International Journal Software Engineering and Computer Science (IJSECS) 2 (2), **2022, 39-45**
Published Online October 2022 in IJSECS (http://www.journal.lembagakita.org/index.php/ijsecs)
P-ISSN : 2776-4869, E-ISSN : 2776-3242. DOI: https://doi.org/10.35870/ijsecs.v2i2.797.

Scratch Quiz Game Development using AppsGeyser

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Received: 16 September 2022; Accepted: 25 October 2022; Published: 30 October 2022.

Abstract: The aim of the research is to develop a Scratch Quiz Game using AppsGeyser. The method used in this research is Design and Creation, which is a research method that describes and creates a new product. The steps in this method are Awareness, Suggestion, Development, Evaluation and Conclusion. It is known that the research results have succeeded in designing a Scratch Quiz game using AppsGeyser. The stages carried out from the initial stages of research, development by applying the GDLC (Game Development Life Cycle) development method starting from the initiation, pre-production, production, testing, beta, and release stages until testing has been carried out. The test results show that 57% can understand the meaning of the game being tested without the need for direction by the game maker, 82% agree that the display is attractive, 64% of every game question has the correct answer, 71% of students agree that the application can replace class exams conventional, but on the question of whether students can make applications similar to AppsGeyser, they answered % stating that students still do not understand in making similar game applications.

Index Terms: Development; Game; Scratch Quiz; AppsGeyser.

1. Introduction

The game is a playing situation related to certain rules and goals, to seek pleasure and satisfaction [1][2]. Games are fun activities that are done for fun [3] while some opinions reveal that games are activities that are carried out for fun and have rules [4][5]. Currently video games are played on personal computers, and not on game consoles, nor arcade machines [6][7]. The difference between playing and playing is; if we look at the meaning of playing, we can interpret an activity that is carried out by both children and adults while the game is a type of activity that we want to play [8][9]. Some of the positive impacts of playing are; Increase Brain Activity, Practice Sportsmanship Against Opponents, Sharpen Ability to Work as a Team, Familiarize Yourself with More Than One Activity, and Entertain Yourself with Different Activities.

Learning while playing, of course, is no stranger to being used in learning. For teachers and students, carrying out learning by playing is very fun [10]. This is done as one of the innovations in learning so that teaching and learning activities feel fun so that they can achieve learning objectives. What is gamification? Gamification is the use of game ideas and elements in a different view or context from the game to influence behavior, increase user commitment and motivation [11][12][13]. The use of gamification in learning is the use of principles and elements in games to convey learning. The principles and elements in the game include: 1) giving rewards; 2) making standings; 3) the presence of a progress bar; and 4) there is a challenge or challenges [14]. Gamification in learning can be done in several ways, including: 1) there is a level in the learning process; 2) giving badges/rewards; 3) leaderboard in class; 4) using a point system; and 5) making educational games. This can be used by a teacher in learning where the material can be made into games such as flat shapes or spaces. With the development of today's technological advancements more resources can be used to deliver education. Teachers can take advantage of advances in science and technology and the surrounding environment to apply gamification in learning. Furthermore, technological developments increase the learning needs of students. Students are required to be able to dynamically learn by combining the concepts of critical thinking and way of life as the demands of the 21st century. With advances in technology, teachers can apply gamification by making educational games. Currently, there are many websites that can be used to develop educational games. These websites include: Wordwall, Educandy, Proprofs Quiz Maker, Quizwhizzer and Scratch.

Scratch is a high-level, block-based visual programming language and website targeted primarily at children aged 8–16 years as an educational tool for programming [15]. Scratch was developed by the MIT Media Lab, and has been translated into more than 70 languages [16][17], including Indonesian. Projects that have been created on the Scratch website can be shared directly with users, and can also be exported to HTML5, Android applications, and EXE files using external tools [18][19]. By applying the elements and principles of gamification such as giving rewards and determining the class, the learning process will feel competitive. With the development of educational games using Scratch learning feels fun. Through the use of Scratch, it is not impossible for students to develop their own games with teacher guidance. Children can make games with learning materials determined by the teacher. It can be concluded that gamification by making educational games fosters creativity and trains children to innovate. Srcatch is accessed online. This method is very easy to do. In addition, project files are stored in the cloud. So it doesn't take up storage space on the laptop. To get the Desktop version of the Scratch application, please download it at Download Scratch for Desktop.

