

Usability Test For The Long Life Learning Mobile Apps System

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Abstract

Smartphones containing various mobile applications are necessary to help with today's activities. It does base on facilitating day-to-day affairs, communication, and more efficient information delivery. The Lifelong Education Unit of Pasir Salak Community College also uses such a platform to deliver information to the local community. Information on short-term courses is generally through text and pictures made public on the Telegram app, WhatsApp, and the website to potential participants. Based on this, a prototype of the Pasir Salak Community College Lifetime Learning mobile application (PSHKKPS) was produced and tested for usability before it could be made public to the target group. The usability of the PSHKKPS mobile application is tested based on a questionnaire that tests three essential aspects: Ease of Use, Interface, Satisfaction of Use, and Future Use. Next, the study also looked at the correlation between the three aspects. The respondents for this usability test were 30 Pasir Salak Community College staff. The findings showed that overall the mobile application is ready to be used by the target group. Therefore, the PSHKKPS mobile application can be used as an information dissemination platform for short-term courses at Pasir Salak Community College.

Keywords: Lifelong Learning, Mobile Apps, Information Technology

1.0 Introduction

Information is vital to maintain and correctly presenting the latest information network (Korshunov et al., 2018). Based on the concept of openness, information is now very accessible, especially online. It can be presented through various online applications such as Facebook, Twitter, Instagram, WhatsApp, and Telegram. However, the diversity of these information dissemination application platforms sometimes causes information to overlap easily and not reach the target group (Normah et al., 2017). This medium is especially true when vital information does disseminate through social platforms such as WhatsApp and Telegram.

This mobile application allows users to create small groups for communication and information sharing. However, this situation may cause users to miss important information due to overlapping information within the same platform. Users may easily ignore the information received because too much information is disseminated at any time, especially when the user is in a group of users of the WhatsApp and Telegram applications. This situation also happened to the Lifelong Learning Unit (PSH) of Pasir Salak Community College (KKPS), which also disseminated information on offering short-term courses on the same platform. Therefore, to overcome this problem, the Pasir Salak Community College Lifetime Learning mobile application (PSHKKPS) prototype was produced and tested the usability of the mobile application in effectively compiling and presenting the information.

The PSHKKPS mobile application uses the Google Site platform in its development. This medium is because the development information presented through the Google Site platform is easy to learn and mainly used to convey information (Pubian & Herpratiwi, 2022). It also does not require that a person has high skills while developing it (Tresnawati, 2021). After that, the development results through the Google Site platform were converted to android platforms to make it easier to install on android-based smartphones. This android platform was chosen because it is more widespread in Malaysia by 71% (StatCounter Global Stats, 2022) compared to other smartphone platforms. Therefore, the PSHKKPS mobile application is expected to be more widely used, especially for the B40 group, the target group for short-term courses in KKPS.

2.0 Literature

Everyday technology is evolving to help facilitate everyday affairs (Kim et al., 2019). This is further facilitated by the availability of a connection to the internet, which makes everyday affairs carried out everywhere and at any time. This ease of internet access has made information easily shared and accessible to users through various browsers on the computer. Access to this information is further facilitated by its use on mobile applications that are usually available and installed on the user's smartphone devices.

As they are already known, smartphones are a necessity for consumers nowadays. It is small in size, easy to carry anywhere, and able to complete various everyday tasks quickly. In addition, the diversity of smartphone functions, the increase in memory capacity and speed, and the connection to

the available internet have indirectly caused the time to use smartphones (Thomé, 2018). The diversity in the use of smartphones also allows users to install the various mobile applications they need, especially in the search for information. Therefore, users need to be competent in installing a mobile application that is needed so that it does not cause any vital information they need to miss.

The Lifelong Learning Unit of Pasir Salak Community College also uses smartphone application facilities to disseminate information on the short-term courses offered. Information is disseminated through Whatsapp and Telegram to the local community. However, based on observations, potential participants sometimes miss important information about offering short-term courses as other information is also presented on the same platform. This has triggered the development of a mobile application to disseminate short-term courses at Pasir Salak Community College.

The production and development of a mobile application must also be in line with the latest requirements to achieve its development goals (Nor Athirah et al., 2019). The functionality of a mobile application is also heavily influenced by the user's needs. This is because the development of a smartphone application can affect user behaviour (Nazaruddin et al., 2020). Users will respond to different mobile applications by providing the user experience of a digital-based application (Kopalle et al., 2020). Therefore, the usability of an important built mobile application is identified before an application can be produced.

