Flower of The Sea: A Gamified Tour Experience to Engage and Educate Museum Visitors

Mohammad Al Hakiem Mohd Hemly[1], Mohd Hafiz Zakaria [1,*], Mohd Mawardy Abdullah[1], Muhamad Haziq Lim Abdullah[1], Sarni Suhaila Rahim[1], Mohd Nasruddin Rahman[2]

[1]Fakulti Teknologi Maklumat dan Komunikasi (FTMK), Human Centered Computing and Information Systems Lab (HCC-ISL), Universiti Teknikal Malaysia Melaka, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia

[2]Perbadanan Muzium Melaka, Kompleks Warisan Melaka Jalan Kota, 75000 Melaka

*Corresponding author's email: hafiz@utem.edu.my

ABSTRACT: This paper explains how museum tours are currently designed to attract and educate visitors by developing a gamified museum tour based on a casual game development approach. Through the developed game, this study has evaluated the effectiveness of video games to engage and educate museum visitors compared to the traditional method. The results indicate that by implementing a gamified approach, the museum visitors will exponentially increase in terms of their engangement and better understanding towards local history.
Keywords: *Gamified Tourism; Mobile Games; Gamification; Museum.*

INTRODUCTION

Museums are central places of information display, storing arts, artefacts and collections of cultural interests. Commonly, museum provides visitors access to artefact collections, however little effort is being placed on the visitors engagement and learning component of what is displayed. Putting all of the attraction in a glass case would limit visitors of any interactions. Hence, this paper explains a study that has been conducted to evaluate the effectiveness of casual games approach to engage and educate visitors on history facts. The scope of the study was performed at Maritime Muzium popularly known as Flor De La Mar, with a full coorperation given by the Perbadanan Muzium Melaka (PERZIM).

The idea of this game is to allow visitors to have the option to use digital technology as part of the museum interactive display. Upon completion of the game, the visitor is expected to gain more information of all warship models displayed and the look and feel when the ship is sailed in the historical era.

GAME DESIGN

The gameplay is designed to be completed within a 10-15 minutes of playtime. This is the common playtime suitable for players who move from one sections to another while enjoying the museum display. Players will control a ship and sail around in a 3D world environment. Players will need to collect gold scattered around in the game world. When players have collected enough amount of gold, they can have the option to buy a journal entry. The journal entry then will unlock information and the model of other ships that are also part of attractions in the museum.

The characters in this game are actual ships from the era of Malay Malacca Sultanate. The first ship portrayed in the game is the "Malay Coaster" (Figure 1), which is the smallest and fastest ship among the others. This is the starting ship that player will play.

Figure 1 The Malay Coaster

The second ship is known as the "Malay Junk", which is the average of the other two with average size and average speed. Player need to buy the journal entry in order to unlock this ship.
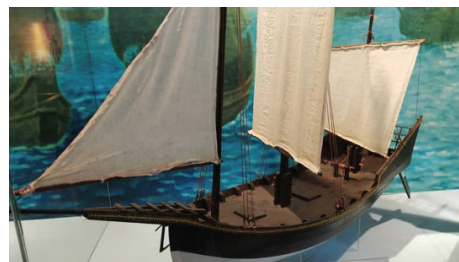

Figure 2 The Malay Junk

The last ship is the "Dutch Warship"(Figure 3), which is the largest and slowest ship among the others. Player need to buy the journal entry twice to unlock this ship.

Figure 3 The Dutch Warship

METHODOLOGY

Rapid Application Development (RAD) methodology is adapted due to its flexibility in accepting new features and functions during the development process. The evaluation of the literature plays a significant part in the development of this project, and it is revolved around gathering, analyzing and comparing related topics or articles or games surrounding the project. The review process of the study was carried out by going through existing games [1],[2] and [3] that are related to the project especially in history education.

A total of 49 test users consists of students are chosen to measure the effectiveness of the game that have been developed. Most of the characters were based on ships from the era of Melaka Sultanate consists of Malay Coaster, Malay Junk and Dutch Warship. Test users required to play the game for a designated amount of time, and answering a survey regarding the game.

The questionnaire used to evaluate the game is based on the survey modified from [1]. In the questionnaire, a total of 4 sections were considered for evaluating the game which are Attention, Relevance, Confidence and Satisfaction which give a total of 20 questions. The score method used in the questionnaire is based on the Linkert Scale and descriptive statistical analysis was performed on the gathered data.

The mean and standard deviation of each question in Attention, Relevance, Confidence and Satisfaction sections were calculated and graphed by its section to conclude the findings.
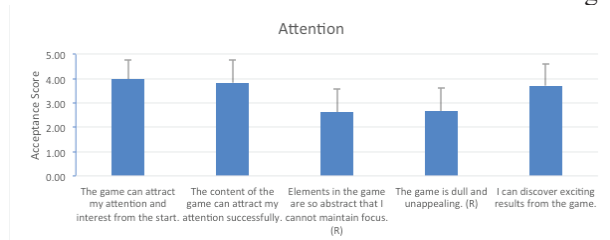

Figure 4 Results of Attention of The Game

Based on mean graph Figure 4, question 1, 2 and 5 shows results with mean value above 3 while question 3 and 4 shows results with a mean value below 3. The results indicate while most users have their attention hooked on the game and feels very excited when playing the game, there is some users that feels indifferent towards the game. The conclusion can be made is that the game is fairly attractive and interesting but is confirmed to be capable of gaining users attention.
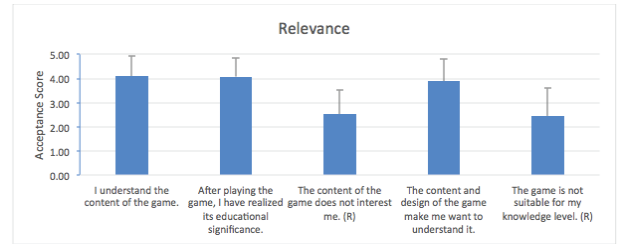

Figure 5 Results of Relevance of The Game

Based on mean graph Figure 5, question 1, 2 and 4 shows results with mean value of around 4 while question 3 and 5 shows results with mean value below 3. The results indicate that most of the test users find the content of the game to be easy to understand, educationally relevant and have interesting input. Overall, the intended educational content can manage to be delivered through the game's gameplay and story.

CONCLUSIONS

Analysing the data collected concluded that the game has the ability to capture user's attention and interests while playing it. It also proves that the content of the game embraces the user's interest to learn and educate them through playing the game to increase their knowledge on the Malacca Sultanate era. Furthermore, the game's easy to understand concept and controls allow the users to be confident while playing the game and helps them to enjoy themselves while playing. The game serves as an educational medium that further engages and interacts with museum visitors to make their visit to the museum more enjoyable and entertaining while learning a lot about the history of Malacca. The testing done had proven that the game is not only easy to play and understand, but it also conveys the message that users need to be educated with in the Maritime Museum. Hence, gamification of a museum tour will be contributing to the historical areas in the future.

ACKNOWLEDGEMENT

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