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Multimedia Approach (Geo-Sirah) Development on Sirah Learning with Geography Elements: Primary School Students

Ernieza Suhana Mokhtar[1], Nur Amanina Rosley[2], Siti Zulaiha Ahmad[3], Jamalia Aurani[4], Noraain Mohamed Saraf[5]

[1,2]Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, Perlis Branch, Arau Campus, 02600 Arau, Perlis, Malaysia, [3]Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, Perlis Branch, Arau Campus, 02600 Arau, Perlis, [4]Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA, Perlis Branch, Arau Campus, 02600 Arau, Perlis, [5]Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, 40450 Shah Alam, Malaysia

Corresponding Author Email: ernieza@uitm.edu.my

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Abstract

Learning Sirah has a sequence of incidents, locations and dates that need to be recognised and understood during the journey of a particular story through reading. Most students easily get distracted quickly when engaged with much reading and lack the desire to learn only using traditional teaching methods. Therefore, the best alternatives should be applied in teaching and learning to stimulate and enhance students' interest in learning Sirah with the integration of multimedia and geographical element such as location, distance, coordinate, and direction. Thus, this study aims to enhance a prototype of the Geo-Sirah application for primary school students and obtain users' acceptance of the proposed Geo-Sirah prototype. ADDIE model was adapted to develop the prototype. The results showed that the mean score of perceived ease of use was higher than other criteria with 4.47, followed by intention to use the application (mean score = 4.39). The mean score obtained on perceive usefulness was 4.38 and attitude was 4.36. It shows that perceived ease of use, and intention to use the application in Sirah subject positively impacted user acceptance and interest in using the application to learn Sirah subject with the geography element through animated storytelling.

Keywords: e-Learning, Storytelling, Geography, Sirah, Islamic Education

Introduction

Education plays an essential role in producing a new generation capable of adapting to challenges and the revolution of technologies among young people and educators (Gašević et al., 2015). Technology offered-better quality in education which can improve the interaction between teachers, students and parents in different educational software such as educational games and instructional software has been introduced for learning and used

efficiently in remote rural areas and inner-city schools (Escueta et al., 2020). This could be applied to all kinds of courses either at primary, secondary or tertiary levels.

Islamic study is one of the syllabuses that have been introduced to students from the primary school level, in which Sirah is one of the learning contents. Moral learning consists of recitation, hadith, Aqedah, worship, Sirah and manners (Makhsin et al., 2012) and it is required memorizing history especially memorizing facts and describing the story of each event like the historical subject. Usually, teachers who practice conventional lecture methods in teaching can cause less interest in learning the subject including Islamic Education learning contents. The method used in teaching Islamic Education in Malaysia has also been questioned because the technique used by most Islamic education teachers is the lecture method compared to other methods such as watching videos, simulations, games, and quizzes (Rustham & ArifinMamat, 2012). Unfortunately, most Islamic Education teachers prefer the face-to-face learning method which leads to passive and uninteresting teaching and learning process in a classroom environment as well as could not grasp the Sirah story's whole flow, while only listening approaches are used in the classroom (Mustaffa & Rashid, 2019; Saifun et al., 2018).

Therefore, new alternatives need to facilitate the conventional learning process by providing media that contain educational elements and improve students' understanding and memory using multimedia technology (Guan et al., 2018) when using computer multimedia instruction such as audio, video, graphics, text and animation (Sharma & Pooja, 2015). Apart from using multimedia in the teaching and learning process, integrated geography elements can improve understanding, knowledge and skills through visuals and imagination (Mahat et al., 2020). Landicho (Landicho, 2020) highlights the potential of using Google Maps as a teaching tool to increase students' interest, improve their understanding of learning topics, and sharpen critical thinking skills among students. Data visualisation with animated maps can increase understanding of the location and distribution of phenomena as learners can apply and enhance spatial thinking for decision-making (Kinoti & Muchai, 2017; Mokhtar et al., 2021; Xiang & Liu, 2016).

Thus, an approach to the effectiveness of multimedia-based teaching techniques in Sirah subject combined with geographical elements to illustrate the location of historical events through storytelling and can be seen in a visualised map will relate to learning outcomes of modern teaching methods. Geo-Sirah prototype for teaching and learning of Sirah for primary school students can help students be more creative during their learning.

