

FINDING YOUR INNER GAMER: ADAPTING INSTRUCTION FOR DIGITAL NATIVES

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INTRODUCTION

This presentation investigates the appeal of digital gaming among students and what they learn while playing these games. While creating digital games for library instruction may not be realistic, librarians can adapt their instruction to meet the needs of digital natives—whose use of technology is fluidly apart of their lives—by understanding the educational benefits and alluring aspects of digital games.

CHARACTERISTICS OF GAMERS

Anyone could be a gamer. According to the Entertainment Software Association, 50% of all Americans play video games and the average age of these gamers is 30.19% of gamers are 50 years or older. Both male and female gamers play over seven hours a week with women over 18 a larger percentage of gamers than boys between 6 and 17. Of those playing computer and video games, 55% are male and 43% are female. Gamers also participate in numerous other activities. For example, 93% of gamers report that they regularly read books or newspapers.

Learning Styles of Gamers

How do gamers think and learn? With 70% of college students being game players (Jones, 2003), examining Millennial characteristics provides a starting point for librarians. Kipnis and Childs (2004) provide a list of Millennial characteristics including:

- Do not like being passive recipients of information
- Must be engaged to retain information
- Want a variety of learning experiences
- Are used to being entertained (p. 90)

The learning style of gamers reflects these traits. Beck and Wade (2004b) depict this learning style as one that:

- Aggressively ignores any hint of formal instruction
- Leans heavily on trial and error
- Includes learning from peers but virtually none from authority figures
- Information is consumed in very small bits exactly when desired, which is usually just before the skill is needed (p. 159)

Beck and Wade (2004a) describe three aspects of the gamer mindset that apply to library instruction: risk taking, data immersion, and trial and error. Because of the ability to start games over if a mistake is made, they have learned “that all risks are survivable” (p. 50). Failure is okay because you can start over and succeed the next time. This survivable risk taking contributes to completely immersing the player in a world of data, visuals, and strategy. Gamers enjoy the sensation of multitasking while processing data (2004b). In or out of the game, gamers use trial and error as a strategy to discover what works and what does not. As a result, they do not consult user manuals or handouts (2004a).

MOTIVATION AND ENGAGEMENT

Superficially viewing digital games, one may believe the eye-catching visuals and often salacious content lure students to this medium. Surprisingly a video game’s technological or sensational features do not explicitly motivate players. Creating tasks that are relatively easy to internalize paired with a high-speed tempo are key in motivating players (Prensky, 2001a).

Furthermore, digital games motivate players to learn new skills and tasks because the medium aims to make the activity fun and entertaining. When people participate in playful activities they are more likely to enjoy the learning process resulting in more time, effort, and concentration put into an activity (Prensky, 2001a). If individuals

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are engaged, they are actively involved in their learning and seek greater educational collaboration with their peers (keynote address, November 3, 2005).

CHARACTERISTICS OF ENGROSSING DIGITAL GAMES

The attraction of digital games lies not in one key feature, but in the balancing of multiple elements. Specific attributes of excellent games are hard to describe since the elements are all interrelated and no one element can dominate without destroying a game's attraction. However certain attributes—rules/goals, control, fantasy—play an important role in player engagement.

Rules and Goals

Rules and goals are essential to games, whether physical or virtual, entertaining or educational. While individually distinct concepts, rules provide boundaries and help clarify the goals of a game. Rules limit the actions of a player by forcing them to choose from a specified number of options, but with access to a wide array of tools and/or capabilities to move forward. Clear goals motivate players and increase game performance through immediate feedback on whether the goal or task was achieved (Prensky, 2001a; Garris, Ahlers, and Driskell, 2002).

Control

Just as students enjoy greater control and decision-making in the classroom, the same is true with gamers. Digital games offer players control in various ways, from creating character identities to directing the game. With players in control, responsibility shifts from the content creator to the gamer. As with students when they lead the classroom, gamers have greater responsibility to learn and use the knowledge obtained when they are in control of a game (Garris et al., 2002).

Fantasy

With fantasy, players become detached from reality and their own identity, freeing them to become more creative and daring. While it may appear gamers are trying to escape the problems of reality, fantasy can have unforeseen educational benefits. Since games offer activities outside reality, real life consequences are lessened (Garris et al., 2002). The fantasy element of digital games can contribute to learning new techniques by letting players test their hypotheses. Rules and norms can be tested or broken, even new rules can be created for a player to test the consequences of their actions (Squire et al., 2003).

EDUCATIONAL BENEFITS OF DIGITAL GAMING

Combining the motivating and engaging elements in digital games can lead to greater appreciation of the benefits and skills needed to succeed in this medium. While some skills such as hand-

eye coordination are obviously gained from playing these games, other lesser known skills are also achieved and can be adapted for instruction.

Communication & Interaction

Interaction separates digital games from other technological media. Tutorials, movies, and television require participants to passively watch; on the other hand, digital games go beyond viewing by demanding the participant make choices for the game to move forward. While interacting with the computer program, the player is given immediate feedback through multiple stimuli such as text, graphics, and sound (Dickey, 2005).

