ArabKafa3: PERSUASIVE ARABIC LANGUAGE E-LEARNING PORTAL

Siti Saudah Binti Mohd Ghani[1], *Elly Johana Binti Johan[2], Wan Anisha Wan Mohammad[3],
Azlina Mohd Mydin[4] and Syarifah Adilah Mohamed Yusuf[5]

[2,3,4,5]Jabatan Sains Komputer & Matematik (JSKM),
Universiti Teknologi MARA Cawangan Pulau Pinang, Malaysia

[1] Fakulti Sains Komputer & Matematik (FSKM)
Universiti Teknologi MARA, Cawangan Terengganu, Malaysia

*Corresponding author

ABSTRACT

The Al-Quran and Fardu Ain Class Program (KAFA) has been in place since 1990 with the goal of strengthening the foundations of Islamic education for children aged 7 to 12. The approach stresses reading the Al-Quran with tajwid and strengthening Fardu Ain's principles among his students, including knowledge of Arabic, and writing Jawi. Students who are not fluent in Jawi may struggle with Arabic comprehension. However, students currently show less interest in learning Arabic, and learning portals have become popular but not always effectively designed. To address this, the Arabic e-learning portal, ArabKafa3, will use persuasive technology principles like tunneling, liking, cooperation, and self-monitoring. In this project, three objectives have been identified that is to identify the requirements for developing Arabic Language E-Learning portal, to design and develop Arabic Language E-Learning portal using persuasive technology, and to evaluate the functionality and usability of Arabic Language E-Learning portal. ArabKafa3 targets third year KAFA students, utilizing the ADDIE Model methodology and incorporating persuasive technology in interface design. Testing for efficiency and effectiveness, functionality testing using test cases, expert evaluation, and usability testing have been made to ensure the portal's success in enhancing Arabic learning for primary 3 KAFA students.

Keywords: Persuasive Technology; KAFA; Arabic, ADDIE Model Introduction

Introduction

The Al-Quran and Fardu Ain Class Program (KAFA) had been in place since 1990 with the goal of strengthening the foundations of Islamic education for children aged 7 to 12. The approach stresses reading the Al-Quran with tajwid and instilling Fardu Ain's principles in his students, such as arabic knowledge and writing Jawi. KAFA Primary School was the first medium for developing a generation of Arabic Language masters. However, learned in KAFA schools differs significantly from learned in government-aided daily primary schools due to insufficient infrastructure, a short period of time, and some of the teachers being graduates of modest academic education (Ros et al. 2022). The success of the teacher was determined by the learned process of the students' reactions as well as their interaction in the lesson. Students who were not fluent in Jawi would struggle to read and understand Arabic. According to a previous study, students believed they had low self-confidence and motivation, and they were also sceptical of their ability to master Arabic because Arabic was a difficult language (Kassim et al. 2017). One of the major issues in teaching and learning Arabic was students' passive attitude (Lubis et al. 2014).

Technology could be used as persuasive tools to persuade students to learn in an enjoyable manner. Persuasive Technology (PT) refers to technologies that aimed to change an individual's behavior through persuasion and social influence (Caraben et al. 2014). Aside from motivation and persuasion, strategy was the most important component of PT architecture (Oinas-Kukkonen 2013;

Oinas-Kukkonen & Harjumaa 2018). To design a system based on PT architecture, the persuasive technique or strategy to motivate behavioral changes should been carefully considered. According to the findings of Nor Aziah et al. (2017), the Persuasive System Design (PSD) designed by Oinas-Kukkonen & Harjumaa (2018) was a comprehensive framework for planning and evaluating the PT.

The PSD model proposed by Oinas-Kukkonen (2018) consists of four design principles that should been considered when developing a prototype or application. The four categories were primary task support, dialogue support, system credibility support, and social support. The primary tasks support focusing on what the primary tasks should been. Dialogue support refers to computer-human dialogue that aids in the achievement of goals. The system credibility support category discusses how to design a system so that it was more realistic and persuasive. The social support category describes how to design the system so that it motivates users by leveraging social influence.