Methodology

The ADDIE model is a systematically simplified instructional design model used as a guide development of learning materials (Nadiyah & Faaizah, 2015; Richey et al., 2011; Wang & Hsu, 2009). According to Stapa & Mohammad (2019), more effective and efficient lesson plans and learning materials can be produced when the ADDIE model is adopted, and most researchers used this model to develop applications or software related to education. This study adopts the ADDIE model as the methodology, which consists of five (5) phases. The first and second phases were combined into one phase, as shown in Figure 1. This study carried out four (4) phases such as i) analysis & design, ii) development, iii) implementation and iv) evaluation. It illustrates the general methodology of this research. To achieve the aim and objective of the research works, there are several data processing had been done.

Analysing and Designing of Geo-Sirah Application

A questionnaire of the closed-ended question with a Likert scale as a preliminary investigation was distributed to 34 participants consisting of teachers who teach Islamic education and parents of primary school students to evaluate an initial prototype in which one (1) refers to strongly disagree and five (5) refers to strongly agree. This questionnaire used a closed-ended question in terms of interaction, navigation, interface design and audio. At the early stage, this study produced an initial prototype using Microsoft Powerpoint, ArcGIS, and Animaker software as the tools for the preliminary investigation.

ArcGIS software is used to establish the administrative-territorial of Saudi Arabia's country base map. It is purposely to present the geographical elements such as locations (coordinate, direction), regions, distance, and journey into the storytelling video based on the prophet's journey (Figure 2a). ArcMap is used to generate a 3-dimensional (3D) surface by converting the elevation data into the TIN and illustrating the Earth's surface of Saudi Arabia in ArcScene for animation (Figure 2b). The 3D surface is overlayed with the vector data of Saudi Arabia to show the boundaries between each state and labelled using 3-dimensional text. The spatial map was embedded into the application to help students in viewing the actual direction, coordinate etc. For navigation, the scene layer must enable the animated rotation to rotate the scene for animation and be integrated into the storytelling. Based on the result of the preliminary investigation, this study strategized the design, content, and interactivity of the application by producing an improved low-fidelity prototype. The crucial activities were designing the sitemap, character and graphic design, interface design and story-telling frame to be embedded into the low-fidelity prototype of Geo-Sirah Apps. Figure 3 depicts the sitemap of the proposed apps.

