Teaching Prayers for the Guidance of Mu'allaf (Newly Riveted Muslim): An Android Application Design and Development Research

Suhaizal Hashim[1]*, Nur Najihah Abu Yazid[1,] Noor Hidayah Che Lah[2]

[1]Universiti Tun Hussein Onn Malaysia
[2]Universiti Pendidikan Sultan Idris
*suhaizal@uthm.edu.my

ABSTRACT

Mu'allaf is a call for non-Muslims who hope to convert to Islam or inherited Islam whose faith still needs to be supported and strengthened. It is the responsibility of Muslims to give support and strength to Mu'allaf who are now considered brothers in religion, especially in the form of welfare, moral, financial, and learning assistance. When a non-Muslim has entered the religion of Islam, he must learn the ritual of prayer and perform it to the best of his ability as a person who has just learned Islam. However, interpreting these prayers with a guidebook alone is insufficient; considering that they need additional help in terms of words and actions. The Prayers Learning Application is a new method to learn prayers that are taught digitally using the portable platform of Android. Thus, the purpose of this study is to design and develop an android application for teaching prayers for the guidance of Mu'allaf. This android application includes multimedia elements to attract and help users better understand delivering prayers. The study's methodology was based on design and development research (DDR) and Waterfall Model was used as a guide in developing this android application. Adobe Animate 2021 was chosen as a development platform, using Action Script 3.0 as the programming language to develop this android application. This application consists of four modules which are Prayer Note, Prayer Time, Simply Prayer, and Prayer Videos. Three experts from a local higher education institution were appointed to evaluate this android application in terms of its functionality through content, interface, and interaction design. The data analysis is acquired in the form of frequency and percentage. Results revealed that this android application is suitable for new learners, which is the mu'allaf community to learn about prayers. In addition, this android application is expected to provide a positive impact in terms of functionality and usability in the future, especially in teaching prayers for the guidance of Mu'allaf. The application of mobile learning is indeed providing a very useful opportunity to deliver Islamic knowledge widely.

Keywords
Mu'allaf community; Prayers Learning Application; Android application

Introduction

A Mu'allaf is an individual who has recently converted to Islam or inherited Islam whose faith still needs to be supported and strengthened (Sabian et. al, 2019). This group requires assistance in learning about religion, particularly how to pray and other fundamental aspects of Islam. Islamic education for Mu'allaf is one of the most important components in preaching to people who have just embraced Islam. The basics of education include several important aspects such as history, culture, economy, politics, administration, psychology, and philosophy (DeCuir, 2019).

All of these educational foundations are mutually helpful in the process of implementing an education system. Each foundation is not a separate field of knowledge, but it is some of the knowledge and its branches that are also part of the education system and organization as a whole (Badshah & Ullah, 2021). Higher education for Mu'allaf is not only focused on religious education but also academic and professional higher education including science, engineering, and social science. This can certainly free them from the hardships and complications of life and can help other converts in the long run. With the birth of human capital and intellectuals among converts, of course, they will be able to involve themselves together in the development and progress of the country (Oberoi & Trickett, 2018).

According to Bakar & Ismail (2018), the number of Mu'allaf registered in Malaysia from 2000 to 2012 is 106,747 people, based on the information given by Malaysia's Islamic Development Department (JAKIM). This proves that Islam's acceptance in Malaysia has been well embraced. Consequently, these Mu'allaf must acquire accustomed to and practice themselves in areas of religious instruction, where they must transition from formal to practical conversation relating to the practice of prayer. Bakar & Ismail (2018) also added that these classes can be acquired through specially prepared non-governmental organizations (NGOs) such as the State Islamic Religious Council, the State Islamic Religious Department, and many more. However, there is a shortage of manpower to meet the needs of the growing number of Mu'allaf.

When a non-Muslim has entered the religion of Islam, he must learn the ritual of prayer and perform it to the best of his ability as a person who has just learned Islam. However, interpreting these prayers with a guidebook alone is insufficient; considering that they need additional help in terms of words and actions. Moreover, this group Mu'allaf's approach to increasing their knowledge and understanding is centered on basic prayer manuals available on the market including books, magazines, and other publications. However, interpreting these Mu'allafs' prayers with a guidebook alone is deficient; they require additional assistance with a multimedia approach. This assertion is consistent with Kumar et. al, (2020) study, which contends that the creation of multimedia-based application software allows users to autonomously control their learning and be more effective.

Similarly, Razalli et. al, (2021) noted that the utilization of applications can improve the quality of evaluation and prayer performance. Additionally, Islamic applications are easy to find, save time, and are free of charge. Nevertheless, there are prayer applications that are already available on the market that Mu'allaf can use, as the software was designed to demonstrate step by step process on how to pray (Tias et. al, 2021). However, most of the prayer application is exclusively available to Hanafi madhab (school of thought) follower and doesn't suitable to be used by Malaysian Mu'allaf.

