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AN INTERACTIVE MALAYSIAN HISTORY MOBILE APPLICATION FOR UPPER SECONDARY SCHOOL STUDENTS IN MALAYSIA

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ABSTRACT

Malaysian History subject is a compulsory subject that need to be learned by all students of Malaysia secondary school. However, the Malaysian History subject is not the most popular subject among the students. The students are required to understand and memorize the facts in order to answer all questions and score in the examination. Based on the conducted survey, most of the respondents (upper secondary school students) feel that the way of teaching and learning this subject need to be changed. The students feel that learning with textbook is unappealing to them. Thus, an interactive application is proposed to overcome this problem. The main objective of this project is to develop interactive mobile application that helps students to learn Malaysian History subject in more enjoyable and interactive way. The application is built using Sketchware which builds Android application directly on mobile devices. The project combines JAVA and Sketch programming language to develop this application. Based on the survey conducted on thirty-one students, sixty-one percent of the students strongly agree that this application is easy to use and interactive since it combines audio, videos and pictures to attract the students into the world of Malaysian History. As the result, students can visualize, understand and appreciate the Malaysian History subject and also their own national history.

Keywords: Mobile Application; Interactive; Malaysian History; Education.

1. INTRODUCTION

Malaysian History subject in secondary school is a required and crucial subject in Malaysia. Thus, students need to understand the subject fully to excel in their examination of Malaysian History subject [8]. They feel that learning with textbook and listening to the teacher's explanations about how the events are taking turns are unappealing to them. In addition, the government also provide teachers with a new online medium by introducing 1BestariNet. Teachers are required to be able to make the students visualize the situation effectively using the medium. Students then needs to analyze the events and then draw useful conclusion.

According to study from [1] although the teachers and students use textbooks primarily in their learning process, they wish to have other sources to refer for history subject. Although the government introduces 1BestariNet program, teachers also need to overcome the time constraints to finish the whole syllabus in the given time [11] while at the same time, be able to upkeep students' attention towards the subject. Hence, students can easily be distracted by other factors while studying in class since they are only reading textbook page by page while listening to the teacher's explanation. In addition, teachers are still teaching history in an uninteresting manner by sticking to teach the subject using textbook despite of having been introduced to 1BestariNet program in order to finish the syllabus on time [11]. As a result, the subject appears to be boring to the eyes of students therefore making them lose interest to study the subject. To counter this problem, this project proposed an Interactive mobile application that help students study Malaysian History subject in more enjoyable and interactive manner. This project plans to combine audio, videos and pictures to help bring students into the world of Malaysian History.

2. LITERATURE REVIEW

2.1. Mobile Application and Mobile Learning

According to [5] mobile learning is becoming a trend nowadays as a learning tool which is known as m-learning. However, the study of educational application for mobile devices are still in their early period and not known to be researched broadly [4]. According to [2] the accessibility of mobile technology enables students to experience the real-world computations and solving problem skills by linking the contents in textbook and real-life situations. This can be seen when [12] conducted an ecology learning activity that helps students to perceive and collect data in the real environment by using mobile technology, the students gain real-world experience on solving-problems using textbook's content.

A study by [13], investigates whether kinesthetics manipulations can help students understands further into physics concepts by focusing on students' visual-motor integration (VMI) ability. The result shows that both touchable application (TA) which manipulates intuitive interface and multi-touch tablet screens and touchable-with-gravity-sensor application (TAG) which combines both touch input and the movement of hands to control gravity fields of virtual objects help students develop better theoretical understanding of projectile motion and collision. However, in the projects' opinion, the study should create another way to analyze the study result using different levels of VMI. This is because different people have different skill set of VMI. Therefore, this study can detect the achievements of different students that has been classified into different VMI. Overall, the study uses variety of tools with different categories to study the impact of mobile technology. However, these tools may not have been suitable to fit the learning standard of schools and curricular activities. This explains why some of the tools that are being evaluated are not used much in the classroom. There are a lot of ways that can help students learn in class by using mobile application.

2.2. Interactive Learning

Learning is the process of gaining knowledge or a set of skills either by studying by oneself or taught by others. In another word, learning is the activity of someone who learns or experiencing life changing situations. Interactive learning is the process where this learning activities is intended to give feedback to a person or responds to their actions.

