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Application Development Basic Technical Guidelines for Football Goalkeepers U 10-15 Years Based on Android

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ABSTRACT: Efforts to improve the basic technique of goalkeepers are a basic component that is very important in supporting the achievements of athletes themselves, one of which is developing Android-based applications. This study aims to develop an application media for basic goalkeeper technique guidelines aged 10-15 years based on Android to make it easier for children to practice independently or coaches can learn good and correct goalkeeper techniques. This research is a Research and Development research. There are several stages carried out in the process of developing this media, namely: Information collection, planning, initial product development, expert validation, small-scale trials, large-scale trials, final product revisions. Subjects of a small-scale trial conducted on 5 coaches and 5 goalkeepers at the SSO real madrid foundation. And large-scale trials were carried out on 10 coaches and 10 goalkeepers at SSB Baturetno, SSB Gelora Muda and SSB 89 Selindung. The instrument used in collecting this development data is in the form of questionnaires. The data analysis technique used is a descriptive statistical analysis technique. The results showed that the application development media for basic goalkeeper technique guidelines aged 10-15 years based on Android is suitable to be used as a reference for student learning and media used by coaches to train. This is shown from the results of assessments that have been carried out by material experts, media experts and field trials. The final results obtained from the study showed that the application of the basic goalkeeper technique guidelines was declared "Eligible" based on the percentage obtained, namely from material experts 81%, media experts 85%, small group trial results 85% and large group trial results 88%.

KEYWORDS: Development, Android, Basic Techniques, Goalkeeper, Football.

I. INTRODUCTION

Over time, science technology is very influential in human life today. There is a lot of evidence that we can see today and various advanced technological tools were created to help humans move [1]. In sports, technology is also needed to help coaches achieve the highest achievements of their athletes. Technology has also been widely used in the field of sports, especially football, in the current era science and technology plays an important role for athletes, coaches, and managers [2].

In the game of soccer there are many aspects that must be considered such as technique, tactics, mental and physical condition. These aspects must be mastered by each player in depth. Modern football is now very much shown by European teams, the purpose of modern football is how to put goals into the opponent's goal as much as possible using good teamwork techniques, therefore mastery of technique, tactics, mental and physical condition is very important [3]. Technique is the player's ability to carry out movements properly and correctly in the process of training and matches so that a good player must be required to master good basic techniques [4]. The game of soccer is not spared from tactics, tactics are strategies that will be planned and implemented in a match, therefore to make good tactics must require compact, tough and strong teamwork, meaning that in playing soccer requires players who can master good techniques to support good tactics [5].

Technique is an ability that must be mastered by every player on the ball, so that to play well every player needs to improve and develop the ability of the technique [6]. There are 2 kinds of soccer playing techniques, namely techniques with the ball and without the ball [7]. There are several kinds of techniques in playing top-composed soccer; (1) Basic techniques-without balls-include sprint running, agility feinting movements without the ball, jumping or jumping and other special movements. (2) Techniques with the ball include kicking the ball, heading the ball, controlling the ball, catching the ball, and dribbling, as well as movements—specifically for the goalkeeper. The goalkeeper's technique is very important, the goalkeeper "must master all the basic techniques of the ball because a goalkeeper is allowed to use all members of his ball or catch the ball but only within the penalty area of his team. A goalkeeper must play optimally in every match, because without a reliable goalkeeper, the goal that

is guarded will be conceded by the opponent causing the team to lose. As said by [8] The goalkeeper is the most important position in football that requires a special outlook and an excellent program. To become a good goalkeeper, it is also very important that the goalkeeper must learn techniques and personal values such as confidence, character and assertiveness which all need to be taught from an early age [9]. Therefore, the goalkeeper must be able to master the techniques and needs of the goalkeeper, because the goalkeeper is someone who determines the victory of a team [10].

