



## Merdeka! Learn the History of Malaysia via 2D Interactive Game

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### ABSTRACT

As the time goes by, the history of Malaysia tends to be forgotten each day among Malaysian. History is one of the important things that need to be known by the whole civilization in order to foster a spirit of patriotism. Students were also having difficulties in studying the history subject because of its long, boring and repeatable content. According to the preliminary study, majority of the students agreed that the used of text book or other printed material are less attractive compare to using technology that consist of colourful images and sound. Most of students only study in order to get good mark in an examination. As a result, they do not properly understand the knowledge and message that are given from the subject. The purpose of this study to design an interactive platform where student will be able to learn about the history of Malaysia, develop an enjoyable experience of learning Malaysia's history via gaming, and to evaluate the enjoyment of the historic-themed 2D game. This project used Game Development Life Cycle methodology for the development of the project to smoothen the process and flow toward the construction of the project. To evaluate the user's enjoyment, this project applied E- Game Flow questionnaire. The result of the evaluation shows the game received 72% level of agreeability. Future work of this game is to improve the overall graphic of the game and add more engagement of the character such as fighting and climbing to provide a better playing experience.

KEYWORDS: History, Malaysian, game, enjoyment, learning

## 1 INTRODUCTION

31st August 1957 is a sacred date to all Malaysians where it is the Independence Day of the country. Many sacrifices, as well as the spirit of the precursors, was one of the main reasons that made this country to look of how it is today. In 2019, it will mark the 62<sup>nd</sup> anniversary since Malaysia achieved its independence. For many years, multiple external forces have set foot in our country to acquire the same one goal which is to take care of their own interest. Various uniqueness in our country is among the factors that drive the invaders towards colonization. This factor includes the position and wealth of the country [1].

History is one of the important things that needs to be studied not only by individuals

but as the whole civilization as well. It helps us to understand why and how we lived the way we are living today. This is why starting in 2013; History subject has been set as one of the mandatory subjects in Sijil Pelajaran Malaysia (SPM) [2]. The main reasons are to foster the spirit of patriotism among students as they will be representing the future generation.

However, there are several problems regarding the acceptance of students towards the learning of Malaysia's history that needed to be emphasized. Previous studies indicated that the students show less interest in the subject of History mainly because of the traditional and old fashioned ways of presenting and also does not attract that much [2]. Then, student also lacks of historical knowledge because they were too passive in the process of learning and did not undergo deep learning and reasoning [3]. Next, less knowledge and skills among educators also led to the shortage of producing excellent students who understand the importance of learning History [4].

In the 21<sup>st</sup> century, education experts proposed that the learning method involving various technologies including the use of the multimedia element should be applied to test the extent to which it affects the interest of learning history [2]. Hence, in this project, interactive game approach will be used to reduce the problem not only for the student but for Malaysians overall as video games today are one of the popular tools used by the developer for many purposes to delivering message towards the player. As for educational type games, it is a game that was designed for learning purpose which covers a subject and consist of educational content. Many previous studies have demonstrated that learning motivation and efficiency can be enhanced through educational games [5].

Therefore, with the development of this game, it is intended to attract student to visualize the most important moment in the country through education. In addition, the element of fun in sharpening the historical knowledge could be incorporated thus cultivate the interest in learning Malaysia's history.

## **2 OBJECTIVE**

There are three objectives in this paper and all the objectives listed tend to be achieved. The objectives are as follows:

1. To design storyboard of historic-themed 2D platform side-view based game.
2. To develop an enjoyable experience of learning Malaysia's history via gaming.
3. To evaluate the Malaysian's response towards game learning through enjoyment testing.

## **3 SIGNIFICANCE (S)**

The significance of this game is to help individuals, especially students, to explore and having an enjoyable experience in learning history through interactive game. Other than using the old traditional ways to learn which is through books or newspaper, students will be having an additional option to choose from which is through gamification. The current technology which is digital type games and approach will make it easier for the students to use the application on their desired platform. Studies show that developer nowadays preferred the use of digital game-based learning [5]. With the inclusion of various multimedia elements such as images and sound along with bright colourful level design, it will surely gain the interest of the student [5].

