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Development and Validation of UNSIL Basketball Guide (PUBbG) Applications Based on Android

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Abstract

This research aims to develop and validate the Android-based Unsil Basketball Guide (PUBbG) application. The method used in this research is the Research and Development method. Three experts were involved in validating the design and feasibility of the android application made and user validation by 66 students using the proportional random sampling technique. The instruments used are media and material expert validation instruments and user validation instruments using the System Usability Scale (SUS). Data were analyzed using descriptive statistical techniques. The results showed that the overall application validity test results obtained percentages of 84%, 80%, and 90%, which means that the developed application is valid and feasible. The results of user validity using the SUS score are in the excellent category with a value of 72.95. The results of the application effectiveness assessment based on a user survey get 8.68 results, which means that the application is practical to improve the basic techniques of Bolabakset. This study concludes that the application product that has been made is in the appropriate category based on the results of expert evaluations and is effective for improving basic basketball techniques based on survey results to users.

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INTRODUCTION

The rapid progress of the times, one of which starts from the educational process so that humans become more dynamic and continue to innovate. Physical education, an integral part of education itself, has received

particular attention regarding the impact of the Corona Virus Pandemic (Grosse, 2020). Physical education that is useful for developing students' abilities by providing opportunities to be directly involved with various learning movements, movement skills, and thinking skills through physical

activity, playing and exercising systematically gets a challenge when activities that are usually carried out in the field have to be replaced with online activities—done in front of a computer or smartphone screen (Filiz & Konukman, 2020).

Quoted from katadata.co.id (2019), smartphone users in Indonesia are increasing from year to year, from 2016 to 2019 experiencing a very rapid increase, from 65.2 million to 92 million users. This shows that in Indonesia itself, smartphones are very familiar. Therefore, making learning media through smartphones is considered suitable and reducing the negative impact of excessive smartphone use, such as playing games that do not know the time (Duke & Montag, 2017; World Health Organization, 2015).

Basketball is a game activity carried out in groups to score as many points as possible into the opponent's ring (Harun, 2017). It is clear that if you want to play well, the basic techniques in a game must be mastered well (Prasetya et al., 2018). The challenge faced during this pandemic is the pattern of basketball learning which has been carried out directly by applying various learning models (Praja, 2017) such as Direct Instruction, Teaching Games for Understanding, Group Investigation Learning (Hanansyah & Ginanjar, 2019, Julianto et al., 2017) and various activities carried out both in groups and individuals must be able to be done independently at home when learning is done online. Therefore, we need appropriate

learning media by the times and the students' interests to overcome the challenges of education that occur today.

The use of appropriate learning media will prove to have a positive impact on learning outcomes (Rusmana et al., 2019). Previous research that applied the use of "learning journals" to basketball game lessons showed an increase in the ability to understand the material, motivate self-improvement, and increase knowledge. However, it was still limited to using physical books that students collected at the end of each lecture session (Andriyani, 2017). Therefore, a development effort can be made by utilizing easy-to-use technology such as smartphones. Several researchers have discussed the role of smartphones, especially android applications, as an alternative means of learning and providing convenience in delivering material and increasing student motivation (Mockus et al., 2011). Other studies reveal that the proper use of smartphones can encourage students to help their learning activities (Anshari, Almunawar, Shahrill, Wicaksono, & Huda, 2017; Vázquez-Cano, 2014; Wu, 2015).

In previous research, researchers conducted an initial study on students to determine basic technical skills in basketball games and obtained the results that most were still in the excellent category. Based on the Norm Reference Assessment, most students were in the less class in shooting techniques (Malik & Rubiana, 2019). Furthermore, the pilot project carried out by Sopian (2020)

succeeded in making an application for an increase in Chest Pass for junior high school students. Therefore, in this study, researchers are interested in expanding the reach of the benefits of the Android application by developing an Android-based Unsil Basketball Guide (PUBbG) application to improve the basic techniques of basketball for students. The research's novelty is that the first application material module is done in two languages (Indonesian and English). Second, the video concept is made in two versions of the model, namely a male video model and a female video model. Third, there are supporting materials that contain various basic movements or techniques that are generally done with wrong activities by beginners and how to fix them.

METHODS

This study uses the Research and Development (R&D) method (Ramadan & Juniarti, 2020) to develop learning media based on Android applications. The main focus is on the development process and expert validation, and user validation.

