Android-based Learning Media on PAUD Management Course

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ABSTRACT

This research aims at (1) android applications as a learning medium Paud Management; (2) Knowing the feasibility of the android application as a learning medium Paud Management; and (3) Know the assessment of media experts and material experts on android-based learning media in Paud Management courses. This research is a type of research and development (Research and Development) by following the ADDIE development model (Analysis, Design, Development, Implementation and Evaluation) which is the stage of analysis, design, development, implementation and evaluation, but only carried out until the fourth stage (4) Implementation. Validation was carried out by the Lecturer Team of course teachers and the IT Lecturer Team and piloted to students of the Early Childhood Education Teacher Education study program of Universitas Negeri Medan. Broadly speaking, the results of the validation test of material aspects are classified as Good with a total score of 75 and a range of values 4 and the results of media aspect validation are also classified as excellent categories of 82 with an average value of 4.5. So that the development of learning media of android-based Paud Management courses is worthy of being used as a learning medium and a source of self-study.

Keywords: *Paud Management, Android, Learning Media.*

1. INTRODUCTION

In the 21st century, information and communication are so easy to obtain that distant humans feel close, it is also referred to as information and communication technology. In the development of information and communication technology comes e-learning (electronic learning) in the world of education [1], [2]. The development of learning in the concept of e-learning (electronic learning) emerged as m-learning (mobile learning). The latest technology from e-learning technology (electronic learning) based on mobile devices. m-learning (mobile learning) which will be used by researchers as a learning medium that will be developed to help in the learning process [3]. Since the beginning of 2020, the world has been plagued by an outbreak or virus. This virus is known as coronavirus or covid-19. The virus first appeared in Wuhan, China in late 2019 [4]. The impact of the coronavirus outbreak is felt by all aspects of life, including in the world of education that makes all online learning done in their respective homes. The impact of covid-19 is also experienced by the

Universitas Negeri Medan that enforces the activities of the teaching and learning process online. Online learning is considered less than optimal due to limited learning media [5], [6]. Learning is done by giving assignments and delivering material by recording the material in a paper afterwards in photos and shared in whatsapp groups so that students find it difficult to understand the content of the material. Early Childhood Education Management is one of the most important courses that must be mastered by students of the Bachelor of Education program of Early Childhood Education Teachers at the Faculty of Education, Universitas Negeri Medan. The scope of this course is about the principles of PAUD institution formation, early childhood grouping methods, educational game tools, PAUD curriculum dynamics, as well as components of financial management, administrative facilities, paud marketing and evaluation of early childhood development, so as to encourage the improvement of the quality of learning in PAUD management courses is needed a more interesting learning media, effective and efficient. Learning media is one of the tools that are quite

important for the learning process to take place, with the media will help the learning process become more interesting and not monotonous [7]. In addition, the media can increase students' interest and motivation in the learning process [8]. But in fact, the current learning media is still limited, especially in PAUD management lecture materials that most students do not like the lesson because it is dominated by theory rather than practice. From this problem, researchers try to offer a solution that is by developing Android-based learning media that has the advantage of more interesting learning media and can be used anywhere and anytime. Research and development of android-based learning media that will be researched by researchers is devoted to Paud Management courses.

2. METHOD

The type of research used in this study is Research and Development (RnD). Research and development (RnD) is a research method used to produce a particular product and test the effectiveness of that product [9]. This learning media development model uses the ADDIE development model. According to [10] explained that the ADDIE development model consists of five stages that include analysis, design, development, implementation and evaluation.

Research on the development of android-based learning media in this PAUD Management course was conducted in the PG-PAUD Study Program of the Faculty of Education, Universitas Negeri Medan. This study was conducted over a period of 5 months.

The sample in this study is 1 lecturer as a material expert, namely lecturers in Paud Management courses, and 1 lecturer as a media expert, namely Lecturers / Lecturers in the field of Information Technology. The data collection technique in this study is to use questionnaires or questionnaires. The questionnaire sheet is a data collection tool using written questions and answers given also written forms such as symbols / signs in the form of stuffing. Assessment on the questionnaire using the Likert scale (scale 5) [11].

3. RESULTS AND DISCUSSION

The initial stage of this research is the stage of analysis (analysis) of needs. The purpose of the analysis stage is to find out the initial needs in developing this learning medium. In developing this medium required need of analysis, namely: (1) User Needs Analysis, (2) Content or Content Analysis, and (3) Hardware and Software Needs Analysis. In the material analysis stage, there are several subjects that become the main material in the learning of PAUD Management courses, including: a) Paud curriculum

management, b) Paud environmental design management, c) Paud process management, input, and output, d) Paud supervision/supervision management.

