

Implementation of Minatku Application as Alternative Information in the Selection of Further Study for Junior High School Students

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Abstract. This article aims to assess the application of Minatku as alternative information in choosing further studies for junior high school students. The assessment of the Minatku application as a result of the study aims to measure the User Experience of the Minatku application through the User Experience Questionnaire (UEQ). The method used in this research is descriptive quantitative, involving 35 junior high school students to fill out the UEQ questionnaire. The instrument consists of 6 rating scales consisting of attractiveness (DT = 1,476), clarity (KJ = 1,236), efficiency (E = 1,514), accuracy (KT = 1,321), simulation (SM = 1,421) and novelty (KB = 0,693). The UEQ test data shows that the Minatku application has a good efficiency in testing the interest of junior high school students in providing options for further studies. Therefore, junior high school students can use the Minatku application to study the factors that influence the selection of junior high school students to continue further studies based on student interests.

Keywords: Application, user experience questionnaire, junior high school

1. Introduction

The statement by the President of the Republic of Indonesia at the 2019 National Education and Culture Conference (RNPK) [1], that Indonesian Education will focus on Vocational Education to support the government's development program regarding the need for skilled workers to meet employment needs. The President's policy is in line with other Government policies regarding the Revitalization of Vocational High Schools (SMK) to improve the quality and competitiveness of Indonesian human resources at the secondary education level. The increase in the number of Vocational High Schools is an additional opportunity to accommodate SMK graduates as prospective workers more significantly to anticipate the development of various industrial sectors. However, the desire to increase human resources capacity technically needs to consider the input aspect.

Vocational education is secondary education that prepares students to work in their respective fields. Vocational education is built to form a skilled, competitive, and competent workforce from an early age. So that students who graduate from Vocational High Schools

(SMK) are ready to work according to their fields. The purpose of Vocational Education, which is a type of education included in the national education structure and oriented to preparing students to enter the world of work or industry, can be achieved. Thus, all vocational education tools, including policies in vocational education, are directed to equip students with good attitudes, knowledge, and skills with appropriate and adequate competencies to work in specific fields of work. Thus, to fulfill the above principles, the recruitment, and selection system for prospective SMK students must be based on an appropriate assessment to ensure the suitability of the inputs with the fields they are engaged in.

The use of technology today is unavoidable, and people constantly carry out activities related to technology. The use of technology can change the mindset and attitude or behavior of a user. The development of increasingly sophisticated and modern technology certainly significantly affects many fields, including education [2].

In research on the development of an augmented reality android version as a learning medium for the human excretory system, it is concluded that the Android version of the AR application is considered attractive and acceptable by students and teachers as an alternative learning medium for the human excretory system, and is effective in helping the biology learning process in the classroom [3]. Research on the development and analysis of the quality of the ISO 19796-1 SMK e-learning assessment application in Yogyakarta shows that the application has an excellent average result and is suitable for assessing the quality of SMK e-learning [4].

Indonesian smartphone users are also increasing. The digital marketing research institute Emarketer estimates that in 2018 the number of active smartphone users in Indonesia was more than 100 million. With such a large number, Indonesia will become the country with the fourth largest active smartphone users worldwide after China, India, and America. Indonesia is listed in fourth place for Asia's most significant number of internet users. However, this order could turn into third place because internet penetration in Indonesia is smaller than in Japan, which is in third place. According to the Central Statistics Agency, Indonesia's population in 2018 reached 264.16 million. In the same year, internet users throughout Indonesia reached 171.17 million users. This figure is obtained from all Indonesian people in various provinces. This data can be used as a reinforcement for this research. The surge in internet users can actualize the use of applications downloaded from the application store, namely the play store so that it can be easily accessed by users to get information quickly and easily.

The growing technology makes it easier for people to communicate, obtain information and support the needs of daily life in the form of applications. According to [5], an application is a ready-to-use program that the program can use to execute commands to get more accurate results per the purpose of making the application. Chapman & Webster began to use technology in recruiting and selecting employees in the corporate environment [6]. Attali conducted a test by conducting tests through computer games (games) to measure the performance of employees in the industry [7]. Widianingrum, etc, state that it is necessary to adjust the competence of office communication between the curriculum and industry to harmonize the learning carried out in schools and technology-based industries [8].

