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Serious Video Games: Games for Education and Health

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Abstract

Every game in the market is made in an effort to play, produce, teach, motivate, socialize, communicate and educate different cultures. The gamer is exposed to different types of games that can be categorized into a casual game, serious game and advergame. Serious games include games for training, games for education, games for science and research, games for production and games for work. Serious games do not necessarily lead to the production of a game [1]. They are mainly used to ensure better health and educational environment. They also provide a tool for creating jobs and making life easier in arts, design, therapy, generic software engineering, healthcare and more. Serious games are made intentionally for learning.

In this paper, I will be discussing in-depth the two most crucial categories of serious games namely games for education and games for health.

Introduction

Over the last several years, projects related to serious games have begun to emerge as an important outgrowth of the gaming industry [2]. The number of non-entertaining games under development is rapidly increasing. The appreciation for the ideas, skills, technologies and techniques used in commercial entertainment games is at an all time high. Many commercial games are already in use for purposes other than entertainment. Some of the titles such as SimCity, Civilization, Hidden Agenda and others have been used as learning tools in schools and universities across the globe.

As a result, a new field of computer and video games, applied to non-entertainment purposes, has the capability to become a new hotbed of activity. This field is growing steadily, and represents a significant new opportunity for game developers, as well as interactive development tool and technology providers. As the entertainment market matures, these new fields offer further economic opportunities for an industry that employs tens of thousands of high-tech workers in the U.S. and worldwide.

Games for Education

Today, video games are playing a very constructive role in educating people of all demographics at schools, community and workplace. Video games are playing a big role in shaping the learning techniques for the kids. The best part of video games is that even infants react to the glamour and shine of the video game. Games are used to increase the sense powers of the infants, who sense growth is retarded.

Games are playing a vital role in primary, high schools, colleges and universities. In schools, games are used as a tool to increase the efficiency of the students to learn things quickly and in a much better way. Universities are using video games to train students in technical fields like Aeronautical, Electrical and Computer

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Engineering. Games fetch the interest of the students. While playing a game, they utilize their skills to learn the game and perform better every time they play. In the natural flow of gaming, students learn the technical aspects of the subjects, which can be used in the real world.

The games have completely changed the lifestyle of kids and the younger generation. The kids playing new online games like Monopoly and Soduko are not only increasing their analytical skills but also their ability to handle various situations like panic, stress and public relations better than their parents.

In a study done in New York, one set of surgeons played video games for 3 hours a week, while the other set played none. The set which played the video games made 37 percent fewer mistakes during laparoscopic surgery and finished the surgery 27 percent faster. In another study, gamers and athletes were compared upon their hand eye coordination. People who played both sports and games were the highest, followed by gamers, and then athletes.

In two separate studies, video game players had better success identifying items in visual environments. One study showed that people who played action games had a 20 percent better success rate in identifying a T in a cluttered environment. In another study, those who play action video games on a regular basis can process visual information faster and can track 30 percent more objects than non gamers. Thus, gaming can also make kids smarter.

People who play video games display fluid intelligence, or problem solving. Managing multiple objectives and multiple resources is one of the goals that help one to become smarter. Learning the rules of the game and what strategy works best for someone also helps the same person. Since video games are driven by goals, they need a hypothesis. If it does not work, they redo their hypothesis in order for it to work.

Computer games encourage students and adults to play together to work at a team. They are a fun way to help them learn to deal with the changing technology, and help increase their self esteem. In today's society most children seem to be lacking a tag of self esteem and it seems to be growing increasingly harder to pep up the depressed child. Computer games can help with that.

As a student progresses through a game they get the accomplishment of completing a level which makes them feel good about themselves. It helps them to understand different emotions they are going through and in some cases helps them to empathize with the opposite sex. Most of the games today allow one to pick a female or male character. While most people pick their own gender, some people choose to play the opposite sex. While some studies show that most games target boys, satisfying their desire for action, speed, and power, a lot of girls are getting more and more into these same interests. A study in 2009 showed that 3 times more boys played computer games than girls, but the girls that do play are usually more avid players than the boys.

Social Skills seem to be another controversy on whether computer games are good or bad. Many claim that the games make the student reclusive and anti-social but what these studies don’t want to show is that most of these that seem to be excluding themselves from other people are actually playing with other people. Most children and young adults prefer to play in pairs or small groups, making it a competition. Playing in these groups and pairs helps them strategize

with each other, communicate, and the best lesson of all, listen.