The mobile application development study by (Nor Athirah et al., 2019) has outlined the stages of development of a mobile application, namely the Early Stage of Design, Design Stage, Development Stage, and Implementation Stage. At the Design Stage, mobile app developers need to identify the problems that cause a mobile app to be produced. This includes in terms of determining the purpose and objectives of the construction of a mobile application. At the Design Stage, the app developer needs to identify the platform to be used for its development purposes. Next, at the Development Stage, mobile app developers need to collect the information that needs to be in the mobile application, the installation process to the smartphone, and the configuration system used. Finally, at the Implementation Stage, mobile app developers need to look at the publication of mobile apps to the public.

3.0 Methodology

This study looks at the usability of PSHKKPS mobile applications in terms of Ease of Use, Interface, and Satisfaction of Future Use and Use. The questionnaire is adapted from the study of Muhammad Razuan & Ahmad Zamzuri (2016). This questionnaire consists of two parts, Part A and part B. Part A contains questions to see the demographics of the respondents, and Part B contains 16 questions to see the applicability of the PSHKKPS mobile application. In Part B, respondents need to select a feedback option via a Likert scale of One to Seven, where One Very disagrees, and Seven is Very Agreeable. The respondents for this study were 30 lecturers randomly selected at Pasir Salak Community College. Questionnaire questions were distributed through navigation links provided through the PSHKKPS mobile application installed into the Respondent's device Figure 1. The reliability of this study

was measured using *Alpha Cronbach's* at 0.74, which shows that the test question has a high-reliability index based on Table 1 of the reliability index (Creswell, 2012).

Table 1: Reliability Index Classification

Indicators	Cronbach Alpha coefficient value, (α)
0.90 – 1.00	Very high
0.70 – 0.89	High
0.30 – 0.69	Simple
0.0 – 0.29	Low

Source: Creswell (2012)

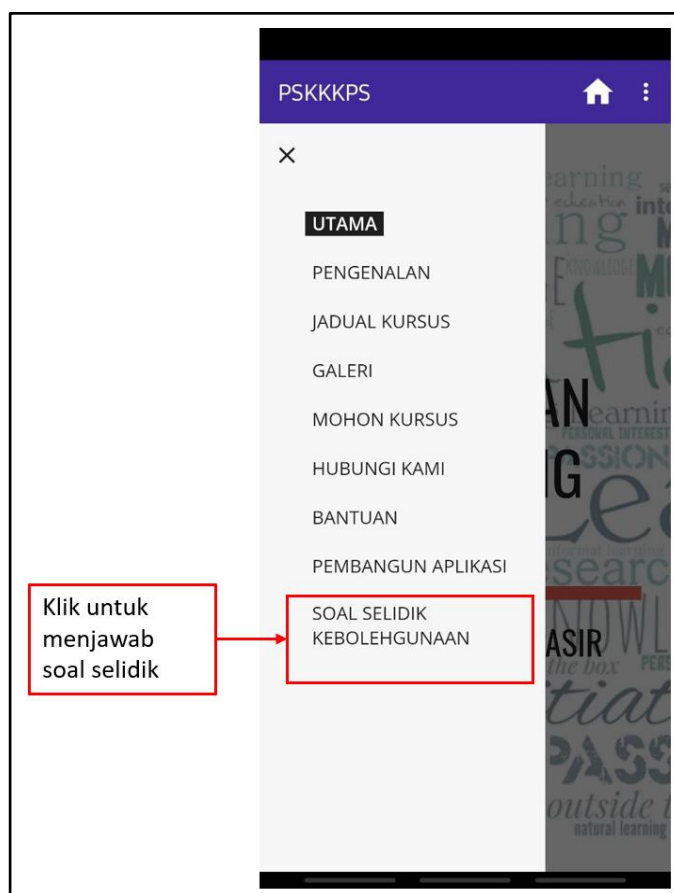


Figure 1: PSHKKPS mobile apps usability questionnaire navigation link.

Data analysis is then obtained through descriptive statistics based on a summary of the entire questionnaire question data. This is intended to provide information on the findings directly and quickly (Pallant, 2007). Next, a correlation analysis is carried out to analyse the strength of the relationship between the groups of aspects of the data set. The Pearson and Spearman Rho (Pallant, 2007) correlation is a commonly used statistical correlation measure. It is a correlation measure used to measure the strength and direction of the relationship between variables (Pallant, 2007). Korelasi rho Spearman, on the other hand, is a statistical method used to test assumptions about the existence of relationships between variables when the data is an ordinal scale or a ratio/interval scale but does not meet the assumption of

normality. Pearson's correlation was used for this study based on the study's data. The statistical findings used are frequency, percentage, mean and standard deviation. The findings of this data analysis are referred to the Pallant Mean Score Interpretation Scale (2007), as in Table 2. Meanwhile, the interpretation of the Pearson correlation is referred to based on Table 3.

