



Usability Evaluation In Ruang Guru Applications Using User Experience Questionnaire (UEQ)

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ABSTRACT

Mobile learning is a form of reconstruction effort for past learning models to digital. Easy access and excellent performance is one aspect of mobile learning support is acceptable and running smoothly. The ruang guru application used as an object in this research was chosen based on the review of the best mobile learning app version of Playstore Indonesia with a download of \pm 10 million. Usability is one of the essential aspects to note in the development of an application so that the developed application has a good experience from the user. User Experience Questionnaire focuses on the aspect of user satisfaction measured using Quisioner with the standard Don Foundation. The measurements carried out in this study used 100 active users of the ruang guru application, using the Quisioner that was disseminated randomly in the school stay. The results of measurements that have done resulted in an effectiveness score of 59.38, an efficiency of 65.36, and a satisfaction score of 62.52.

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1. Introduction

Mobile Learning is a learning model that appears and develops in the digital age; the emergence of this learning model is a real form of packing various fields of science by utilizing information technology. The phone is used only to communicate between one individual and the other, but increasing some features that increasingly make humans take the initiative to make the phone more multifunctional. Mobile device users as a learning medium have been done in advance, starting with the use of short messages that focus on the text model as well as progressively evolving towards the visual. The implementation of mobile learning has been massive from elementary to college levels with various models, and learning techniques, ranging from text-based with ebook or virtual-class learning models that have leverages virtual streaming technology. [2] The ruang guru, For example, is the leader of mobile learning applications from Bimbel to the virtual class that has been used by the majority of students and Indonesian people. With the many users and services provided by the teacher's room to the customer that in this case is a student, of course, the ease of application and the use of an excellent User Interface is a crucial requirement for the application easy to use. Increased user room teachers also influenced user experience feedback in using the app and recommend the app to their relatives. It is, therefore, necessary to measure the extent to which the teacher's room application can be used and know precisely how the user responds while using the application. Usability Testing has several different evaluation techniques. Among the techniques in usability testing, there is a technique called User Experience Questionnaire (UEQ). User Experience Questionnaire focuses on aspects used for assessment, among other Learnability, Memorability, effectiveness, efficiency, and user satisfaction.[3] However, this research only emphasizes three aspects, namely effectiveness, efficiency, and user satisfaction. These three aspects are a significant aspect of measuring Usability on either mobile or website applications. [4] In its application UEQ uses a measurement with a Linkert scale of 1-4 or using a measuring scale of 0-100, adjusting the components that want to test on an object. [5] The UEQ method is widely used by the User Interface designers or User





Experience Researcher in measuring the extent to which applications they develop according to User needs. In this research, UEQ is used to measure components either from the User Interface or the application of the ruang guru applications function. [6] The purpose of this research is to measure the extent to which the user has real experience in using Ruang Guru's application, as well as know what problems arise and the user feels during their use of the application.

The previous research which to use as the foundation for this study was the research of Muhammad Yossi Affiq (2018) titled "Evaluation of Usability in the UBER application using testing Usability" In this research, testing conducted on the application Online Ojek Uber. [7] Further studies of Ika Aprilia (2018) titled "Website Usability Testing using User Experience Questionnaire " on the research of the UEQ method used to test usability on the next Website research Usman Ependi (2017) titled "User Experience Questionnaire interface Palembang Guide as supporting Media Asian Games XVIII" In this research test focused on the interface of Palembang Guide application with UEQ method.

2. Methodology

In this study, using the System Usability Scale as a measurement method, measurements made to 50 active users of the teachers' room applications, and this user was randomly selected using the Simple Random Sampling method that applied the Slovin Process in the user selection. The use of the formula in the hope that each user has the same rights and opportunities to use the application, in that process, the error tolerance limit of 10%. The 50 selected users have gone through the selection stage with the following formula calculations:

$$N = \frac{110}{1+110(10\%)^2} \quad (1)$$

$$N = \frac{110}{1+110(0.01)} \quad (2)$$

$$N = \frac{110}{1+1.10} \quad (3)$$

$$N = 50,38 \quad (4)$$

From the calculation, we were rounding the number of users by 50 active users of space applications teachers. Furthermore, to obtain the user profile and background of teachers in using space applications, this study also conducted a structured approach to user persona. User Persona is one of the valuable tools in the work of the User Experience project. Persona allows all design and development team to keep a simple user story. In this research, a user persona is created by using Figma application, with the use of core components such as user name, user profile as well as target or user purpose in using the application.

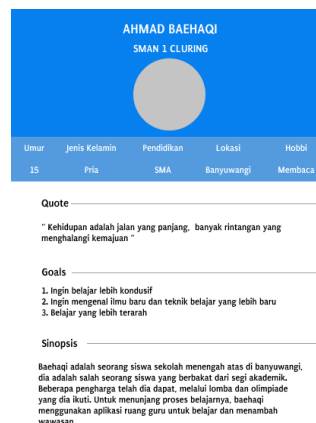


Fig. 1. User Persona



Each user asked to answer several questions that have adapted to the guidelines of the System Usability Scale (SUS), among others: effectiveness, efficiency, and user satisfaction with a Likert scale. The list of questions used includes the main components in terms of UI, menu, main features, material, or table of communication in the teacher's room. Example of a list of questions on the user satisfaction topic we can see in Table 1.

