A Conceptualized Framework for Edutainment

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Abstract

Conventional technique of design in computer games normally use programming as the ultimate task for developing computer games. In this framework, the development of edutainment for developing computer games for kids will be spearhead towards educators. The development of this conceptualized environment will lead the users to build an application towards a distributed resource available to a group of children. The aim of this paper is to develop an edutainment framework to be used as a tool for non-programming users especially educators for preschool children to develop digital games. Furthermore, it will identify the need for the used of diverse media elements and accommodating different skill levels in interface controls.

Keywords: Conceptualized Framework, Edutainment, Digital Games, Preschool, and Storytelling

Introduction

For years, children's games have lived outdoors in playgrounds or around kitchen tables at board games dice and little wooden pieces. For years, children's stories have lived between the pages of books or in the imaginations of campfire storytellers. Today, children's games and stories still live in those places, but they also can be found on computers that offer a world of multimedia. Learning geography, history, mathematics or science while catching computer cartoon thieves is becoming as common as climbing a tree. Pointing and clicking at hot spots or buttons on a computer screen are becoming as common as turning pages in a book.

Today, the world of multimedia games, stories and activities is a place where education and entertainment meet. Edutainment – a place that asks children to enjoy what they learn with a combination of many media (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 will come alive on a computer screen. Selecting a picture of a cat might offer an animated romp ending with a loud 'meow'. Selecting a button might offer another view to a new room to point and click at new images and words.

Children can interact with characters in ancient fables or new original poetry. They can wander through animated reference materials that explain the scientific principles behind a zipper or a nuclear reactor.

They can play games that take them back in time, out in space or across the world. Edutainment offers children a way to wander through stories, information or games at their own pace and in their own way. They can connect ideas in paths they choose or investigate one particular idea among many. To connect educators must do the ideas and putting in the storytelling which dealing with these kids. They know what are the best games or

approach in teaching the kids to this new digital age. Therefore, this conceptualized framework is the best approach, which can cater for non-programming educators to develop the digital game or other courseware that is suitable for their preschool environment.

This framework can be the starter kit for educators in enabling them towards diverse media element to corporate together. In this framework the merging multimedia technologies has been combined in one-stop-center.

Technological Innovation in Education

Children's edutainment has become immensely popular and commercially successful with parents, teachers and children. In the past, however, teachers and parents did not see the importance of edutainment. They did not see how children's everyday play experiences could be a tool for learning. Educational researchers and psychologists have written extensively about the benefits of play as an integral part of children's learning.

Since the beginning of time, educators have shared stories and anecdotes with their students to excite and inspire them and to draw them into new learning experiences. These stories have captured ideas, people and places not found within the walls of the classroom. They have engaged educators and students in discussions, exploration and problem-solving activities. However, educators have come to understand the power of confronting complex real-world challenges.

