DEVELOPMENT OF GAMIFICATION EDUCATIONAL WEBSITE

BASED ON STUDENT INTELLIGENT

(O.M.I.G)

AHMAD ZAKI YAMANI BIN AHMAD PUAD

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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AHMAD ZAKI YAMANI BIN AHMAD PUAD

This report is submitted in partial fulfilment of the requirements for the

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DECLARATION

I hereby declare that this project report entitled

DEVELOPMENT OF GAMIFICATION EDUCATIONAL WEBSITE BASED ON STUDENT INTELLIGENT (O.M.I.G)

is written by me and is my own effort and that no part has been plagiarized

without citations.

STUDENT : (AHMAD ZAKI YAMANI BIN AHMAD PUAD) Date : 15/8/2017

I hereby declare that I have read this project report and found

this project report is sufficient in term of the scope and quality for the award of

Bachelor of Computer Science (Interactive Media) With Honours.

DR. SITI NURUL MAHFUZAH MOHAMAD
Pensyarah Kanan
Fakulti Teknologi Maklumat & Komunikasi
Universiti Teknikal Malaysia Melaka

SUPERVISOR : (DR. SITI NURUL MAHFUZAH BINTI MOHAMAD) Date : 15/8/2017

DEDICATION

This final project is dedicated to my beloved parents for their endless support and helps when I need it the most, always pray the best for me and also give me a lots of advices during the process of develop this project.

To my supervisor who has guided and give me a lot of supports, Dr. Siti Nurul Mahfuzah (UTeM).

To my evaluator who gives a good advices and feedback on this project,

Last but not least, to all my beloved friends who help me from the beginning of this project until end.

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Thank you.

ABSTRACT

This project discusses about Online Multiple Intelligent Gamification website also known as OMIG. The previous educational website does not have a gamification elements in it. Due to this problem can caused boredom, lack of interest with the website or unmotivated and unable to keep the user or students to use the application for long term period. Furthermore, by implementing gamification elements into an educational website can overcome this problems. This educational website will use game elements and game design techniques to engage people, motivation, new learning style and to provide more effective learning. For developing this project, there are two parts that are integrate that is gamification and multiple intelligent. The user interface design was created using game element and game design to increase user attention. The multiple intelligent is to identify student intelligent and providing learing style based on student intelligent. Besides that, this website can act as a supporting tools that can motivate student for their learning. This project is on of ongoing study for developing new learning application.

ABSTRAK

Projek ini membincangkan tentang OMIG. Laman web pendidikan sebelum ini tidak mempunyai unsur-unsur gamification di dalamnya. Oleh kerana masalah ini boleh menyebabkan kebosanan, kurang minat dengan laman web atau tidak bermotivasi dan tidak dapat minat pengguna atau pelajar untuk menggunakan aplikasi untuk tempoh jangka panjang. Tambahan pula, dengan melaksanakan unsur-unsur gamification ke dalam laman web pendidikan boleh mengatasi masalah ini. Laman web pendidikan akan menggunakan unsur-unsur permainan dan reka bentuk permainan untuk melibatkan pengguna, motivasi, gaya pembelajaran yang baru dan untuk menyediakan pembelajaran yang lebih berkesan. Untuk membangunkan projek ini, terdapat dua bahagian yang mengintegrasikan iaitu gamification dan teori kecerdasan pelbagai. Reka bentuk antara muka website telah dicipta menggunakan elemen permainan dan reka bentuk permainan untuk meningkatkan perhatian pengguna. Teori kecerdasan pelbagai adalah untuk mengenal pasti pelajar pintar dan menyediakan gaya pembelajaran berdasarkan kepintaran pelajar. Selain itu, laman web ini boleh bertindak sebagai alat sokongan yang boleh memberi motivasi kepada pelajar untuk pembelajaran mereka. Projek ini adalah pada kajian dijalankan bagi membangunkan aplikasi pembelajaran yang baru.

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CHAPTER I

INTRODUCTION

1.1 Introduction

With the advent of video game 4 decades ago, it has been used in many areas. With the latest development of technology, video game have gone beyond game console, game arcade etc. Furthermore, it can be play in smartphone or even a tablet. Throughout video game, it can give challenges and goals to the player and due to this it can give many beneficial for education purposed.

