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Kampus Sungai Petani

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‘VIEWFINDER’ MOBILE LEARNING APPLICATION FOR VIDEOGRAPHY AND CINEMATOGRAPHY BASED ON THE RULES OF PERSPECTIVE

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ABSTRACT

Perspective is a way to represent three-dimensional space on a two-dimensional, flat surface. It is one of the fundamentals of art that is very important, to be learned by an artist as a preparation for the new explorations in visual art. As for videography and cinematography, the understanding on linear and atmospheric perspective does play a significant role in producing meaningful results (story build-up, camera shot and composition). Poor understanding on the rules of perspective will lead to poor visualization, that causing less impact in the video. This research aimed to develop a learning aid that will assist in improving the understanding among film, media studies and multimedia course students on the rules of perspective in videography and cinematography. A mobile learning application named ‘Viewfinder’ with a dedicated lesson plan has been developed through this Design & Development Research (DDR). Data were collected through qualitative approach and analyzed using the six phases thematic analysis by Braun & Clarke (2013). Usability evaluation has been conducted using Mobile Goal Question Metric (mGQM) Model) and results proved that this mobile application is usable to assist and improve user’s understanding on linear and atmospheric perspective in videography and cinematography project.

Keywords: perspective, videography, cinematography, mobile application, learning aid

INTRODUCTION

In visual art, perspective is divided into two different types, which are the atmospheric and linear perspective. Linear perspective is the type of perspective that deals with lines and points. It consists of 4 components that are called Vanishing Point, Horizon Line (Eye Level Line), Orthogonal Line and Transversal Line. On the other hand, Atmospheric perspective (also known as aerial perspective) is a technique of creating the illusion of depth, or recession, in a very painting or drawing by modulating color to simulate changes established by the atmosphere on the colors of things seen at a distance. It deals with how the looks of an object are tormented by the area or atmosphere between it and the viewer (Martin, 2014). Both perspectives are the fundamental foundations for the novice learners in videography and cinematography related subjects. Linear, atmospheric perspective and movement based on these perspectives is part of cinematographic techniques that is important in completing a video project and it is also a common hurdle (Hewko, 2016). Poor understanding on the rules of perspective will lead to poor visualization, that causing less impact in the video (Andreas, 2017). This can be seen from the unsuitable selection of camera angles, flat and meaningless visuals and poor storytelling. Most of the students only thought that the elements of perspective are only meant for drawing, whereas it is actually can also be applied in videography and cinematography projects as well (Antoine, 2018). Thus, this research aim to develop a learning application dedicated to assist learners to use the element of perspective in their videography and cinematography projects.

MATERIALS & METHODOLOGY

This research employed the design and development research (DDR) based on the six DDR phases. The researcher will firstly test the reliability and validity of this research through a triangulation method analysis. Purposive sampling will be used in selecting the participants where six students from two classes from the Department of Graphic & Multimedia, Faculty of Creative Arts, Kuala Lumpur Metropolitan University College (KLMUC) will be randomly selected as the representative respondents. The classes are CBM 214 Digital Effects & Compositing and CBM 204 Digital Audio Video. These students were selected and categorized based on their level of results. They were grouped into low, moderate and high academic level based on the Student Achievement Report analysis. Two students from each group were selected respectively. They will involve throughout the research and all will be gathered and studied in a same focus group. Mr. Ahmad Ridwan Razak from Mira Digital, a company that is doing video and visual effects projects for local and international films will be involved in evaluating the newly developed mobile application learning aid. Two lecturers who have been teaching the subjects for semesters and years will be interviewed during the need analysis phase. The main purpose for this interview is to get their insight on the issues regarding the perspective among their students. All data will be collected using qualitative data collections, which are through document analysis, think-aloud protocol and interview. All students in the focus group will be gather in a studio where the think-aloud protocol and interview will be conducted. In analyzing the data set of this research, the researcher will adapt the thematic analysis steps by Braun & Clarke (2013). All data collected through think-

aloud protocols, interviews and survey forms will be manually analyzed, coded and converted into themes in order to formulate the research findings. Results from the triangulation have justified the relevancy of mobile application as the learning aid in this research. Thus, a new mobile application will be designed and used as the instrument in the next data collection phases.

‘VIEWFINDER’ APPLICATION DESIGN

The same layout design was used for all screens under each type of perspective where there are navigation buttons on the right and left screen position and one explainer video as themain content. This is to allow the user to click navigation button easily, with two hand positions, holding and use the application in a comfortable position. ‘Replay’, ‘pause’ as well as the ‘back to menu’ button, were placed on the right screen area, while the ‘back’ and ‘next’ button on the left screen area. The button designs for this mobile application are based on the Spatial Contiguity Principle in Mayer’s CTML where people learn better when corresponding words and pictures are placed near each other rather than far from each other on the page or screen (Mayer, 2009). The semiotic concept where applied where the main three icons (linear, perspective) as well as the types of perspective’s icon, the application logo icon (used for home button). White color is used to make the icon more vivid. Designing works were done in Adobe Illustrator. This Illustrator design files will be later imported into Adobe Flash during the final compositing and programming stage.