Most of the software available on the shelf is only the 'ready-made' content. If the preschool content need to be change to suit the environment (specially to cater the government mission) the software have to re-do again which can take years to build it. This conceptualized framework has the advantages of merging technologies between educational and entertainment which is suitable for educators and easier handling in 'one-page' they can manipulate the course as required by the educational environment. Educators should not spend an excessive amount of time learning to use the technology.
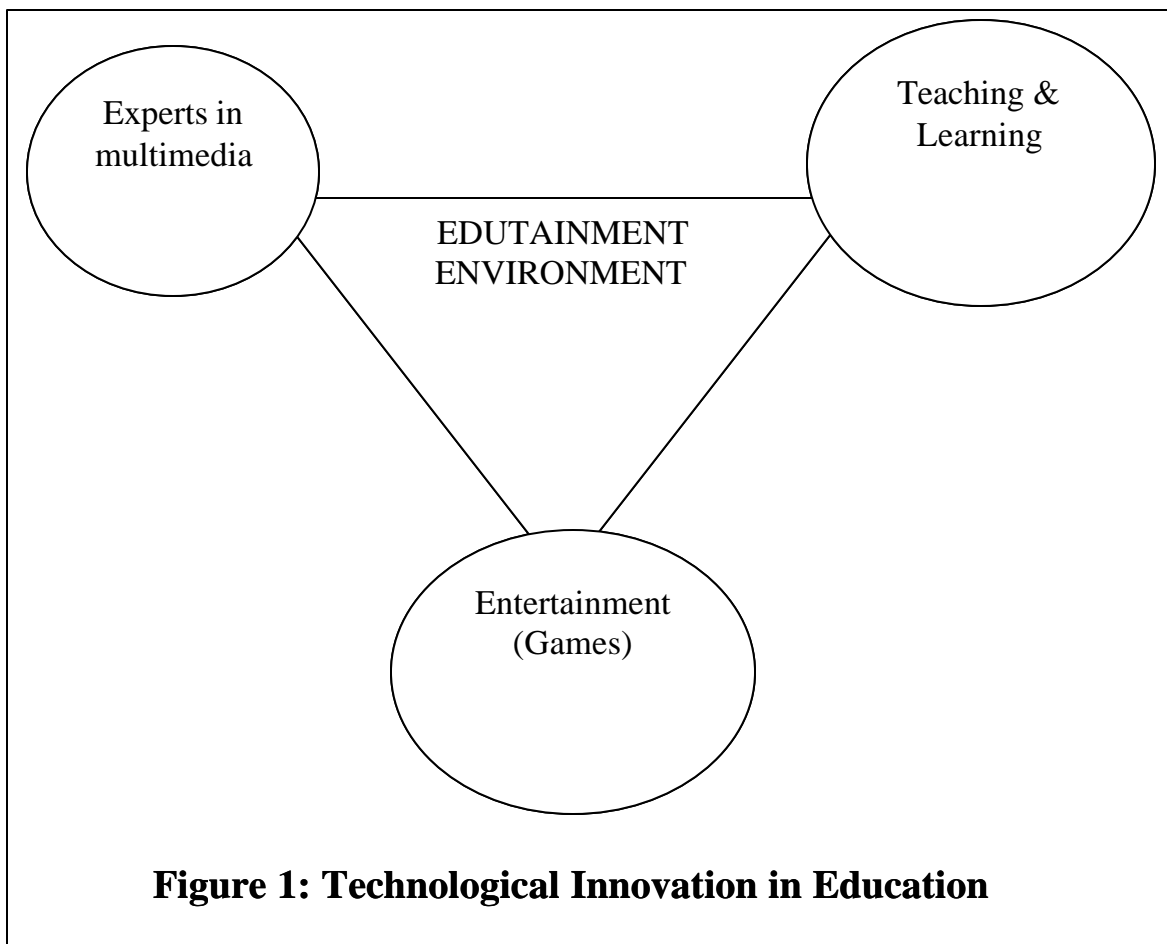
Merging Technology in Education

Conventional technique of design in computer games normally use programming as the ultimate task for developing computer games. In this conceptualized framework, the development of edutainment for developing computer games for kids will be spearhead towards educators. The development of this environment will lead the users to build an application towards a distributed resource available to a group of children. The aim of this software is to be used as a tool for non-programming users especially educators for preschool children to develop digital games. Furthermore, it will identify the need for the used of diverse media elements and accommodating different skill levels in interface controls.

This conceptualized framework is not limited to educators but parents also are encourage to do so since it has the ability to combine the diverse media elements which normally only be practiced by specialists who has the knowledge and skill for many years and is suitable for non-programming background which using the concept of WYSIWYG (What You See Is What You Get).

The development of edutainment environment is intended to implement technological innovations in education as shown in Figure 1 (Hussain & Eshaq, 2001). The goal and design principles of this environment emphasis on creating applications that provide common and transparent technology to learners. To promote adoption, it is important to make technology as transparent as possible.

The advantages of technologies such as multimedia software and game software will be utilized to perform the edutainment environment. This environment will be designed in one screen that hides incredible programming behind a simple façade for educators to build edutainment games for children. It is also will be used to spearhead the development of the edutainment environment for developing educational game.

Figure 1: Technological Innovation in Education

As education design becomes more complex and challenging, a new form of storytelling is required in delivering a new level of interactivity, integration and a more democratic relationship between story-teller and audience. Educators (facilitators) should draw from the games industry to add value to their knowledge development as a step to taking mathematics learning to its next stage of evolution. It is suggested that this conceptualised framework will encourage educators to create effective game or course for class. This conceptualised framework will allow non-technical educators to generate education games especially to cater for the 'Smart School Project' as well as Multimedia Super Corridor's (MSC's) need for content developers. The success (or failure) of the design will much depend on the teachers functioning more as 'facilitators of learning' rather than 'purveyors of knowledge'. Teachers (facilitators) and game designers will be able to realize the potential electronic games have on educational medium not only for supporting traditional school disciplines such as mathematics, language, and art, but for exploring social and cultural issues as well.

