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Development Of Animated Learning Applications For Weathering Topics of Form 6 Geography

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Abstract: Animated learning applications can be one of the good teaching aids to deliver subject content like Geography subjects because this subject has been perceived as a difficult subject in the school curriculum that difficult to teach and teach In general, this android application was developed for assessing students to more understanding about weathering topic since it was involved the prolong process and needed physically attended at the places which troubled for teachers and students. The ADDIE model (analysis, design, development, implementation, evaluation) was chosen as the methodology for the development of this project which used Adobe Animate CC and Adobe Illustrator CS software. Developers use the Expert Checklist Form tool for assessments and expert verification form reviews. This application is reviewed by three (3) experts consisting of two (2) lecturers on FPTV and one (1) of Geography Teacher at Kolej Tingkatan Enam Sultan Sallehuddin, Kedah based on content design, design interface design and interaction design. The data obtained and analyzed are in the form of frequency. It was found that all the experts agreed that this application is good to present the content of weathering topic and can be used as a teaching tool (ABBM) for teachers teaching STPM Geography subjects. Hopefully this application will be enhance by others developers to make sure that it will present completely the whole process of the weathering and others physical geography process was happened.

Keywords: Animated Learning, Geography, Weathering

1. Introduction

Geography is an important science in the ongoing improvement of our understanding of natural events that occur and are predicted to occur. Geography is a way of life (Bednarz et al. 1994). The peculiarity of geography rests in the fact that it deals with things that are inextricably linked: people and places, their distribution, interrelationships, and the time spans that they cover (Martin, 1995). The importance of teaching and understanding geography may have implications for both geographers and

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non-geographers. Individuals must have a basic understanding of geography in order to effectively tackle natural and social challenges (Girgin, 2002). As a result, it can be claimed that the necessity for geographic knowledge grows throughout time.

In this subject of education, video teaching is one of the most effective means of increasing knowledge. Video is a powerful and effective medium for influencing student behaviour and altering the teaching and learning process, according to Md Salleh and Mat Ali (2011). (PdP). Meanwhile, according to Norhayati (2011), one of the parts of multimedia that serves to offer knowledge in a more realistic form is image-based information that can provide a variety of stimuli experiences such as hearing and vision is video teaching. This is because, throughout the Teaching and Learning (PdP) session in the classroom, there will be a repeat process in learning through the usage of video. The globe is currently dealing with Pandemic Covid 19 and its effects.

The pre-university geography topic necessitates a comprehension of the process or occurrence of space-changing events. According to Muhammad et al. (2018), students' deficiencies are related to classroom Geography questions or the actual STPM. Facts, as well as the ramifications of what is happening and illustrations of an issue, were the focus of geography questions. Students who do not master physical geography information and understanding will struggle to comprehend the process or genesis of a phenomena. According to a preliminary study conducted with a teacher who taught Geography Form 6, the challenge that students have is that they are unable to visualise the genuine situation/phenomenon that occurs during the teaching and learning process about the topic. All teachers should take advantage of the benefits of video development as a teaching aid in order to ensure that all information is graphically addressed. As a result, the goal of this project is to create an animated learning application for Form 6 geography classes on the topic of weathering. It is envisaged that this application, which features animated graphics, will aid in the teaching and learning process, as well as serve as an alternative reference for Form 6 students preparing for the STPM exam.

1.2 Research Background

Geography is a social and natural science field that analyses the environment (Meadows, 2020). Teaching geography has its own set of issues, which may be found in practically every country. In view of advancements in ICT, the most basic reform in the geography-teaching curriculum was implemented. The goal of the new geography-teaching curriculum was to aid in the formation of "geographical consciousness" (Karabağ & Şahin, 2007). Geography has a reputation for being a tough subject in the school curriculum to teach and learn (Saidu & Garba, 2015). Some of the reasons put out by the authors include the nature of the subject and the method it is taught, which discourages open inquiries, inquiry, and true learning.

1.3 Problem Statement

Geography is one of the most significant subjects of study since it aids in the understanding of both the physical environment and human growth. However, there are a variety of issues with geography teaching and learning, which result in students failing or performing poorly in geography exams. As a result of the tactics or methods used by geography teachers, some students tend to shun geography during their studies due to its non-motivational elements. In light of these considerations, the research will address the following issues in developing animated visual teaching and learning aids for geography in weathering subjects.