Based on some of the research results above, the developing can use technology for recruitment and selection; the world of education can also use technology to select new students, especially in vocational/vocational education. The Education System recognizes the

system of inputs, processes, and outputs. The novelty in this research is using technology as a tool for student selection as a component of the education system, namely the input component, so it is necessary to develop and implement a selective assessment for prospective vocational/vocational education students. In previous research, an application of my interest has been produced, which contains a mapping of student interests based on the theory of Dr. Holland, better known as the RIASEC theory. This application can be alternative information for Junior High School (SMP) students in class IX who will continue their studies at the next level. Evaluation of the application can inform the choice of further study to Senior High School (SMA) or Vocational High School (SMK) through this application based on the student's personality. This application suggests 6 different categories that describe the relationship between personality characteristics and work environment. Implementation of Minatku aims to measure the efficiency of the Minatku application by using User Experience Questionnaire (UEQ).

Android is an operating system for Linux-based mobile devices that includes an operating system, middleware, and applications. "Android is an operating system for mobile phones and touch screen tablet computers based on Linux." But along with its development, Android has turned into a high-speed platform for innovation [9]. Application who inseparable from the leading developer behind it, namely Google. First, Google acquired Android, then developed a platform. The android platform consists of a Linux-based operating system, a GUI (Graphic User Interface), a web browser, and end-user applications that people can download, and developers can freely work and create the best and open applications for use by various devices [10].

2. Method

The method used in this research is descriptive quantitative; the quantitative method is researching and describing a sample of people who use the "Minatku" application to determine how efficient the "Minatku" application is among application users by using the User Experience Questionnaire (UEQ). Data collection was carried out by testing the application of my interest to 35 respondents, namely junior high school students. After the respondent uses the application, the UEQ instrument is given.

Questionnaires are some written questions used in obtaining information and respondents in the sense of personal reports or things they know. The questionnaire in this study refers to the User Experience Questionnaire (UEQ). UEQ can be applied to calculate how extensive the user experience is on interactive products, one of which is an application [11]. The UEQ questionnaire comprises six aspects: attractiveness, clarity, efficiency, accuracy, stimulation, and novelty. Of the six aspects that will produce as many as 26 UEQ questions to calculate the level of user satisfaction in using the system. UEQ is usually applied for several purposes, namely estimating the level of user experience between two products, evaluating the user experience of a product, and ascertaining areas of improvement [12].

Table 1. UEQ Instrument Grille.

Aspect	Indicator	Question Number
Attractiveness	Overall system impression	1, 12, 14, 16, 24, 25
Pragmatic Quality	Hedonic	9, 20, 22, 23
	Efficiency	2, 3, 13, 21
Quality	Stimulation	8, 11, 17, 19
	Novelty	5, 6, 7, 18
		3, 10, 15, 26

3. Results and Discussion

The Minatku Application's implementation begins with preliminary research, namely the Development of an Android-Based Selective Assessment Instrument Application for the Selection of Vocational (Vocational) Prospective Students. Preliminary study results produced the Minatku application from the initial research, which aims to provide recommendations for junior high school students in choosing further studies. Research developed the Minatku application based on Dr. Holland's RIASEC theory. In addition, my Interests application uses Figma as an application prototype, the Unity Engine application is practical as an application framework, and the firebase API as an application system database that will act as data archiving and calculations in the application network; this will be effective because users no longer need to authenticate repeated so that when opening the application, the Minatku application can save the data of the filling material.

This survey has a Cronbach Alpha factor representing the consistency of all items on all scales. For example, if the Cronbach Alpha factor value is 0.7 or higher, then the data analysis using the User Experience Questionnaire (UEQ) Survey is very consistent.

The Cronbach's Alpha reliability factor results are obtained by first finding the correlation value by calculating the average value of each pair of items on the scale, then taking the average of all correlation results on the scale. If the average value has been obtained, the next step is to use the average value multiplied by the number of items per scale to find the alpha value. Finally, after reviewing the size of the difference in answers, the mean, variance, and standard deviation of the respondent's response data were calculated. Figure 4 below shows that all scales accept Cronbach's Alpha coefficient value greater than 0.7.