Back in 2010, gamification appeared. The gamification is used game elements and game design from video games that can be implemented into a contexts that are not games. It is for motivation to the user or student during learning activities. There are two type of motivation that can be found in gamification founded inn psychological theory of self-determination. One is extrinsic motivation based on aspects points, rewards, failure etc. Second is interest in a subject, achieving conviction and central motivation.

OMIG is an educational website using gamification elements to make this website more interactive to the user. Therefore, implementing gamification elements into the website, will increase user motivations during learning process and also can make the user to using the website for long term.

1.2 Problem Statement

A few research has been done on how to relate the Multiple Intelligent concept in institute of higher learning. Furthermore, instructors also faced a tasks on how to apply the multiple intelligent in their lessons. (Mohamad, 2014).

The efficiency and effectiveness of teaching are still imperfect based on previous experiments. Educators should plan in a way which can involve as many of the intelligences as possible because applying this intelligences give the student accomplishments (Ghazi, Shahzada, Gilani, Shabbir, & Rashid, 2011).

The previous educational website does not have a gamification elements in it. Due to this problem can caused boredom, lack of interest with the website or motivation and unable to keep the user to use the application for long term period. Furthermore, by implementing gamification elements into an educational website can overcome this problems.

1.3 Objectives

The objective of this project are:

- To identify student intelligent.
- To design gamification educational website based on student intelligent.
- To test effectiveness of using gamification educational website.

1.4 Scopes

The project scope is based on selected chapter from BITE 3623 Motion Graphic subject. There are 9 chapters for BITE 3623 Motion Graphic subject but only 3 topic are selected to be implement in this project. The chapter that has to be covered are:

Table 1.1 Topic of Motion Graphic cover in OMIG

Chapter	Topic
1	Week 1 (Introduction to Graphics)
2	Week 2 (Fundamental of Graphics)
3	Week 3 (Digital Image Manipulation)

1.5 Project Significance

This gamification web site can provide a new learning style to the user. Furthermore, the game design can attract user attention and make the user to use the application longer. Moreover, this website can help students to be more focus to what they learn.

1.6 Conclusion

This chapter clarify the overview of a development of educational website with gamification based on student's intelligence project. The explanation about aim of the project, objective of the project and the benefit of the project has been stated in the project background. The problems statement also has been clarify in the report. In the scope section, there is an explanation about content and the target user of this project. The expected result of this project has been explain in the project significance section.

CHAPTER II

LITERATURE REVIEW AND PROJECT

2.1 Introduction

This section will cover the literature review from previous article that are related to this project. In this section also will provide a comparison between existing projects. For this project, the comparison is made based on the project domain, developing technique, technology that have been used, combination of multimedia and game skill to achieve learning experience. The method that have been used in this project will also be explained in this section. The project's requirement also will be cover in this section

2.2 Domain

In current years, Malaysia education structure has become one of the issues that face many criticism from various government agency in Malaysia. Based on the News Straits Times, existing education system does not fill the fundamental of motivation in learning among students. Besides that, guiding students' focus to rewards when performing well in school can insulate student motivation (Rajaratenam, 2012).

To engage people, gamification method is being used which contain of game elements and game design methods in a non-game contexts. Furtermore, using this methods can provide motivation, new learning style and to provide more effective learning. This gamification method has been used in 2010. This method used the benefit that game can give and using elements of game design to give motivation in learning (Gene, 2014).

Gamification is constructed on the psychological philosophy of self-determination where two types of motivation are recognised. One is "extrinsic motivation" based on aspects such as money, score, failure or ending. Second is the "intrinsic motivation" related with interest in a subject, achieving conviction and so on (Gene, 2014).

Based on Naomi, the use of gamification methods the students learn with academic materials with the use of gaming environment for this subject has resulted a alteration from classroom based learning activities into more interactive learning style (Naomi, 2013). In other word, this could be the part of gamification that ended up being useful in a wide range of use fields.

A) EDUCE Model

EDUCE is an Intelligent Tutoring System that has been created using the principles of Multiple Intelligences for learning resources. This method can classify the user learning features and adaptively provide learning material that suitable to the learner. This concept can offers a framework and a language for developing a broad range of content that supports creative, multi-modal teaching. The multiple intelligence method classify the intelligence to solve a problems that are of value and there are different techniques to determine this intellect (Kelly, 2004).

