrate the degree to which it teaches players to thinking critically and apply techniques to solve complex problems, all-the-while placed within the context of a historical, educational world.

Method

Initially I chose *AC3* to explore Gee's concept of learning principles within video games due to its widespread popularity within the mainstream video gaming world, as well as previous exposure to the *Assassin's Creed* series. Although I did not extensively play the original *Assassin's Creed* game, I witnessed many hours of gameplay as a spectator and was therefore subject to some basic gameplay situations and strategies. My decision to explore the world of *AC3* was fueled further by its setting in American and world history, and I was interested in how

a game set in such a widely-taught time frame (at least within the American education system) could apply to Gee's principles of learning.

To conduct my data gathering, I spent about 2 hours playing *AC3* for Xbox 360 on the morning of February 10th, 2013. Due to its extensive use of cutscenes, I played for slightly longer than the originally proposed time to account for lack of physical gameplay. Every few minutes, I paused the game to record some notes regarding my experience. Within these notes, I applied all of Gee's principles, but I found some to be more apparent or beneficial than others.

Discussion and Analysis

Information 'Just in Time' and 'On Demand.'

After two hours of direct exposure to *AC3*, I witnessed a handful of patterns within the game that could prove to be beneficial to learning and the educational process. One of Gee's principles that stood out above most others was Information 'Just in Time' (as well as 'On Demand'). Within the first minutes of actual gameplay, I played in a virtual tutorial. Rather than being allowed to completely run free without direction or restriction, I was guided through a tutorial that explained how to move, perform actions, and control my character. The obstacles I faced slowly increased in difficulty and complexity, as did the information regarding the necessary actions I needed to take. Not every action was enabled; I found out later that I had many more capabilities that were not introduced in the tutorial. This allowed for the discovery of new actions and commands, but it also prevented me from being overloaded with information. Such an overload could have resulted in frustration and poor performance, as Gee (2005) agrees "human beings are quite poor at using verbal information (i.e. words) when given lots of it out of context and before they can see how it applies in actual situations." For example, shortly after the tutorial, I embarked on a mission in a theater to assassinate a specified target. During the

mission, I needed to pick a lock in order to gain access to my target; however, I had not yet learned how to do so. As I approached the door, instructions flashed on the screen, guiding me through the process of breaking the lock. Many times in poorly designed games, or in educational settings, too much information is forced upon the player (or student) within too short of a timeframe. People tend to not absorb as much information in this manner, as they are not able to apply the knowledge immediately or effectively; however, *AC3*'s use of information 'on demand' allows the user to develop basic skills and later improve these skills without an overflow of direction.

Furthermore, at select moments throughout the game, alerts popped up regarding certain historical information. Reading this information was optional, but it provided historical context and interesting (albeit editorialized) background. Despite being optional, this information 'on demand' encouraged me to read about the scenario in which I was playing. For example, I learned about the real-life theater that my character was running through – the Theatre Royal, which was presenting *The Beggar's Opera* – as well as what type of trading ship I was sailing on while journeying to Boston. Although not viewed as a typical educational game, this aspect of *AC3* adds an additional learning component to gameplay.

This system of Information "On Demand" and Information "Just In Time" could be applied to the classroom setting and let students learn at a more efficient pace which encourages them to actually learn material, as opposed to memorizing without understanding. Many times, students are taught too much information too quickly, and much of this information may not be necessarily be paramount to what should be learned. A pace set too quickly does not ensure that students learn enough of the correct material; moreover, it rewards those students who can absorb the most detail within a constrained period of time by pure memorization and informational regurgitation. Overloading students with information may just force them to learn

strategies to mindlessly memorize chunks of information in short spans, counterproductive of what is intended. Not only does this alienate the education system, it does not promote learning or expanding knowledge. Information that is 'on demand' and 'just in time' encourages both game players and students alike to think critically about how to achieve certain goals by "teaching players to first gather information and think of a strategy before trying to solve a problem" (Adachi and Willoughby, 2013) without being handed a solution after initial failure. It provides the player/student with just the necessary information needed to accomplish his goals. If schools took a cue from this Gee principle and incorporate a more "information-efficient" teaching strategy, an increase in student comprehension and retention could potentially be noticed.