Proposed Framework for Edutainment

Electronic Games and Collaborative Play

There are many electronic games that promote collaborative play. Children when playing electronic game, very often exhibit collaboration since they are highly motivated to solve problems and improve their skills during play. Electronic games are based on challenge, fantasy and curiosity, thus combining intrinsic motivation for learning with interpersonal motivation such as co-operation and competition (Figure 2). There is vast research literature on co-operative learning in schools. Inkpen et al. (1994) provided a summary of some of the findings related to the benefits of co-operative learning in schools (Inkpen et. al., 1994). These findings include achievement and positively affected attitudes toward school and classmates (Hymel et al., 1993), (Johnson, et al., 1981). Many teachers today, incorporate co-operative learning methods in their classrooms. The curriculum development for elementary schools
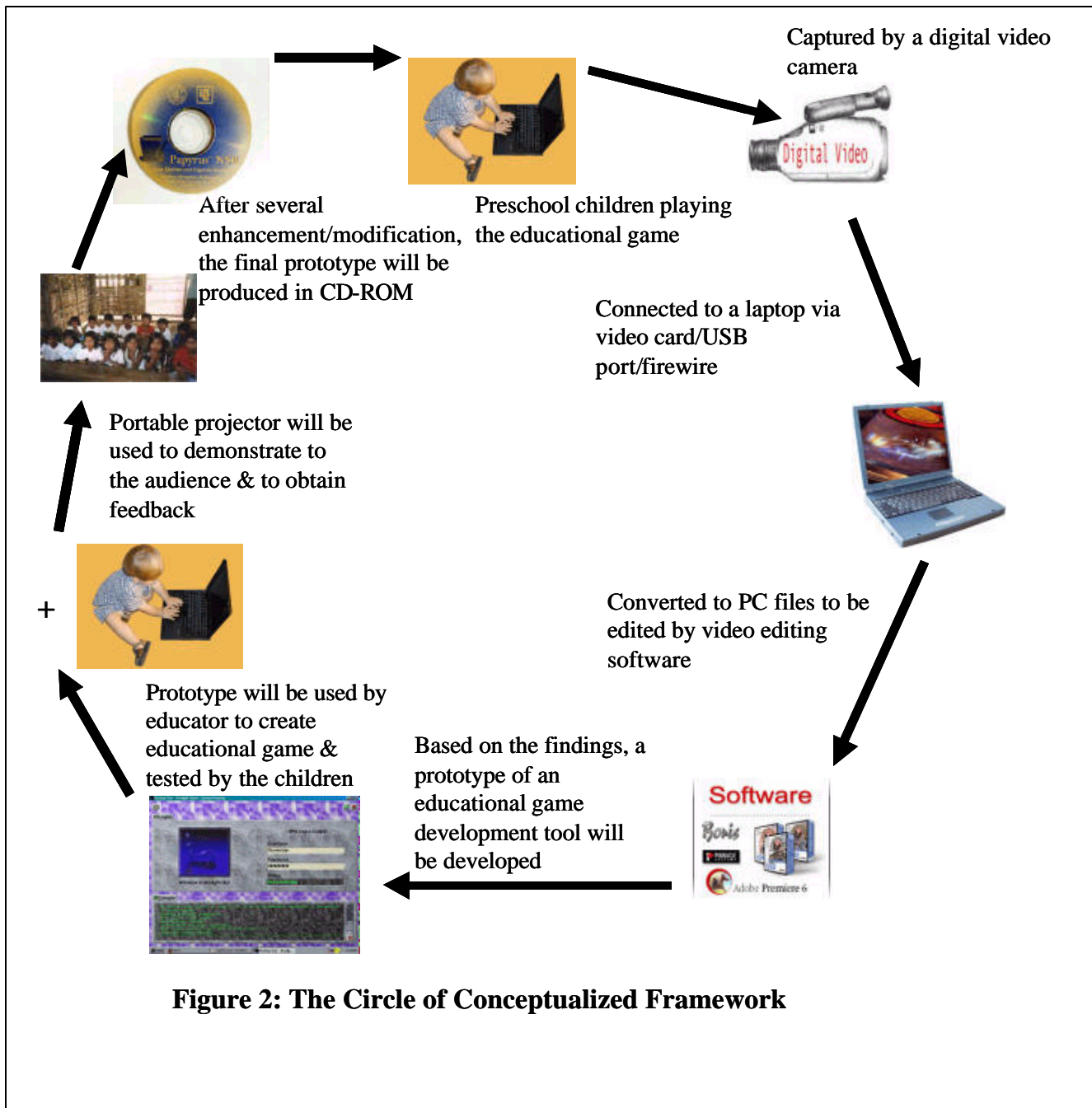
Captured by a digital video camera