The plethora of learning gadgets available in this highly advanced era has made the learning process easier. Apart from computers, smartphones are one of the most important necessities in human lives, where practically all communication and self-learning are done through technology (Julianingsih, 2021). "Everything is at your fingertips," as the phrase goes, as long as you have adequate internet access. There is no doubt that the existence of smartphones can aid in the transition to a comprehensive information source. This is true not only in Malaysia but also in other countries where smartphones and internet connections are becoming more ubiquitous.

According to Goggin (2021), smartphone applications span sectors that improve people's lives, and there are already over 300 million applications for Android and the iPhone Operating System (iOS) that were created in 2011. Without a doubt, existing facilities are one way for the community to better understand the learning process. Besides, religious aspects such as prayer guides, fasting guidelines, and funeral management instructions are available for Android and iOS as reference and learning resources. Furthermore, the use of multimedia is considered to be based on a material or reference that contains an interesting image. According to Girwidz & Kohnle (2021), multimedia elements such as text, graphics, animation, simulation, audio, and video must be included in media-based learning. As a result, this predicament provides motivation and chances for developers to develop an application for teaching the Mu'allaf the fundamentals of prayer.

Henceforth, the purpose of this study is to design and develop an android application for teaching prayers as guidance of Mu'allaf. This android application includes multimedia elements to attract and help users better understand delivering prayers. However, this study solely focused on Malaysian Mu'allaf according to Shafie madhab (school of thought).

Methodology

This study employed to design and development research (DDR) to design and develop an android application for teaching prayers as guidance of Mu'allaf. The approach formulated is based on DDR empirically (U. The design of the application was based on the DDR form proposed by Brown and Collin in the 1990s and Waterfall Model. This model was selected because each phase in this model is compatible with the development process of this application as it works well for a small project where the requirements are very well understood (Nuraini, Rumanti & Anggara, 2021). The Waterfall Model includes five phases: planning, analysis, design, development, and maintenance. It is also

one of the most common methods used in research to test theory and validate its practicality because phases are processed and resolved one by one and will not overlap. According to the DDR approach, there are three main phases, as illustrated in Table 1.

Table 1. Implementation of DDR Phase

Phase	Type of Development
Phase 1: Requirement Analysis	Literature Review
Phase 2: Design and Development	Development of the application
Phase 3: Functionality	Quantitative Method (Questionnaire)

Sampling

A purposive sampling method that has been used is in a form of non-probability sampling in which researchers rely on their judgment when choosing members of the population to participate in their surveys (Sharma, 2017). The respondents of this study involved three experts and they were asked to evaluate the application in terms of functionality via a questionnaire. The criteria of the selected experts are: (i) an academician from the field of Information Technology and Multimedia Creative, (ii) an academician teaching in a local institution of higher learning, and (iii) an academician have extensive knowledge and experience in the field of study.

Instrument

The checklist form was given to the experts involving an academician who is a skilled person with extensive knowledge and experience in Islamic Studies and 2 academicians in the creative multimedia field from a local higher education institution in Johor, Malaysia. In the checklist form, Part A consists of items (7 items) of application content design, Part B consists of items (10 items) of application interface design and Part C consists of items (5 items) of application interaction design. The level of agreement was calculated using a percentage and two scale options (Yes/No), with score values ranging from 0% to 100%. The researchers opted to use this scale as it was easier to collect data and would provide an accurate assessment in explaining respondents' feedback.

Data Analysis

The checklist form was given to the experts involving an academician who is a skilled person with extensive knowledge and experience in Islamic Studies and 2 academicians in the creative multimedia field from a local higher education institution in Johor, Malaysia. In the checklist form, Part A consists of items (7 items) of application content design, Part B consists of items (10 items) of application interface design and Part C consists of items (5 items) of application interaction design. The level of agreement was calculated using a percentage and two scale options (Yes/No), with score values ranging from 0% to 100%. The researchers opted to use this scale as it was easier to collect data and would provide an accurate assessment in explaining respondents' feedback.