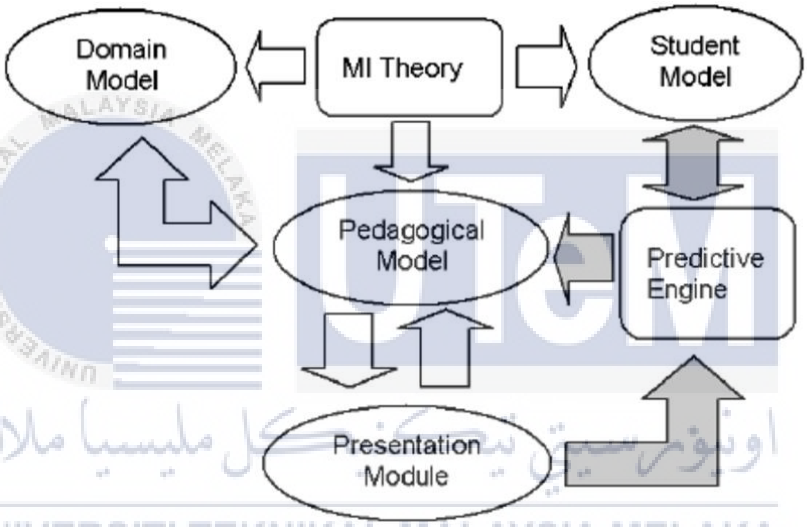

Figure 2.2.1

Figure 2.1 EDUCE Model

B) Multiple Intelligences Learning Activities Model (MILA Model)

Based on Tangwannawit, there are nine intelligences recognised by Multiple Intelligences theory. They are (i) Linguistic, (ii) Logical-mathematical, (iii) Spatial, (iv) Kinaesthetic, (v) Musical, (vi) Naturalist, (vii) Interpersonal, (viii) Intrapersonal and (ix) Existential. Multiple Intelligences theory is a psychological theory that explain what the brain does with information (Tangwannawit, 2008).

This nine intelligent has its own characteristic, process or tools that's show a various ways. Besides that, only four intelligent will be implement in the project to identified student intelligent in FTMK, UTeM.

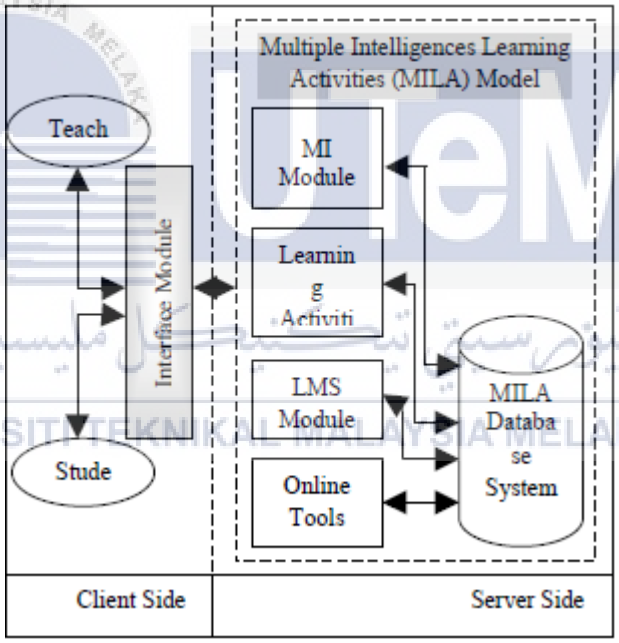

Figure 2.2 MILA Model

There will four intelligences will be used in this project: linguistic, visual, logical and Interpersonal intelligences.

Table 2.1 Definitions of multiple intelligences.

Intelligence	Definition
1) Linguistic	This intelligent have the ability to manipulate languages to express oneself.
2) Visual	This intelligent have the ability to create cerebral images in order to solve problems.
3) Logical	This intelligent have the ability to think logically, reason deductively and detect patterns.
4) Interpersonal	This intelligent have the ability perception of other people's felling, interpretation of behaviour and communications and understands the relationships between people and their situation.