The success of the goalkeeper can be seen from his excellent skillful and coordinated ability when making saves on his goal effectively and efficiently so as not to cause injury to him when jumping and falling [11]. A goalkeeper must have more needs than other players because goalkeepers are required to have complex skills. In addition to saving the goal from the opponent's attack, the goalkeeper must dare to make decisions when intersaving the ball from the opponent and also as a builder of the initial attack of a team that starts from the goalkeeper like modern football like this [12].

In Indonesia, soccer is a game that is in great demand by children [13]. The number of football coaches established by institutions and the private sector, these are good things for the development of Indonesian football, so that this coaching can create players from a young age, but the source of the problem is that children's understanding of the basic material of football, especially goalkeepers, is still minimal [14]. Children only depend on training at SSB to improve their abilities. The students' low understanding and knowledge of the material makes students dependent on their trainers at SSB, even when the training time used by trainers to discuss with students is very little. Lack of references or learning media makes it difficult for children to develop their talents individually or independently. Even the coach's training of his protégés such as passing, dribling, control is an exercise that is generally given to all players, but not specifically for goalkeepers, based on research [15] One of the factors that cause children to feel bored / bored in learning is that the method of exercise / learning is less varied so that it is not supported by learners, training / learning media that is less supportive and there are still many memorizations. It will be saturated if the training is presented like that, for now there are no technological tools presented specifically for goalkeepers.

In the modern era, what has used technology, therefore, must be created an application that can be used as a learning resource to improve the technique and keterampilan_seorang of goalkeepers. The media used is an application as a learning resource, especially for goalkeepers [16]. The material presented in this android application can be a solution in coaching goalkeepers at a young age, especially for beginners. This application has mater about basic goalkeeper techniques, videos, pictures, and quizzes to increase children's knowledge and insight [17]. So that the application can be used to reference student learning and make it easier for students to know the basic techniques of goalkeepers. This application media can be accessed via Android offline or online. With a very attractive appearance will make students more interested in using this media and not make students bored. Based on the results of research by [18] said that learning using the application model can increase and increase the enthusiasm of children's learning and with the application can eliminate boredom when learning. If students are happy with this application, so students will be very easy to understand the material in the media, and of course most students now have smartphones even though they still have their parents. Based on the results of the study [19]. Android media is very influential on learning during this pandemic and is a very appropriate media for distance learning or independent learning, here is one of the benefits of using Android, namely as a tool to find information and a tool to add insight, of course using Android is very easy for students in the learning process independently, especially during the Covid-19 pandemic.

Based on this background, researchers try to develop new media in Indonesia yaitu_aplikasi the development of goalkeeper techniques in the modern era based on android for coaches and players, so that coaches and players can learn or understand how to do gawanag techniques well, with existing technology can be taken anywhere, namely using android. With this media, it is expected to arouse interest and motivation for children.

II. METHOD

This research is a type of development research or RnD aimed at creating an application for basic U-10-U 12 goalkeeper technique guidelines based on the Android system, so that it can be accessed by all soccer players from coaches and players, especially goalkeepers. This application has a form of android-based material to train the basic techniques of goalkeepers in soccer games.

This study aims to develop a media application for basic technique guidelines for goalkeepers aged 10-15 years based on Android. The research model used in this development is a type of borg development, and there are ten activities/stages, namely: 1) Research and information collection. 2) Research planning. 3) Initial product development. Development of learning materials and evaluation instruments. 4) Preparatory field trials. 5) Revision of the results of preparatory field trials. 6) Main field test 7) Revision of main field test results. 8) Operational field test. 9) Revision of the final product. 10) Dissemination. Then the research and procedures developed by researchers into 7 activities or stages of development, including: 1) Information

Collection, 2) Planning Arrangement, 3) Initial Product Development, 4) Expert Validation, 5) Small-scale field trials, 6) Large-scale field trials, 7) Final Product Revision.