The Design and Development of the Application

This android application includes multimedia elements to attract and help users better understand delivering prayers. The study's methodology was based on DDR research and Waterfall Model was used as a guide in developing this android application. The Waterfall Model was chosen for this study because it is simple to use and comprehend, as well as easy to plan and design the application. This model is indeed straightforward and classic with a linear application flow. Despite that, by employing this model, the activities carried out to develop the application were sequential. Besides, this model can also focus on errors that occur in each phase (Desiani et. al, 2022). This means that if an error occurs in the first phase, it must be resolved before proceeding to the second phase. This will make the developers more aware of the activities that have been carried out during each phase (Lucitasari & Khannan, 2019). Moreover, this model can speed up the activities and processes involved in each phase of this application development. The design phase entails application design such as input, output, and user interface design, to develop a learning strategy that has been embedded through this application. As a result, the established plan has made it easier for the researcher to adhere to the timeline and create efficient applications. Figure 1 shows The Waterfall Model that was used as a guide in developing this android application.
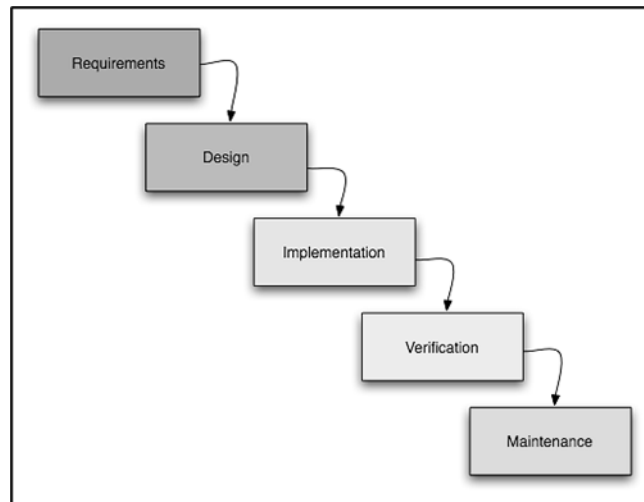
Figure 1. The Waterfall Model (Royce, 1970)

Planning is one of the key components in this Waterfall Model that researchers use to plan all aspects of teaching, learning, and research. The selection of the Waterfall Model is also believed to offer numerous benefits throughout the development process of the application since it simplifies the development process from one phase to another. Moreover, the development of this learning application makes use of certain media elements that include images, audio, video, animation, and text for learning the basics of prayers. According to Salehi (2022), the development phase is a systematic framework capable of knowing and forming educational materials that are designed by using materials like suitable hardware and software. This model approach's five key phases were used as a guide for product development in this process:

Planning Phase

In the first phase of planning in the Waterfall Model, the researcher must determine and fully comprehend the target user, and existing problems, and step in solving the problems that arise before moving to the next phase. At this phase, the study's scope and objectives were also decided to highlight the relevance of why this product needs to be built by the researcher. This is because the information gathered will be examined and studied to aid in the conduct of research. The first step in product development is to define and describe the problems that arise. The research was conducted by reading journals and previous studies. Based on the reading, the problem that this group of Mu'allaf commonly faces is difficult to understand, and there is no easy guidance for this group to perform compulsory prayers. Hence, simply reading the guidebook will not help this group fully comprehend the information. Furthermore, the necessity to perform obligatory prayers demands not just reading but also praying practice. After discovering the issues, the data can be used to design an application to assist this group of Mu'allaf.

Analyse Phase

In this stage, the researchers examine the application's content as well as the study's three objectives, which are to design and develop the android application in teaching prayers for the guidance of Mu'allaf and to test the applications' functionality in terms of content, interactions, and interface design. This phase entails specifying in detail what the researcher must commence to assist and support the development of the application. This phase also examines the collection of information on understanding the basics of prayer, the content of madhab, and so on. Detailed data analysis has been performed in this phase to determine the requirements and authentic sources for developing this application with Islamic characteristics. The results of the analysis are compiled and summarized into a conclusion that permits this application to be developed to achieve the study's objectives. Table 2 shows the five primary criteria that were reviewed during the evaluation process before developing the android application:

Table 2. Selection of Analysis in Design Criteria

| Criteria	Explanation
Functionality	This design should have an operational value where the design developed fits or meets the scope of the study.
Controllability	Consumers need to manage the products that are guided by the manual provided so that the operation of the production system can be shown.
Design	The development of the application must be compatible with the functions and operating methods used for teaching and learning purposes.
Agility	The selection of materials for the development of the application must be taken into account since it also involves the product's durability and is able of functioning properly.
Economic	The cost, time, and energy of the application development are quite low and affordable with its functionality as an effective tool for teaching and learning purposes.

Design Phase

The design phase is the key factor in determining how an application performs and runs. Thus, the journey of this application will be sketched out ahead of time to ensure that the development process works smoothly and orderly. Besides, the application's interaction types, navigation systems, and the setting of appropriate multimedia elements will be determined. Content, interaction, and interface design are the three crucial categories of the design described by the researchers. In addition, the researchers have gone through the process of creating a storyboard based on the findings of the overall investigation and data collection. The storyboard is a diagram that depicts the information layout, sequence, and detail for the produced android application's presentation display. The storyboard is transformed into a visual representation of concepts and ideas. Moreover, it is generated based on the content in the design phase using the appropriate manner depending on the demands and suitability of the target user. This method allows the entire picture of the program to be represented, and if there are flaws, they will be spotted early, allowing the application development process to go smoothly and efficiently. Hence, the researchers have stated that three types of design have been integrated, including content, type of interaction, and type of presentation for multimedia elements that have been placed according to the analysis phase. The storyboard was created using Microsoft Word as a sketching tool because it is simple to use, as well as tidy, and easy to read. Table 3 shows the preparation and planning process for the main components and consumables of the android application in teaching prayers for the guidance of Mu'allaf:

Table 3. Application Design

| No	Design	Display and description
1.	Content Design	 The content design process is the process of explaining the purpose of the application and organizing the content into a design that can help to achieve the purpose of the application development. The content in this application includes introductions, user manuals, notes, and quizzes.