Table 2: Pallant Mean Score Interpretation Scale (2007)

Mean Value	Mean Interpretation Levels
0.00 – 2.33	Low Level
2.34 – 4.66	Medium Level
4.67 – 7.00	High Level

Table 3: Rowntree Scale for Pallant Correlation Coefficient 2007

Correlation Coefficient Value (R)	Strength Of The Relationship
0.9 to 1.0	Very tall, very strong
0.7 to 0.89	Tall, strong
0.4 to 0.69	Simple
0.2 to 0.39	Weak, low
0.0 to 0.19	Very weak

The development of the PSHKKPS mobile application is based on the ADDIE design model. This model was chosen because it is suitable for designing multimedia-based materials (Ahmad Fkrudin & Ammar Badruddin, 2018; Hong, 2015; Rosenah et al., 2005). It is in line with the use of the PSHKKPS mobile application as multimedia presentation material. ADDIE models, such as Figure 2, stand for *Analysis*, *Design*, *Development*, *Implementation*, and *Evaluation*. Each phase in the ADDIE Model is related to the other. Each phase's process can be repeated to obtain the required result.

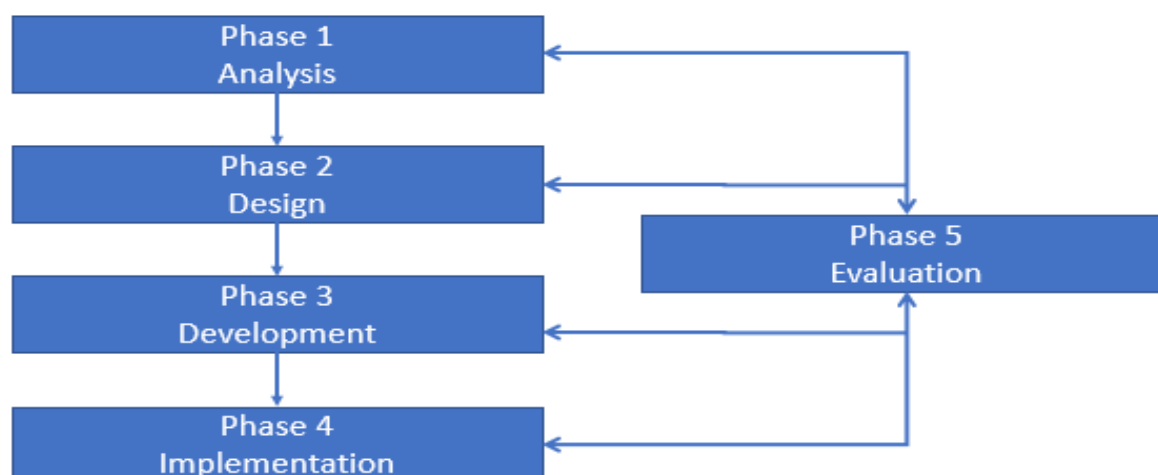


Figure 2: ADDIE Design Model

As a result of the development of the PSHKKPS mobile application, two content experts and design experts were reviewed by two content experts and design experts. This is to ensure that this application's development meets its content and presentation design objectives. Feedback from content experts ensures that the content presented in the PSHKKPS mobile application covers the scope of presentation of the information required by the user. The feedback from design experts is to ensure that the design meets the appropriate design for a mobile application on a smartphone.

4.0 Analysis and Discussion

The analysis of questionnaires adapted from The Muhammad Razuan & Ahmad Zamzuri (2016) study contains three categories of questionnaire questions in Part B, namely the Ease of Use category, the Interface and User Satisfaction category, and the Future Use category. The Ease of Use category contains five questions to see the ease of use of this mobile app. At the same time, the User Interface category contains seven questions to see the interface of the mobile application presented to the user. Finally, the Future Usage category contains four questions to see what the mobile app will use for users in the future.

Table 4 analysis findings from the User Convenience category show this mobile application is easy to use ($M = 6.53$, $SD = 0.63$), users easily learn to use this mobile application ($M = 6.43$, $SD = 0.63$), the navigation buttons are consistent when moving between screens ($M = 6.33$, $SD = 0.61$), this mobile application has all the functions and capabilities I need ($M = 6.40$, $SD = 0.72$). Overall this mobile application is easy to use ($M = 6.30$, $SD = 0.75$).

