

## **GAME-BASED LEARNING CONTENT PRODUCTION FOR E-LEARNING ENVIRONMENTS**

**Salih GÜMÜŞ<sup>1</sup>, M.Recep Okur<sup>2</sup>, G.Deniz DİNÇER<sup>3</sup>**

<sup>1</sup>*Anadolu University (Turkey)*

[salihgumus@anadolu.edu.tr](mailto:salihgumus@anadolu.edu.tr)

<sup>2</sup>*Anadolu University (Turkey)*

[mrecepokur@anadolu.edu.tr](mailto:mrecepokur@anadolu.edu.tr)

<sup>3</sup>*Anadolu University (Turkey)*

[gddincer@anadolu.edu.tr](mailto:gddincer@anadolu.edu.tr)

### **Abstract**

The opportunities provided by information and communication technologies with use of Internet in educational environments after the 1990s use of e-learning environments has been increasing in open and distance education. With this process educational computer games have been used in e-learning environments for production of course contents. Computer games can also be used in the field of education as in many fields such as science, mathematics, medicine, engineering, language teaching with developing 21st century technologies.

It is considered that Games can be effective learning environments, therefore it increases the interest in the game-based learning among the educators. The features of the Games such as being attractive, directing the players to make decisions, problem solving and skill development, increases the effects of game-based learning. Instructional designers can prepare training scenarios that include these features of the games.

In this study, the Raptivity software that is used in creation of e-learning contents is reviewed. The use of game templates will be reviewed within the framework of e-learning environments instructional designers' experiences.

This presentation might be beneficial for those who are interested in rapid e-learning content development.

Keywords: rapid e-learning software, game based learning, raptivity software, e-learning

### **INTRODUCTION**

E-learning has become a major form of education, not limited to the classical forms of education provided by schools, colleges and universities. E-Learning can overcome time and space constraints and can create tailored solution for specific learner styles and requirements in different situations [1]. Different types of content can be produced for e-learning environment. Content of some parts or all of them can be prepared as game based.

History of game endures for ages but the last 40 years, history of games developed rapidly by changing their style as video and computer games. With developing technology electronic games are admitted as a sector which includes million people. From 1970 to today, contexts of virtual world had been possible direction in the developing graph technology. Each passing day more people are meeting with electronic games and they are spending time by playing these games [2]. At first, in the computer games that are entered in our life as video games, we spend much more time on them. Some investigations write that we have users who spend time on computer games more than 12 hours a day. Computer games which are preferred as a method to spend free times enjoyable, especially Y generation takes interest in them.

With the pervasive of internet, playing games on personal computers by single-users gave place to multi-users games and virtual world that can be played on the internet. When production budget and sales figures are taken into consideration, it is seen that they are struggling with film industry. Computer

games have educational properties at the same time it can have been produced only for educational properties [3]. Educational games which are designed for aims, can be used from pre-school also university epoch as auxiliary education of formal education.

Many of education establishments dealt with games that are educational but main behaviour that must have been achieved needs to be transferred in effective context by using right technique. In addition to this, establishments need to produce rapidly as according to the needs.

## GAME BASED LEARNING

According to Hostet's computer games are a perfect learning-equipment because computer games give a chance to see the challenge and user can play game whatever he/she wants [4]. Game that is produced by producer of content when he/she goes to the aim, it should motivate. There should be feedback and direct to submit. Game based content can be produced to submit and evaluate in e-learning with lesson. Games have text, picture, voice, video, animation. There are lots of allegation that such like these items remove from traditionalism and they help to learn mostly [5].

According to Malone & Lepper the game should serve 5 different educational aim. Challenge, fantasy, complexity, control, curiosity [6]. While tuition designer designs a game, he/she has to be careful such as entertaining learning, solving problems, thinking critic, tuition of concept, developing strateji, towards to be aim, control attention and being convenient on personel and teamworks. Convenient games should be designed according to students level.

However, Healy and Connolly compared traditional learning method and game based learning in their research [7]. The comparison of traditional learning method and game based learning can be seen in the chart below;

Fig.1 The comparison of traditional learning and game based learning

<b>Traditional</b>	<b>Game Based Learning</b>
Passive	Active
Focuses on listening and reading	Focused on performs
Teacher oriented	Learner oriented
Validated style	Lower validity in today
Out of date	Up to date
Slow and strict	Fast and flexible
Skill development- listening, reading, group work, communication...	Skill development- social and communication skills, problem solving, strategic thinking, planning, analytic discussion...
Face to face	Attractive

## RAPID CONTENT DEVELOPMENT IN E-LEARNING

As e-Learning environments become widespread, it brings about a content production need. In e-Learning environments content preparing with traditional style has some disadvantageous. They may be time consuming, be impractical and they require a good team. These challenges reveal Rapid e-Learning concept. Nowadays Rapid e-Learning is one of the mostly used concepts in online learning environments.