Attractiveness		Clarity		Efficiency		Accuracy	
Items	Correlation	Items	Correlation	Items	Correlation	Items	Correlation
1, 12	0,39	2, 4	0,48	9, 20	0,46	8, 11	0,48
1, 14	0,30	2, 13	0,36	9, 22	0,44	8, 17	0,34
1, 16	0,37	2, 21	0,38	9, 23	0,54	8, 19	0,44
1, 24	0,23	4, 13	0,61	20, 22	0,64	11, 17	0,48
1, 25	0,21	4, 21	0,77	20, 23	0,27	11, 19	0,45
12, 14	0,44	13, 21	0,40	22, 23	0,66	17, 19	0,70
12, 16	0,55	Average	0,50				
12, 24	0,50	Alpha	0,80				

12, 25	0,58
14, 16	0,69
14, 24	0,40
14, 25	0,30
16, 24	0,41
16, 25	0,47
24, 25	0,64
Average	0,43
Alpha	0,82
Conf. Int. Alpha (5%)	0,70
	0,89

Conf. Int. Alpha (5%)	0,65
	0,89

Average	0,50	
Alpha	0,80	
Conf. Int. Alpha (5%)	0,66	
	0,89	

Average	0,48
Alpha	0,79
Conf. Int. Alpha (5%)	0,63
	0,88

Stimulation	
Items	Correlation
5, 6	0,41
5, 7	0,64
5, 18	0,65
6, 7	0,57
6, 18	0,46
7, 18	0,63
Average	0,56
Alpha	0,84
Conf. Int. Alpha (5%)	0,71
	0,91

Novelty	
Items	Correlation
3, 10	0,16
3, 15	0,28
3, 26	0,53
10, 15	-0,09
10, 26	0,00
15, 26	0,17
Average	0,18
Alpha	0,46
Conf. Int. Alpha (5%)	0,06
	0,69

Fig. 4. Cronbach Alpha Reliability Coefficient

Below are the average item results based on all the questions categorized on each scale. The average result obtained is 0.8, and this average is included in the average rating. Because an average referral value above 0.8 is positive, and an average referral value below 0.8 is a negative rating. From the results obtained, it can be concluded that the Minatku Application left a positive impression on all scales, including attractiveness, clarity, efficiency, accuracy, stimulation, and novelty. The results are shown in Table 2

Table 2. Average result by scale.

UEQ Scale (mean and variance)		
Attractiveness	1,476	0,83
Clarity	1,236	1,18
Efficiency	1,514	1,08
Accuracy	1,321	1,22
Stimulation	1,421	1,43
Novelty	0,693	0,84

To better understand the quality of a product, it is necessary to compare the product's user experience as measured by the results of other products. Benchmark tests are carried out using the User Experience Questionnaire (UEQ). Analytical data tool by comparing the value of each aspect with respondent data collection to evaluate different products (business software, web pages, web shops, social networks). Benchmark tests can represent the quality of the Minatku- Based Application compared to other products in the User Experience Questionnaire (UEQ). Analytical data tool (version 10) benchmark test results are divided into five categories: Excellent, Good, Above Average, Below Average, and Bad. The values for each category of the UEQ data analysis tool are shown in Tabel 3

Table 3. Categories on the UEQ analytical data tool

Scale	Excellent	Good	Above average	Below average	Bad
Attractiveness	>1,86	>1,6	>1,19	>0,7	<0,7
Perspiciuity	>2,03	>1,77	>1,25	>0,75	<0,75
Efficiency	>1,9	>1,5	>1,06	>0,6	<0,6
Dependability	>1,7	>1,47	>1,15	>0,78	<0,78
Simulation	>1,7	>1,35	>1	>0,5	<0,5
Novelty	>1,61	>1,14	>0,75	>0,25	<0,25

The User Experience Questionnaire (UEQ) has five benchmarks, namely excellent (excellent), good (good), above average (above average), below average (below average), and evil (bad). The graph of the results of the UEQ test can be seen in Figure 5.