Another great aspect of the computer games are the fun and relaxation they provide to all ages. While the world around us is filled with stress of change, and the on goings of today's societies, it is sometimes helpful to have an outlet to vent our built up stress into. Games where one can create fantasy worlds like The Sims or where one can pick up a sword or an axe and chop up a tree or a virtual zombie to help vent stress. These games also provide a way that you can talk to people that have possibly been through some of the same situations that you are going though. These games are also a great way to meet people and for parents and children to interact with each other. These games also create a safe and fun atmosphere where one can express themselves.

Also, the education sector can utilize serious games to inform about diseases and risks associated with certain actions. We can easily see how a plot can be developed by a programmer to set a stage for various outcomes of learning in this situation. Further involvement of games could be in the form of exercise games for people who are overweight.

Hence computer games are not just tools of fun and relaxation, they create an atmosphere of learning and experience. Students and adults alike continue to develop key skills needed for the world as they quest through the pixel animated computer screens. In order to maximize the initiative of games for health, various mediums that are used by the workforce or the masses today have to be able to work with current web 2.0 technologies effectively. In general, software and hardware has to be capable of carrying such games.

Games for Health

These kinds of serious games are different from commercial games that are played on the play station or X-box consoles because of their difference in the plot, activities and reward from game play. Learning programmers have to ensure that from this learning experience comes entertainment too because it still has to captivate and hold the attention of the gamer.

The following are some examples of health related commercial games: RPG's show poison, disease, potions, healers; Ultimo IV allows the player to give blood to show sacrifice; Grand Theft Auto has an ambulance; various American war games have medic characters that have specific roles and also have a representation of endurance.

An innovative application of serious games in health care is their use in pain management [3]. The degree of attention needed to play a game can distract a patient from the sensation of pain. Distraction that is produced from gaming has been shown to affect the level of pain felt by kids who have some kind of injury or ailment like cancer or sickle cell. All those studies reported that distracted patients had less nausea and lower systolic blood pressure than controls (who were simply asked to rest) after treatment and needed fewer analgesics [4].

For example, people suffering from chronic pain could be playing games designed to ease their pain while their therapist monitors progress online. The therapist could then interrupt the game any time to adjust the settings. These types of strategies have been reported and analyzed among paediatric patients. This strategy could also be used directly to distract patients from further complicating ailments by avoiding

scratching or irritation of affected areas, it will work as anaesthesia for minor operations.

Games for health could also be further categorized into a few branches based on their end users in various industries namely: Government and NGO's, Defence, Healthcare, Marketing and Communication, Education and the Corporate Industry. The application of games for health for Government and NGO's could be in the area of Public Health Education and Mass Casualty Response. In this field, games might involve trainees getting training in real life cases, and customization by trainers would also ensure that response from these game cases are close to real life in preventing mass casualties in situations like an earthquake.

Another application of games for health would be in the area of Defence. Army casualties need the best possible medical services because their lives depend on it. Rehabilitation could integrate games to teach these patients how to move limbs. Games help you to learn a pattern and reapply it. Serious learning is the motive of serious games, and so what is learnt with these types of games is "how to get well soon". The pain felt by wounded soldiers could also be reduced with the gaming strategy explained earlier. An integration of these strategies into rehabilitation could produce an improvement in the health of an injured soldier. Other games for health like Combat Medic, which might not necessarily be a learning game allows players to test their skills as a Special Forces Combat Medic charged with saving and defending the lives of company members during firefights in a Middle East Conflict.

The marketing and communication sector can use games for health to advertise treatments. Advergame could be used to simulate s surrounding where treatment can be given by the gamer by following certain instructions. Companies can further advertise their products by directing winners to their website.

Conclusion:

In this short paper, we had seen how modern video games could play a vital role in the fields of health and education. More serious games initiative programs should be developed. The goal of such programs should be to formulate a new series of policy education, exploration and management tools utilizing state of the art computer game designs, technologies and development skills. Such initiatives should also host regular gaming conferences and workshops aimed at helping the area of "serious games" emerge into an organized industry of developers and development studios skilled at using cutting-edge entertainment technologies to solve problems in areas as diverse as education, health care, national defence, homeland security, analytics, corporate management, inter-personal skills, public and private safety and more.

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