Planet Jawi: Mastering Jawi Through Gamified Assessment

Nurul Hidayah Mat Zain[1], Nor Azida Mohamed Noh[2], Anita Mohd Yasin[3], Ismassabah Ismail [4], Siti Nurkhairina binti Yahizan[5],
[1,2,3,5] Faculty of Computer and Mathematical Sciences, UiTM Cawangan Melaka, Kampus Jasin, 77300 Merlimau, Melaka
[4]Centre of Foundation Studies, UiTM Cawangan Selangor, Kampus Dengkil, 43800 Dengkil, Selangor
[1]nurul417@uitm.edu.my, [2]azida@fskm.uitm.edu.my, [3]anitamy@fskm.uitm.edu.my, [4]isma@tmsk.uitm.edu.my, [5]sitinurkhairinayahizan97@gmail.com

ABSTRACT

Jawi is an art of writing that originated from the Arabic writing system, which is Arab letters infused into the Malay writing system. Nowadays, the lack of use of Jawi and the assumption that Jawi is challenging to learn to cause the young generation now slowly to forget Jawi and deny this language. Based on the preliminary study conducted, most of the student agrees that Jawi is a crucial subject and student strongly agree that they did not enjoy learning Jawi through a traditional method such as a textbook. Hence, this project develops an application, namely *Planet Jawi,* to learn Jawi through gamification. The target audience for this application is students ages seven to nine years old. This project implemented Rapid Application Development (RAD) as a method to design and develop *Planet Jawi*. The application involved three topics about Jawi such as basic Jawi Alphabet, which comprises 37 Alphabet, *'Huruf Jawi tidak Bersambung'*, and *'Padan Huruf'* which cover *'Huruf Vokal'* topics. For the future works of *Planet Jawi* application, the use of a variety of languages such as English can enhance to attract more users and variety the content covered in Jawi.

KEYWORDS: Jawi, Gamification, Learning, Rapid Application Development (RAD)

1   INTRODUCTION

Nowadays, the usage of multimedia applications in education has its strength to meet the needs of the 21st-century learning method. Multimedia act as one of the medium for the educators to represent their information towards the student. The generation of this 21st century needs to think out of the box and be creative besides being knowledgeable in technology and sciences. One solution is to introduce educational games [1]. According to [2], computer games can make the learning process easier to understand and improve cognitive skills among children.

Gamification refers to the enrichment of software with design features known from games to invoke similarly engaging experience as games do [3]. According to [4], he defines gamification is used in learning and contains game-based mechanics, aesthetics and game thinking. Gamification is used to engage people, motivate action, promote learning and solve

problems. The component of the games is mechanics, which contain a set of rules and feedback loops that make the game enjoyable [5]. Other than that, the purpose of gamification is to give players' experience, increase players' motivation, and engagement while playing games [6]. A student who is learning through the gamified assessment will more motivate to exploring the knowledge and having fun. The benefits of implementing the gamification approach give us the motivation to develop Jawi application.

The assumption that Jawi is challenging causes the young generation to deny this language gradually. Kids need to learn Jawi in their childhood moments. Although to learn Jawi is vital to the Muslim in Malaysia, studies on learning and writing Jawi are still lacking. There are a decreasing number of Jawi writing in printed materials and other media, including electronic media [7]. Therefore, a Jawi application through the gamification approaches needs to develop to help kids in their learning process.

2 OBJECTIVES

The project aims to design and develop an application named *Planet Jaw*i to learn Jawi through the gamification approach. In accomplishing the main aim, the following specific objectives need to achieve: 1) to design a 2D dimension about *Planet Jawi: Mastering Jawi Through Gamified Assessment,* 2) to develop an application *Planet Jawi: Mastering Jawi Through Gamified Assessment* and 3) to evaluate the enjoyment in Jawi learning through *Planet Jawi: Mastering Jawi Through Gamified Assessment.*

3 SIGNIFICANCE (S)

The advancement of technology has exposed children to a gadget such as smartphones, iPad and tablet. Children use this application as a practical learning tool compared to the book. Implementing gamification elements in the learning process will ease students to understand and memorize the content. Besides, the implementation gamification approach will help children to understand better, recognize and remember the Jawi script. The application focuses on learning Jawi, which includes a basic introduction to Jawi. By using this application, the children can practice Jawi by learning through the assessment and complete up the task provided. Besides, this application will be one of the learning tools to help parents and teachers to educate and teach their children about basic Jawi in an enjoyable environment. Children will not get bored in the learning process and become motivated to learn Jawi.

