Jan 1st, 12:00 AM

04. Multimedia Design

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Developing Educational Gaming to Facilitate Comprehension of Discrete Math Concepts

Ryan, Dang  Cameron University

Educational gaming software has shown its effectiveness in providing powerful learning experiences for high school students. Virtual environments foster real-world application of the knowledge presented in-game. Games function as aids in development of student competency. Currently, evidence beyond anecdotal reportage to support the use of computer games in education is limited. The dominating areas of research in educational gaming exist solely in the disciplines of medical education and business management studies. Our objective is to develop a novel working beta-model concerned with increasing discrete math cognitive skills in college-aged students in an engaging and fun manner. Cameron University’s Computing and Technology Department development team is authoring a novel video game to facilitate learning of discreet math concepts. The subsequent beta-testing and field-testing of this original product serve as anecdotal evidence in support of educational gaming. As of 2015, the current team is developing an animated video game, designed to facilitate learning Set Theory. The team will systematically revise and develop beta-tests of game. Revisions of game determine functionality, interactivity and level of fun. Project development by current Cameron students, professors, and associated facilitators is an ongoing process that will continue within Multimedia Design Department after graduating class leaves.
Gamification of Algebra Concepts

Many non-mathematics majors struggle when it comes to understanding and solving mathematical problems. Many approaches have been tried, but students often find them boring and are unwilling to use them. It has been shown that games can help people better learn mathematical concepts such as the quadratic formula [1]. Over the past few months, with the collaboration of a team from the Multimedia Department and computer science majors at Cameron University, we have been developing a game students can use to learn how to solve a quadratic equation. In this presentation, I will discuss the steps we used to plan the game, such as using storyboards to plan out the game's aesthetic, theme, and gameplay functionality. The storyboard consisted of the characters that we've called “minions,” attached to which are numbers corresponding with the numerical coefficients in the quadratic formula. The minions compete against each other in order to get into a spot on a warship. The user needs to click on the minions marked with the wrong numbers to prevent them from getting on the ship while only allowing the minions marked with the right numbers to get into the boat. In this presentation, we will show how a user can play a game and learn how to solve a quadratic formula.

Stressing Cooperative Learning in Small Groups Based on Self-determination Theory

The project is funded by the “Tuck and Anna Pittman Endowed Lectureship in Instructional Technology” grant through the School of Science and Technology at Cameron University. It reports on findings of a study that measures students' needs for relationships in a small group multimedia learning environment. Emphasizing cooperative over competitive learning is the primary teaching strategy of the study. The study applies self-determination theory as its theoretical framework. Much research on self-determination theory supports the development of competence and autonomy by establishing a solid relationship among learners (Deci & Ryan, 1985; Deci & Ryan, 2000; Ryan & Deci, 2000). The study also supports the very core value of Cameron’s Plan 2018: “Student learning as our top priority,” Action 1.10, “Improve student learning through innovative uses of instructional…”; and Action 6.1, “Focus resources to achieve optimal student learning.”
03.04.05 A Narrative of an Undergraduate Research, Scholarship, and Creative Activities Project Cameron University/School of Science and Technology

Abbas, Johari Cameron University

Karisha, Jackson Cameron University

William, Johnson Cameron University

The project is funded by the “Support for Undergraduate Research, Scholarship, and Creative Activities” grant from the School of Science and Technology at Cameron University. It reports on scholarly activities of a few minority undergraduate students. The purpose of the project is to produce a rich literature review on Self-Determination Theory and Service Learning approaches and their interrelated motivational connections to seek research funding via a qualitative (case study) research design. The project will provide in-depth research activity, support, and publication opportunities for minority students who have not previously been engaged in any faculty-mentored undergraduate research process. Hence, the fund supports undergraduate research and is used to increase the number of undergraduate scholars who are participating in research, and will have at least a scholarly product-a review of research publication. The intent is to submit the results via a research paper to Oklahoma Journal of Undergraduate Research.

03.04.06 On Becoming a Competent and Autonomous Learner in Instructional Technology

Abbas, Johari Cameron University

Dominique, Thomas Cameron University

Karisha, Jackson Cameron University

William, Johnson Cameron University

The project is funded by the “Public Service Company of Oklahoma (PSO) Endowed Lectureship in Instructional Technology” grant through the School of Science and Technology at Cameron University. It reports on a study that measures students’ needs for competence and autonomy in a flexible open learning environment. The primary focus of the study is to examine a learning strategy that allows learners to have full control over their own multimedia skill developments. The study applies self-determination theory as its theoretical framework. Much research on self-determination theory supports the development of competency and independence in learners that are motivated and have a high desire to achieve (Deci & Ryan, 1985; Deci & Ryan, 2000; Ryan & Deci, 2000). The theory derives much from modern cognitive motivational theories including Bandura’s self-efficacy theory. In light of the findings, the researchers will outline answers to questions such as what teachers can do to meet their students’ need for competence and autonomy. The study also supports the very core value of Cameron’s Plan 2018: “Student learning as our top priority,” Action 1.10, “Improve student learning through innovative uses of instructional…,” and Action 6.1, “Focus resources to achieve optimal student learning.”
03.04.07  From Content to Form: Death in Top Grossing Children's Animations

Linda,Wright Smith  Cameron University

In Dec, 2014, the British Medical Journal 2014 published (16 December 2014) the results of research conducted by medical professors in Canada and England entitled “Cartoons Kill: casualties in animated recreational theater in an objective observational new study of kids’ introduction to loss of life.” They compared 45 of the top grossing G or PG rated children’s animated films from the United States to the two highest rated United States adult movies for each year (90) to measure how long it took from the start of the film to the first incident of an important character’s death. Anthropomorphized characters were excluded from the research. Their results show that very young children are being exposed to death of a significant character within 1:13:08 to 1:25:22 minutes of film time. Half the adult movies and two thirds of the children's animated movies had death scenes of important characters. The authors discuss the psychological effects that result from this kind of exposure at such a young age. This poster visualizes the forms of deaths identified in the research and the psychological effect on young children.