While many consider digital gaming to be a solitary activity with a player interacting only with the virtual world, gaming enhances interpersonal communication skills in many ways. Not only must gamers ask for guidance, but they need to succinctly describe their dilemma with specific gaming language—a similar situation faced by our students in becoming information literate (Foreman, 2005). Gamers and information literate students alike must recognize weaknesses in their strategies and seek appropriate help (Association of College and Research Libraries, 2000).

REPETITION

Much like information searching, where a user must continually revise their search strategy, players must also repeatedly refine their skills in order to create the most effective and efficient process to reach their goals. As a result, digital games often require players to continually repeat and modify their gaming techniques. Through repetition, gamers develop skills by trial and error. They will continually develop their knowledge until the skill is adequate to perform the task. Since players are driven by the desire to advance in the game, repeating and refining tasks are not boring in this context (Gee, 2003).

PARALLEL PROCESSING

One of the greatest benefits of digital gaming that can be incorporated into library instruction is parallel processing. Gamers must be able to interpret multiple elements at one time. Unlike other groups, gamers embrace the deluge of unfiltered information from which they interpret and manipulate data (Prensky, 2005). Gamers and other individuals who grew up with digital technology have different thought processes. Contrary to a linear thinking process, in which the individuals focus their senses on one element at a time, those in the parallel processing mode jump around. Integrating digital games and the internet into their lives has trained gamers to efficiently interpret multidimensional images and quickly adapt to unanticipated or unexpected situations (2001b). Taking advantage of gamers' innate parallel processing skills, librarians can teach students to view multiple areas of a website or database simultaneously.

APPLICATION IN LIBRARY INSTRUCTION

Viewing digital games from an educational standpoint, game designers effectively use active, experiential learning principles. The experiential pedagogy emphasizes the cyclical nature of learning when an individual tries and retries ideas in the same way gamers construct their knowledge by actively participating in an environment (Garris et al., 2002; Kiili, 2005).

Integrating Narrative and the First Person Perspective into Instruction

Most gaming environments require the player to be an active participant in a story's narrative. A game moves forward not because of the software program, but through the actions of a player. As a result, a gamer is an essential part of the story and must keep exploring in order for narrative progression (Dickey, 2005). The information seeking process complements the narrative style found in digital games, which is often non-linear with players deciding the structure of the activity. The same practice occurs in the research process when an individual branches out to discover other sources, repeats processes by revising searches, and goes in various directions initially not planned.

Positioning a student in the first person point of view allows them to be an active participant in the environment instead of only observing. In lecture style settings, the student takes the third person point of view, where the information taught may seem abstract and theoretical. Using the first person perspective, allows students hands-on experience linking complex, abstract ideas with everyday experiences.

Power Ups

Many of the gaming attributes stated earlier are found in the concept of power ups. Power ups are abilities or tools giving the player an added advantage. A gamer may receive strength, speed, weapons, or a menagerie of magical powers; sometimes even restore health. Some power ups begin instantaneously while others can be stored for later use. The educational benefit of power ups is the player must learn to use resources effectively especially when using stored power ups. The gamer is forced to allocate resources and decide the crucial moment to use a power up. The gamer not only assesses the resources available, but must also forecast the consequences for future actions (Squire et al., 2003; Salen and Zimmerman, 2006; Wikipedia, 2006).

In a library instruction classroom, power ups can engage students and ease frustration with unexpected assistance. Scattering power ups through an activity can raise students' competitive spirits making the activity engaging especially if students have to vie for limited power ups. A simple power up is to randomly give students access to librarian help when searching for information.

Feedback and Reflection

For the fullest learning impact, gaming techniques should be followed by reflection and feedback with a librarian to reinforce the learning objectives of an activity and clarify questions. In digital games, players must reflect on their actions because there will be subsequent effects later. Popular video games engage the player in a four step process:

1. The player must *probe* the virtual world
2. Based on reflection while probing and afterward, the player must form a *hypothesis* about what something might mean in a usefully situated way
3. The player *re-probes* the world with that hypothesis in mind, seeing what effect he or she gets
4. The player treats this effect as feedback from the world and accepts or *rethinks* his or her original hypothesis. (Gee, 2003, p. 90)

Students need to be able to reflect upon their actions, similar to the four step gaming process above, in order to effectively internalize information retrieval skills and to become information literate. If reflection is absent from this process, students may go through an information retrieval activity simply copying a librarian without understanding their actions. However, actions combined with discussion and reflection helps solidify the learning process (Prensky, 2001a).

CONCLUSION

The application of gaming techniques into the classroom is rather new. This presentation revealed the practical application of these techniques through the presenters' instruction experiences and study of current literature. Research shows students become increasingly engaged and motivated to learn when digital gaming is incorporated into the classroom. However, there is scant information available on the learning effectiveness of digital gaming methods compared to other classroom techniques. Hopefully future studies can shed light on the importance of digital gaming as an active learning method.

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