Next stage of design. At this stage began to be designed educational applications that will be developed according to the results of previous analysis by determining the elements needed in educational applications such as the preparation of application needs design and application frameworks in the form of flowcharts and storyboards. Navigation flow in the operation of learning media on Android devices is depicted on flowchart. Here's a flowchart image from the paud management android app.
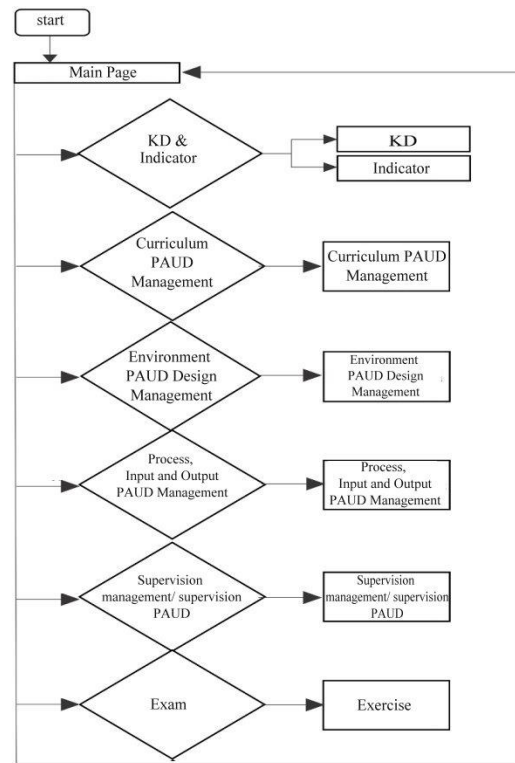

Figure 1 Flowchart

In addition, in the third stage (development stage), at this stage of development is also done validation of material experts and media experts, so that modifications are made to multimedia products in accordance with the recommendations of material and media experts. Material experts are lecturers who master paud management courses while media experts are lecturers in the field of IT.

Figure 2 Main Menu Display

Figure 3 Material Menu Display

Based on table 1, the results of validation of material from android-based Paud management learning media by validators. It can be known that the material from the learning media developed is categorized as "Good" with a total score of 60 from a maximum score of 75, then the average result is

converted into a likert scale of 1 - 5 so that it gets a result of 4 from a maximum scale of 5. So from the data it can be concluded that the material from the learning media developed is categorized as Good, so that the learning media developed can be tested.

Table 1 Material Expert Validation Results

Aspect Assessed	Score
Learning	
1. Clarity of basic competency formulation	4
2. Clarity of competency achievement indicators	4
3. Relevance between KD, Indicators, materials and evaluation	4
4. Clarity of the language used	4
5. Language compatibility with EYD	4
6. Systematic presentation of material	4
7. Ease of matter to understand	4
8. Adequacy of training to master the concept	4
9. Availability of evaluation materials	4
Contents	
1. Material conformity with competence	4
2. Material conformity to KD level	4
3. Clarity of the material presented	4
4. The traceness of material presentation	4
5. Suitability of the image with the material	4
6. Conformity of examples with material	4
Total of Max Score	75
Total Score	60
Average Rating = $\frac{number\ of\ score\ obtained}{number\ of\ aspect}$	4

Table 2 Medical expert validation results

Aspect Assessed	Score
Quality of content/material	
1. Veracity	5
2. Accuracy	5
3. Balanced Presentation of Ideas	4
4. Appropriate Level of Detail	4
Learning	
1. Alignment among learning goals	5
2. Activities	5
3. Assessment	4
4. Characteristic of learners	4
Feedback and adaptation	
Adaptation content or feedback is driven by different students or learning models	5
Motivation	
Ability to motivate and dance to the attention of many students	5
Presentation Design	

Design of visual and audio information to improve learning and streamline mental processes	4
Interaction of use	
1. Ease of navigation	5
2. Proportional interface display	4
3. Interface quality for help	4
Accessibility	
1. Ease of accessibility	5
2. Control design and adjustment format accommodate students	5
Reusability	
Ability to be used in a variety of learning and with different students	5
Meets Standard	
Compliance with international standards and their specifications	4
Total of Max Score	90
Total score	82
Average Rating = $number\ of\ score\ obtained / number\ of\ aspect$	4,5

In table 2, the validation results of Android-based paud management learning media by learning media validators are categorized as "Excellent" with a total score of 82 from a maximum score of 90, then the average result is converted into a likert scale of 1 - 5 so that a result of 4.5 from a maximum scale of 5. From the data it can be concluded that the learning media developed is categorized as valid so that the learning media developed can be tested.

In the fourth stage, If it has been validated by media experts, then continued the field trial phase to students numbering ± 40 people. This event was held during 8 meetings. Here's a picture of the student's trial process.

In the final stage of research and development this is the final evaluation stage conducted by conducting an assessment of product trials in the field. Media product output in the form of apk extension files that can be opened on the appropriate Android device and then will automatically install learning media on the Android device.

Picture 4. Display of learning practices

4. CONCLUSIONS

The development of android-based learning media in Paud Management courses in the PG-PAUD Study Program of Universitas Negeri Medan has been successfully developed using the Smart App Creator (SAC) application. According to the acquisition of the results of the assessment of material expert validators produced a total score of 75 with a range of values of 4 categorized well, as well as the results of assessments by media experts, obtained a total score of 82 with an average score of 4.5 so that it falls into the category of very good. Therefore, the development of learning media of android-based PAUD Management courses is worthy of being used as a medium of learning and a source of self-study.

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