2. Interface Design
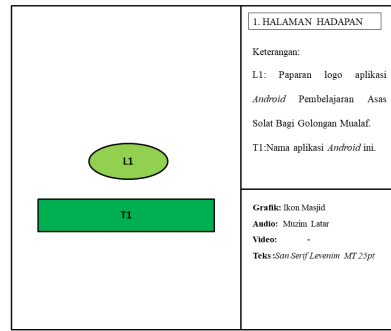
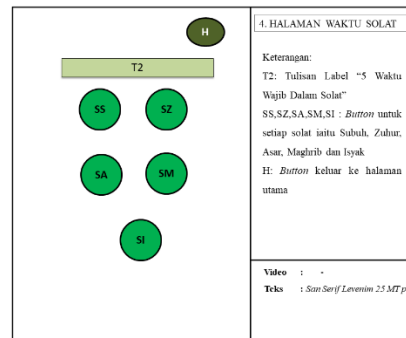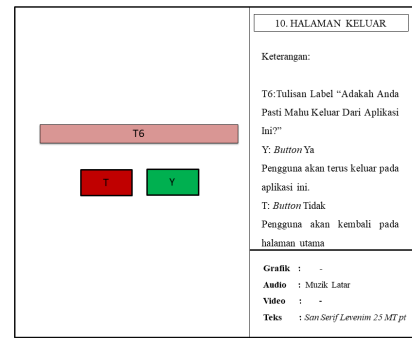
Front Interface View
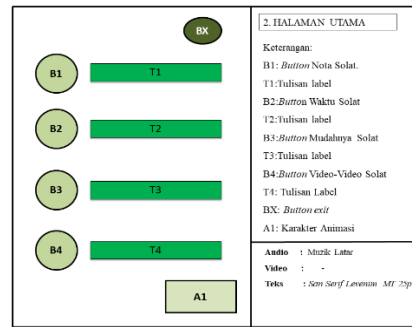
Main Page
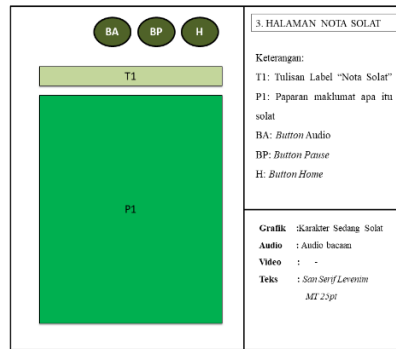
Prayer Notes Page
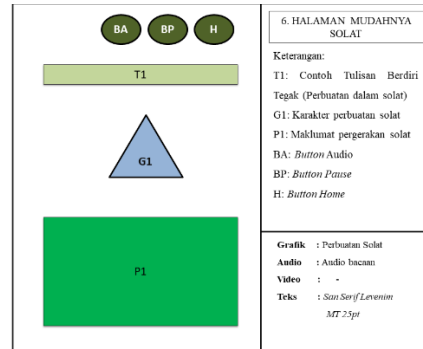
Prayer Videos Page

Simply Prayer Page

Exit Page

The interface design is the main link to the user in displaying this application page that has been developed as it creates fewer problems, increases user involvement, perfects functionality, and creates a strong link between this application. Every multimedia element that will be used in the presentation will also be determined throughout this process based on the suitability and requirements of the application. The specifications can pertain to the selection of backdrop selection, control buttons or icons, menu selection, the setting of text characteristics, and the color, size, layout, and position of the multimedia elements in the application. Since developing an interface entail creating a display for the user to see, it should prioritize the users' demands over the preferences of the application researcher.