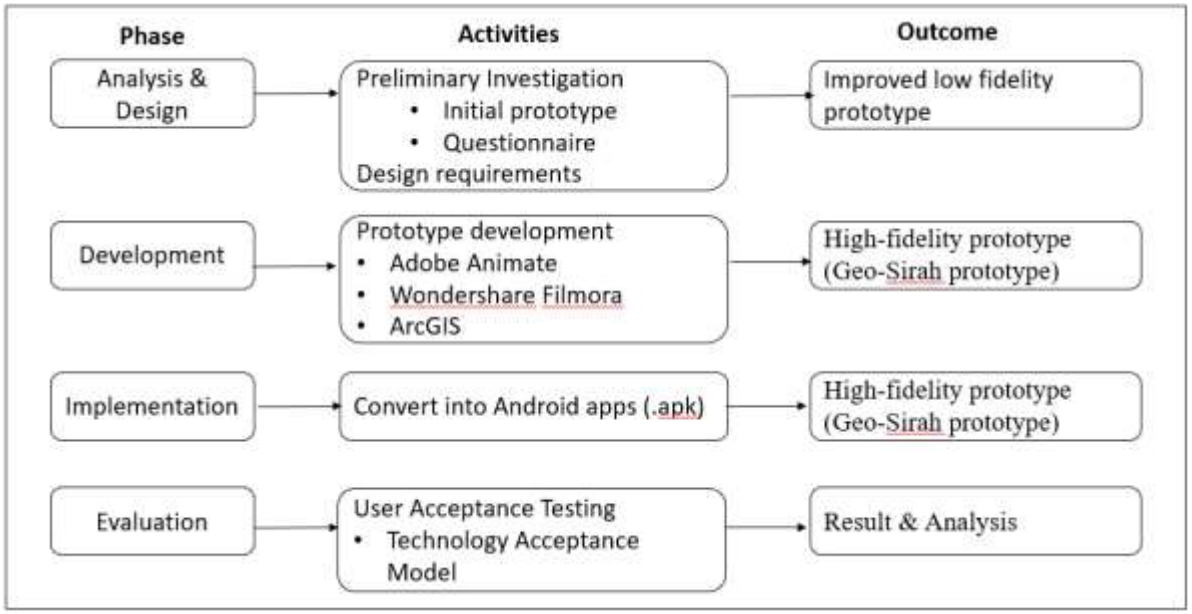

Figure 1: Research Methodology

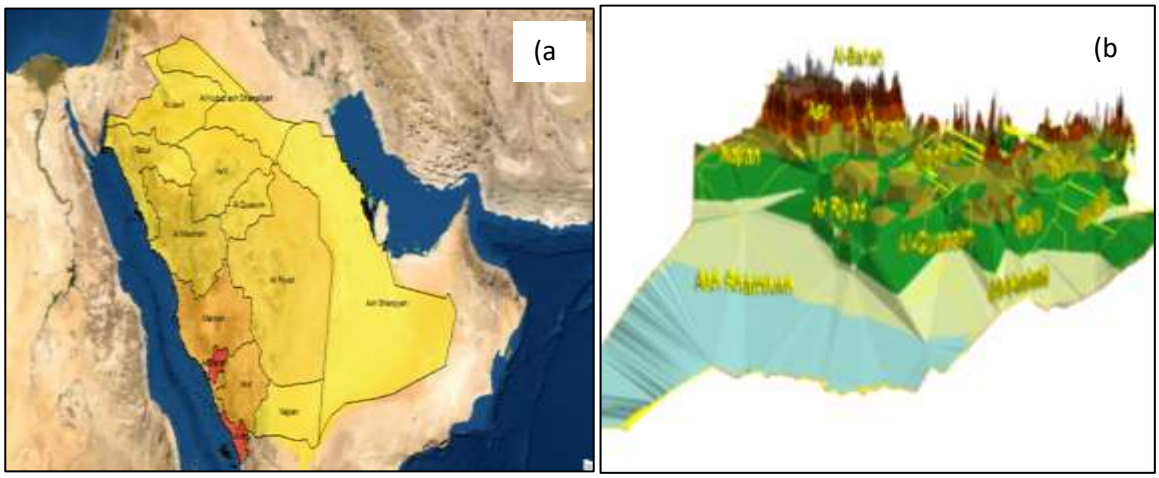

Figure 2: (a) Spatial Basemap and (b) 3D Surface using ArcGIS Software

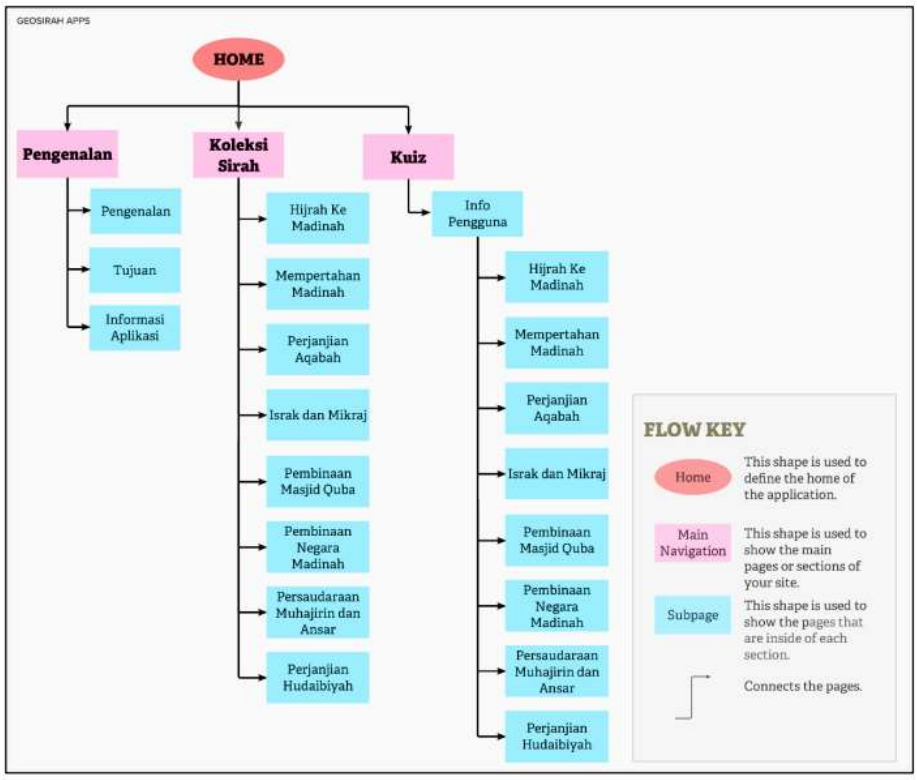

Figure 3: Sitemap of Geo-Sirah Application

Development of Geo-Sirah Application

Four (4) activities are involved in this stage, which is developing the prototype's interface, sound recording, captioning the videos, and applying multimedia elements in the prototype. The software used in the development phase is Adobe Animate and Audacity. Wondershare Filmora 9 is used to combine all the elements that have been designed such as graphics to illustrate the storytelling, animation, text, audio, and video and shows the geography elements. The audio narration of Sirah's journey is recorded using Audacity software with embedded the actual audio into a new character and exported the audio into mp3 format. The development of the application involved embedding storytelling videos that have been created into the application using Adobe Animate 2020.

Implementation of Geo-Sirah Application

The application is converted into an Android application package (.apk) using Adobe Animate. Then, it was published using embedded AIR runtime to be played on a smartphone. Having converted to android apps, Geo Sirah is ready to be explored by the targeted users.

Evaluation of Geo-Sirah Application

The evaluation of the prototype was carried out based on the user acceptance test, the Technology Acceptance Model (TAM) which is a theory of information systems that describes how users come to accept and use new technology. The questionnaire consisted of four (4) different components which are perceived ease of use (PEU), perceived usefulness (PU), attitude (ATT) and intention to use (BI) by using a five-point Likert Scale as shown in Table 1.

Table 1
Likert Scales

Description	Scale
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

Result and Discussion

Teacher and Parent's Perception of Geo-Sirah Implementation

Table 2 summarizes the result of descriptive statistics for interaction and navigation of the prototype. The result shows most of the respondents 19 (55.9%) agree compared to 15 (44.1%) strongly agree that the instruction provided in the application was helpful for students with a mean statistic of 4.44 and a standard deviation was 0.504. The prototype was built with the function of the menu button. The menu button of used as a key to enter from one section to another section. It found that 20 (58.8%) respondents strongly agree while the remaining respondents with 14 (41.2%) agree that the button was convenient to click. The mean and standard deviation was 4.59 and 0.500 respectively.

