Computer Graphics 2017: The Sound of Geothermal: Animation and Board Game Design - Chieh-Ju Huang - Chienkuo Technology University - Taiwan

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Using Chinese traditional story character "the god of fire" to style an animation describes the knowledge and mechanism of geothermal power generation. The animation also shows how people can collaborate together to use renewable energy to unravel the matter of community electricity shortage and therefore the crisis of energy overuse. Besides the idea of Geothermal, the storyteller will explain the event, operation, and performance from the energy of Geothermal. In addition, a parlor game is meant from "Design Thinking" and "POEMS" design tools. When designing this parlor game, a design thinking workshop was proposed for investigating how and why the parlor game would be played. POEMS design tools support to the sport rules from: People (users during this game), Objects (the objects during this game), Environment (the content and environment during this game), Messages (the knowledge from this game), and Service (the service and activities during this game). It's for multiple players, and therefore the cards contain path cards and gear cards for interacting with others. The parlor game supported the principles derived from the appliance of green energy. The players will find out how the Hydraulic, wind generation, Firepower, atomic power, and heat work by playing this parlor game. In a comprehensive way, this animation and parlor game for educational and energy usages are teaching the users about the knowledge of power generation and environment protection. This project uses "Methane Ice formation and mining techniques" because the theme to transfer their associated knowledge to general science education supported storytelling, scenario design, character design, interaction design, and hologram projection technologies. There are two learning systems had been developed during this project. The primary learning system is named "The Animation Learning System for Methane Ice Formation and Energy Transformation". The second learning system is named "The Hologram Projection Learning System for the Knowledge Kernel and Structure Recognition of Methane Ice". Two activities had been held to ask grade school students and high school students to find out the science of Methane Ice by the 2 systems developed during this project. The evaluation results show that the usability of those two systems is excellent for both grade school and high school students. The result get obviate the factors that the training achievement of Methane Ice science learning been suffering from unfriendly system design. Further learning achievement evaluation supported the ARCS learning motivation model are going to be performed to point out the affordance of the Methane Ice science learning mechanism proposed during this project.

Serious games are digital games that use technologies and characteristics of video games with other main purposes than to entertain, being education one among the foremost important. computing majors require students to possess good programming skills and a number of other projects involving games are being created to tackle this problem during a more entertaining and attractive way. One concern among researchers is that there's not a selected methodology to make serious games for education, since serious games need to be designed for specific users and contexts. This thesis is concentrated on the creation of a game design for a significant game on programming which will be utilized in courses of computing at the University of Porto, which places particular specifications to be met with the project. To realize this, tasks started with the analysis of the scenario and requirements, followed by the creation of a game concept that would deal with the objectives of the project. The ultimate product, a prototype, demonstrates that it's possible to make a game design and a platform to develop a game that's independent of a selected programing language, making it editable for programming courses that are supported distinct programming languages. the sport design was done following the overall guidelines that commercial video games usually follow, with the tutorial activities attached thereto since the conception of the gameplay. an in-depth design of the sport mechanics was done to line the inspiration of the gameplay of the intense game and therefore the platform that supports it. At the top a prototype with one level was generated using the mechanics of programming assignments and tested with students of informatics, receiving regeneration about the sport, finding that's attractive enough to motivate students into programming. Future developments are expected because the game design is an important version of the ultimate game idea but there are some details that require a redesign and further testing on distinct courses. However, the results are promising to continue the development of the intense game that might become a successful mature tool that helps in learning programming. Nowadays the computer game industry is one of the most important entertainment industries. This is often seen as a chance to use video games on other areas and industries. Since the looks of digital games, training and education are the main areas during which games are used besides entertainment. There are several features of video games that are attractive to players and these are the features that are getting used to drawing in students into activities that otherwise appear as unexciting, difficult to know, or risky to try to within the world. This is often the purpose where edutainment and academic games were created to teach on several subjects.