Several studies have used AppsGeyser to produce an application that is easy to use and implement. Ariyani (2022) developed Appsgeyser as a formative evaluation instrument in the form of an application-based quiz for the interaction of living things with the environment for junior high school students. The results of the linguist's assessment got an R value of 3 with the "valid" category. The results of the assessment on trials conducted by students got a p value of 87.17% in the "very practical" category. The results of the assessment on trials conducted by science subject teachers got a P value of 88.63% in the "very practical" category, so the INMADELLING quiz is worthy of being used as a formative evaluation instrument in the form of application-based quizzes for material on the interaction of living things with the environment for junior high school students [20]. Mavropoulou (2021) continues that finding alternative ways of distance learning using educational platforms presents and tests several development platforms without code and low code that are useful for the development of stand-alone applications for educational purposes at the lowest possible cost, then analyze their features and potential uses. , using and analyzing eight representative development platforms and the corresponding set of features and services that each platform under consideration can support, the researchers reached the conclusion that nowadays all teachers can create applications and the lack of programming skills is not a hindrance. to keep themselves up-to-date [21]. Another thing also agrees with the research conducted by евская & обелкина (2016) which discusses new ways and ways of teaching Russian vocabulary, showing the wide possibilities of using educational information technology. The advantage of the proposed technologies is that they are easy to adapt and transfer to various educational conditions. The technology under consideration allows for the effective and varied organization of student self-employment with a large number of lexical units. This article describes the most useful sources of information and how to work with them when teaching vocabulary. The three studies agree that AppsGeyser can be used as a technology in creating a learning tool for students [22].

The use of AppsGeyser because it is a fast platform that allows the creation of mobile applications in 10 minutes. You just need to fill in the application form with relevant content for development. AppsGeyser provides convenience and an attractive appearance so that users will find it easier and faster to create applications. There are several categories of applications that can be made including websites, messengers, maps, RSS, and others. With only a PC computer, internet connection and only drag and drop from online game maker software, the available game maker may be the right Appsgeyser used to create fast applications and games such as scrath with a simple drag and drop menu facility.

2. Research Method

This research was conducted from February to June 2022 which involved students and testing at the STMIK Indonesia Computer Laboratory in Banda Aceh. The method used in this research is Design and Creation, which is a research method that describes and creates a new product. The steps in this method are Awareness, Suggestion, Development, Evaluation and Conclusion. Awareness is carried out in the early stages of research, namely formulating problems that will be raised as topics of problems in research. Formulation is done by making observations, both observations of what is happening in the surrounding environment as well as observations of problems that exist in a scientific paper. The results of these observations are used as the basis for making the background of the problem. Formulation of the problem is done by doing a literature study and observation. The next stage is to provide suggestions to be used as a proposed solution based on the formulation of the problem that has been made. This stage is useful for determining the objectives and benefits of the research conducted. The proposed solution is in the form of developing a multimedia product in the form of a game that carries a visual-based Scratch Quiz in a game model. The process carried out at this stage is the realization of the solutions that have been made, namely the development of visual-based games. The development at this stage is the engineering of multimedia products in the form of games by applying the GDLC (Game Development Life Cycle) development method. The stages in this version of GDLC are initiation, pre-production, production, testing, beta, and release [23][24]. The conclusion stage is the final process carried out in the research conducted. This stage draws conclusions from what has been done in this research.