After several enhancement/modification, the final prototype will be produced in CD-ROM

Preschool children playing the educational game

Connected to a laptop via video card/USB port/firewire

Portable projector will be used to demonstrate to the audience & to obtain feedback

Converted to PC files to be edited by video editing software

Prototype will be used by educator to create educational game & tested by the children

Based on the findings, a prototype of an educational game development tool will be developed

Figure 2: The Circle of Conceptualized Framework

also tends to incorporate group interaction (Hymel et al., 1993). There have been several studies, which demonstrated the benefits of various learning in various settings.

A Framework for Analysis

The main focus of this study is to design a framework based on the design factors of motivating electronic games environment for children. There are eight factors that reflect the design of this Edutainment environment.

1. Meaningful learning - Computer games are an integral part of children's popular culture (Provenzo, 1991). We believe that computer games provide environments in which children find learning to be meaningful and useful.

2. Goal - Normally, game design provides children with a goal or a set of goal to achieve. We have noticed that such goals create a sense of mission in children and often they will stay on until they could finish the game.

3. Success - Accomplishing the goals of the mathematical computer games can provide children with a sense of success. Therefore, we should place them in environments of learning that provide this sense of success.

4. Challenge - To almost all of the children being challenged in a game meant they would not be bored. In contrast, they frequently refer to traditional school as boring.

5. Cognitive artifact- Children need cognitive artifacts such as mathematical computer games to motivate and allow them to express their thoughts about mathematics, even if this expression is initially game-bound.

6. Association through pleasure - Children need to associate learning with some pleasant memory. This association assists the concepts to remain with the children.

7. Attraction - Game design can create environments in which children get excited about embedded learning activities and therefore, are willing to be immersed in it and spend time learning it.

8. Sensory stimuli -Educators must have such sensory stimuli –'add flavor to learning activities' so that the fun of playing the game and make the learning more enjoyable and memorable.

Motivation plays a central role in any learning activity (Dweck, 1986). Based on the psychological needs and motivation, we have designed a framework for edutainment environment where it lies on a set of criteria for mathematical computer games (Murray et al., 1999).

A Conceptualized Framework for Edutainment Environment

In this study, the framework has been made based on the difficulty in helping children to learn in two domains:

- Motivation - to motivate them to want to spend time and engage in learning activities and

- Psychological needs - to aid them cognitively to construct knowledge (Gardner, 1982).

