

Bringing video gaming and BD-Live from being an entertainment tool to a becoming a distance learning tool: a concept paper

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Bringing Video Gaming and BD-Live from being an Entertainment Tool to a becoming a Distance Learning Tool: A Concept Paper

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Abstract: To some parents and educationist, video gaming has long been associated with wasting time. The interactivity and connectivity of the sixth and seventh generation video console has resulted in the introduction of the use of motion as input, and IR tracking and wireless controllers and 3D together with connectivity among the different console users in a network. This paper discusses the application on how the sixth and seventh generation video game console can be adapted to deliver vocational instruction through the gaming consoles. Apart from the video game console we would also be discussing on the use of the BD-Live feature on the BluRay disc. Using the case studies of Xbox 360, Wii, Play Station 3 and BD-Live, we would like propose how video game and BluRay consoles can be used to deliver vocational education through the distance learning mode. The advent of the internet, motion technology and 3D technology, would mean enhanced educational content can be delivered to students in a more effective, expansive and entertaining manner. The discussion of this paper will benefit the makers and software engineers of video gaming and BluRay consoles by opening their products to the educational market while distance learning instructors will benefit with new forms of content delivery.

Introduction

Video gaming has long being associated with wasting time to many parents and educationist. Contrary to popular thought, McGonigal (2011) reported that gaming is actually quite good to society as video gaming can produce positive emotions such as optimism, curiosity and determination in a person. Video gaming with friends and family will strengthen social relationships. Challenging video games train problem-solving resilience. Gamers supposedly learn quickly from their mistakes, and are more resistant to failure, which are traits that could be encouraged in distance education.

Woolington (2012) in her Daily Emerald article reported researchers at the University of Rochester found that video gamers are better 25% at decision making without sacrificing accuracy as compared to non-gamers. Researchers at North Carolina State University found that playing the “World of Warcraft” increases cognitive ability in older adults. In this paper we are going to look at ways on how video gaming and its related technologies can be used to deliver enhanced educational content to distance learning students in a more effective, expansive and entertaining manner.

Current gaming technologies

The seventh generation is the current generation of video games. Examples of the consoles are Nintendo’s Wii, SonyPlayStation 3 and the Xbox 360. The seventh generation video gaming consoles feature High Definition (HD) gaming, motion sensing gaming and 3D gaming. Gamers can play online and also perform functions normally done on a computer such a webpage browsing, social media such as Facebook and Twitter and subscribe to video and entertainment services.

Chen, Li, Ngo, and Sun (2011) described all the non-entertainment possibilities (including educational applications) the Xbox Kinect console is hoped to have in the future. This includes the integration of motion sensing technology with video conferencing technology, augmented reality and immersive military training. Motion-sensing technology through Kinect provides doctors touch free medical interactions. Doctors would no longer need to scrub in and out to access a computer safely.

History and literature through gaming devices

One of the best ways for teachers to teach the appreciation of literature is through video. Coencas (2007) believes students who have watched any piece of literature on film will be articulate when describing that piece to other people. Video helps a student analyze the components of a narrative better than just simply reading the text.

Their (2011) reported the game based on the Great Gatsby novel, has the protagonist Nick Carraway fighting his way through flappers and gangsters as like in the novel. Today there are many video games based on works of literature such as the Romance of the Three Kingdoms and Tolkien's Lord of The Rings Trilogy. Gaming like video brings any piece of literature to life. Even with the guidance of a face-to-face teacher, the teaching of literature is daunting to students as students need to imagine the scenarios. Mel Gibson in his video "*Mel Gibson Goes Back To School*" mentioned that language is the problem that prevents students from liking Shakespeare. By watching the Hamlet on film, students will ONLY need to focus on comprehending what the characters are trying to communicate and NOT the language per se. Hamlet on film brings out what is being said in the text rather than how the characters are saying it. In fact literature appreciation tests on what the characters are saying rather than the English language itself.

Schrier (2005) mentions that history can be taught better using video games as augmented reality (AR) games can

1. Create an authentic "practice field" for solving problems and using real-world contexts and tools.
2. Increase the potential for collaboration among participants, and enhance opportunities for reflection.
3. Enable participants to take on and express new identities through role-playing.
4. Encourage participants to explore more deeply a physical site and to consider interactions between the real and virtual worlds.