Table 2
Descriptive Statistics for Interface and Navigation

Description	N	Mean	Std. Deviation
1. Instructions provided can help students in using the application	34	4.44	0.504
2. Easy to click on the button	34	4.59	0.500
3. Understand the usage of each button provided	34	4.59	0.557
4. Each of the buttons in the applications is useful	34	4.47	0.563
5. Easy to navigate from one screen to another screen	34	4.41	0.609
Valid N (listwise)	34		

Geo-Sirah Application

A 3-dimensional (3D) surface of the state in Saudi Arabia was added to the Geo-Sirah application, which shows lowland and highland areas. It gives students a picture of the

topography of Saudi Arabia in a 3-dimensional view. They should also be able to narrate or explain the story in Sirah subject easily after watching Sirah videos for each topic during the teaching and learning process. As an additional benefit of using geography, students' thinking may be improved and polished to a higher level when learning the Sirah subject of Islamic Education. Captions were added in the storytelling video to make it easier for students to better understand the storyline. In terms of vocabulary knowledge, captioned videos were found to have a strong impact on learning and helped students to visualise what they have heard, resulting in a better vocabulary learning experience (Teng, 2019, 2020). The caption will allow learners to better integrate auditory information with visual input to acquire new words (Vanderplank, 2016).

Figure 4 illustrates the interface of the GeoSirah application, and it was in landscape mode. The application contained the opening with a logo created with a short sound effect for the application to attract the users and when clicked on the start button (Figure 3a), it will move to another scene according to its action applied to the system which was the introduction or the main page interface (Figure 4b). An introduction page provides information related to this application such as information about Geo-Sirah. Figure 4c shows the interface of the video section which consists of eight (8) different buttons for Sirah topics. It will help the user explore and start playing the video according to the selected topic (Figure 4d). When the quiz button was clicked, the main page of the quiz section will display where it has login information such as name and class (Figure 4e). The start button will navigate to the page consisting of the Sirah topic. Here the user can select the topic of the quiz to be answered (Figure 4f). Meanwhile, Figure 4g shows the question-and-answer options for the user to choose the correct answer based on the question given.