Product trials are intended to collect data that is used as a basis for determining the quality of the products produced. The data obtained from the trial was used to improve and perfect the products produced in this study, including: 1) Trial design, 2) Test Subjects.

The data collection technique used in this development research uses questionnaire instruments. Questionnaires can be in the form of questions/statements or closed. There are 3 instruments used in this study, namely:

1. Instrument I

The first instrument is a material expert evaluation sheet in the form of a material expert assessment questionnaire related to the material of basic football techniques. The results of this material expert assessment will be used as revision material in the development of Android-based products.

2. Instrument II

The second instrument is a media expert in the form of a learning media expert assessment sheet related to the appearance and products made. This instrument is used for android-based media revision materials to make them suitable for use.

3. Instrument III

The third instrument is an evaluation sheet or questionnaire aimed at students or trainers to find out whether or not the android-based learning application media that will be developed.

After the data from the trial results have been collected, data analysis data processing is carried out. Data analysis techniques from the feasibility assessment of the application of basic goalkeeper techniques U-10 – 15 years based on the Android mobile operating system. Furthermore, the application of basic techniques for goalkeepers U-10 – 15 years based on the android mobile operating system feasibility in this Development-based research is classified in four feasibility categories using the following Scale.

Tabel 1. Normative Eligibility Percentage

No.	Scores in presentations	Eligibility Categories
1.	<40%	Not worth it
2.	40% - 55%	Less viable
3.	56% - 75%	Pretty decent
4.	76% - 100%	Proper

III. RESULT

1. Expert Validation

The development of this Android-based application is validated by lecturers who are experts in their fields, namely the validation of material experts and media experts. Validators are asked to assess whether the initial product that has been designed is suitable for use or not. Then the input results from the validation are used as a reference for the initial product revision of the Android-Based Basic Goalkeeper Technical Guidelines Application for 10-15 Years. This expert review resulted in the following revisions:

a. Material Expert Validation Data

The material expert who became a validator in this study was Drs. Herwin, M. Pd. who has expertise in the field of football. Here are the results and revisions of the application according to the improvements:

1) Grammar and writing

Based on validation from material experts, there are several revisions and suggestions that grammar and writing on some displays be improved, this is so that application users do not misinterpret words or words in the application.

Before Revision

After Revision

Figure 1. Home Screen Display and Goalkeeper Material

2) Addition of Each Sub Technique

The addition of each sub-technique from preparation, implementation, advanced motion and full video technique, this is so that application users can find out from the beginning of preparation to perform techniques to advanced motion. So that the video in the application can be easily understood by users.

Before Revision

After Revision

Figure 2. Sub Technique Display

3) Material expert revised data

Revised data from material experts is used as evaluation material to improve the products developed. The percentage obtained from material experts from the aspect of feasibility of material content is 77%, and from the aspect of truth of material content is 100%. The total score percentage is 81% with good/decent category.

Table 2. Application Assessment Results Data by Material Experts

No.	Assessed aspects	Scores obtained	Max Score	Percentage	Category
1.	Eligibility of Content	28	36	77	Good/Worth It
2.	Correctness of the Concept	7	7	100	Good/Worth It
Total Score		35	43	81	Good/Worth It

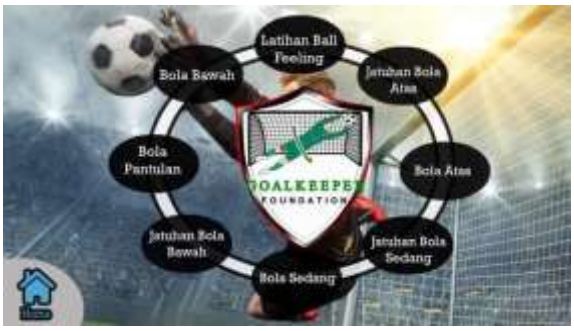
b. Media Expert Validation Data

Media experts who became validators in this study were Nawan Primasoni, S. Pd., Kor., M.Or. who have expertise in technology. This validation process gets suggestions and revisions from media experts so that it is feasible to use according to the improvements, here are the results and revisions of the application according to the improvements:

1) Addition of Goalkeeper Rescue Video

The addition of this video is made so that users are more interested in the application, with many interesting features so that users can enjoy the application as it functions.

