Android Based Learning Media Development on Basic Beauty Learning

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Abstract; the learning media developed is a media that can help students in learning basic beauty. This study aims to produce valid, practical and effective learning media. The method used is Research and Development (R&D) with a 4-D development model (four D model). This study used an instrument in the form of a questionnaire. The questionnaires were divided into validation questionnaires, practicality questionnaires and effectiveness questionnaires. For data analysis, researchers used the Aiken and Gain Score formulas. In this study there are 3 validators, namely 2 material validators and 1 media validator. The results of the questionnaire analysis from the validator obtained an average value of 0.86 with a valid category. The practicality questionnaire was filled out by students and teachers who after being analyzed obtained an average score of 85.5% with a very practical category of practicality. For the effectiveness test based on the KKM, 85% of students get a score above the KKM, while in terms of the gain score, the result is 0.61, which means the learning media developed can be said to be effective. Based on these data, it can be concluded that the android-based learning media application for basic beauty subjects is valid, practical and effective to be used as a learning medium.

Keywords: instructional media, android, basic beauty, 4-D model, Aiken's formula, gain score.

INTRODUCTION

Education can be interpreted as something that can not be separated and always associated with our lives. It can be said that this education is an important aspect in creating quality human resources, where education can turn a person into an individual who provides benefits to life[1]. With education, humans can become individuals who benefit, for themselves, their nation and their country. Based on the above explanation, education must be carried out properly in order to achieve the goals that have been set. Education influences the success obtained by a nation, by improving the quality of its individuals[2].

Education today refers to multidimensional education that prioritizes scientific and technological approaches. Advances in information and communication technology have

[1] Sudarsri Lestari, "Peran Teknologi Dalam Pendidikan Di Era Globalisasi," *EDURELIGIA; JURNAL PENDIDIKAN AGAMA ISLAM* (2018); Rebecca Tipton and Olgierda Furmanek, "Educational Interpreting," in *Dialogue Interpreting*, 2020.

[2] Muh Barid Nizarudin Wajdi, "Spiritual Counseling As An Alternative Problem Solving," *Educatio : Journal of Education* 1, no. 2 (October 30, 2016): 11–28, accessed October 18, 2017, http://ejournal.staimnglawak.ac.id/index.php/educatio/article/view/27.

changed people's way of life, both at work and while socializing, playing and learning[3]. In the early 21st century, technology is progressing that has captured various aspects of life, including in the field of education. Learners and teachers alike must face a number of challenges and opportunities to survive in this informational knowledge. The development of science and technology has an impact on the processes that occur in learning, namely enrichment of learning resources and media such as textbooks, modules, *overhead* transparency, film, video, television, hypertext *slides,* the internet, etc.

The 21st century is the era of knowledge development, at this time we will feel the rapid dissemination of information, of course, with the help of technology that is always evolving. The characteristic of the 21st century is that science is increasingly interconnected, so that the synergy between the two is faster. With regard to the use of ICT in the world of education, this is evidenced by the narrowing and merging between space and time. Determinant of the speed and success of science for mankind[4] .

Education in the 21st century has the goal that the ideal of the nation is to become a prosperous and happy nation because of its honorable position, on par with other countries in the globally reached world[5]. With this in mind, KEMDIKBUD formulates learning in the 21st century to the ability of learners to identify, formulate problems, think analytically, and collaborate to solve a problem[6]. Therefore, media that can help the goal is achieved, one of which is the medium of learning[7].

Learning media can be interpreted as a tool used so that the learning process runs smoothly and optimizes interaction between educators and learners. Thus, of course, it can help teachers teach and make it easier for learners to take and understand the lesson. This process requires teachers who are able to coordinate learning media and learning methods. The use of media in the teaching and learning process can also cause new desires and interests for learners, giving rise to learning motivation and even psychological impact on learners. In addition to increasing the learning motivation of learners, the use of media can also increase learners' understanding of learning materials.

Similarly, at the time of basic beauty learning, in the learning process teachers should use media in learning. In order to provide encouragement, awareness and guidance to learners, must be used teaching methods or methodologies that are easily understood by learners, so that they can be heard, understood, absorbed and implemented. as an influence (feedback) on learning outcomes[8].