3. Interaction Design
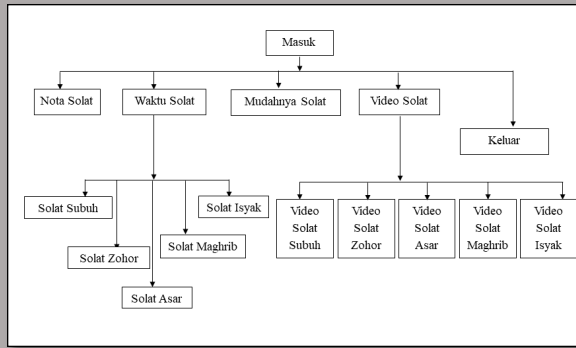
The interaction design is the navigation of this application that allows full control of the value of a communication or message service to its users and the quality of experience they have when using it. The use of a navigation structure is a flow that outlines the application's travel from one module to the next to ensure that the designed application runs smoothly, while also allowing any errors to be addressed and improved as soon as feasible. The design of this application includes activities such as designing the navigation system and the path of achievement, explaining what will happen on each screen, creating the control power for interactivity, and developing the storyboard. The sketched structure will provide an initial overview of the link between each interface as this application is developed.

Development Phase

The fourth phase is known as the development phase. This phase involves the application that has been used to develop this application that includes the media and technology elements as needed. Researchers use Adobe Illustrator software, Adobe Animate 2021 software, Voice Changer Sound Effects Software, and Clideo Trimmer Audio Software in this phase to facilitate the development of this application. The development phase is implemented after the design phase is completed. This level involves many activities that include interface and content development followed by embedding multimedia elements such as text, graphics, audio, and video. This process is also dependent on the summary on the storyboard, which has been created beginning with the main page, front page, and last page. Interface design is very important because it involves an initial overview of the user's application and the development process should be carefully implemented so that it can adapt to the subject and meet the target users' objective. Next, content development will be carried out carefully. The content of this application must comply with the information on the basic prayers step in Islam. This process should be carried out carefully so that the objectives of the study can be achieved. Lastly, it is the development of multimedia elements which is an important element as the application contains many multimedia elements. This is because the utilization of multimedia in the teaching process is thought to be quite beneficial since it can give the user an enjoyable learning session, especially in terms of understanding the procedure to perform prayer. Since this application relies on voice reading from audio and text for explanation, text and audio features are used the most. The multimedia elements available in this application include video, graphics, audio, and text as per Table 4 as the effective use of quality graphics can boost users' motivation in focusing through this application.

Table 4. Application Development

No	Element	Display and Description
1	Home Page Interface Design	

		This page has various buttons in the application that can take the user to the provided page. The information layout and presentation of the content, including the name and position of the application's menus have been organized.
2	Note Page Interface Design	
		This page displays a note on how to perform prayers. There are a few different notes to choose the user can choose from. All information and content are sourced from reliable sources.
3	Content Interface Design	
		This page includes an audio of the surah being recited to assist the user in better understanding the prayers. Additional animations and graphics to increase users' enthusiasm and interest.
4	Display Interface Design	
		This page illustrates the position of the icon sequence or navigation buttons in filling the space on the display of the prayer time interface so that it looks neater and more attractive.

Maintenance Phase

Once all four phases have been successfully implemented, the final phase is the most significant since the application is now ready for testing. This phase will be implemented after the completion of the development phase. This stage involves the process of testing the effectiveness of the user who uses it. At this stage, the application provided will be used or implemented in real situations. The completed application will be tested by experts to identify errors during project development. If an error occurs, it will be fixed before handing it over completely to the user. Thus, the role of experts is taken into account to evaluate the functionality of the application and determine whether or not it meets the

user's desired requirements. As a result, three criteria will be analyzed and reviewed: the evaluation of the application's design, the evaluation of the application's content, and the evaluation of the application's functionality. Following the testing, maintenance will be performed to guarantee that no further problems may arise. In this phase, the application was evaluated by three (3) experts in terms of the application of design and functionality. The assessment phase is the last phase of the prayer learning topic in the application as the usability of this application will be evaluated through a questionnaire to elicit feedback on the usefulness and improvement of the application.

Results

We discuss the process of analysis that will be carried out to discover all of the information about the product produced in detail. The analysis findings will help to achieve the goals of developing this application based on expert evaluation of the topic of basic instructions in prayer. The researcher has implemented phases of testing and evaluation of the application based on the approval from three experts articulated in their field and expertise. The experts involved were an academician who is a skilled person with extensive knowledge and experience in Islamic Studies and 2 academicians in the creative multimedia field from a local higher education institution in Johor, Malaysia. The researcher has measured the functionality and reliability of the application based on the content, interface, and interaction design grounded by the testing and evaluation process. As a result, experts were provided a checklist form to determine the functional extensions of the application based on three design elements. To test the validity of the instrument, the researcher has also asked for views and confirmation from content and language experts. The checklist form in Part B has seven items to test the application functionality in terms of its content design. Table 5 shows the data analysis in the form of frequency and percentage in terms of content design elements by experts.