2. Methodology

The development model for this study is the ADDIE model. The Analysis phase, Design phase, Development phase, Implementation phase, and Evaluation phase are the five primary phases of this approach. The evaluation is done by professionals using a questionnaire, hence this study is conducted

using the descriptive technique. The ADDIE model was used in this investigation, as shown in Figure 1.

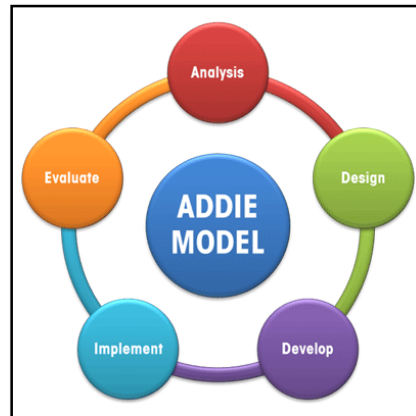


Figure 1: Model ADDIE (Source: Mulyatiningsih, E., 2016)

The first step of the study should focus on the target group's features in order to discover the problem that the student isn't seeing as the learning process unfolds. The goal of this app is to create an animated learning software that will aid students in their studies. The platform on which the user will utilise the programme is the Android platform. Adobe Animate CC and Adobe Illustrator CS6 were used to create this application.

The product development journey is depicted through storyboards in the second phase of the design process. Interface design, content design, and interaction design are all discussed at this phase. The uniform layout of the navigation buttons and the suitable usage of graphics are discussed in the interface design. The topic of content design pertains to content that will be displayed in an animated format and is related to the subject of geography. The navigation design for the intercourse is discussed in the design of the intercourse. To guarantee that navigation functions well, it must be coded and programmed appropriately.

Development is the third step. Interface development, animation, music, graphics, and encoding are all included in this phase. When using this application, developers must ensure that all of the items used are of interest to consumers. The fourth phase entails the implementation of ready-to-develop programmes that will be deployed on a mobile phone utilising the .apk file format. For .apk files to work, developers must install Adobe AIR on their phones. Three experts will be chosen to test the functioning of the built application in the fifth step of the evaluation. Each of the specialists participating, including interface experts, content experts, and interaction experts, was given an evaluation form.

3.1 Sample

The experts who are involved in the testing and evaluation process will be the sample for this study. Three experts in the fields of multimedia and geography have been put to the test. Two of the specialists are lecturers from the UTHM Faculty of Technical and Vocational Education, who are experts in the fields of multimedia and user interface. The evaluation will be focused on the interface design and user interaction. One of the experts will conduct the review based on the content of the application and is a geography teacher from Kolej Tingkatan Enam Sultan Sallehuddin, Kedah.

3.2 Analysis of data

This study will be conducted using the descriptive technique, in which data will be collected through a questionnaire during the evaluation process. There are three categories of questionnaires: application content, interaction design, and interface design. Part A, Part B, and Part C are the three

portions of the interface design surveys. Part A was made up of demographic information. Part B consisted of ten questions about interface design content. Section C The substance of application questionnaires consisted of eight questions concerning the application's content to evaluate if it matched the subject in the Geographical topic's syllabus. Seven questions about user interaction were included in the questionnaires about interaction design. The responders express their opinions by selecting one of two options: Yes or No.

The data will be analysed by estimating the percentage of agreement among experts based on their questionnaire replies. The data will be represented in a table, and a debate will be held to assess if the application's development can meet its goals.

3. Results and Discussion

In the construction of animated learning applications for Geography Subject Form 6 Topic Luluhawa, three aspects will be examined and assessed. The first consideration is the application's content. This element is assessed to determine whether the content corresponds to the chemistry syllabus. A geography teacher from Kolej Tingkatan Enam Sultan Sallehuddin, Kedah, will assess this element. An analysis of the data has been completed and is presented in a Table 1.