4 METHODOLOGY

Rapid Application Development (RAD) methodology is being implemented in this project because it provides more quality product in less time to meet the requirement. Besides, the RAD process involved directly integrates the end-user in the project's development. By identifying the flow of the project, it can reduce the time between the *User Design* phase and the *Cutover* phase, which can reduce the cost of project development. Therefore, the project will fit the users whose demands to complete much earlier than ever before. Fig. 1 shows the architecture of the RAD methodology model.
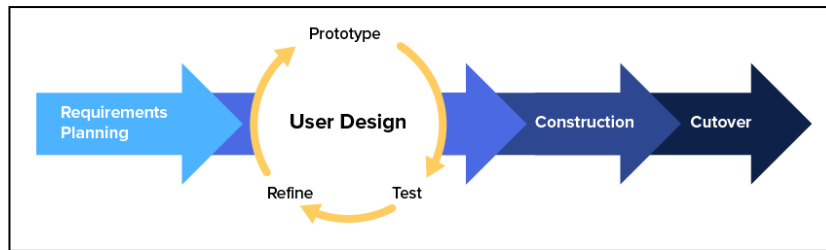
Fig. 1 The architecture of RAD methodology model

RAD methodology consists of four phases, including *Requirement Planning Phase, User Design Phase, Construction Phase,* and *Cutover Phase.* Each phase comprises their flow and process that can make the project more systematic. Fig. 2 show the part of the scene that produce during the *User Design* phase.

(a)   (b)

Fig. 2 Part of the scene (a) and (b) in *Planet Jawi*

5   RESULT

In this study, we implemented the EGame Flow Model to measure the enjoyment experience of the respondents. The adapted version comprises seven elements, including *Concentration, Goal Clarity, Feedback, Challenge, Control, Immersion* and *Knowledge Improvement.* Each element includes a set of criteria for accomplishing enjoyment in games. To get feedback from users, they need to answer the set of questionnaires based on the EGameFlow Model after playing the game. We give each criterion into the Likert Scale from 1 to 5, which is between strongly disagree to strongly agree. Table 1 shown the result of the average mean for each element when doing the descriptive analysis. The analysis computed every average mean of the elements into a total average to identify the outcome of the evaluation. The result for the total mean is 4.53, or 90.6% of enjoyment experienced felt by the respondent while playing the game.

Table 1 The total of average mean

Element	Mean
Concentration	4.42
Goal Clarity	4.60
Feedback	4.52
Challenge	4.59
Control	4.65
Immersion	4.29
Knowledge Improvement	4.62
Average Mean	**4.53 (90.6%)**

6   CONCLUSIONS

According to the findings, the total average mean of all elements was 4.53 (90.6%), which is above the average scale. The highest mean score among the seven elements is the *Control* element, with a score of 4.65. The findings showed that the user enjoys while they have control in-game. This proof that element control is one of the essential elements to provide the student with an enjoyable experience.

REFERENCES

[1]   N. Yunos, "Peranan guru dalam memupuk kreativiti pelajar," *J. Pengaj. Umum Bil*, vol. 9, p. 57, 2008.

[2]   N. A. M. Rashid, S. M. Salleh, and N. M. Noor, "The Role of Game Elements in Improving Jawi Skills through a Mobile Game'G-Jawi'," *Int. J. Interact. Mob. Technol.*, vol. 12, no. 7, pp. 20–30, 2018.

[3]   B. Morschheuser, L. Hassan, K. Werder, and J. Hamari, "How to design gamification? A method for engineering gamified software," *Inf. Softw. Technol.*, vol. 95, pp. 219–237, 2018.

[4]   K. M. Kapp, *The gamification of learning and instruction: game-based methods and strategies for training and education*. John Wiley & Sons, 2012.

[5]   G. Zichermann and C. Cunningham, *Gamification by design: Implementing game mechanics in web and mobile apps*. " O'Reilly Media, Inc.," 2011.

[6]   P. Buckley and E. Doyle, "Gamification and student motivation," *Interact. Learn. Environ.*, vol. 24, no. 6, pp. 1162–1175, 2016.

[7]   S. Z. Mohid, N. Homan, R. Ramli, and S. Adnan, "Pembangunan Aplikasi Mudah Alih Pembelajaran Asas Jawi," in *International Conference on Information Technology and Multimedia*, 2016.