Table 5. Analysis of Content Design

No.	Items	Percentage (%)		Percentage of Agreement (%)
		Yes	No	
1	The content of the application is clear and easy to understand	3	0	100
2.	The content of the application is suitable and relevant to the user's learning needs.	3	0	100
3.	The content of the application is well-organized.	2	1	67
4.	The content of the application has provided information on the prayer learning topic.	2	1	67
5.	The content of the application has met the objective that has been set.	2	1	67
6.	The language used in this application is clear.	3	0	100
7.	The language used in this application is easy to understand	2	1	67

As a result of analysis by experts on the content design, items 1, 2, and 6 state that all experts (100%) agreed on the content of the application is clear and easy to understand, suitable, and relevant to the user's learning needs and the language used in this application is clear. While for items 3, 4, 5, and 7, two experts (67%) agreed on the content of the application is well-organized, has provided information on prayers learning topic, has met the objective that has been set and the language used in this application is easy to understand, while another expert (33%) doesn't agree on it.

For section C, there were ten items related to the analysis of interface design in terms of the presentation of multimedia elements and interface display that the experts need to evaluate to obtain functional confirmation of this application as shown in table 6.

Table 6. Analysis of Interface Design

No.	Items	Percentage (%)		Percentage of Agreement (%)
		Yes	No	
1	The icons/ buttons used in the application are easy to understand and work as expected.	2	1	67
2.	The icon colors were aligned with the application's theme.	3	0	100

No.	Items	Yes	No	%
3.	The image size used in the application is suitable and easy to watch.	3	0	100
4.	The images in the application were placed properly and orderly.	3	0	100
5.	The overall usage of color in the application is appropriate and interesting.	2	1	67
6.	The background music in the application is suitable.	3	0	100
7.	The application has an interface display that invites interaction through interactive media.	3	0	100
8.	The application has a suitable interface display and is within user experience and expectations.	3	0	100
9.	The application text position is consistent and easy to understand	2	1	67
10.	The application graphic position is consistent and easy to understand	3	0	100

The results indicated that on items 2, 3, and 4, all three experts (100%) agreed on the statement that the icon colors were aligned with the application's theme, the image size used in the application is suitable and easy to watch then were placed properly and orderly. Furthermore, they also agreed on items 6, 7, 8, and 10 as all three experts (100%) agreed that the background music in the application is suitable, the application has an interface display that invites interaction through interactive media, suitable and within user experience and expectations and lastly, the graphic position is consistent and easy to understand. However, for items 1, 5, and 9, only two experts (67%) agreed on the icons/ buttons used in the application are easy to understand and work as expected, and the overall usage of color in the application is appropriate and interesting and the text position is consistent and easy to understand, while another expert (33%) disagree on this.

Lastly, for section D, there were five items related to the analysis of interaction design that experts need to evaluate to obtain the functional confirmation of this application as shown in table 7.

Table 7: Analysis of Interaction Design

No.	Items	Percentage (%)		Percentage of Agreement (%)
		Yes	No	
1	The application allows the user to control the speed of the learning content.	3	0	100
2.	The application allows the user to explore the learning content.	2	1	67
3.	The application linkage is easy to use for the users.	3	0	100
4.	The application allows the user to simply follow the progress of the lesson content presentation.	3	0	100
5.	The application makes it simple for the users to seek the information they desired.	3	0	100

The results indicated that for items 1, 3, 4, and 5, all three experts (100%) agreed on the statement that the application allows the user to control the speed of the learning content, the linkage is easy to use by the users, it allows the user to simply follow the progress of the lesson content presentation and the application makes it simple for the users to seek the information they desired. Though, for item 2, two experts (67%) agree on the application allows the user to explore the learning content and another expert (33%) disagrees about it.

Discussion

Based on the result and analysis, the process to design and develop this android application seems to be successful. This program was developed with Adobe Animate 2021 software and is accessible in the Apk format for android smartphones. This android application is suitable for new learners, which is the mu'allaf to learn about prayers. In addition, this android application is expected to provide a positive impact in terms of functionality and usability in the future, especially in teaching prayers for the guidance of Mu'allaf. All three experts give positive comments about the application and its suitability to be used as a learning material for Mu'allaf to learn about prayers. The selected

Waterfall model proved to be suitable for the application design and development process as supported by Afify & Kadry's (2019) study, which employed the Waterfall Model in designing a Customer Complaint Web Management Module application in school, stated that utilizing this model in development application is a systematic strategy that can save time. Furthermore, because it emphasizes the creation of paperwork and documentation at each phase, this model makes monitoring progress easier.

Aside from that, the application appears to be capable of attracting users by knowing and understanding the basics of prayer more clearly due to the application's intriguing interaction and interface design. As such, effective interaction is when the developer can provide effective input to the users (Yusoff et. al, 2018). This statement is reinforced by Xia & Ismail (2022), who believes that a good interaction design in a modern educational product will make the application inspiring and more dynamic. Furthermore, the development of this application can be used as an alternative reference material for users who is less interested in academic work i.e., reading and writing as they can develop their interest and passion in using technology (Madigan & Curran, 2021).