Rapid eLearning; has traditionally referred to a methodology to build e-learning courses rapidly. Rapid eLearning is beneficial on two key counts: It meets the current demand to rapidly create learning resources to address business events, competitive developments, product trainings, or other business needs. It helps minimize the time and resource contribution from the client.

In the recent days, the number of the software used in Rapid Content Development for e-Learning environments increases. Due to this software, the instructor of the course can develop course content in computer environment even though he is not experienced. The software called Raptivity is one of them. The instructors may develop their course materials by using the templates in that software. It includes more than 200 templates. Nearly 40 out of all is game based content templates.

The benefits of rapid content development tools:

- Quick and effective development of eLearning programs
- Manage growth without loss of investment
- Scalable solutions that will meet your needs now and in the future
- Rapid authoring without programming
- Simulation with multiple outputs
- Increased author collaboration
- Deliver PowerPoint presentations to the internet securely and simply
- Doesn't require specialist knowledge and skills or thirdparty support
- Can use subject matter experts to author directly.
- May have a short shelf-life.
- Requires a low level of investment to create.

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These templates are classified. The groups are; the ones for reminding the terms of the course, the funny ones for reviewing after the lessons. Format of them are similar to the popular TV competitions'. Some names are 'Million Dollar Quiz', 'Place a Bat', 'Bet, Answer and Win', 'Spin the Wheel' and 'Name Me'. There are Fun Learning Games. These game templates develop popular games in order to review and evaluate. Moreover there are strategy games, vocabulary games, letter games, matching games and puzzles.

### Sample Games From Raptivity



## STUDENTS VIEWS AND REVIEWING RAPTIVITY GAME TYPES

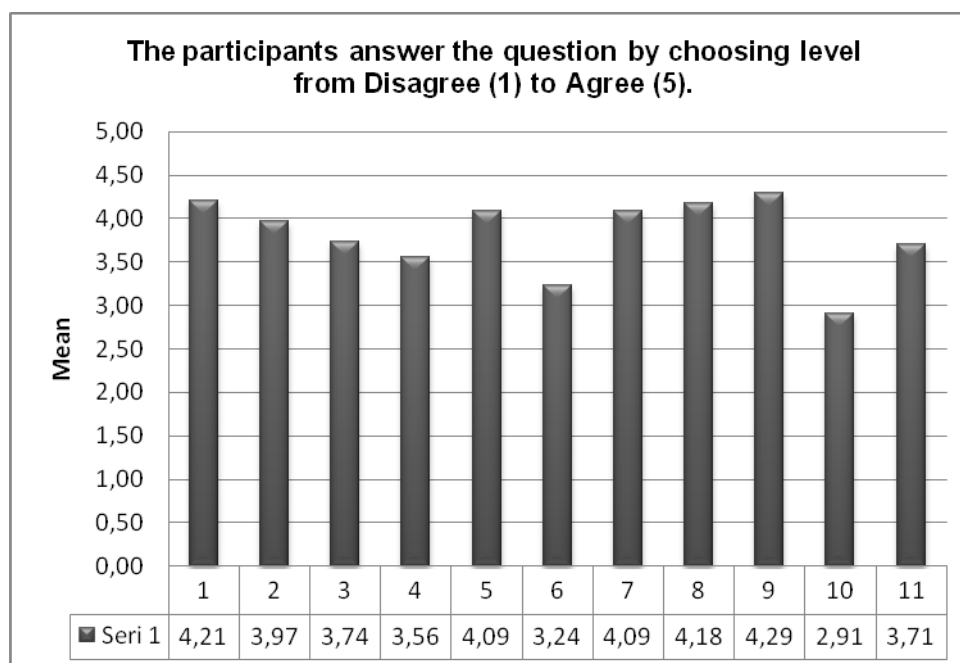
In this study, game templates of Raptivity are examined for e-Learning content developers. The developers are asked for reviewing 5 different game templates. The 5 games are; True or False Circular Maze, Spin the Wheel, Find the Words, Grader Game Show, Audio-Visual Crossword.

The questions are answered by the students who are trained for content development for e-Learning environments and prepare projects. The students are candidate teachers and take part in content development process. Fig.2 shows percentage distribution of the answers.

**Fig.2:** Questions about Game Templates of Raptivity

Questions	Mean n=34
Enable learning with fun	4,21
Enhance problem solving skill	3,97
Enhance critical thinking skill	3,74
Enable content teaching	3,56
Enable strategy development	4,09
Can distract attention	3,24
Enable permanent learning	4,09
Facilitate content production	4,18
Enable attractive content development	4,29
Require educational software experience in order to develop content	2,91
Requires teaching designer in order to use templates affectively	3,71

The participants answer the question by choosing level from Disagree (1) to Agree (5).