Co-design.

As gameplay progressed, another increasingly prevalent aspect that incorporated one of Gee's principles is that of Co-design. Set within a highly interactive game space, *AC3* allowed me to develop my own personal experience as I played, rather than being provided the same experience that others may have had. Although limited in the early stages of the game, the interactivity and the co-designing experience expanded quickly. For example, playing as Haytham Kenway on my way to the American colonies, I took the opportunity to explore below deck in the sailors' quarters to acquaint myself with my surroundings and build relationships with those on board. At two separate points, sailors sat at tables waiting to play some games. The games – Fanorona and Nine Men's Morris – were optional, but I figured why not take the chance to explore a new facet of the game? Although not familiar with the games, they each seemed to be somewhat similar to checkers in some way; however, they proved to be a bit more difficult. I initially expected my opponents to be simple and easy to defeat, but that was not the case.

Eventually, I either won or gave up. While this is an extremely limited and simple example of Gee's Co-design principle, this example fits the idea that "the player does something and the game does something back that encourages the player to act again" (Gee, 2005). More examples appeared as gameplay continued and player motility increased.

Shortly after the below-deck exploration, several sailors provoked my character on the main deck and a large altercation ensued. Within this fight scene, as well as a later sword duel, I received basic instruction on executing offensive attacks and defensive maneuvers. Although these instructions were beneficial (as well as 'just in time,' as previously discussed), they only got me so far. I still helped design my experience by deciding which moves to execute next. Should I parry? Should I block? Should I counter? Not only was I learning to fight, but also I actively participated in the learning and gameplay experience. According to Gee (2005), "In good games, players feel that their actions and decisions – and not just the designers' actions and decisions – are co-creating the world they are in and the experiences they are having."

Drastically increased co-design appeared upon arrival in the American colonies, as the map exponentially increased in size, as well as the availability of side missions. With this growth in new opportunities, the co-design possibilities became endless, and any player could then choose their own paths and mold their own unique gameplay experiences. Such individualized experiences that are dictated by the controlling player helps to spur greater motivation and increased attention and focus.

Applying this concept to any school or education system would help engage students in learning because, like video games, it "involve[s] individualized skill development, which likely leads to enhanced motivation" (Adachi and Willoughby, 2013). Active participation and design of one's experience allows the students to comprehend the actions they make within that experience. For example, in one of my grade school history courses, we were given the task of

designing our own learning or review tool for the unit test, with some guidance and restrictions. Several students created board games with complex rules, movements, and rewards. These students created their own systems both to teach and to learn the class unit. Such methods increase interactivity among students, as well as providing the feeling of active production of the experience. However, many educational systems fall short of implementing a method of co-design within the curriculum, even through the collegiate level. Hours-long lectures and instruction without active student participation may not only lessen the quality and efficiency of learning, but also detract from interaction and a sense of individual importance of the student. According to Bonwell and Eison (1991), several studies have shown that “many strategies promoting active learning are [...] superior to lectures in promoting the development of students' skills in thinking and writing,” which demonstrates that incorporating student participation may prove to be more beneficial than pure listening. However, if students feel that their participation is not necessary, a loss of interest may ensue, which may potentially decrease learning efficiency. For example, several strategies proposed by Bonwell and Eison (1991) to integrate student interaction are a “feedback lecture” and “guided lecture.” Another possible strategy is a practice already instituted at some educational institutions, such as the inclusion of a discussion section to complement lectures.

Systems thinking.