2.3 Existing System

2.3.1 Comparison of existing system

Table 2.2 Comparison between Traditional Teaching and Learning, Conventional Courseware and MI Courseware

Traditional Teaching and Learning	Conventional Courseware	MI Courseware
A teacher centred environment	A student centred environment	A student centred environment
The instructor is in charge.	Students are in charge their own learning.	Students are in charge based on their learning style.
Control and responsibility is teacher centred.	Control and responsibility is student centred.	Control and responsibility is student centred.
The learning experience is often competitive in nature. The competition is usually between students. Students resent others using their ideas.	Learning may be independent.	Learning may be Co-operative, collaborative or independent. Students work together to reach a common goal. Students willingly help each other sharing/exchanging skills and ideas. Students compete with their own previous performance, not against peers. Significant attention to social development, including teamwork, interpersonal relationships, and self-awareness
Learning takes place in the classroom.	Learning extends beyond the classroom.	Learning extends beyond the classroom.
The content is most important.	The way information is processed and used is most important.	The way information is processed and used is most important.
Students master knowledge through drill and practice.	Students evaluate, make decisions and are responsible for their own learning. Students master knowledge by constructing it.	Students evaluate, make decisions and are responsible for their own learning. Students master knowledge by constructing it.
All students in a classroom are taught the same material.	All students in a classroom are taught the same material.	All students in a classroom are taught the same material with MI approaches.
Students learn through listening and observation	Students learn over , Group exercise and hands-on exercise	Students learn through four types of intelligences.
Instruction based on textbooks, lectures, and individual written assignments	Instruction based on courseware	Instruction based on interactive notes, tutorial, assignments, quiz and activity.

2.4 Project methodology

ADDIE Methodology is used as methodology for this project as shown in the Figure below.

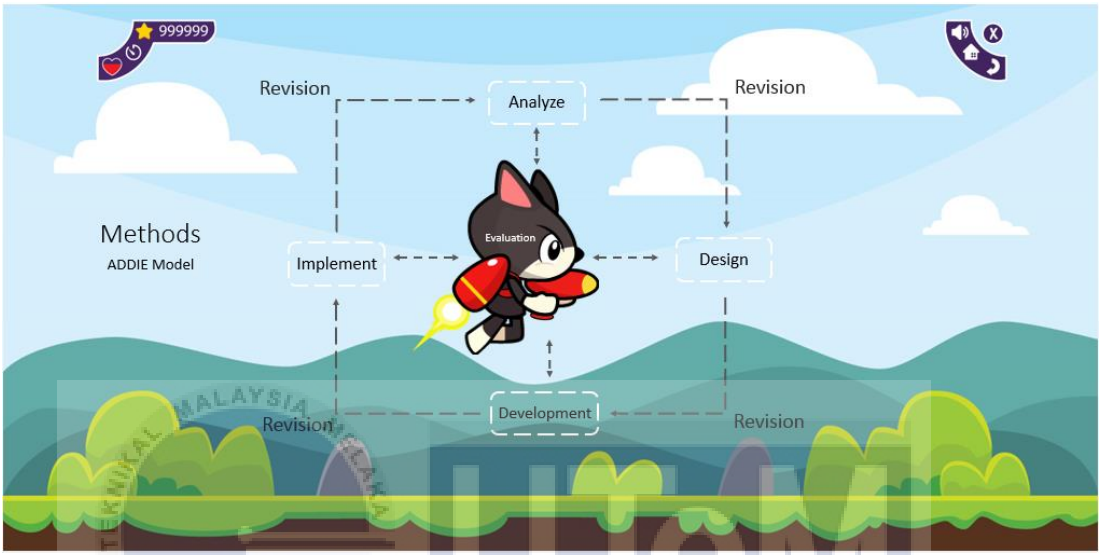

Figure 2.3 ADDIE Model

Table 2.3 shows the description of the ADDIE Model for each phases.

Phase	Description
Analysis	This process is defining the objective and the foundation for all other phases in instructional design.
Design	This process is to plan strategy for developing the product and how to reach the product goal.
Development	This is a process producing the materials. The plan and materials will be generate from this phase.
Implementation	This process is the testing phase of the product to the real world.
Evaluation	This is a measuring phase where to test the efficiency and effectiveness of the product.

2.5 Project requirement

There is several software and hardware that required to be used for developing this project. Both software and hardware requirement are explained as following below.

2.5.1 Software requirement

Below is the minimum software requirement required to be used for developing this project.

- Adobe Muse CC.
- Adobe Illustrator CS6.
- Adobe Photoshop CS6.
- Adobe Edge Animate CS5.
- Microsoft Word 2013