Layona, Yulianto and Tunardi [7] conducted a study to create authoring tools with interactive video to learn programming. The result of the surveys found out that that most teachers loves idea of using videos and animation in teaching programming languages. Most of the students feel the conventional way of learning programming is difficult. However, with the videos and animation introduced as an interactive way to learn programming, students and teachers can learn and search for learning materials easily. According to [14], the use of multimedia for example picture, maps, charts and dynamic media such as videos or simulations has significant impact in creating instructional e-textbooks for students as meaningful learning can occur when a learner can build a mental representation [3]. Interactive learning can help students learn effectively and find learning materials easily. In addition, teachers can also gain benefits from the learning method as the students may understand better when they are taught using interactive learning.

2.3. Existing Malaysian History Application

The project observed that upper secondary school students in Malaysia has many history subject's mobile application that can be used to study. These applications are taken from Google Play Store. However, the project notices a similarity between these applications where most of them are examination-oriented history applications. It either provides short notes for students to study or offers sample of objective questions for students to test their knowledge in the subject. Table 1 below shows the differences and comparison of different Malaysian History mobile application that has been observed by the project.

Table 1. Comparison of History Education mobile application

Name of Games	SPM Fokus Sejarah	SPM Sejarah	SPM Sejarah	Nota Ulangkaji Subjek SPM
Developer	Benny Lim Aik Beng	Seng Yen Teh	MobielBeans	JeanApps
Screen Orientation	Portrait	Portrait	Portrait	Portrait
Main Menu	No main menu. Manoeuvre through tab list.	No words. May be confusing to be used at first.	Buttons are easy to locate. Vibrant colours are used.	Manoeuvre through tabs. Provide lists of chapters.
Provide Exam Questions	No	Yes	Yes	No
Provide Notes	Yes	No	No	Yes
Rating	4.7/5 Stars	No Rating	4.5/5	4.5/5
Interactive game/ quizzes	No	Yes	Yes	No
Provides student-teacher communication	No	No	No	No
Contributions	Most users are satisfied with the notes provided. They found the notes helps to understand the subject.	The application is suitable for students who wants to evaluate their knowledge in the subject.	The application helps user in their examination. Questions provided are very close or similar to examination questions.	Most student found the application helpful since it contains notes from many school subjects such as Physics, Geography and History.

2.4. Existing Mobile Application Related to Education

The project also reviews some of other applications that is developed to support education. Interactive learning is a way of learning that uses computer programs, games, multimedia elements and other related applications. It involves the person who is learning by reacting to the way the person uses them. The first application is a game named JarMat [15]. This game is

targeted toward students in the second grade of primary school who learn mathematics. In this application, player need to choose whether to learn addition, subtraction, multiply or division in the main menu. The second application is Vidyanusa game that is developed by [9]. In this application, there are 23 games or levels that are linked by a story or a plot. The author adopted a few mathematical elements into the game such as arithmetic sequence and addition and subtraction of integers. The third application is <e-Adventure> which is developed by [6]. This application is an adventurous educational mobile game that supports both mobile and desktop application. According to [6], this game is developed to help people with less knowledge on game production can design and develop their own educational video game and export it to execute on different mobile platforms. This application combines M-Learning, Game-Based Learning and Game-Based Mobile Learning in its development.

Another interesting application that utilises interactive learning is Salt Hero [4]. This application uses interactive learning to help students learn about salt in Chemistry subject. The evaluations made by [4] on user's satisfaction shows that students perceived the application as beneficial to them. This helps students understand more about the topic since the virtual lab imitates the result like a real experience in a chemistry laboratory. Salman and Antonius [10], developed "Laut ABC" as an interactive application for children to learn alphabets using Android mobile device. It encourages children to identify shapes of an alphabet. In conclusion, this application is suitable for children as it can help them learn alphabet by including many interactive elements such as colourful pictures and audio.

3. METHODOLOGY

In order to develop the Interactive Malaysian History application, a framework based on waterfall approach has been proposed. Figure 1 illustrates the system architecture of the proposed project. This project is comprised of three modules which is Notes, Video and Exercises. The application was fully developed using Sketchware. Sketchware is a mobile application that enables user to develop mobile application straight into their Android smartphone. Assets or resources which are stores in the library section such as photos and audios were imported into Sketchware to create interface such as Flashcards and Quizzes. Then, these resources will be manipulated in the Components section such as OnClick() and OnStart() functions. These functions will be used in the modules either in Notes, Video or Exercise that can be brought to live and used. Figure 2 indicates some of the interfaces of the proposed project that were developed by using XML layout.