Although certainly not the last of Gee's principles apparent within *AC3*, the principle of Systems Thinking appears often and provides for a serious impact throughout gameplay. As Gee (2005) states, a good game will permit its players to take his gameplay knowledge of movement, strategies, and skills to “see how they fit into an overall larger system to which they give meaning.” Set within a large theater, the first mission within *AC3* is an excellent demonstration

of the application of Systems Thinking. Immediately following the reveal of my main objective – to reach the ‘golden target’ – the camera angle immediately shifted to the walls of the theater, and I immediately recognized that the walls were the only necessary tools needed to scale my way to the target. Having just completed the tutorial that explained how to climb walls and jump from obstacle to obstacle, I applied my newly acquired knowledge to easily access the higher floors of the complex. Another example of Systems Thinking appears when exploring the ship to Boston, as previously mentioned. While walking towards the sailors playing the board games, a strange flashing shape slowly moved in and out of view, giving off an ethereal glow.

Instinctively, from experiences in both *AC3* and myriad other games, I approached the shape because I felt that it must be either important or interactive. Due to my previous experiences, I think of multiple aspects of any gameplay as if they are part of a larger system. Therefore, I tend to recognize certain cues containing specific meanings and certain actions as to signify other meanings. This application of acquired and experiential knowledge is the essence of Gee’s Systems Thinking. Good games should “help players see and understand how each of the elements in the game fit into the overall system of the game and its genre” (Gee, 2005), which is exactly what *AC3* provides for each player. The game took advantage of my prior knowledge of video games in order to facilitate my understanding of this new game system, aiding in both my gameplay and active learning experience.

Educational systems should take note of this simple, yet paramount principle of Systems Thinking. Being able to take basic strategies and ideas throughout games and genres develops systems understanding, as well critical thinking within such systems. The ability to take patterns of understanding and relate them to new situations is an important skill to have as one continues through life, whether applied socially, academically or in one’s career. Implementing a curriculum that incorporates such Systems Thinking framework from video games could instill

“interdisciplinary learning connections between video games and virtually every subject area” (Hutchison, 2010). Furthermore, if schools and curriculums can effectively connect all areas of learning by teaching fundamental and underlying concepts within each subject, students may learn more efficiently and develop more acute critical thinking skills. Video games can also bolster “enhanced top-down control of attention,” (Bavelier, Green, & Dye, 2010) and gamers have been shown to “choose among different options more rapidly” (2010) given a set of alternatives. These critical thinking skills are crucial when facing any new complex problems and when seeking any alternate solution to such problems. Without cultivating systems thinking within education systems, these skills could become stagnant, and the knowledge presented to students could remain isolated and unused, proving these processes to be wasted efforts.

Conclusion

Ubisoft's popular action-adventure game *Assassin's Creed 3* not only engages players, but stands as a good vehicle of learning by incorporating all of Gee's principle of learning, most notably Information 'On Demand' and 'Just In Time', Co-design, and Systems Thinking. By blurring the lines between gaming and educational learning by applying these principles, an increase in learning and development could potentially be noted within the educational classroom. Many video games provide an excellent educational opportunity for “young people to experiment with innovative forms of play and problem solving, unrestricted by time and space” (Hutchison, 2010). With less restrictions and the ability to experiment with their own learning experiences (to a limited degree), students may prove to have more efficient learning capacities. Allowing students to have information 'just in time' prevents inefficiencies in knowledge retention, and allows them to apply the information when it is most applicable and needed. Further, the concept of Co-design within schools will engage students, improving their

experience by promoting them to apply themselves and interact with their educational setting. An aspect of co-designing their own experience includes that of information 'on demand' as well by letting them choose when to utilize the resources available to them. Ultimately, students should be able to take the skills, strategies, and information that they learn and employ them when faced with new situations. This notion that people understand best when comprehending how separate aspects all fit within their surroundings or "system" aids in expanding critical thinking ability. Incorporating these principles within educational systems could bridge the gap between what was previously viewed as solely recreational enjoyment and what can be a beneficial vehicle of learning.

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