How Educators Can Apply Educational Games in the Learning Environment

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Abstract

Over the past years, the way in which we learn has taken a direction toward educational games. This trend is due not only because of the astonishing quantity of games that are available from various multimedia avenues, but also how these games mesmerize the learner's interest. This literature review concentrates on articles that explain how educators can utilize educational games in the learning environment. These articles focus on how educators have changed the way they teach with the use of edutainment, how an educator applies educational games to motivate a learner, and how educators can employ simulation as a tool for teaching.

Keywords: educational gaming, edutainment, gaming, motivation, simulation

The process in which a person learns is extremely important to obtaining his or her goals. The ability to effectively learn is critical to the success of the learner's perception of what is being taught. Learning practices have evolved from lecture and books to multimedia educational gaming and educators have had to adapt to this new learning environment. Learners who engage in educational games can gain knowledge of a certain subject and at the same time they can be entertained. Through the use of educational games an educator can enhance a student's learning process with the use of edutainment, motivate a student to learn, and engage a student in learning through simulation.

Educators today realize that instructing methods have changed and now incorporate educational games into their teaching process. According to Annetta, L. (2007), "As an educator in the 21st century, it's not hard to see that children today operate differently than they did 10 years ago" (p. 10). Educators appreciate that games used to be for fun only, but now games can be used for educational tools. As stated by Annetta, L. (2001), "But in recent years, educators have gravitated toward the notion of integrating these technologies—once thought of as idle play—into their teaching repertoire" (p. 10). According to DeVary, S. (2009), "Edutainment is defined as education that has been placed within the framework of entertainment" (p. 36). The word edutainment has been present for a decade. According to White, R. (2003), "The articles authored about edutainment centers published in industry magazines during the late '90s imbedded the term into the industry's lexicon. Given a choice between just education, just

entertainment, or a combination of the two, more LBE guests prefer the two-fer" (p. 2).

Now more and more educators are looking at edutainment for teaching.

Educators are changing the way they teach through the use of edutainment.

According to DeVary, S. (2009), "The introduction and ever-increasing use of computer

games has prompted educators to debate and research the merits for using computer

games as learning tools" (p. 35). In the world of edutainment, learners are gaining

knowledge by having fun. As stated by White, R. (2003), "The idea that learning can be

fun, and fun can promote learning, is transforming attractions that once saw themselves

as primarily either education- or entertainment-oriented. It's even spawned a new word:

edutainment" (p. 1).

There are various types of location-based edutainment or LBE which include,

according to White, R. (2003), "Interactive & Participatory; open-ended & Immersive

(play), Structured (participatory games), Scripted (mazes). Non-interactive 7 Spectator;

Seated & Scripted (movie, play or science show) and Explorative; Scripted (aquarium,

some museums), and Free-choice (zoos, some museums)" (p. 2). Some of these games

can be a combination of these types. According to Green, M. & McNeese, M. (2007),

"The main purpose of edutainment is to promote student learning through exploration,

interactivity, trial and error, and repetition in such a way that students get so lost in the

fun, that they don't realize they are learning at the same time" (p. 2).

Although educators are using edutainment, the edutainment technology has

sparked some controversy about the level of education that students are receiving, but

DeVary's article points out an important message regarding edutainment. As stated by DeVary, S. (2009), "In can be argued that although educators and students do not have control over how new technologies evolve, they do have control over how technologies are being used to promote learning. They have learned that technology is a great tool for accessing information connecting students to experts and other students all over the world" (p. 37).

There are other debates over the use of edutainment for learning. According to DeVary, S. (2009), "Another argument against using computer games in education is the concern that technology will be used only for the sake of "using technology." (p. 37). Studies have looked at the use of edutainment technology and its affect on student's learning outcome. As stated by DeVary, S. (2009), "They found that students taught by playing games using technology earned higher scores (but not significantly higher) than those students taught by playing traditional games. However, they observed that students using technology games were more motivated and excited about their learning experience" (p. 38).