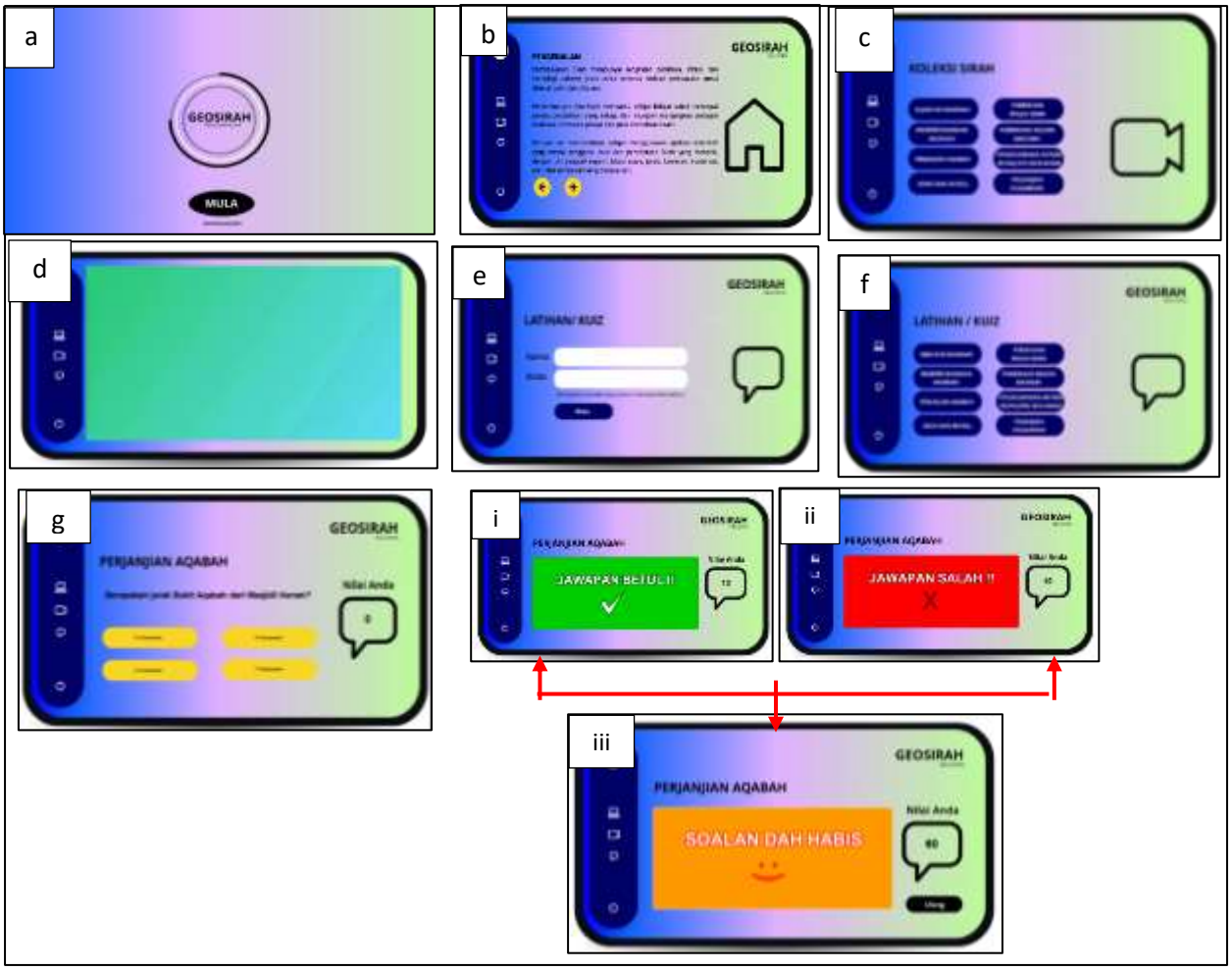

Figure 4: Geo-Sirah Application

User Acceptance

Figure 4 shows the result of the criteria for the user acceptance test which consist of perceived ease of use (PEU), perceived usefulness (PU), attitude (ATT) and intention to use (BI). The total mean for each question was used to obtain the mean value of each criterion. From the findings, perceived ease of use (mean score = 4.47) indicates that the application of Geo-Sirah in the geographic environment using multimedia technology for primary school students is easy to use and access the application as the features in the application were well displayed. Meanwhile, the overall mean for perceived usefulness (PU) was 4.38 as the respondents agreed that Geo-Sirah in the geographic environment using multimedia technology for primary school students was useful and effective as a teaching and learning tool which can improve students understanding of Sirah subject. For attitude (ATT) towards the application, the mean score was 4.36. It highlighted participants' positive attitude towards using the application for teaching and learning which will be useful in delivering learning content. Lastly, the mean score of 4.39 shows the result of the mean for intention to use (BI) Geo-Sirah in the geographic environment using multimedia technology in the study lesson. This indicates that participants had an intention to use the application as a teaching and learning tool when having access to the application.

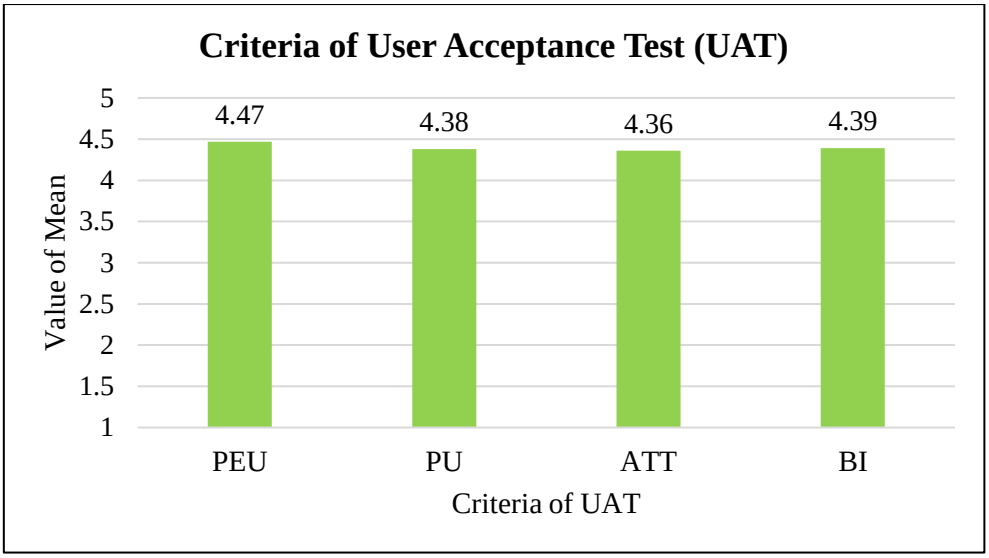

Figure 4: User Acceptance Test (UAT)

Conclusion