There was a total of 28 principles of PSD as explained by Oinas-Kukkonen & Harjumaa (2018). Not all PSD principles had been applied in this researched domain. Recognizing the problem and the positive impact of persuasive technology in education, an arabic language e-learning portal (ArabKafa3) had been developed through the adaptation of persuasive technology involving the principles of tunneling from primary task support category, liking and self-monitoring from dialogue support category as well as cooperation from social support category as shown in Table1

Table 1:   Persuasive Technology Principles Adapted in ArabKafa3

Requirement	Description	Category	Persuasive Technology Principles
An e-learning portal should guide students in the process of changing their attitudes by favourably impact for action that brought them closer to the desired behaviour.	Used the ArabKafa3 to guide students through a process or experience provides opportunities to persuade along the way.	Primary Task Support	Tunneling
An e-learning portal should have a looked and felt that appeals to students.	Arabkafa3 was visually attractive for students was likely have been more persuasive.	Dialogue Support	Liking
An e-learning portal should provide means for students to track their performance or status.	ArabKafa3 monitors one's own performance or status and assists the student in reaching goals.	Dialogue Support	Self-monitoring
An e-learning should provide means for cooperation.	ArabKafa3 could persuade students to adopt a desired attitude or behaviour by leveraging people's natural desire to cooperate.	Social Support	Cooperation

ArabKafa3 could help students learn Arabic because the characters appeared with colors, text, images, sounded, animations, and movies. In addition, the inclusion of woodwall, a web application with interesting educational and interactive quiz-based games, would increase children's interest in ArabKafa3. ArabKafa3 was developed using the ADDIE model methodology, and the interface design of ArabKafa3 based on persuasive technology principles was discussed in this study.

Methodology

The ADDIE model was used in the development of Arabkafa3. By modifying the process in the ADDIE model, the method was used to define the progress required to complete the project. The five phases of the ADDIE model are depicted in Figure 1.
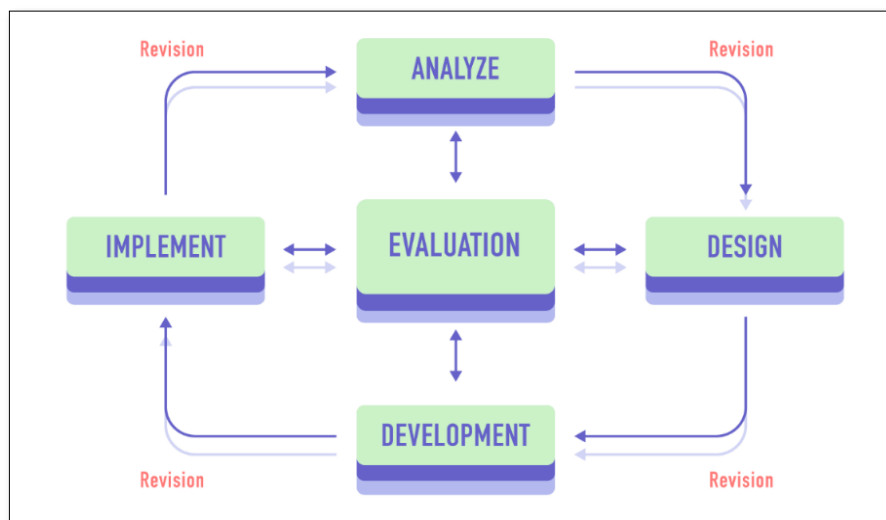
Figure 1: Phase in ADDIE Model
(Source: https://www.learnupon.com/blog/addie-5-steps/ *-Eoghan Quigley, 2022)*

The ADDIE model described a process that had a systematic flow and began at the beginning. There were five phases involved: analysis, design, development, implementation, and development. These five steps demonstrated dynamic, customizable training in the development of powerful training and performance support systems. The five phases of the ADDIE model were applied to Arabkafa3. Table 2 depicts the project framework for this e-learning portal.

Table 2: The Project Framework

Phase	Objective	Activities	Technique / Tool	Outcomes
Analysis	To identify the requirements for developing Arabic Language E-Learning Portal	Identify the current business and problem statement	Observation	Current business processes and problem statements are identified
		Conduct Interviews	Interview through Google Meet	Analyzed results to support the problem statement
		Planning the process throughout this project	Microsoft Excel	Gantt Chart
Design	To design and develop the Arabic Language E-learning Portal using persuasive technology.	Design Sitemap	Draw.io	Sitemap
		Design Storyboard	Microsoft PowerPoint	Storyboard
		Design Wireframe	Microsoft Word	Wireframe
Development		Develop interactive education e-learning portal consisting of multimedia elements	-Adobe Animate -Adobe Photoshop -Adobe Audition -Live Movie Maker -Google Site	Create text, video, image, buttons, sound, animation, record, and contain quizzes and lessons.