Augmented reality allows the learner of literature and history to "experience" the scenarios describe in any literature or history text book. Imagining the story or an historical event has always been challenging to the face-to-face student. Distance

learning students would appreciate better any course material presented in augmented reality as it acts in lieu of the face-to-face instructor in any conventional literature or history course. 3D technology that comes with video games today enhances the learning experience both to the distance and the face-to-face learner.

Business simulation through gaming devices

Business simulation games are games that focus on the management of economic processes of an imaginary business. Before the advent of video games, families would gather together to play Monopoly a board game dealing with the purchase and sales of property. (Van der Walt, Leon (2010). Today the business simulation games have become more sophisticated.

SimCity is a game that tests town planning skills. Business skills, such maintaining a budget, are examined here. Game Dev Story for the iPad and iPhone tests skills of managing a video game company. Skills of the player managing resources, finances and human resources are tested. *Capitalism* tests skills of a player manipulating the entire market cycle, from resource extraction to manufacture to marketing. (All Business (2012))

MBA instructors can use business simulation games to test the skills of the MBA student on running a business in a holistic manner. The conventional form of teaching a business plan is for the students to study a case study which is descriptive in nature. Hard skills such as budgeting and human resources planning are quite difficult to be tested in a case study. Harvard Business School and Stanford School of Engineering used *Capitalism* for educational purposes. Professor Tom Kosnik felt that *Capitalism* players learn how to start and grow a business together with soft skills such as leadership and team building necessary in any business. The business simulation game makes any MBA course interesting and interactive. The online distance learning (ODL) instructor could ask his students to go on-line for a playoff. Students can compare among themselves how they manage a business. Grades may be given by the instructor to the student who comes out with the best plans.

Vocational courses using video games

One of the main features of the seventh generation console is the introduction of motion

sensing gaming. Playstation and Microsoft Xbox introduced the Move and Kinect technologies respectively. The primary controller of the console is a remote that uses built-in accelerometers and infrared detection. The remote gauges its position in space from the light emitted from a sensor bar placed on the television screen. (Chen, Li, Ngo and Sun (2011)) In 2009 Sony introduced the PlayStation Move, a motion-sensing game controller platform for the PlayStation 3 (PS3) video game. The PlayStation Move uses the PlayStation Eye camera to track the wand's position, and inertial sensors in the wand to detect its motion.

As mentioned earlier the video gaming console has developed into a simple gaming tool to one whereby gamers play using movement. The need to use keyboards is replaced by motion. Fit-in-Six, for PlayStation and Nintendo Wii, is a personal training video game where using the motion sensor the software will act like a personal trainer monitoring the movements of a fitness class student. The student will be able to choose from classes on cardio, balance, upper body strength, lower body strength, core strength and flexibility. Cardio classes will include aerobic instruction while Pilates and Yoga will be included in upper body strength, lower body strength, core strength and flexibility. For the instruction of music, Karaoke Revolution would be a good choice. The game challenges the singer's ability to sing in different octaves.

In the same manner designers of ODL courses can use motion-sensing gaming technology to present vocational courses to distance learning students. In the past vocational courses will require a lot of face-to-face instructional time as instructors would need to demonstrate and later the students try to perform a certain task at hand. Microsoft Kinect can save large amount of student flying time through the simulator. Moving closer to home, currently Wawasan Open University includes computer lab time for selected courses. Although the students spend a majority of their time at home going through the course material, the students are required to attend a few computer lab sessions at the regional office. ODL institutions can save on lab resources by offering the module through gaming software. As the gaming modules today are internet connected, a dedicated instructor could monitor the progress of his students while his students are "playing" the module.

Les Mills International is the largest provider of choreographed fitness classes distributed to health clubs in the world. A new suit of choreographed fitness programmes will be introduced every quarter to the instructors. Les Mills will provide

their instructors with a DVD and a book of the new routine. To enhance the training, an instructor training module workshop is held every quarter at selected training centres. Similar to the Learning Management System (LMS), an instructors' portal is available on the Les Mills official website.