Nutshell, the purpose of the study is to improvise the prototype and evaluate the acceptance of the application among teachers, parents, and students. Innovation in the teaching and learning of Sirah using multimedia technology integrated with geographical elements that include location, distance, coordinate, and direction is a necessity in today's increasingly challenging education to improvise the environment in Islamic Education. This study extracts the story of The Prophet's journeys based on the primary school Islamic syllabus, which consists of the topography of Saudi Arabia related to the Sirah story. The stories of the journey in Geo-Sirah Apps comprise eight events starting from "Hijrah Madinah" to "Perjanjian Hudaibiyah". A positive perception was obtained from teachers and parents towards Sirah in the geographic environment using multimedia technology as participants found the prototype contained interesting storytelling, easy to understand, creative and innovative. The teachers found that it is easy to explain the Sirah story by visualizing the area of the events and they believe that the student could internalize the contents in an interesting approach. A positive influence on perceived ease of use and intention to use the application in Sirah subject as these criteria obtained the highest mean score with 4.47 and 4.39 respectively. The use of mobile technology makes the teaching and learning system easy to use and promotes a new environment in learning when geographical elements are integrated into the storytelling of Sirah. It may also be a beneficial and effective tool in the development of new methods and techniques in teaching and learning Sirah when the storyline is combined with elements of geography and able to access the application without difficulties. Therefore, students should be exposed early to the geography approach in Islamic Education where students can explore, analyse, understand, and think beyond the box.