Implementation	To evaluate the functionality and usability of Arabic Language E-Learning e-learning portal.	ArabKafa3 publish in Web App.	Web Application used link from google sites on the website	ArabKafa3 System is implemented.
		E-learning portal functionality is tested		Functionality test e-learning portal
Evaluation		Create suitable questionnaire	Research for a suitable Questionnaire	Functionality testing result
		Test the e-learning portal usability.	Respondent from expertise	Usability testing result

Results and discussion

ArabKafa3 was evaluated from the standpoint of its users during the usability evaluation. The evaluation included 40 respondents who provided valuable feedback. This feedback enabled the developer to understand the improvements needed to improve ArabKafa3, making it more user-friendly and widely accepted. The evaluation used descriptive statistical methods such as mean, mode, and standard deviation to effectively analyse the data. These measures aided in gaining valuable insights from the feedback of respondents. The questions in the evaluation section focus:

A. Usefulness: Assessing the degree to which ArabKafa3 is helpful and beneficial to users.
B. Satisfaction: Measuring user satisfaction with the e-learning portal and its features.
C. Ease of Use: Evaluating how user-friendly and straightforward ArabKafa3 is to navigate and interact with.
D. Ease of Learning: Gauging the perceived ease of learning and understanding the content provided by the portal.

Table 3 displays the mean, mode, and standard deviation values of user evaluations for all constructs in ArabKafa3. The mean values range from 4.65 to 4.69. Notably, construct C has the highest mean, representing "ease of learning," with a mean of 4.69 (SD = 0.48). This indicates that respondents are particularly interested in the ease of learning provided by this e-learning portal across all constructs. Figure 2 shows a bar chart depicting the overall results of the constructs.

Table 3: Analysis of the overall results with mean, mode, standard deviation

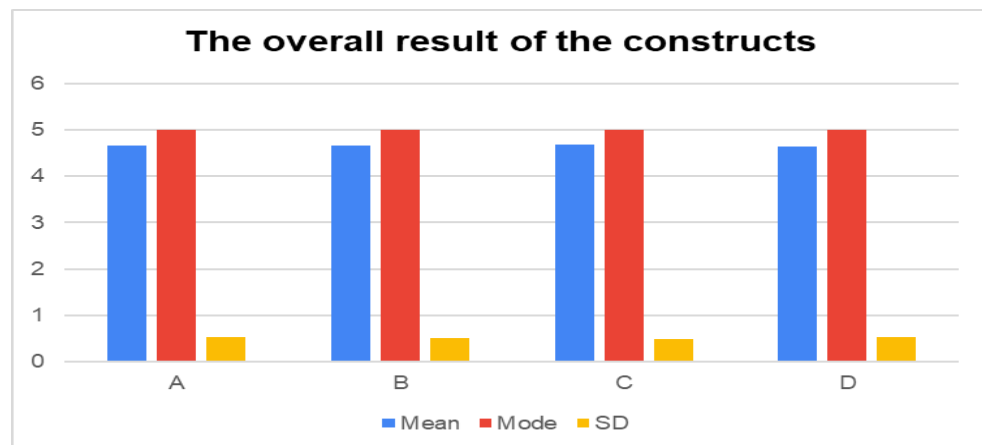| No.	Construct	Mean	Mode	Standard Deviation (SD)
A	Usefulness	4.67	5	0.54
B	Ease of Use	4.67	5	0.52
C	Ease of Learning	4.69	5	0.48
D	Satisfaction	4.65	5	0.52

Figure 2: An analysis of the graph's overall results of the construct

Conclusion

The multimedia elements and the presence of persuasive technology within ArabKafa3 have proven to be effective in assisting KAFA year 3 students in better learning and understanding Arabic. ArabKafa3 e-learning portal has been accepted as an additional resource that provides a creative approach to enhancing students' learning experiences.

Corresponding author

Elly Johana binti Johan, Jabatan Sains Komputer & Matematik (JSKM), Universiti Teknologi MARA Cawangan Pulau Pinang, Malaysia

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