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[3] Yuqi Hu and Chunli Li, "Implementing a Multidimensional Education Approach Combining Problem-Based Learning and Conceive-Design-Implement-Operate in a Third-Year Undergraduate Chemical Engineering Course," *Journal of Chemical Education* (2020); Paul Kwame Butakor, Ernest Ampadu, and Saratu Jenepha Suleiman, "Analysis of Ghanaian Teachers' Attitudes toward Inclusive Education," *International Journal of Inclusive Education*, 2020.

[4] Badan Standar Nasional Pendidikan, "Standar Isi," *Jakarta: BSNP* (2006).

[5] Ibid.

[6] Ministry of Education and Culture, "Peta Jalan Pendidikan Indonesia," *Kemdikbud* (2020).

[7] Direktorat Jenderal Pendidikan Tinggi Kemdikbud RI, *Buku Panduan Merdeka Belajar - Kampus Merdeka*, ke satu. (Jakarta: Direktorat Jenderal Pendidikan Tinggi Kemdikbud RI, 2020).

[8] Icha Bimawati Astikasari et al., "The Game Model To Develop Motor Skills For Kindergarten Students," *Ann Trop Med & Public Health* 24, no. 3 (2021): 1–6.

Based on the results of observations and interviews, which were held on Wednesday, September 21, 2020 at SMK Negeri 7 Padang with basic beauty subject teachers, basic beauty teachers use *power points* as learning media. In *the power point* of learning material has been presented theories, images, and video tutorials related to the material. It's just that to play a tutorial video until Tuesday takes a long time so that the teacher runs out of time just to play the video and make other material delayed. Another problem is also experienced by teachers when they want to share power *points* to learners because the *power points* hyperlinked to the video must be opened on a laptop or on a computer, and learners must reconnect the video to the power *point,* and not all learners have a laptop or computer at home. *Power points* that are connected to the video are also not able to be opened on the *smartphone* of learners because the video does not become a unit in the power *point.* This makes learners have difficulty in repeating learning materials, especially materials that contain video tutorials. So that the development of more practical learning media is needed to help teachers and learners.

From the results of interviews with learners almost 90% of learners have *smartphones,*coupled with pandemic conditions that make learners must have a *smartphone* for online learning. Learners say they prefer to learn to use smartphones because they can learn anywhere and anytime, and learners feel more motivated in learning. Learning media that use *smartphone* technology is known as mobile *learning (m-learning). Mobile learning* is one of the alternatives to the development of learning media. The presence of *mobile learning* is intended as a complement to learning and offers opportunities for learners to learnless mastered materials anywhere and anytime. (Panji Vishnu Wirawan, 2011: 22-23).

From the results of interviews with teachers and learners above concluded teachers and learners need learning media that can facilitate in learning. Teachers in basic beauty subjects support and agree in the creation of *android-based* learning media and used as research, because it is expected that the media can help the learning process and increase the motivation of participants, and can help learners to learn anywhere and anytime.

METHODS

The type of research used is Research and Development *(R&D),*which is research that produces a particular product. The subjects of this study are learners who learn basic beauty as much as one class. The object of this research is an android-based learning medium on basic beauty subjects. The development model used is the 4-D model (Four*D models).* This 4-D model consists of 4 main stages, namely: (1) *defining,*(2) design, (3) development *and* (4) disseminate[7]. The research begins at the *define stage.* The steps at this *define* stage include front end analysis, student analysis, task analysis, concept analysis and learning objective analysis. The second stage is *design.* At the stage of *design* that is done is designing the learning media that is carried out. The third stage is the stage of *development,* namely the validity test, practicality test and effectiveness test. The fourth stage is the stage of *disseminate* or spread. In the context ofthe development of thisteaching media, researchers at this *stage* limit only to the stage of socialization of learning media through distribution in limited numbers to teachers and learners. This distribution is intended to obtain responses, feedback to developed learning media. If the target response, the learning media is good, then only

printing in large quantities and marketing so that the learning media can be used by a wider target. However, researchers do not do printing in large quantities and marketing due to time and cost constraints. The instruments used in this study are validation sheets, practicality sheets, and *pretest* and *postest questions*. The formulas used to process validity data are as follows:

$$V = \frac{\sum s}{[n\,(c-1)]}$$

Where: s = r – lo
lo= lowest validation assessment number
c = highest validation assessment number
r = the number given by an assessment
n = the amount of data or the number of validators