Table 4: PSHKKPS Mobile Application Ease of use Analysis

No	Ease Of Use	Min	Standard Deviation
1	This mobile app is easy to use.	6.53	0.63
2	I quickly learned to use this mobile app.	6.43	0.63
3	Navigation buttons are consistent when moving between screens.	6.33	0.61
4	This mobile app has all the functionality and capabilities I need.	6.40	0.72
5	Overall, this mobile app is easy to use.	6.30	0.75

While the findings of the Table 5 analysis from the User Interface category show that users like the interface of this mobile application ($M = 6.23$, $SD = 0.57$), the information presented in this mobile application is well organised to facilitate the search for the information the user needs ($M = 6.13$, $SD = 0.86$), the interface display of this mobile application is easy to use ($M = 6.33$, $SD = 0.71$), users feel comfortable using this mobile application ($M = 6.43$, $SD = 0.68$), users enjoy exploring this mobile application ($M = 6.53$, $SD = 0.51$), users will use this mobile application again ($M = 6.33$, $SD = 0.76$) and Overall, users are satisfied with this mobile application ($M = 6.30$, $SD = 0.75$).

Table 5: Interface Analysis and PSHKKPS Mobile Application Satisfaction

No.	Interface And Satisfaction	Min	Standard Deviation
1	I like the interface of this mobile application.	6.23	0.57
2	The information presented in this mobile app is well organised to facilitate searching for the information I need.	6.13	0.86
3	The interface display of this mobile app is easy to use.	6.33	0.71
4	I feel comfortable using this mobile app.	6.43	0.68
5	I enjoyed exploring this mobile app.	6.53	0.51
6	I am going to use this mobile app again.	6.33	0.76
7	Overall, I am satisfied with this mobile app.	6.30	0.75

Finally, the Table 6 analysis from the Future Use category shows that users believe they can be more productive using this mobile app ($M = 6.37$, $SD = 0.61$). This mobile app improves user access to the necessary information ($M = 6.37$, $SD = 0.56$). From the everyday user experience using this mobile application, users will use it regularly ($M = 6.33$, $SD = 0.71$), and this mobile application helps manage user activity in the future ($M = 6.36$, $SD = 0.67$).

Table 6: Interface Analysis and PSHKKPS Mobile Application Satisfaction

No.	Future Use	Min	Standard Deviation
1	I believe it can be faster productive by using this mobile app.	6.37	0.61
2	This mobile application improved my access to the necessary information.	6.37	0.56
3	From my recent experience with using this mobile app, I thought I would use it regularly.	6.33	0.71
4	This mobile app will help in managing my activities in the future.	6.37	0.67

Overall, the Pallant Min Score interpretation table (2007) on all three categories shows that the mean interpretation level is high. Therefore, the PSHKKPS mobile application shows high user usability and meets its development objective. The results of the Pearson correlation analysis (Pallant, 2007) carried out showed that the Ease of Use aspect with the Usage Interface aspect had a significant relationship ($p = 0.019$) at the moderate relationship level ($r = 0.425$). Next, the aspect of Future Use with the Ease of Use aspect has a significant relationship ($p = 0.012$) at the level of a moderate relationship ($r = 0.453$). At the same time, aspects of Interface and Satisfaction of Use with Future Use have a significant relationship ($p = 0.000$) at a moderate relationship level ($r = 0.628$). Overall the correlation analysis

shows that these three aspects have a significant relationship at a moderate level based on Table 7.

Table 7: Pearson Correlation Test

		Ease of Use	Interface and Usage Satisfaction	Future Use
Ease of Use	Pearson Correlation	1	0.425*	0.453*
	Sig. (2-tailed)		0.019	0.012
	N	30	30	30
Interface and Usage Satisfaction	Pearson Correlation	0.425*	1	0.628**
	Sig. (2-tailed)	0.019		0.000
	N	30	30	30
Future Use	Pearson Correlation	0.453*	0.628**	1
	Sig. (2-tailed)	0.012	0.000	
	N	30	30	30
*. Correlation is significant at the 0.05 level (2-tailed).				

5.0 Conclusions and Recommendations

The PSHKKPS mobile application specifically presents information on short-term courses offered at KKPS. In addition, users can register directly for the short-term courses they are interested in in the PSHKKPS mobile application platform. The usability tests have shown that users can use this application to achieve its development objectives. However, the impact of its use on the target group should also be implemented in the future. This PSHKKPS mobile application also still has room for improvements that can be made to it. Among the proposed is the *push notification* function to provide vigilance to users on the offer of new short-term courses that will be implemented. In addition, the PSHKKPS mobile application can be further simplified by uploading on both mobile application platforms for android and IOS platforms. Therefore, the PSHKKPS mobile application has fulfilled its development objectives based on the implemented usability test, which shows that the mobile application is ready for use by the target group.

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