When student studies about a particular subject, they should not learn just to answer the

exam in schools. In fact, deep understanding is also needed to achieve effective learning [6]. According to The Australian Society for Evidence-Based Teaching website, it is stated that deep learning brings up more than just recalling facts. Furthermore, additional information or fun facts will also be featured in this game project to provide students a knowledge which they might have not read in the textbook yet. Then, players had no other choice but to take their time in completing their objective and go through each level in order to complete the game. With this, the player does not only play to gain satisfaction but also achieve mutual understanding to actually getting the message that's been delivered from the game.

Educating nationalism awareness as well as nurturing patriotic values among students also one of the benefits and goals of this project. It is important to teach the student stories about the nation's history and to appreciate the struggle and sacrifices made by the past figures at a young age [7]. There is an English proverb "Strike the iron while it's hot". This paper is tended to help students to visualize and recognize the leading characters involved in every process of demanding independence from the colonist. Through the storytelling approach of the games and the fact that the level will be in a linear form (year by year), it will be easier for the students to remember each figure and item from each level or so-called, the process of independence.

#### 4 METHODOLOGY/TECHNIQUE

Game Development Life Cycle (GDLC) model is the process of successive software development guideline where progress is considered to focus on the quality criteria as its main focus. There are many types of GDLC model from the different companies which suite their preferred requirement. The GDLC model also defines several phases that must be completed and testing until it meets the requirements before moving on to the final phase. The process is called iterative approach to increase flexibility towards changes during the development. Essentially, the GDLC model consists of six phases: Initiation, pre-production, production, testing, beta, and release [8].

#### 5 RESULT

The evaluation was made to identify the player's enjoyment. The enjoyment factor will be measured from adapting the scale development in E-Game Flow questionnaire which consist of 8 factors which are: concentration, goal clarity, feedback, challenge, autonomy, immersion, social interaction and knowledge empowerment [9]. A total of 15 respondents were involved in the testing phase consisting of middle school students aging from 13 to 17 years old. There are 23 questions are adapted from the E-Game Flow which each of it will response in Likert scale.

Table 1: Total Mean of each factor and Overall Mean Value

| Factor  | Total Mean |
|---|------------|
| Concentration                                 | 4.10       |
| Clear Goal                                    | 3.61       |
| Feedback                                      | 3.70       |
| Challenge                                     | 3.27       |
| Autonomy                                      | 3.82       |
| Immersion                                     | 3.22       |
| Social Interaction                            | 3.07       |
| Knowledge Improvement                         | 4.13       |
| Overall                                       | 3.62       |
| <b>Percentage of overall total mean value</b> | <b>72%</b> |

Based on Table 1, the overall result of the total mean which is 3.62, this shows that

agreeability level of the game was a success with 72% of the respondents agree that the game provide an enjoyable experience through game learning.

## 6 CONCLUSION

Merdeka! Learn the History of Malaysia via 2D Interactive Game has been successfully made in order to help younger generation especially middle school student who wanted to increase their knowledge about the history towards the independence in Malaysia. This also acts as an alternative way to learn instead of using text book. The problem statement stated that students are feeling bored when studying history subject by using traditional method such as book and encyclopaedia, hard to achieve mutual understanding when learning and also bland and less attractive ways of learning history subject. Students tends to not enjoy in the way they are supposed to be while learning history of Malaysia. However, after the project implementation and game testing, the result of the evaluation shows a positive review with overall mean value of 72% (3.62). Along with additional reviews and recommendation for an improvement, the result shows that all the three objectives have been achieved. To conclude, Merdeka! Learn the History of Malaysia via 2D Interactive Game provide a game-based learning platform for user to learn the history of Malaysia in a fun and enjoyable way.

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