Considering the results; it is clear that the fundamental steps necessary for game content development are provided. This educational game is supposed to bring some skills to the learners. Fundamental skills are; critical thinking skill, communication skill, researching skill, problem solving skill, using information technology skill, entrepreneurship skill, classifying skill, planning skill, self control, rapid decision making, adaptation skill, risk taking skill, protection of his right, task sharing,

making self-criticism, association skill, multi-directional thinking skill. With a game based content in accordance with the content of the course learners can gain one or more skills.

Participants of the questionnaire are asked about their general view about the software. According to the results the production of the software is attractive in terms of visual aspects. Garris, Ahlers ve Driskell indicated the properties of the game in 6 basic dimensions; Fantasy, Rules/Aims, Sensory Stimulators, Struggle, Mystery, Control [8]. It can be seen that the game templates of the software supports these dimensions.

The one who has not web programming acknowledge or advanced Adobe Flash experience can produce game based content with it. Some of the participants are undecided about some of the questions. That means they are undecided about this question. With the answer result of the question 'Require educational software experience in order to develop content', the participants draw attention to experience requirement. The answer for the question 'Requires teaching designer in order to use templates affectively' was positive in average.

### **Some student views about the usage of software and the game templates;**

**Student 1 :** *"The software may be useful in e-Learning environments. it may increase the attendance rate and provide permanent learning. In my point of view, it does not require advanced level of software knowledge. However, it is absolutely certain it requires a teaching designer if the content is used for education."*

**Student 2 :** *"Considering the games I look over, I believe that due to the games learning will not be boring. Moreover the learner can be concentrate on the subject. The programme takes a little time to develop content without any problem. This property makes it very attractive for the ones who have limited time. "*

**Student 3 :** *"The software and the templates provide various opportunities. It must be advanced considering the users' wish. "*

**Student 4 :** *"The fee is a big problem. The templates require it. "*

**Student 5 :** *"It is a good programme which enables its users to prepare a complex content in an easy way. However the games may be attention distracter and the software requires a designer."*

## **CONCLUSION**

In the e-learning environments time is important for the institutions which produce or develop content. The content production time must be as short as possible because the content is rapidly renewed. Due to Rapid e-Learning development tools time can be saved. Some of the content may be game based. In this study game content templates of the Raptivity software were studied. Different contents may be developed with this programme. Latest sample of game based contents are in the web site 'elsgamesworld.com'. This web site is prepared to help learners. Fun ESL games for Classrooms PowerPoint Games & Templates, Printable Board Games, Interactive Games for Classrooms, Games for ESL Kids & Adults, Grammar Games, Vocabulary Games, Reading Games, featuring Snakes & Ladders, Hangman & Wheel Games.

Game templates of this software are analyzed by the students studying their last year in Program in Computer Education and Instructional Technology. They also develop Flash based contents for e-Learning environments. They like the software in general terms; however, they mentioned some negation. First of all the software requires a basic training for using smoothly. They indicated that while using the game templates a teaching designer assist may be necessary. High costs, know how requirement in publishing process of the content, deciding which sample must be used are some examples for the negations. However; owing to variety of the templates and simplicity of production, this software will help to the teams prepare content for e-Learning environments in terms of time and staff number. Production of the programme can be published in .swf form and it is an important advantage. Audios and images are compressed in high quality. It can work in accord with learning management systems.

## Examined Some Games:



**Interaction Model Name: True or False Circular Maze :** This interaction model helps design a maze puzzle as a stimulating game. Certain nodes are blocked by barriers that can be moved by answering the True or False questions. Each correct answer propels the learner on the correct path motivating the learner to pay close attention to the displayed questions.



**Interaction Model Name: Spin the Wheel:** This interaction model helps design a game to evaluate learners in the various concepts being taught. This game is a self-learning model and helps in retention and recalling important concepts. Click the Hit button in the center of the wheel to spin the needle and answer the question that follows.



**Interaction Model Name: Find the Words :** This interaction model helps create a stimulating word search puzzle. The learner searches for the words from the jumbled alphabets using the techniques of association and visualization.



**Interaction Model Name: Grader Game Show:** The Grader Game Show is a great way to test learners on multiple topics. Using this interaction, you can create clustering of related questions for each topic and ensure that you test your learners in sufficient depth for a particular topic. The learners do not get hints for all questions but they get limited level of assistance at topic level which makes the assessment more challenging.



**Interaction Model Name: Audio-Visual Crossword:** The Audio-visual Crossword is a great way to create identifying, naming and labeling exercises which are presented as an interesting crossword. The audio-visual clues make the crossword appealing. This crossword provides instantaneous feedback to learners continuously, so they know when they have typed something wrong. In addition, there is help at hand, if the learner wants the computer to solve just a letter or one word, when stuck. This helps the learner get to the solution quickly.

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