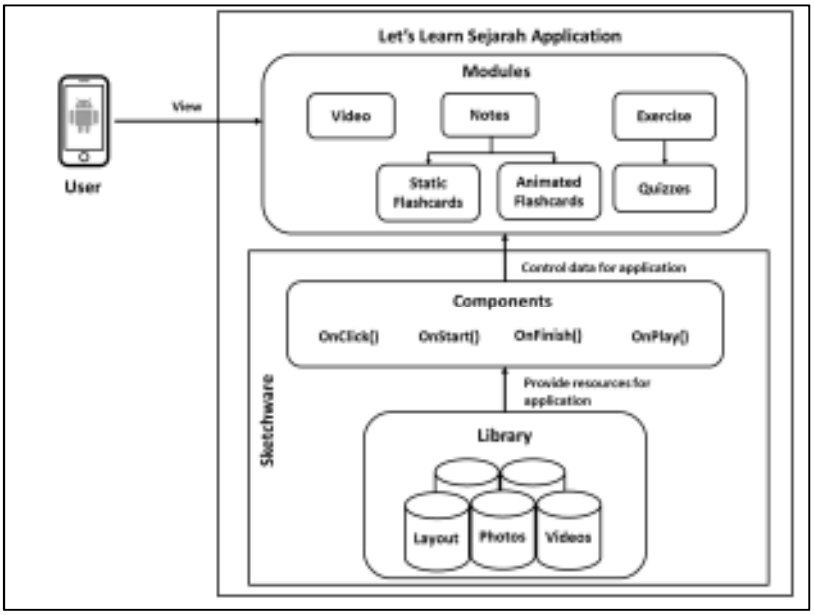

Fig.1. Interactive Malaysian History application architecture

Fig.2. Interfaces of Let's Learn Sejarah application

4. RESULT ANALYSIS

The project had conducted two survey questionnaires in order to develop the application. The first survey is conducted to seek users' response on new ways of learning Malaysian History subject and to test whether the current textbook is enough to be used in class to teach and learn Malaysian History subject. There are 31 students that had answered the questionnaire about the application. Based on the respond of the users, the application receives a positive feedback from all of its respondents. There are 9 users agree and 22 users strongly agree that Let's Learn Sejarah interactive mobile application helps them study and improve their performance in the subject. The respondents also agree that they will continue to use this application. Figure 3 depicts the overall users rating toward the proposed application. It is shown that the application has achieved its goal to ease students in learning Malaysian History Subject using interactive components.

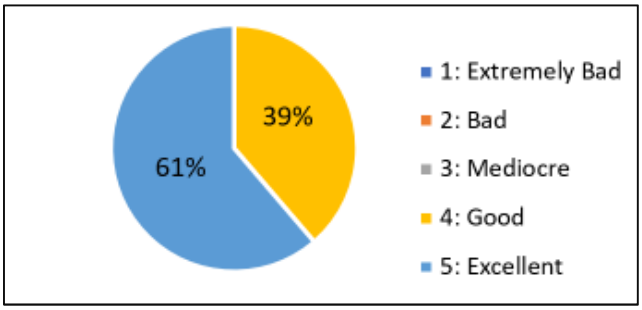

Fig.3. Rating given by users towards the proposed application

5. CONCLUSION

This project has proposed Let's Learn Sejarah mobile application that can help upper secondary school students learn and revise Malaysian History subject in much more enjoyable manner. It can help students learn and revise Malaysian History subject anywhere and anytime. Students can revise the subject by reading flashcards, listening to chapter audios, watch Youtube's videos and test their knowledge by answering provided quiz. Apart from that, students can also benefit from this mobile application as it can be easily installed in any android smartphone. According to the result of the User Acceptance Test that has been conducted, 39% of students gives the application a rating of 4 over 5 and the remaining 61% of students shows their satisfaction for the application by giving Let's Learn Sejarah application the rating of 5. Overall, the results turn out to be positive and proves that Let's Learn Sejarah application helps students learn Malaysian History subject.

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