Table 1: Data analysis from the content aspect evaluation

Bil	Items	Frequency		percentage
		Yes	No	
1.	Is it true that this app's contents is compatible with syllabus?	2	0	100%
2.	Is it true that this app's contents is designed to be compatible with form 6 student?	2	0	100%
3.	Is it possible that the quiz in this app can help with student understanding?	2	0	100%
4.	Is the user guide information in this application sufficient?	2	0	100%
5.	Is the font, size, and colour selection adequate for the text in this application?	2	0	100%
6.	Is it permissible to include multimedia components in this application?	2	0	100%
7.	Is the audio clear and audible?	2	0	100%
8.	Are students able to comprehend each animated movie supplied in the application?	2	0	100%

According to Table 1, the content design analysis in the development of this learning application revealed that both experts agree that the content in this application meets the user's learning objectives, that the content in this application was developed with 6th grade students in mind, and that the quizzes in this application can help students understand with 100 percent approval. In addition, for enough user guide information in this application, the font, size, and colour selections are appropriate for the text used in this application, and the multimedia elements used in this application have received 100% approval from all three experts. Furthermore, children can readily understand every animated movie supplied in the programme, and audio questions can be heard properly.

Table 2: Data Analysis From Evaluation of Interface Design Aspect

No	Items	Frequency		Percentage	Note
		Yes	No		
1.	Is the user interface design intuitive?	3	0	100%	
2.	Is the visual display in the background appropriate?	2	1	75%	The audience of Form 6 students must be considered.
3.	Is the colour scheme for the backdrop display appropriate?	2	1	75%	Too feminine
4.	Is the size of the icon display appropriate?	2	1	75%	Too big
5.	Are the icons you've chosen simple to understand and use?	3	0	100%	
6.	Is the animation designed utilised engaging?	3	0	100%	
7.	Is it possible to use text-shaped buttons?	2	1	75%	Buttons with captions should be the subject of the question.
8.	Is the app's navigation in accordance with the instructions?	3	0	100%	
9.	Is the terminology well-understood?	3	0	100%	
10.	Is it simple to follow the specified instructions?	3	0	100%	

In terms of the product interface design, the three experts agree that this animated learning application has a user-friendly design, that the icon used is easy to comprehend, and that it fits well with the animation employed. Only 75% of experts agree that the display questions background graphic, background colour, icon display in size, and text-shaped button operate perfectly. For the next point, all experts agree that the navigation accessible for the programme to work according to the instructions is perfect, that the language used is easily understandable, and that the instructions offered are simple to follow. The details of the item findings as show in Table 2.

The design questions in this app match to the topic of immersive learning, according to Table 3, the interaction design analysis, and the design of the button in this app only receives 66.7 percent of the experts. Every button in the app that works, including the user's button, the app's exit icon that makes it easy for the user to depart, the app's animation video that is acceptable, and the app that functions effectively without errors, requires 100 percent expert approval.

Table 3: Data Analysis From Evaluation of User Interaction Design

Bil	Items	Frequency		Percentage	Note
		Yes	No		
1.	Is the app's design appropriate for the weathering learning theme?	2	1	66.7%	Form 6 children require a more formal environment.
2.	Is the app's button design appropriate?	2	1	66.7%	
3.	Is every button in this app functional?	3	0	100%	There is no need for a caption because the size is too enormous.
4.	Is every button in this programme in accordance with the user's instructions?	3	0	100%	
5.	Is it easier for users to exit this programme because it has an exit icon?	3	0	100%	
6.	Are the animated videos in this application appropriate?	3	0	100%	
7.	Is it possible to use this programme without encountering any issues?	3	0	100%	

3.1 Discussion

The ADDIE approach is used to create of animated learning applications for the Form 6 Topic of Geography (Weathering). The Analysis phase, Design phase, Development phase, Implementation phase, and Evaluation phase are the five primary phases of this approach. Several pieces of software were used in the construction of the programme, including Adobe Animate CC, Adobe Illustrator CS6, Audacity, and all other applications required to create an animated learning application with multimedia features including animation, graphics, and text. The application process was designed in a logical manner, and the design also included the weathering process, which is a good learning tool. Experts have tested and assessed the animated learning applications, and based on the data analysis, it can be stated that all of the content, interface design, and user interaction generated in the application are suitable for use in studying Geography Subject. As stated by Saidu and Garba (2016), visual teaching and learning materials were inadequate for teaching and learning of geography in government secondary schools.

4. Conclusion

Form 6 pupils will be able to learn more visually about how the weathering process works with the animated learning application. The creation of this animated learning application could also be used as a reference material for Form 6 pupils preparing for the STPM exam. Overall, the developer was successful in creating the Animation Development Application for Form 6 Weathering Topics in Geography. The responses from all three experts were also positive, indicating that the aims and study questions had been satisfied.

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