Before Revision



After Revision

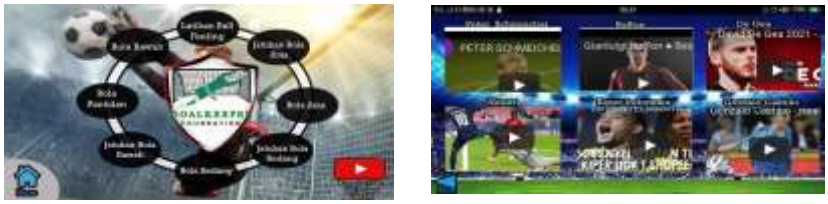


Figure 3. Home Screen Display and Goalkeeper Material

2) Data validated by media experts

Revised data from media experts is used as evaluation material to improve the product developed. The percentage obtained from media experts from the display aspect is 86%, from the linguistic aspect 81%, the programming aspect 90%, and the user aspect 85%. The total score percentage is 85% with good/decent category.

Table 3. Application Assessment Results Data by Material Experts

No.	Assessed aspects	Scores obtained	Max Score	Percentage	Category
1.	Display	31	36	86	Good/Worth It
2.	Language	13	16	81	Good/Worth It
3.	Programming	18	20	90	Good/Worth It
4.	User	17	20	85	Good/Worth It
Total Score		35	43	81	Good/Worth It

2. PRODUCT TRIALS

a. **Small-Scale Trials**

1) Conditions of Test Subjects

Small group trials to 5 Real Madrid UNY SSO goalkeepers aged 10-15 years and 5 Real Madrid SSO coaches on the integrated field of the Faculty of Sports Sciences, Yogyakarta State University. The first stage carried out before filling out the questionnaire is to explain the purpose of this study, and explain the material related to the research conducted. Conditions when filling out questionnaires students and trainers pay attention to the explanation of the procedures for questionnaire siding, trainers and students fill out carefully.

2) Results of small-scale trial questionnaires

The results of the trainer and student questionnaire test regarding learning media basic goalkeeper technique guidelines aged 10-15 years based on android. The percentage obtained from the small group assessment of this feasibility aspect is 87%, the linguistic aspect is 81%, the display is 85%. and the total number is 85% categorized as good/decent.

Table 4. Small-scale trial result data

No.	Assessed aspects	Scores obtained	Max Score	Percentage	Category
1.	Content Eligibility	174	200	87	Good/Worth It
2.	Linguistic Aspects	65	80	80	Good/Worth It
3.	Display Aspect	272	320	85	Good/Worth It
Total Score		511	600	85	Good/Worth It

b. Large-Scale Trials

1) Condition Subjects of large-scale trials

Large group trials at SSB Gelora Muda, SSB Baturetno and SSB 89 Selindung to 10 goalkeepers aged 10-15 years and 10 coaches The first stage carried out before filling out the questionnaire was to explain the purpose of this study, and explain the material related to the research conducted. Conditions when filling out questionnaires students and trainers pay attention to the explanation of the procedures for questionnaire siding, trainers and students fill out carefully.

2) Results of large-scale trial questionnaires.

The results of the trainer and student questionnaire test regarding learning media basic goalkeeper technique guidelines aged 10-15 years based on android. The percentage obtained from the small group assessment of this feasibility aspect is 87%, the linguistic aspect is 80%, the display is 88%. and the total number is 88% categorized as good/decent.