Besides, the application contains many multimedia components such as video, text, animation, and audio that have been embedded throughout this application to attract users and to make sure that this application is more engaging. According to Razalli et. al, (2019), incorporating multimedia features in mobile applications is one way to simplify the difficult learning process. It is supposed to be more relevant and straightforward than traditional learning resources like textbooks and two-dimensional visuals. This statement is in line with a study conducted by Goipova, Boqiyeva & Azimova (2020), which notes that the mainstay of interactive multimedia is in learning situations where users are given control of possibly reviewing learning materials in their own space in line with their interests, needs, and cognitive processes. Plus, this application has also been seen as a platform that allows students to learn independently and they can explore this application slowly to help them focus and understand the information presented. Ghilay (2017) indicate that the learning process outside the classroom can be done by students independently to increase their motivation.

In addition, the use of text elements in multimedia in an application is a matter that also plays an important role to convey clear understanding and information to users (Gnezdilova & Bugaeva, 2021). This statement is supported by a Chan et. al, (2020) study that state some individual is more receptive to information in the form of text, whilst others are more receptive to information in the form of images, graphics, videos, or animations. Next, the use of video is a very effective medium to aid the learning process as it contains a lot of comprehensive information it reaches the users directly (Dunham, 2020). This statement is supported by Fyfield et. al, (2019) study that state video can add a new perspective to learning because it can show users about information through moving pictures and voices. Audio is yet another medium that is often used in computer-human interaction, which includes the music element in this application as it plays a vital part in creating a more striking and exciting environment. This remark is confirmed by Akhter et. al, (2021), who claim that the use of audio and video throughout the teaching and learning process is more interesting and easier to comprehend thru individuals.

Nevertheless, other prayer applications incorporate multimedia elements in Malaysia such as Mobile Prayer Software for The Hearing Impaired (Rahim et al., 2021), and Mobile Augmented Reality Applications (Razalli et. al, 2019). These two applications, on the other hand, have distinct designs and content. However, these applications are loaded with information that renders and seems to be unsuitable for Mu'allaf. This is because prayer requirements must be provided specifically to the Mu'allaf community before any further information is shared. Thus, this application is more focused on the basics the Mu'allaf community needs as soon as they accept Islam. Therefore, the existence of this application surely can encourage users, especially the Mu'allaf community to learn through mobile devices with a new and beneficial experience as this application can facilitate their learning process and provide numerous benefits to them in terms of knowledge.

Conclusion

The purpose of this study is to design and develop an android application for teaching prayers for the guidance of Mu'allaf. Additionally, this android application can help to facilitate users to learn visually and more clearly regarding the basics of prayers. This application was able to give a positive impact on a user in terms of effective and interesting knowledge delivery. This includes the use of Android applications in learning the basics of prayer that allow the target user, the Mu'allaf community to follow the learning process independently, as well as to learn at their own pace and to repeat if they do not understand the content at the first time. However, some refinements and improvements need to be done based on experts' suggestions. The improvement process after this is expected to provide a positive impact in

terms of functionality and usability of this application in other fields such as medicine, tourism, design, arts, entertainment, industry, education, and others. In the future, this application hopefully can be updated and improved by adding more features and content such as the quiz and exercise part to make the learning process more interesting and motivating to benefit users, especially the Mu'allaf community.

Acknowledgment

References

Afify, E. A., & Kadry, M. A. (2019). Electronic-customer complaint management system (e-ccms)–a generic approach. International Journal of Advanced Networking and Applications, 11(1), 4125-4141.

Akhter, S., Javed, M. K., Shah, S. Q., & Javaid, A. (2021). Highlighting the advantages and disadvantages of E-learning. Psychology And Education, 58(5), 1607-1614.

Badshah, S. N. B., & Ullah, A. (2021). Current Educational Challenges & Solutions in the Perspective of Islam. Journal of Islamic Civilization and Culture, 4(01), 10-20.

Bakar, S. A. A., & Ismail, S. Z. (2018). Mualaf management in Malaysia: Dynamic collaboration between government and non-government agencies. (Pengurusan mualaf di Malaysia: Kerjasama dinamik antara agensi kerajaan dan bukan kerajaan). Jurnal Usuluddin, 46(2), 97-122.

Chan, K. Y., Lyons, C., Kon, L. L., Stine, K., Manley, M., & Crossley, A. (2020). Effect of on-screen text on multimedia learning with native and foreign-accented narration. Learning and Instruction, 67, 101305.

DeCuir, A. (2019). Toward a Muslim Ethics of Care: Leadership in American Islamic schools. Journal of Islamic Faith and Practice, 2(1), 8-23.