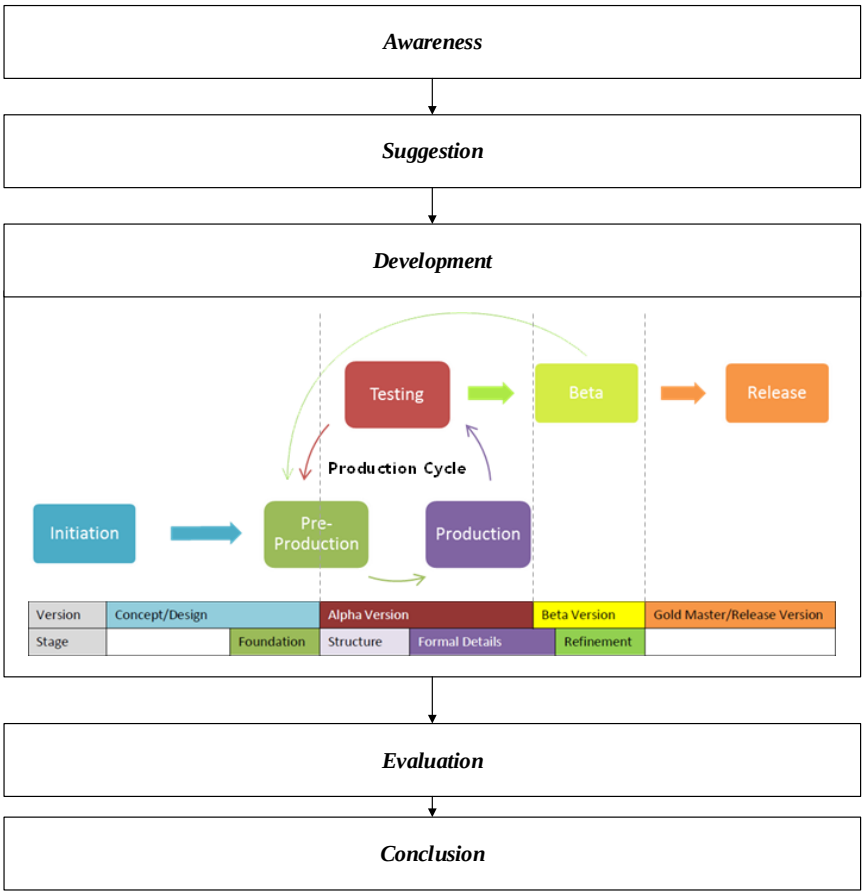

Fig 1. Research Framework using the Design and Creation method

At the application testing stage, the authors distributed questionnaires to 56 students from 2 different classes. There are 5 questions from the test which consists of; can the play tester understand the meaning of the game he is testing without needing direct direction from the game maker?, does it look attractive?, is the question of each answer correct?, can the application replace conventional classroom exams?, can students create applications similar to AppsGeyser? . in the fifth question is an implementation plan for students in developing similar applications in the future and this is a measure of student interest in making games. Each question has an answer with a value of 1-4, the answer is very well understood, it is 4, understanding is 3, not understanding is 2, and not understanding is 1.

3. Result and Discussion

3.1 Results

Awareness is carried out in the early stages of research, namely formulating problems that will be raised as topics of problems in research, namely topics made in making Scratch Quiz game applications. The proposed solution is in the form of developing a multimedia product in the form of a game that carries a visual-based Scratch Quiz using AppsGeyser. The next process is to collect material as data for the quiz application by collecting some questions and questions from the lecturer in the English language and computer programming courses. At the development stage at this stage is the engineering of multimedia products in the form of games by applying the GDLC (Game Development Life Cycle) development method starting from the initiation, pre-production, production, testing, beta, and release stages. However, the process of testing, beta and release on use using AppsGeyser is very easy because the application can be directly used on Android. The following is the display of the scratch quiz game application that has been generated (figure 2).

Fig 2. Scratch Quiz Application Display AppsGeyser

3.2 Discussion

The conclusion stage is the final process carried out in the research conducted. This stage draws conclusions from what has been done in this study. In this stage, the writer distributed questionnaires to 56 students from 2 different classes. There are 5 questions from the tests carried out which consist of; can the play tester understand the meaning of the game he is testing without the need for direct direction from the game maker?, is the display attractive?, are the questions from each answer correct?, can the application replace conventional class exams?, can students make applications similar to AppsGeyser?. Of the 4 questions, there is one question that is different from the test, in the fifth question is the implementation plan for students in developing similar applications in the future and this is a measure of student interest in making games. Each question has an answer with a weighted value of 1-4, very understanding answers have a weight of 4, understanding has a weight of 3, lack of understanding has a weight of 2, and do not understand has a value of 1.