Learning Media Validation Level Category

NO	Level of Achievement	Category
1	≥ 0,667 – 1,00	Valid
2	≤ 0,667	Tidak Valid

Data taked from learning media obtained from questionnaire for teacher and learners. Data obtained analyzed using the formula ass follow:

$$Nilai\ Praktikalitas = \frac{\sum Skor\ yang\ diperoleh}{\sum Skor\ maksimum}\ x\ 100\%$$

Learning media practicality categories

No.	Level of Achievement (%)	Category
1.	81 – 100	Very Practical
2.	61 – 80	Practical
3.	41 – 60	Quite Practical
4.	21 – 40	Less Practical
5.	0 – 20	Impractical

Source : Riduwan, 2010

Technique of Effectiveness analysis on *android-based* interactive learning media is implemented to see the effectiveness of media that have been used in the learning process. For the effectiveness test, the study used *pretest and postest methods.* Pretest *and Postest* research designs are as follows:

$$X = O1 \times O2$$

Information:
X = Treatment
O1 = *Pretest* value
O2= *Posttest* value

Learners are given the first treatment, namely the application of *android-based*learningmedia. Further analysis is carried out as follows:

a. Give the test that is *postest,*from *the postest* can be seen how student learning results are used to measure learners' learning outcomes and analyzed.
b. Obtained data on the completion of learning learners. Further determining the number of students who reached completion, if ≥ 65% of students answered correctly then it can be said to have fulfilled the completion [9].
c. The next step is to determine the completion of the classic, if 85% of students in one class meet the completion then it can be called already fulfilling the completion of the classic. Establish student completion using the following formulas[10] :

$$ketuntasan\ klasikaL = \frac{Banyak\ mahasiswa\ yang\ tuntas}{jumlah\ mahasiswa}\ x\ 100\%$$

d. The final step is to enter the data into *the gain score* formula in Hake (1999).

$$g = \frac{Spost - S\ pre}{100 - S\ pre}\ x\ 100\%$$

Information:
g= *gain score*
S post= score from *posttest*
S pre= score from *pretest*

Pretest and *posttest* scores will be used as indicators of the level of effectiveness in learning commonly called gain *score.* The *Gain Score* category is

[9] Purnomo Hadi Susilo and M Ghofar Rohman, "Digitalisasi Sistem Manajemen Mutu Iso Berbasis Aplikasi Web," *Jouticla* 2, no. 1 (2017).
[10] Mulyasa, *Manajemen Dan Kepemimpinan Kepala Sekolah* (Jakarta: Grafika Offset, 2011).

Gain Score Category

Gain Score	Interprestasi
(<g>) > 0,7	Tinggi
0,7 > (<g>) >0,3	Sedang
(<g>) < 0,3	Rendah

RESULTS AND DISCUSSION

Based on the goals and procedures of research that have been done, it is produced *android-based* learning media on basic beauty subjects. This research was designed using a 4-D learning device development model, i.e. with the following stages.

Define

The first analysis is this analysis is used to find and find out theproblems experienced by teachers and learners in learning basic beauty learning eyes. From the results of interviews with teachers obtained some obstacles experienced by teachers and learners, namely teachers feel the media used today is not effective because it takes a lot of time and media access is too difficult for students. So that teachers and learners feel they need a more effective and accessible learning medium. Analysis is also carried out to find out the *smartphone* ownership of each learner. Almost all learners have *smartphones* and learners also prefer to learn to use *smartphones.*

The second analysis is the stage that theauthor in the analysis of the teacher is to conductinterviews with teachers about representation,learning motivation and the age oflearners. The characteristics of learners in learning can be described as below. 1) Academic ability is heteroge, 2) Learners like things that have interesting images and designs and are easy to use. 3) Students aged 13-15 years.