TABLE 1
SAMPLE QUESTIONNAIRE

User Satisfaction
Easy to use System
You want to use this app on your phone
Color composition according
Easy to understand buttons
Easy to use button
Easy to use quiz and exam features
Languages spoken are easy to understand
Help you learn
Type of material provided as desired

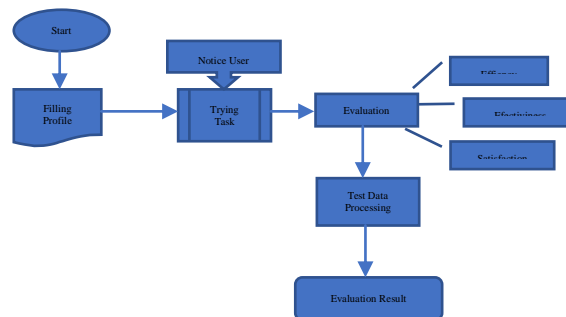


Fig. 2. Evaluation Process For Usability Testing

Usability testing conducted with groups that can see in Figure 2, the application will be reviewed by the teachers' room 50 active users with an average daily use for 3 hours/day. Testing is done with a participatory approach so that the user will be tested simultaneously in the same room after they tried to task-a task that had predetermined.

3. Result

Before testing to 50 users of the application user, then do a pre-test to know the background of the use of ruang guru applications. In the pre-test test, 60% of users make use of applications for learning purposes, 25% only try and find out, and 15% because they are asked by the school or parents to register. After the pre-test, the usability testing carried out to the 50 users manual Ruang Guru application, which emphasizes the value of effectiveness, efficiency, and user satisfaction. Testing was conducted through 3 different stages, starting with effective testing to measure how effective and precise it is for menus and features in the Teachers Room app. From the test generated scores that we can see in table 2.

TABLE 2
EFFECTIVENESS SCORE

Effectiveness	Score
User can enter main menu easily	2,56
User recognizes each icon displayed	2,34





Effectiveness	Score
Icon name corresponds to the expected content	2,32
User can exit from main menu easily	2,42
Colors shown are interesting	2,62
Reading lesson Materials	
The material displayed after the material	2,26
User can easily read the material	2,54
Students can return to the material list menu	2,48
Information Page	
User can view the information provided	2,52
User can return to main menu	2,52
Material List	
The image that appears after the displayed material	2,66
User can recognize any material	2,56
User can go to learning material page	2,62
User can return to main menu	2,78
Profile Page	
User can view personal profile	2,68
User can return to main menu	2,68
User can easily understand the contents	2,56
Total	59,38

In the effectiveness testing of the Ruang Guru application, a score accumulated of 59.38 obtained. Further testing is done by focusing on the efficiency side of the ruang guru application; on the examination of the list of questions focused on the extent to which these features can recognize by the user—efficiency test results, we can see in table 3.

TABLE 3
EFFICIENCY SCORE

Efficiency	Score
Main Page	
User selects the button correctly to go to the next page	3,04
User can easily select the desired menu	2,86
Users need not ask any further	2,84
Students can smoothly read each material	3,98
User recognizes details of given material	2,86
User can test the material provided	3,00
Information page	
User can view the progress of the	2,50
User easily returns to previous page	2,72
Material List	
User well recognizes the material with the given logo	3,00
User easily returns to the page back to the previous menu	3,86
Material easily in search	3,96
Material easily in search	3,02
User with free Change profile	2,74
Total	65,36



Further testing is done on the subject of user satisfaction to find out the extent to which effort the user is to the Ruang Guru application, and user satisfaction testing finished after the user through a series of trials against several tasks that have finished. From the user satisfaction measurement obtained a score of 62.52 which we can see in table 4 below.

TABLE 4
USER SATISFACTION SCORE

Satisfaction	Score
Easy to use System	3,82
You want to use this app on your phone	3,20
Color composition According to	3,84
Easy to understand buttons	3,94
Easy to use button	3,38
Easy to use quiz and exam features	3,78
Languages spoken are easy to understand	3,74
Help you learn	3,52
Type of material provided as desired	3,56
Total	62,52

TABLE 5
USSABILITY TESTING SCORE

No	Name	Score
1	Effectiveness	59,38
2	Efficiency	58,36
3	Satisfaction	62,52
Usability Score		62,24

After the measurement of the three main subjects obtained the value of 59.38 in the effectiveness points, 58.36 at efficiency points as well as 62.52 on the point of satisfaction. Furthermore, the accumulated score and result in the final value of 62.24, this score is derived from the accumulated when the previous points.

4. Conclusion

The usability testing that has been done by going through several processes resulted in a score of 62.24, including the effective testing, efficiency, and satisfaction of the application of the teacher's room. The results of the test saw that the user satisfaction factor became the main supporting factor of the resulting usability score, with the result of 62.52 indicating that the majority of participants or users feel comfortable using the Ruang Guru application. Inversely proportional to the score effectiveness and efficiency that has a score of 59.38 and 58.36 signifying that participants feel that the application still has a low level of effectiveness and efficiency. The efficiency and effectiveness of the application pushed by the existing User Interface and Content applications, and the user interface becomes the leading supporter when the user uses the application. In subsequent studies there should be the development of the.

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