Desiani, A., Amran, A., Gofar, N., Apriyani, C. N., & Chaniago, R. A. F. (2022). Application of the Waterfall Method in Software Design on Android-Based Programming Language Course Applications. Journal Of Informatics and Telecommunication Engineering, 6(1), 235-246.

Dunham, R. S. (2020). Completing a Multimedia Project. In Multimedia Reporting (pp. 345-351). Springer, Singapore.

Fyfield, M., Henderson, M., Heinrich, E., & Redmond, P. (2019). Videos in higher education: Making the most of a good thing. Australasian Journal of Educational Technology, 35(5), 1-7.

Ghilay, Y. (2017). Math Courses in Higher Education: Improving Learning by Screencast Technology. GSTF Journal on Education (JEd), 4(2), 1-6.

Girwidz, R., & Kohnle, A. (2021). Multimedia and Digital Media in Physics Instruction. In Physics Education (pp. 297-336). Springer, Cham.

Gnezdilova, E. V., & Bugaeva, I. V. (2021, April). Multimedia Text as a Communication Tool. In 2021 Communication Strategies in Digital Society Seminar (ComSDS) (pp. 149-153). IEEE

Goipova, S., Boqiyeva, M., & Azimova, M. (2020). The Advantages of Computer Technologies in Teaching Foreign Languages. Интернаука, (41-2), 48-49.

Goggin, G. (2021). Apps: From mobile phones to digital lives. John Wiley & Sons.

Julianingsih, D., Prawiyogi, A. G., Dolan, E., & Apriani, D. (2021). Utilization of Gadget Technology as a Learning Media. IAIC Transactions on Sustainable Digital Innovation (ITSDI), 3(1), 43-45.

Kumar, S. N., Lenin Fred, A., Padmanabhan, P., Gulyas, B., Dyson, C., Melba Kani, R., & Ajay Kumar, H. (2021). Multimedia-based learning tools and its scope, applications for virtual learning environment. In Computational Intelligence in Digital Pedagogy (pp. 47-63). Springer, Singapore.

Lucitasari, D. R., & Khannan, M. S. A. (2019). Designing Mobile Alumni Tracer Study System Using Waterfall Method: an Android Based. International Journal of Computer Networks and Communications Security, 7(9), 196-202.

Madigan, D. J., & Curran, T. (2021). Does burnout affect academic achievement? A meta-analysis of over 100,000 students. Educational Psychology Review, 33(2), 387-405.

Nuraini, I., Rumanti, A. A., & Anggara, H. D. (2021). E-learning Design Using the Waterfall Model in Einstein Institution at Purwokerto. eProceedings of Engineering, 8(5).

Oberoi, A. K., & Trickett, E. J. (2018). Religion in the hallways: Academic performance and psychological distress among immigrant origin Muslim adolescents in high schools. American journal of community psychology, 61(3-4), 344-357.

Rahim, N., Rizhan, W., Amin, M. M., Isa, W. M. W., Ismail, I., Shapri, N. S., & Ramlan, R. (2021). Mobile Augmented Reality Application for Primary School Education.

Razalli, A. R., Mamat, N., Razali, N., Mohd, M. H., Yasin, M. L., Hashim, A. T. M., & Ariffin, A. (2021). Development of Prayer Mobile Application Software for The Hearing Impaired (Deaf) Based on Malaysian Sign Language. Int. J. Acad. Res. Bus. Soc. Sci, 11(6), 1108-1122.

Richey, R. C., & Klein, J. D. (2014). Design and development research: Methods, strategies, and issues. Routledge.

Royce, Winston W. (1970): Managing the development of large software systems. In Proceedings, IEEE Wescon, August 1970, pp 1-9.

Sabian, S., Sadiani, S., Hartati, Z., & Khair, A. (2019). The Muallaf Nurturing: Between in Map and Fact. Jurnal Ilmu Komunikasi, 2(2), 97-111.

Salehi, N. (2022). How to properly apply new external knowledge: the waterfall model of absorptive capacity and innovation. Journal on Innovation and Sustainability RISUS, 13(2), 73-83.

Sharma, G. (2017). Pros and cons of different sampling techniques. International journal of applied research, 3(7), 749-752.

Tias, R. F., Hidayat, M. M., Prasetyo, E., & Suryaningrum, A. (2021). Application Of Obligatory Prayer Learning Based on Augmented Reality. Journal Of Electrical Engineering and Computer Sciences, Vol 6 Number 2, Dec 2021, 6(2).

Xia, X., & Ismail, A. R, (2022, February). A review of the application of interaction design in modern educational product design. In Proceedings of the 5th International Conference on Big Data and Education (pp. 141-147).

Yusoff, Z., Kamsin, A., Shamshirband, S., & Chronopoulos, A. T. (2018). A survey of educational games as interaction design tools for affective learning: Thematic analysis taxonomy. Education and Information Technologies, 23(1), 393-418.