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References

Escueta, M., Nickow, A. J., Oreopoulos, P., & Quan, V. (2020). Upgrading education with technology: Insights from experimental research. *Journal of Economic Literature*, *58*(4), 897–996. https://doi.org/10.1257/JEL.20191507

Gasevic, D., Dawson, S., Siemens, G., Gasevic, B. D., & Dawson, S. (2015). Let's not forget: Learning analytics are about learning. *TechTrends*, *59*(1), 64–71. http://www.scopus.com/inward/record.url?eid=2-s2.0-84919797752&partnerID=tZOtx3y1

Guan, N., Song, J., & Li, D. (2018). On the advantages of computer multimedia-aided English teaching. *Procedia Computer Science*, *131*, 727–732. https://doi.org/10.1016/j.procs.2018.04.317

Kinoti, K. D., & Muchai, M. M. (2017). Bridging Geo technology Competence Gaps among Kenyan Undergraduate Students : An Interdisciplinary GIS Training Model at Chuka University. *International Journal of Education, Culture and Society*, *1*(3), 70–74. https://doi.org/10.11648/j.ijecs.20160103.11

Landicho, C. J. B. (2020). Senior High School Students ' Perceptions and Attitudes toward the Use of Google Maps as Instructional Tool in Earth Science. *The Normal Lights Journal On Teacher Education*, *14*(1), 141–168.

Mahat, H., Arshad, S., Saleh, Y., Aiyub, K., Hashim, M., & Nayan, N. (2020). Penggunaan dan penerimaan bahan bantu mengajar multimedia terhadap keberkesanan pembelajaran Geografi The use and acceptance of multimedia teaching aids on the effectiveness of Geography learning. *Malaysian Journal of Society and Space*, *16*(3), 219–234. https://doi.org/doi.org/10.17576/geo-2020-1603-16

Mokhtar, E. S., Nasirun, N., & Syafiqah, N. (2021). Measuring Cognitive Level using Informative Map among Secondary Students : A Quasi-experimental Approach. *Insight Journal Vol.*, *8*(2), 1–10.

Mustaffa, A., & Rashid, A. A. (2019). Teaching Methodologies In Islamic Education In 21 st Century ; Challenges And Perspective. *International Conference in Islamic Education: Rabbani Education 2018*, *March*.

Nadiyah, R. S., & Faaizah, S. (2015). The Development of Online Project Based Collaborative Learning Using ADDIE Model. *Procedia - Social and Behavioral Sciences*, *195*, 1803–1812. https://doi.org/10.1016/j.sbspro.2015.06.392

Richey, R. C., Klein, J. D., & Tracey, M. W. (2011). *Conditions-based theory. The Instructional Design Knowledge Base: Theory, Research, and Practice* (First, Vol. 15, Issue 2). Routledge.

Rustham, N., & ArifinMamat, A. (2012). Teaching Methodologies in a Weekend Madrasah: A Study at Jamiyah Education Centre, Singapore. *Journal of Arts and Commerce (IJAC)*, *1*(2), 148–170. http://www.ijac.org.uk/images/frontImages/Vol_1_No_1_/Vol._1_No._2/11.pdf

Saifun, M., Mohd, A. B., Fadzil, M., Kamarudin, B., Hasrul, M., Muhammad, M., Nizan, S., & Esrati, M. Z. (2018). The Teaching and Learning of Sirah using the Game Method among Gifted Students. *The 3rd International Conference On Education In Muslim Society (ICEMS 2017)*, *September*.

Sharma, H. L., & Pooja. (2015). Computer Multimedia Instruction versus Traditional Instruction : An Experimental Study. *International Journal of Scientific Research*, *4*(5), 740–742.

Stapa, M. A., & Mohammad, N. (2019). The Use of ADDIE Model for Designing Blended

Learning Application at Vocational Colleges in Malaysia. *Asia-Pacific Journal of Information Technology and Multimedia*, *8*(1), 49–62.

Wang, S. K., & Hsu, H. Y. (2009). Using the ADDIE model to design second life activities for online learners. *TechTrends*, *53*(6), 76–81. https://doi.org/10.1007/s11528-009-0347-x

Xiang, X., & Liu, Y. (2016). Understanding ' change ' through spatial thinking using Google Earth in secondary geography. *Journal of Computer Assisted Learning*, 1–14. https://doi.org/10.1111/jcal.12166