The third analysis is this analysis is done by analyzing Basic Competencies in the eyes of basic beauty learning. Next, the formulation of indicators is carried out.

The fourth analysis is the analysis of concepts carried out to identify the main concepts to be used and to identify supporting concepts that are relevant and related to basic beauty materials. The main concept in basic beauty subjects is that learners can understand about hair as a whole.

The last analysis is to analyze the material to be studied by learners in this module is: 1) Analyzing scalp and hair, 2) Hair beauty equipment, 3) How to wash and dry hair, 4) Scalp sequencing by various methods, 5) Scalp and hair care, 6) Styling hair styling, 7) Hair piece styling, 8) Hair piece care, 9) Arrangement of bun up style

***Design* (Planning)**

The learning media developed is designed with *android studio software* **that is** assisted by *software* and several *websites* **that have different** functions each. *The software* and *websites* **used** in designing this learning medium are; (1) *Android Studio:*serves to create applications, (2) *Photoshop:* serves to edit photos to be used, (3) *Factory Format:* serves to edit videos, (4) http://waifu2x.udp.jp/: serves to enlarge the resolution of images, (5) https://compresspng.com/: serves to reduce the size of images.

This learning media that has been designed can be used on android-based *smartphones* **with** *offline* and *online modes.* This learning medium consists of a home page that can be viewed in Figure 1, this page will be displayed a few seconds as an opener and will go directly to the instruction page.

Figure 1 Home Page

On the instructions page there is one button, which will take the user to the main menu page as seen in figure 2.

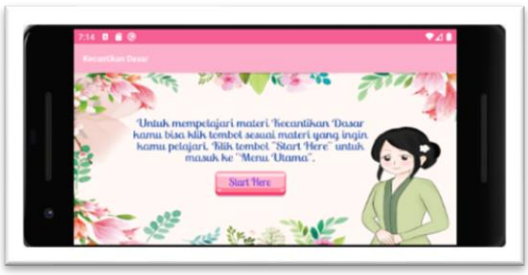

Figure 2 Instructions page

On the main menu page there are several buttons that can be selected by the user as seen in figure 3.

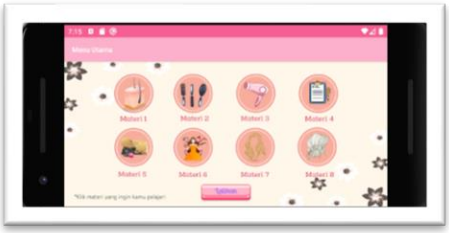

Figure 3 Main Menu page

If one of the material buttons is clicked it will switch to the competency achievement indicator page, such as figure 4.

Figure 4 Competency Achievement Indicators page

When learners click the next button, students can read and watch videos of the material, such as images 5 and 6.

Figure 5 Materials page

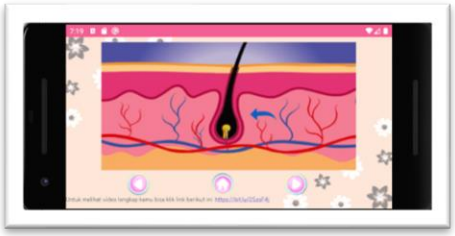

Figure 6 Video page

Develop **(Development)**

a. Validity Test

The developed learning medium has been completed, then validated by the validator. Android-based learning media assessment is done using validation sheets conducted by 3 validators. The material validation test is conducted by two experts and the media validation test is conducted by one different expert. How to meganalysis this validation sheet using Aiken's V. Validators provide an assessment of learning media that have been developed with regard to several aspects.

The overall results of the analysis of the validation test of the android-based learning media developed can be seen on.

Overall Validation Test Data

No.	Aspects assessed	Valuation	Category
1.	Material Validation Test	0,81	Valid
2.	Media Validation Test	0,91	Valid
Average		0,86	Valid

Based on data from the table showing the results of validation tests on the development of android-based learning media on basic beauty materials have a valid category with an average value of 0.86.

b. Practicality Test

Practicality tests aim to find out the practicality and exposure of android-based learning media developed based on the results of limited trials in the field. This practicality data is obtained from the provision of practicality sheets to teachers and learners. This android-based learning media practicality test was conducted by 1 teacher and 20 learners. The results of the practicality test by the teacher can be seen in the Table.

