

An Edutainment Framework Implementation Case Study

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INTRODUCTION

The convergence of information technology, particularly multimedia applications, has made it possible to create electronic games with characters that come alive on the screen. From its original use just for entertainment, electronic games now can be used for educational purposes. Thus, the term 'edutainment' is created from a combination of the two areas: education and entertainment. Exploring the edutainment environment has become an interesting research area and understanding its application to suit various learning environments or teaching models is a crucial issue.

Research has shown that educational games can be integrated in the learning environment, but the difficult part is to design edutainment products that reflect the goals of the curriculum. McFarlane, Sparrowhawk, and Heald (2002) assessed the knowledge acquired via the use of educational games in primary and secondary teaching. The study was based on teachers' opinions on the limits and potential of games. Their results reflect that most of the teachers had a very positive view of the adventure games and, above all, of the simulations. However, in spite of this very positive assessment, they stressed the difficulty of using these games in the teaching due to the pressure of time and the need to cover the educational program in its entirety. The requirements of the curriculum were also mentioned by teachers in the study by Sanger (1997). For this reason, it is important to have a design framework for edutainment environment that can show the merits of games to teaching staff and enable them to use them in a way that is oriented far more towards the acquisition of the knowledge required by the school content structures. Hence, this research attempts to refine the design framework whereby its implementation may overcome the current problems in an educational setting involving children ages four and above.

BACKGROUND

Edutainment can be defined as:

A place where children could enjoy what they learn with a combination of many mediums (sound, animation, video, text and images) by simply using a computer mouse to point and click on a particular picture, word, or button; and stories as well as information that will come alive on a computer screen. (Druin & Solomon, 1996)

To Buckingham and Scanlon (2000), edutainment is a hybrid genre that relies heavily on visual material, on narrative or game-like formats, and on more informal, less didactic styles of address. The purpose of edutainment is to attract and hold the attention of the learners by engaging their emotions through a computer monitor full of vividly coloured animations. It involves an interactive pedagogy and focuses on making learning inevitably fun. Edutainment environment has become immensely popular and commercially successful with parents, educators, and children. Research has shown that computers help children learn. The use of computer-based learning, or e-learning, was found useful with young children. Carlson and White (1998), for example, discovered that the use of a commercially available software program significantly improved preschool or kindergarten students' understanding of the concepts of left and right. Based on their findings, the researcher concluded that it is possible to provide young preschool children with a favourable computer experience while enhancing their understanding of a particular educational concept.

Two other studies support the conclusion that well-designed e-learning activities, when presented with the active participation of a trained tutor, can increase young children's cognitive abilities. Goldmacher and

Lawrence (1992) studied two groups of preschool children enrolled in a Head Start¹ program. One group followed the standard Head Start program while the other group participated in computer enrichment activities in addition to their standard Head Start activities. The computer activities were theme-based and built around a variety of software. Students in the computer or e-learning group demonstrated improvements in all academic skills tested and showed greater growth in memory and visual perception. Chang and Osguthorpe (1990) showed that kindergarten children who worked with a computer achieved higher scores in tests of word identification and reading comprehension than children who received regular noncomputer teaching.

However, not all of the educational software could provide positive effects on children. Haugland assessed the effect of developmental and nondevelopmental software on children's cognition, creativity, and self-esteem (Haugland & Wright, 1997). The nondevelopmental software is the drill and practice software which consists of multiple choice questions or quizzes presented using information technology. The result indicated that nondevelopmental software had a detrimental effect on children's creative abilities. Developmental computer experiences fit young children's style of learning because they provide children participatory learning experiences that are intrinsically motivating and tend to be holistic learning experiences. In evaluating approximately 750 software programs marketed for use by young children, Haugland found that most of the software is developmentally inappropriate. Only about 20% of the software meets young children's developmental needs.

Children learn best by doing, interacting, and exploring rather than watching and/or listening. Exploring, manipulating, and "playing" with materials are the most effective ways to teach young children (Kantrowitz & Wingert, 1989). Hence, edutainment which usually exists in the form of electronic educational games could be the most effective e-learning material to be integrated in the classroom, as by playing games, psychological needs of children can be fulfilled. Electronic games are undoubtedly motivating, thus the intrinsically motivating nature of the electronic games should be utilised by using this medium for educational purposes as it is no secret that motivation is the key to education. However, there are still many issues that need to be addressed in the design of edutainment environment.

Hence, this research serves to refine the theoretical design framework of edutainment environment.

This research aims to provide the design framework for edutainment environment that is refined based on the literature review, analysis of existing edutainment products, and a case study that has been conducted on selected research settings. The objectives of this research are:

- i. To link motivation with psychological needs and understand how edutainment can achieve these important aspects in learning
- ii. To investigate current issues and problems pertaining to edutainment in the learning and teaching environment as well as to examine the extent to which edutainment reflects the goals of the curriculum
- iii. To compare the application of practices for game design in the existing electronic educational games by analysing them based on a set of parameters of good game design
- iv. To conduct a case study on selected research subjects for the purpose of refining the theoretical design framework
- v. To refine the design framework that may be implemented to create an edutainment environment that reflects the goals of the curriculum

After the analysis has been performed on the selected edutainment products to discover the strengths and weaknesses based on several perspectives, the researcher conducts an empirical study² involving the same edutainment products that have been critically analysed to further refine the theoretical design framework for edutainment environment. Twenty-four preschool children and one educator from a preschool, located in a middle-class neighbourhood of Kajang under Cheras district in Selangor, participated in the summative evaluation. Participating children originated from the same cultural background. None of the participating children had used the four selected edutainment products before. All children were able to use the computer, as attested by their educator. The preschool had only one personal computer with different types of educational software that was demonstrated to the children and sometimes used by them in different sessions. The computer was used once a week for half an hour during the children's computer lesson.

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