03.04.08  Two-Lives

Ali,Madanipour  Cameron University
Jeffrey,Gholson  Cameron University
Justin,Gholson  Cameron University
Usef,Faghihi  Cameron University

Two lives is about 2 young teenagers; Susan and Adam. They meet two fellow students who turn out to be drug dealers selling at their school. This story illustrates how a simple answer can make two lives turn out very different by the end. The story is to illustrate the consequences of drugs and how addiction can often lead more than just health problems. The story starts off with Adam and Susan on their way to class they soon come across Julie and Eric who are welcoming and friendly to Adam and Susan. They hang out and talk for a little while and are gracious and kind. Then Julie and Eric begin to coax Adam and Susan to try out some drugs which are in a box, Susan refuses and walks away. Adam is about to the same but then is convinced by Eric and Julie to try the drug. When Adam takes the drug he ends up loving it and goes to hang ou with his so called new friends. For a time Susan is lonely until she eventually meets new friends. Adam on the other hand has no idea that Eric and Julie don’t really care about his well being and are only interested in making money. The story follows the two teens, Adam and Susan on separate paths. Susan goes from being alone to making great new friends, studying and working at her grades. Adam ends up resorting to stealing from his family and his addiction eventually drives him out of the house. The story ends with the Susan and Adam meeting again, but this time completely opposite then what they were from before.
Gamifying Mathematical Concepts—Intersection

Andrew, Rutter  Cameron University
Brock, Crosby  Cameron University
Douglas, Schlumbohm  Cameron University
Jawad, Drissi  Cameron University
Kenneth, Austion  Cameron University
Trevor, Harrigan  Cameron University
Usef, Faghihi  Cameron University

Intersection is a mathematical concept which instructors have attempted to explain to students in many ways. There exist several online resources which attempt to teach intersection in ways which will engage the learner. To our knowledge there are no readily available e-learning software programs which teach this concept in enjoyable ways. Research has shown that learners exhibit improved performance when mathematical concepts are presented in methods that those learners find inviting. The development team is in the process of engineering an e-learning software suite that will teach mathematical concepts such as set operations (e.g., union, intersection, complement, difference) and Cartesian products in ways that will be fun for the learner. In this presentation, all of the aforementioned concepts will be demonstrated using gamification techniques.

Gamification and Union in Discrete Math

David, Chatman  Cameron University
Han, Xiong  Cameron University
Jawad, Drissi  Cameron University
Kaitlynn, Birch  Cameron University
Ryan, Dang  Cameron University
Usef, Faghihi  Cameron University

It has always been a characteristic of higher-level mathematics to have a steep learning curve. If a student doesn’t like the challenge of mathematics to begin with, the student won’t be willing to dive into it. Why is this? I believe it is the fear of the unknown. Average students cannot see themselves in a situation in which they will ever need to use the higher-level mathematics. Research studies have shown that games can help people learn mathematical concepts such as the quadratic formula [1]. We have been working on a project that will add the fun of playing video games to learning set theory, a concept taught in discrete math. During the presentation, I will discuss the approach we have been taking to create a game that we will use to help teach union, an entry-level concept in set theory. First, I will discuss the process of planning and making a storyboard that will serve as a blueprint for developing the game. Here, I will talk about how we have collaborated as Multimedia Design students and Computer Science students while trying to complete this project. Also, I will explain the elements of multimedia design that were valuable throughout developing and creating the aesthetic of the game. Once the game is completed, we expect to test the game with the help of discrete math students in fall of 2015. We hope we can later build upon this game to include more and more concepts other than set set theory in the area of discrete math.
03.04.11 Violence in Children's Media

David,Chatman Cameron University

Because of my fascination with computer generated images, I went to see How to Train Your Dragon 2 and was amazed with how much of a children's film this turned out to be for me. Ian Colman states, “We conclude that children’s animated films, rather than being innocuous alternatives to the gore and carnage of typical American films, are in fact hotbeds of murder and mayhem.” Death and hard choices were two important themes that stood out and promoted me to do a literary review to learn what the current research had to say about the psychological impact these type of animated movies have on small children. I will also discuss some of my findings concerning children's and parents’ perspective of death and violence in movies and other media that children have access to via the internet.

03.04.12 Designing Tomorrow

Leigh,Tucker Cameron University

Art is apart of life that is experienced throughout various places. There are no boundaries of what it can be or what it is. Designs created today can have an impact on the future, and there are no limitations that will stop the creativeness that tomorrow holds. Designing and creating are processes that can be used to create many things. The main objective of this presentation is to show the design principles, and allow the visual aspects of art to come alive.