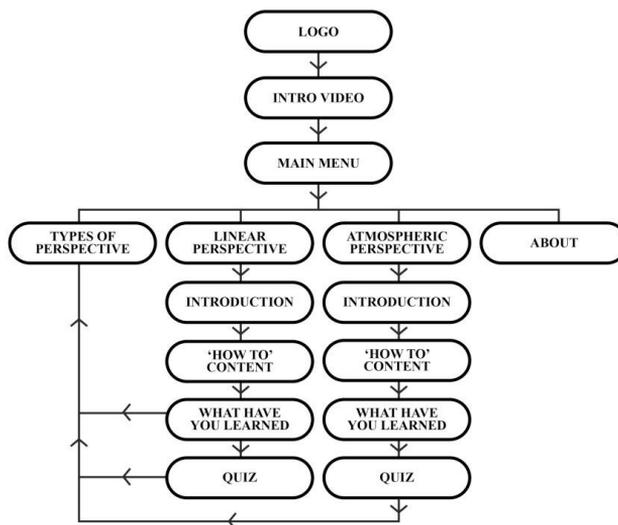


Figure 3.1 Application Flow Diagram



Plate 3.2 Usability Test with User



Figure 3.3 Viewfinder's Application's User Interface Design

RESULTS AND DISCUSSION

Findings of this research have been formulated from the analyzed data, which were collected through the usability evaluation. This usability evaluation that involved six students as respondents, consist of three different sessions, which are think-aloud protocol, evaluation tasks and interview. Coding process derived from students' responses has been conducted, listed and later simplified into themes in order to summarize the finding. This usability of mobile learning application was evaluated based on mGQM Model (Hussain, 2013). It can be seen that the themes emerged from all thematic analysis from three usability evaluations (think-aloud protocol, task and interview) are correlated. These themes then were mapped with the mGQM Usability Characteristics. Results indicate that the 'Viewfinder' mobile application learning aid has successfully met the characteristics, where most of the themes reflected the goal and guidelines proposed by this model. Table on the below shows the theme mapping:

Table 4.1 Thematic Analysis Map for Overall Usability Evaluation

<i>mGQM Usability Characteristic (Hussain 2013)</i>			Usability Evaluation Theme Mapping (Extracted from Students' Responses)
Quality Characteristic	Goal	Guidelines	
Effectiveness	Simplicity	-Ease to input the data	Understandable
		-Ease to use output	
Efficiency	Accuracy	-Ease to install	Noticeable
		-Ease to learn	
		-Accurate	
	Time taken	-Should be no error	Explorative
		-Successful	
		-To response	
Features	-To complete a task	Simple UI	
	-Support/help		
	-Touch screen facilities		
Satisfaction	Attractiveness	-Voice guidance	Memory retrieval
		-User interface	
			Prior Knowledge
			Better Learning Experience
			Clear Instruction
			Appealing
			Neutral Color

No issues highlighted related to any error and comments on the voice guidance. However there was only one student mentioning about tapping and swiping features in the mobile application, but not highlighting it as a problem for him when he was using the mobile application. These are the reasons that support the usability of this newly developed mobile application:

- i. This mobile application is understandable, has successfully improved learner's prior knowledge, retrieved what they have learned while using it and provides better learning experience on the topic of perspective in videography and cinematography.
- ii. The UI design with simple and noticeable UI components (buttons, videos, text, animation and other graphics) as well as the use of neutral and vivid color combination are also the aspects to be considered in ensuring the usability of this mobile application (interactive multimedia).
- iii. Clear instruction is also essential to ensure the usability of this mobile application (interactive multimedia), where it determined its efficiency in responding to user's input, as well as time taken to complete a particular task

CONCLUSION

Based on the list of application in Google PlayStore and Apple Store (2020), there is still no mobile application dedicated to support the understanding on perspective in videography and cinematography. This has become advantage for this newly developed mobile application when it comes to commercialization. In addition, learners from any learning institution with media studies, film and multimedia courses, as well as self-taught novice learners can also use it. However, the researcher would like to highlight that this application is not designed to replace the conventional classroom teaching and learning. It is more as a platform to support the lesson where the student could use it for revision and exploration. In order to improve and maximize the benefit of this mobile application, following recommendations were made. First, in order to ensure the learners clear on the objective of this learning aid, future research should study and prepare a demo session between the instructors (educator) with the learners in order to provide better explanation to use the application. They should not only depending on the 'about' menu in the mobile application learning aid because there was one student (respondent) tend to neglected the menu during the think-aloud protocol session and straight away went through the other menu and did not click this 'about' button until the end of the session. So, there is possibility for similar situation to happen in future, with different user (learner). Apart from that, in today's pandemic situation, we have seen how

physical class has been deliberately shifted to online. Online Distance Learning (ODL) is one of the ways to cope with learning condition right now. To support ODL, educators need to have tools that students can depend on without full supervision from lecturer. Educators are required to make open distance learning experience enjoyable to students because of the challenged to transform themselves to digital learning by providing the technology supports required for learning (Zuhairi, Karthikeyan, Priyadarshana, 2019). This is where Viewfinder learning applications play a significant role and become increasingly relevant.

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