The research subject consisted of two components, namely, firstly, experts to validate the design and feasibility of the developed android application, which consisted of 3 experts with the following criteria: a) having relevant experience of more than five years; b) is a lecturer/practitioner; and c) in the following areas: learning media and basketball. The second research subject

was 66 students of Physical Education at Siliwangi University (44 males and 22 females) with an age range of 20-21 years as user validity and to test the effectiveness of the product made.

The instruments used in this study include material expert validation instruments, media expert validation instruments, and System Usability Scale (SUS) instruments to determine user validity. The System Usability Scale (SUS) instrument is a usability testing tool consisting of 10 statements with a Likert scale of 1-5 (Vlachogianni & Tselios, 2021). The data obtained were then analyzed using a descriptive percentage technique.

FINDINGS AND DISCUSSION

Findings

The Android-based Unsil Basketball Guide (PUBbG) application has been successfully created, as shown in Figure 1. Overall, this application contains material on basic techniques in basketball games such as ball handling, passing, dribbling, and shooting techniques. In addition, there are also supporting materials about wrong movements and how to fix them, making it easier for users to learn how to implement them.

Figure 1. Initial view and description of the contents of the developed application module



Table 1 Summary of results and expert suggestions

Validator	Rating Percentage	Feedback/Suggestions
Media Specialist 1	84%	<ul style="list-style-type: none"> - Add another language model (English) to the basic technique description. - The display of ads when the data is activated is quite annoying. - Add back button.
Media Specialist 2	80%	<ul style="list-style-type: none"> - Display images that are too far away to be enlarged. - Too many ads if the data package is activated. - There is a video that is clicked can not be seen - The video presented is still delayed, and in particular, there is only one dribble technique; while there are many basketball dribble techniques, the rest are good.
Material Expert	90%	

Table 2 Summary of user validation results and mean SUS Score.

	Statement Number										Effectiveness
	1	2	3	4	5	6	7	8	9	10	
Average	3.97	2.17	4.45	2.53	4.15	2.33	4.26	2.18	4.41	2.85	8.68
SD	0.58	0.87	0.61	1.11	0.68	0.98	0.64	0.96	0.55	1.07	0.95
Average SUS Score	72.95										

Furthermore, the researchers tested the validity of the application to the experts using a questionnaire with a summary of the results, as shown in table 1. Overall, the three experts stated that the eligibility percentage was above 80%, meaning that the android-based learning media developed was declared feasible, and field trials could be carried out (test). Try user).

After being declared valid and feasible by all experts, a user trial was carried out by involving 66 student participants as users. Based on the results of user validation as shown in table 2, information is obtained that the SUS score is 72.95, which is in the excellent category.

In the effectiveness results obtained an average value of 8.68 with a standard deviation of 0.95 from a maximum score of 10

so that it can be concluded that the overall application made is feasible and effective to improve basic basketball techniques based on user assessments.

Discussion

Basketball learning is one of the compulsory subjects taught in higher education. This course is usually conducted in practice directly in the field but is related to the current pandemic, so learning must be done online. Physical education Unsil Basketball Guide (PUBbG) is an application developed to face the challenges of changing times related to the pandemic where most of the learning is done online (Paseleng, & Sanoto 2021). Based on the research results obtained, the application developed is in a suitable category and is feasible to be used by users.

Android-based applications have been widely used in assisting the learning process as has been done by Titting, Hidayah, & Pramono (2016), who developed an android application-based learning media in Floor Gymnastics learning applied to High Schools, Marvin's research (2018) which developed Physical Education-media application for junior high school students, analysis by Firlando, Frima, & Sunardi (2020) which creates an android-based application for learning basic soccer techniques. Based on the results of the previous research, all of them revealed that the application developed was beneficial for the development of the student learning process. Furthermore, in the world of health, Frontini et al. (2020) informed that the mHealth app designed helps promote healthy

behaviour and prevent obesity in adolescents. This means that the android application is a trend for young people that is easy to use, so creating learning media through the android application is highly recommended.

CONCLUSION

This study concludes that the researchers succeeded in making an android-based unsil basketball guide (pubbg) application with the results of the validity of the application being eligible for 84%, 80%, and 90%, which means that the developed application is valid and feasible to use. The results of user validity using the sus score are in the good category with a value of 72.95, and the results of the assessment of the effectiveness of the application based on a user survey get a value of 8.68 which means that the application is effective to be able to improve the basic techniques of basket ball. In further research, the researcher suggests that the product's effectiveness can be tested more broadly so that a more comprehensive picture will be obtained about the impact of the application product made for users.

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