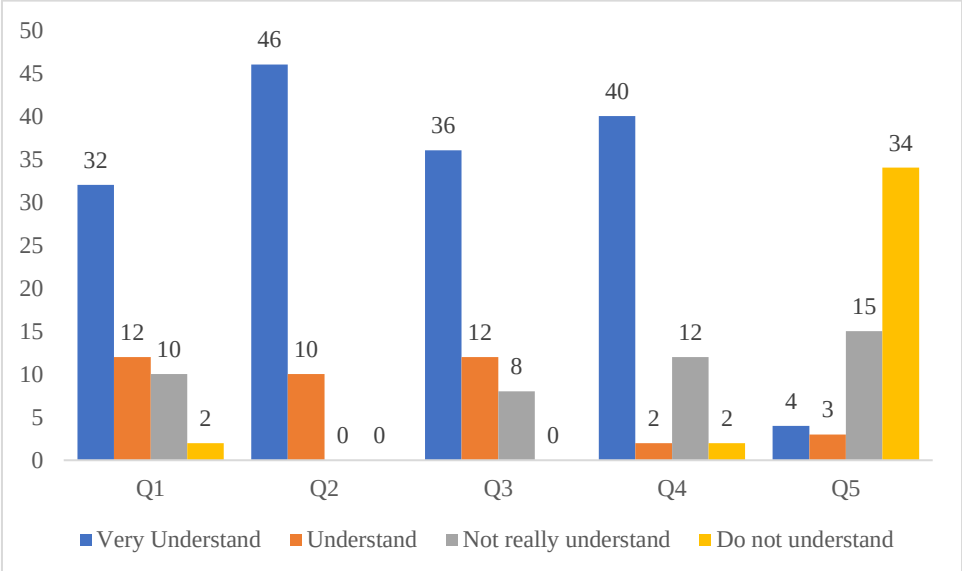

Fig 3. Testing Results of the AppsGeyser Scratch Quiz Application for Students
(Data source: Data Processed, 2022)

From the results of the tests carried out, in the first question (Q1) it was found that 57% or 32 people could understand the intent of the game being tested without the need for direction by the game maker. While 21% or 12 people chose the answer to understand and quite understand and do not understand with a percentage of 18% and 4%. In the second question (Q2) it is known that the level of understanding is very high at a percentage of 82% with 46 students answering very understanding and only 10 students answering understanding with a percentage of 18%. In the third question (Q3), 36 students answered strongly agree/understand with a percentage of 64% and 12 students answered understood with a percentage of 22%, only 8 students answered quite understand with a percentage of 14%. The fourth question (Q4) of the question whether the application can replace the conventional class exam?, it is known that 71% of students strongly agree and agree with a percentage of 4%, only 21% do not agree. In the last question (Q5) it was found that the students' interest in developing game applications was at a percentage level of 7%. This is because students still lack understanding in the work of making applications, so 61% stated that students still do not understand in making similar game applications.

4. Related Work

Several studies are needed related to the results of the research the author did so that they can be compared and are expected to be findings that can be considered in the future. Pratiwi *et al* (2021) implemented android-based learning media through the web learning media Appgeyser Sparkol Videoscribe to improve students' scientific literacy skills. The results showed that students experienced an increase in scientific literacy skills up to 43.4%. %, especially on the ability to understand the concept of optical instruments which are categorized as "good". The use of Appsgeyser web learning media which is modified from the more attractive Sparkol Videoscribe media allows it to significantly improve science processing abilities [25]. It also agrees with Oliver (2019) who stated that implementing games into the curriculum as well as implementing serious games at the undergraduate level in universities pragmatically on the application of serious games to the biblical languages - Greek, Hebrew and Latin - proposed that they should be presented to students as paper. behind the glass [26]. The same statement was made by the author where a game application can change the way of learning and students' interest in learning. In terms of application development, learning has now made it easier for application developers by utilizing AppsGeyser. This statement agrees with Pylkki (2013) which states that faster multi-platform development or more efficient applications with native look and feel are preferred [27]. However, the development of mobile platforms gives users seamless access to portable network services with less security than traditional programs designed for static environments, mobile applications are more adaptive to dynamic contextual changes and thus can provide a variety of new functions [28].

5. Conclusion

It is known that the research results have succeeded in designing a Scratch Quiz game using AppsGeyser. The stages are carried out from the initial stages of research, development by applying the GDLC (Game Development Life Cycle) development method starting from the initiation, pre-production, production, testing, beta, and release stages until testing has been carried out. The test results show that 57% can understand the meaning of the game being tested without the need for direction by the game maker, 82% agree that the display is attractive, 64% of every game question has the correct answer, 71% of students agree that the application can replace class exams conventional, but on the question of whether students can make applications similar to AppsGeyser, they answered % stating that students still do not understand in making similar game applications.

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