Overall Practicality Test Data **Table**

No.	Aspects assessed	Valuation	Category
1.	Master Practicability Test	90%	Very Practical
2.	Learner Practicality Test	81%	Very Practical
Average		85,5%	Very Practical

Based on data from the Table shows the results of practicality tests on the development of android-based learning media on basic beauty materials have a very practical category with an average score of 85.5%.

c. Effectiveness Test

The classic completion test serves to see how many learners can graduate from KKM. Learners who have used *android* application-based learning media are then given the *postest* to see students' understanding of electrical and electronic materials with the help of learning media developed. From the data analysis (Table 15) it turns out that there are 85% of learners who graduate. This means that classes that learn to use *android-based* learning media have fulfilled classic completion. A class is said to complete the completion of classical if at least 85% of students in one class have fulfilled the completion [11].

Results of Effectiveness Analysis Based on KKM

No	KKM	Sum Learners	%
1.	< 75	3	15%
2.	≥ 75	17	85%
Sum		20	100%

Effectiveness analysis data based on KKM can be seen in appendix 14. The number of completed learners as many as 17 learners (85%), this shows that classical completion has been achieved, it can be concluded that android-based learning media developed effectively used when viewed from classical completion.

Test *Gain Score*

Number of samples	*Gain Score*	Interpretation
20 people	0,61	Keep

The *gain score test* serves to see the difference between the *pretest* value and the *posttest* value. The *gain score test* can help researchers see how much the value of learners before using learning media developed after using the learning media. Before learning learners are given a *pretest* to see the basic knowledge of learners. After the learning is completed learners are given the *postest* to see how the knowledge of learners after learning takes place. From the prostest results, it appears that learners have basic knowledge to get higher grades, because previously unanswered questions after using the learning media learners have found the answer.

For the *pretest* and *postest* questions tested, previously there have been trials of the problem to see the level of validity, rehabilitation and difficulty of each problem. For 25 *pretest* and *postest* questions there are 5 difficult questions, 10 moderate and 10 simple. From the data analysis (Table 16). This shows the difference in the *pretest* and *postest* value of learners after using learning media developed by moderate categories. These results

[11] S Pd Trianto and M Pd, "Model Pembelajaran Terpadu Dalam Teori Dan Praktek," *Jakarta, Prestasi Pustaka* (2007).

are the same as previous research conducted by Sri Lina Brilianty on the development of android-based *learning media* learning media on the material. Where for *n-Gain* gets a medium category. It can be concluded that the learning media developed is already effectively used in learning[12].

There are several advantages that learners feel when using *android-based*learningmedia, namely (1) complete material, (2) easy to read anywhere, (3) very helpful in understanding the material, (4) easy in access. In addition to the advantages of android-based learning media also has disadvantages, namely the size of applications that are quite large and semi-online applications[13].

From the two assessments above it can be concluded that the learning media developed has been effective to be applied and used on learners on basic beauty materials. In line with the opinion of Vienna [14] that the learning media used must pay attention to the effectiveness in its use. In view of the cognitive learning outcomes of learners who follow the basic beauty development by using learning media, shows that *android-based* learning media on basic beauty subjects developed by researchers effectively to improve learners' learning outcomes.

Disseminate

This stage aims so that the resulting product can be utilized by others. But in the study did not conduct the *disseminate*stage. Researchers only socialize learning media based on *android* applications through distribution in limited quantities to teachers and learners. This distribution is intended so that this android application-based learning media can be used as a learning tool for learners.

CONCLUSION

Based on the results of research that has been done, it can be concluded that *the android-based* learning media developed has been declared valid after validation by 3 validators, 1 person for media validation and 2 people for material validation. The results of the response of teachers and learners to the practicality of android-based learning media on basic beauty subjects have a very practical category. The results of the effectiveness test of *android-based* learning media in beauty subjects have an effective category as evidenced by the learning outcomes of learners who experience improvement.

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