Educators can use edutainment to motivate a student to learn and make learning a fun environment. Motivation is a psychological state which refers to the energies either internal or external to a person that stimulate a person's eagerness and diligence to engage in a certain activity. People behave in ways that are predictably their own whether they are hard at work, enjoying a recreational activity, participating in a learning environment, or playing a game, and just having fun. According to Wangenheim, C. & Shull, F. (2009), "Educational games (or serious games) are designed to teach people

about a certain subject, expand concepts, reinforce development, or help them drill or

learn a skill or change their attitudes as they play" (p. 92). A key aspect of an educator's

responsibility to teach a student using educational games is recognizing the importance of

motivating a student to learn and how to go about it.

   According to Cross, C. (2009), "Educators and corporate trainers spend a lot of

money considering how best to inculcate desired norms, behaviors and knowledge in

their pupils or employees" (p. 216). The study of motivation helps educators understand

what prompts students to learn, what influences their choice of learning, and how what

students learn will persist over time. Various multimedia educational games can assist an

educator to encourage a student to learn. Videogames, one of the popular multimedia

educational gaming tools, can motivate a student to learn and help the student to retain

what he or she has learned. As stated by Gros, B. (2007), "Videogames are useful

instruments for learning specific strategies and for acquiring knowledge; they also

develop the learning that is characteristic of the culture of the information society, and

this learning is likely to have long-term consequences" (p. 28).

   Another division of educational games that educators use to teach is simulation.

According to Chandler, M. (2009), "Business and science classes from Woodbridge to

Frederick are sampling sophisticated software that allows students to try out potential

careers, practice skills or explore history through simulated missions in national parks,

ancient cities or outer space" (p. 2). This educational gaming provides an educator with

games that can teach a learner by using simulation. Simulation is a reproduction of a real

life situation and allows the learner to use their imagination. According to Seay, J.

(1997), "The tool of simulation/games allows teachers to present "the play in" a topic while engaging students in the process of "turning ideas on their sides" (p.7). Simulation gaming allows the learner to experience a situation not just read about it. Simulation can be fun in the learning environment. According to Seay, J. (1997), "Computer simulations are especially able to allow students to create and manipulate systems and problems within certain parameters and without the normal constraints of time and space. And besides all that, they are interesting, attract students to learn, and are usually down right fun" (p. 7).

Another interesting concept about simulation gaming is that it can be used to teach an entire class, but simulation gaming is primarily used by educators to teach a student about a specific subject. As stated by Seay, J. (1997), "Another factor to keep in mind when thinking about simulation gaming is that they should be used to teach a specific problem or situation" (p. 6).

In a simulation gaming situation, students can pick a certain subject and interact with the game. According to Barab S. & Gresalfi, M. & Arici, A. (2009), "In the games we design, children can become environmental scientists, investigative reporters, statistical consultants, and historians" (p. 76). In this particular set of games, once the student decides what occupation they would like to explore, the game simulates the real world and they are virtually making decisions regarding a particular situation. As stated by Barab S. & Gresalfi, M. & Arici, A. (2009), "For example, in one of our scenarios, a student playing the game takes on the role of statistician, and in-game characters ask the student player to analyze data to determine whether surveillance cameras or an increased

police presence will make the virtual town safer. The next time the student returns to this

virtual town, he or she may encounter cameras on every building or a police officer on

every corner" (p. 76). In simulation gaming, students are held responsible for the

outcome of their decisions not for answering the correct choices on a test. According to

Seay, J. (1997), "It all comes together as serious learning that can push the boundaries of

normal teaching practice" (p. 7).

      In conclusion, learning today is different then it was ten years ago and one of the

reason for the change in learning is due to the new technologies that are constantly being

developed. The technology of educational games is now used by educators to keep

students interested and to make learning fun. These educational games assist a student to

learn about a new subject and at the same time the educational games can entertain a

student. Through the use of educational games, educators have incorporated edutainment

to enhance a student's learning, applied educational games to motivate a student to learn,

and they have utilized simulation gaming as a tool for teaching.

1.   Target Students: Any student who would like to reach outside of their everyday learning environment and venture into something new, different, fun, exciting, motivating, and stimulating.
2.   Problem/Challenge in courses: Motivating and stimulating students to learn.
3.   Proposed Solution: Motivate students with a new teaching tool. Try something different. Make different kinds of challenges available.
4.   Assessment method: A survey to students asking them qualitative questions about their experience with an educational game.
5.   Resources/Technology: Using a PowerPoint to present an educational game.
6.   Timeline: During one class.
7.   Identify obstacles: Some students might thin that a game is for younger students.

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