Table 5. Small-scale trial result data

No.	Assessed aspects	Scores obtained	Max Score	Percentage	Category
1.	Content Eligibility	350	400	87	Good/Worth It
2.	Linguistic Aspects	141	160	88	Good/Worth It
3.	Display Aspect	565	640	88	Good/Worth It
Total Score		1056	1200	88	Good/Worth It

3. DATA ANALYSIS RESULTS

Based on the results of the study, data were obtained that produced several things as follows.

a. Based on the notes of material experts, to improve grammar and writing and improve each technique to make sub-techniques.
b. Based on the notes of media experts, it is advisable to add examples of goalkeeper saves when playing
c. Small-scale trials were conducted for 5 trainers and 5 students
d. After that, it continued with large-scale trials to 10 trainers and 10 students.
e. Based on the results of small-scale and large-scale trials, good / decent results were obtained. The results obtained are then integrated according to predetermined categories, The categories used in this study are divided into several parts, namely percentages.

IV. DISCUSSIONS

At the beginning of the development of learning media, the basic techniques of goalkeepers based on android were designed and produced into an initial product in the form of an application as a learning medium for students aged 10-15 years. The media development process goes through research and development procedures such as preliminary studies to the final product. After the initial product is made, it needs evaluation from validation and trial experts. The evaluation stage is carried out on material experts and media experts. The research phase was carried out with small-scale trials, namely on 5 coaches and 5 goalkeepers aged 10-15 years at SSB RMF UNY and large-scale on 10 coaches and 10 goalkeepers at SSB, Baturetno, SSB 89 Selindung and SSB Gelora Muda.

After conducting trials (small scale and large scale) can be obtained advantages and disadvantages of basic technical guidelines for goalkeepers aged 10-15 years based on Android. Here are the advantages and disadvantages of the application:

1. Pros of the Application

a. This application can be used by students as a learning medium, with an attractive appearance that makes the material easier to understand and can be used as a coach reference to understand the basic techniques of goalkeepers.
b. Increase knowledge of basic goalkeeper techniques.
c. Attract students to learn basic goalkeeping techniques using this app.
d. The application can be accessed online

2. Cons of the App

a. Application installation via bluetooth and downloaded via link (can not be downloaded on the play store) due to the author's limitations.
b. In-app videos are shortened so that the size of the application is not too large.

Media tagging basic technical guidelines for goalkeepers aged 10-15 years in the "Eligible" criteria. These results are evidenced by the results of assessments from material and media experts as well as the results of small-scale and large-scale trials.

Students and coaches are very happy with this application because there is no application that presents to learn goalkeeper and gain knowledge about goalkeeper. From the results of trials on the application media, basic technical guidelines for goalkeepers aged 10-15 years based on Android can be concluded as follows:

a. Students are very interested in learning basic goalkeeper techniques by using the app, observing images as well as videos and quizzes within the app.
b. According to the coach, this application is very appropriate to make, so it makes it easier for students to understand material related to basic goalkeeper techniques.
c. Student dependence on smartphones is very high. With this application, it is expected that students use their smartphones as much as possible so that they are useful for students.
d. The use of application media basic guidelines for goalkeepers aged 10-15 years based on Android still has obstacles, the installation of the application cannot be downloaded on the play store due to the limitations of the author. In the future, the learning media guidelines for basic techniques for guarding gwang aged 10-15 years are expected to be perfected

.

V. CONCLUSION

Based on the results of the development of the basic goalkeeper technical guidelines application for goalkeepers aged 10-15 years based on android, there is a conclusion that from the entire media component of the application basic guidelines for goalkeepers aged 10-15 years based on android-based assessments from material experts, media experts and respondents, it can be concluded that the application is categorized as feasible, which is reviewed from the feasibility of content, language and appearance. The assessment results from material experts get a percentage of 81% (feasible category). Meanwhile, from the assessment of media experts, the percentage is 85% (feasible category). In small-scale trials it gets a percentage of 85% (feasible category), and in large-scale trials it gets a percentage of 88% (feasible category).

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