On the other hand, the best practices for game design also have the influence based on a set of criteria for computer games. See Figure 3. The advantages of technologies such as multimedia software and game software will be utilised to perform the edutainment environment. This environment will be designed in one screen that hides incredible programming behind a simple façade for educators to build edutainment games for children. It is also will be used to spearhead the development of the edutainment environment for developing educational game (Hussain & Eshaq, 2001).
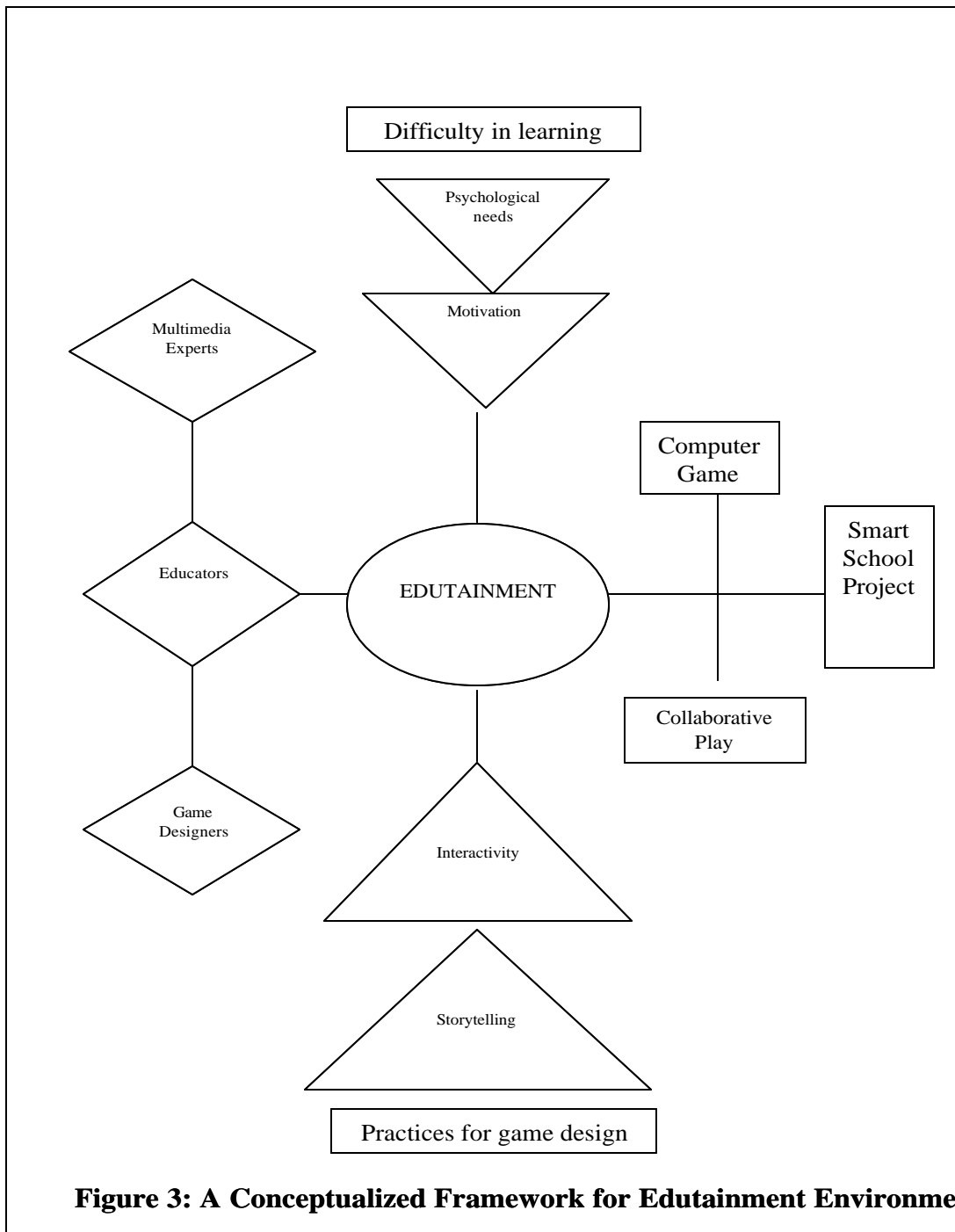
Difficulty in learning

Psychological needs

Motivation

Multimedia Experts

Computer Game

Smart School Project

Educators

EDUTAINMENT

Collaborative Play

Game Designers

Interactivity

Storytelling

Practices for game design

Figure 3: A Conceptualized Framework for Edutainment Environment

Conclusion

As education design becomes more complex and challenging, a new form of storytelling is required in delivering a new level of interactivity, integration and a more democratic relationship between story-teller and audience. Educators (facilitators) should draw from the games industry to add value to their knowledge development as a step to taking mathematics learning to its next stage of evolution.

It is suggested that this framework will encourage other researchers to create effective tool for Edutainment environment and games development which will allow non-technical educators to generate education games especially to cater for the 'Smart School Project' as well as Multimedia Super Corridor's (MSC's) need for content developers. The success (or failure) of the design will much depend on the teachers functioning more as 'facilitators of learning' rather than 'purveyors of knowledge'

Teachers (facilitators) and game designers will be able to realise the potential electronic games have on educational medium not only for supporting traditional school disciplines such as mathematics, language, and art, but for exploring social and cultural issues as well.

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Biography

Hanafizan Hussain is currently doing her PhD in E-Learning and her research area includes education and entertainment.

Zarina Che Embi is a tutor in the Faculty of Information Technology and also a Postgraduate student in Multimedia University. Her research area is edutainment in early childhood and kindergarten kids.

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