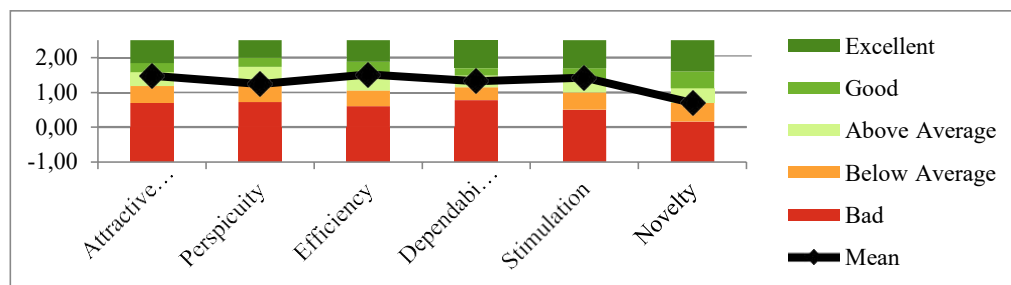


Fig. 5. UEQ Assessment Result Chart

Implementing the Minatku Application begins with preliminary research, namely the Development of an Android-Based Selective Assessment Instrument Application for the Selection of Vocational (Vocational) Prospective Students. The Minatku application was produced from the initial research, which aims to provide recommendations for junior high school students in choosing further studies. Minatku application was developed based on Dr. Holland's RIASEC theory. Minatku application uses Figma as an application prototype, the Unity Engine application is practical as an application framework, and the firebase API as an application system database that will act as data archiving and calculations in the application network; this will be effective because users no longer need to authenticate repeatedly so that when opening the application, the data of the filling material can be saved. After all the installations went well and the Minatku Application was able to run, a functional test of the

software was held. This functional test aims to ensure that all system software for this Minatku Application uses the C# programming language in the Unity engine application. This functional submission is accompanied and verified by the application developer.

Table 4. Categories on the UEQ analytical data tool

Scale	Interpretation		
Mean			
Comparisson toBenchmark			
Attractiveness	1,48	Above	average 25% of results better, 50% of results worse25% of
Perspicuity	1,24	Above	average results better, 50% of results worse10% of results
Efficiency	1,51	Good	better, 75% of results worse25% of results better,
Dependability	1,32	Above	average 50% of results worse10% of results better, 75% of
Simulation	1,42	Good	results worse
Novelty	0,69	Below	average 50% of results better, 25% of results worse

Furthermore, a trial was conducted on 35 users by distributing a User Experience Questionnaire (UEQ) which helps measure usability aspects: effectiveness, efficiency, and user satisfaction. Subjective testing used the User Experience Questionnaire (UEQ) questionnaire on the attractiveness scale with a score of 1.48 predicates sufficient (average), clarity with a score of 1.24 predicates sufficient (average), efficiency with a score of 1.51 predicates suitable, accuracy with a score of 1.32 predicates sufficient (average), stimulation with a score 1.42 predicate is good. Finally, the novelty with a score of 0.69 predicates is sufficient (average). These results indicate that the six UEQ test scales are in a reasonably close position. The results mean that the user accepts the Minatku Application. These results support the research entitled Usability Analysis and User Experience in the Budget Hotel booking Application using the User Experience Questionnaire (UEQ) (Case Study on Airy Rooms)[13], in that study the UEQ results showed that respondents gave positive perceptions of the three tested. The result can be seen from the average value obtained by the application on the UEQ questionnaire scale, which almost all reach and even exceed the number 0.8, where this number is the limit value that is considered a normal and positive result in the UEQ questionnaire. In this study, the results and the predicate also show positive results.

4. Conclusion

Based on the study results, the Minatku application's availability can be used to provide information and recommendations for junior high school students in selecting further studies based on interests. A User Experience Questionnaire (UEQ) is used for subjective testing to calculate user experience using the system. The results of the Minatku Application were obtained on a scale of attractiveness, efficiency, accuracy, stimulation, clarity, and novelty at a relatively (average) position close to good.

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