Gaming technology can be applied to ease the delivery of new material to the instructors' every quarter. As the instructor training module is provided face-to-face every quarter, instructors will have to travel to the Les Mills centre every quarter to receive the updates on the new choreography. The updates can be sent to the instructors using motion sensing gaming. In fact by creating Les Mills classes in motion sensing gaming, Les Mills's programs can be made available to the public who do not have access to a Les Mills health club. Les Mills can license the software for use at home.

Administration of Education Delivery through Gaming Technology

It cannot be denied that the capital outlay and technology required for the delivering education through gaming technology is high. This may not be a project for one single institution of higher learning but one that requires cooperation from a consortium of institutions of higher learning and the owner of the platforms. There will be a need to carry and deliver the content through their exclusive online multiplayer gaming and digital media delivery service such as the PlayStation Network and Xbox Live.

Initially it costs a lot of money and technical support to provide education through the online multiplayer gaming and digital media delivery service. However using a digital media delivery service to distribute educational content is not new. iTunesU is the educational offshoot of the digital media delivery service for Apple Inc. Many educational institutions including ODL institutions such as The Open University and Open University Hong Kong have used the iTunesU platform to deliver course materials either in the form of Portable Document Formats (PDF), audio or video through the network. Currently there is no arrangement between any institution of higher learning and Sony, Microsoft or Nintendo in delivering any educational content through their gaming networks. Judging from the model between the ODL institutions and Apple Inc., the same of kind of business model can be created between the ODL institutions to carry educational gaming content through their networks.

The cost structure of using gaming technology will defer considerably with the

conventional mode of ODL delivery. There will be a large course development capital outlay. There will also be a need to have trained gaming programmers together with content developers creating a course. The benefit of the ODL delivery via gaming technology will come in the long run. As most ODL institutions provide a limited amount of face-to-face tutorials together with their course delivery, gaming technology removes the needs of having a large pool of tutors to conduct courses.

The downside of using gaming technology is the complexity of the programming. Gaming technology may not be suitable for all courses. Courses which require a dedicated instructor such as driving, playing of musical instruments or sports might benefit from the use of motion sensing gaming. The use of the motion sensing gaming technology will save the institution money of employing a large pool of dedicated personal trainers. Software will ensure that the consistency of course delivery as there is a tendency for human instructors to vary in their instructional approach.

Online Distance Learning delivery through BD-Live

BD-Live is a Blu-ray technology allows the user to enhance their viewing experience through downloaded content and advanced interactivity. BD-Live enabled Blu-ray discs may allow features such as online chat, online gaming that can be played with others watching the same disc, and downloadable content. This interactive technology is not found in earlier audio/video storage devices such as the DVD and the CD. For example Sony Pictures' Julie & Julia BD-Live disc allows viewers to access the late master chef Julia Child's actual recipes while the viewer watches the movie and exchange recipes with other viewers through the internet.

In the current ODL practice in Malaysia, students will receive their printed course material or Flash based CDs with the material encoded on them. Interaction between the instructors and the student community will be done through the LMS such as Moodle or Blackboard. Students and instructors will post their comments on the forums. Real time interaction between the members of the class is not possible in the current system used in Malaysia. Through BD-Live, ODL institutions can deliver pre-recorded lectures on the discs. The instructor can ask their students to view the BD-Live disc at a predetermined time so they the instructor and the students can interact at the very same time. This creates an "online" interactive class without using too much internet bandwidth.

Administration of Education Delivery through BD-Live

The capital outlay and distribution of ODL material through BD-Live may not be that complex and expensive as compared to the delivery through the online multiplayer gaming and digital media delivery services. ODL institutions should have a production team that can produce HD quality video material and some Blu-Ray disc authoring.

Students can review their course material (i.e. documents, audio or video) at their convenience like how course material is currently presented on CD-ROM and printed hard copies. The course coordinator might want to block a few periods whereby a dedicated tutor and students “gather” online for an interactive chat session while reviewing the material on the disc together.

Conclusion

Video gaming technology and BD-Live are areas designers of distance learning programmes can enhance the delivery of content. The advent of the internet, motion technology and 3D technology would mean enhanced educational content can be delivered to students in a more effective, expansive and entertaining manner. It is hoped that this paper will benefit the makers and software engineers of video gaming consoles and BluRay players by opening their products to the educational market while distance learning instructors will benefit with new forms of content delivery.

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