

The Development of an Interactive Digital Module of Management and Training Courses in Early Childhood Education

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Abstract. This study aims to (1) develop digital interactive module as a learning media for Management and Training Courses in Early Childhood Education, (2) reveal the feasibility of android application as a learning media for Management and Training Courses (3) examine students' perception on the interactive digital module and the level of validity of the interactive digital module which is based on android mobile application from media and content experts. This research is used for research and development (Research and Development) which refers to the ADDIE model, namely analysis, design, development, implementation, and evaluation. However, this research ended in the Implementation stage. Validation was carried out by a team of expert lecturers on subject matter and media, while the test was carried out on 60 semester IV (fourth) students of the Early Childhood Education Teacher Education study program, Medan State University. Broadly speaking, the results of the assessment of the material aspect validation test are classified as Good with a total score of 75 and the range of values and validation of the media aspect are also classified as Very Good, namely 82 with an average score of 4.5. So that the development of interactive digital-based PAUD Management and Training learning media is worthy of being used as a learning medium and a source of independent learning.

Keywords: early childhood management and training, digital modules, interactive digital, learning media

1. Introduction

Learning activities must be related to each other. Learning activities can be said to be a communication process because they carry messages that are communicated between the communicator and the communicant. Communicators are educators, while communicants are students. This is related to the educator's method of conveying the message content through the media. On this basis, the systems approach in learning requires a relationship between one component and another. Media are tools used by educators to convey material according to the needs of students. Heinin, Molenda, Russell, and Smaldino (2008:6) define media as a means or channel of communication (means of communication), for example print media, audio,

visual, video, objects, and people. (Yaumi: 2018).¹ Along with advances in information technology, the media has become an interesting study and much in demand in almost all disciplines. Clark in Hastings and Tracey (2005) states that the media is only a driver of learning.²

The success of the learning process must have several components, including learning objectives, lesson materials, learning strategies, learning media, and learning evaluation (Cepi Riyana, 2015).³ Learning Media is a tool to assist educators in providing quick understanding to students, in other words that media is a tool that can help educators to explain the purpose of the learning discussion delivered. Factors that influence the success of an educator in transferring knowledge to students, one of which is the teacher's accuracy in choosing methods and media in learning (Ramli Abdullah: 2016).⁴ In teaching and learning activities, learning media must be effective and efficient enough to be used because they can provide enthusiasm, motivation, and interest in learning activities.

Today, technology is very developed so that several technology-based learning media can be used by lecturers in the lecture process so that lectures are effective and efficient and can motivate students. The technology-based learning media include e-books, Moodle, guide books, handbooks, videos, e-modules, multimedia, digital books, and so on. Since the media is very diverse, the researchers facilitate students in learning integrated media that is able to present text, images, video, audio and animation (Anasikhatussalafi, 2014).⁵ Therefore, the researcher chose the Interactive Digital Book as a source of student learning for the PAUD Management and Training Course.⁶

Interactive Digital Books are also known as Interactive Digital Modules. Modules are media or learning facilities that contain materials, methods, limitations of learning materials, instructions for learning activities, exercises and ways to evaluate which are designed systematically and attractively to achieve the expected competencies and are used independently (Hamdani, 2011).⁷ Meanwhile, Interactive Digital Books are learning media in a digital version developed through interactive multimedia in which there are several media components such as text, images, audio, video and animation (Dian Nurhati, 2017).⁸ Interactive Digital Books allow students not only to

¹ Yaumi, M. 2018. Media and Technology Learning. In *Jakarta*.

² Hastings, Nancy B., and Tracey, Monica W. Does Media Affect Learning, Where Are We Now? *TechTrends* Volume 49 Number 2, March/April, pp. 28-38 (2005)

³ Cepi Riyana. 2015. The Role of Technology in Learning. *ICT Development in Learning*. <https://doi.org/10.1016/j.revmed.2010.08.003>

⁴ Ramli Abdullah.: Learning in the Perspective of Teacher Creativity in Utilization of LearningMedia. *Lanthanide Journal*, Vol. 4 No. 1 (2016)

⁵ Anasikhatussalafi.. 2013. Development of Interactive E-Modules as Learning Resources in Digital Simulation Subjects for Logic and Algorithm Materials for Class X Smk Muhammadiyah 1 Bambanglipuro Assignment. *Journal of Chemical Information and Modeling*.

⁶ <https://fip.unimed.ac.id/profile-program-studi-pgpaud/>

⁷ Hamdani. 2011. *Teaching and Learning Strategies*. Bandung: Faithful Library.

⁸ Nurhati, Dian.: Development of Interactive Digital Books for Development Courses E- Learning for Students of Educational Technology FIP UNY. *Technology Study Program Education Faculty of Education: Yogyakarta State University* (2017)

engage the senses of hearing but also sight. Therefore, researchers chose Interactive Digital Books as a source of student learning for Management and Training courses.

From trouble the researcher try offer solution that is with developing learning media based on Android which has the advantages of learning media more interesting and can used where only and when course . Research and development of learning media based on android which will researched researcher devoted to the eyes studying management and training early childhood .

2. Method

The type of research used by the author is *Research and Development (RnD)* . *Research and Development (RnD)* is method study which used for produce product certain and test effectiveness product the (Sugiyono, 2014).⁹ Study *Research and Development (RnD)* , according to (Sugiyono, 2014) study and development is method study which used for produce product certain, and test effectiveness product the. This research produces a product that can be used in the learning process in the form of an *interactive digital module* . Research on the development of a product for this learning module is carried out to determine the feasibility of the media is in the learning process. Researchers conduct research and development on the course Management and Early Childhood Education and Training.

Model development media learning this use model development ADDIE. According to (Sugiyono, 2019) explain that Model ADDIE development consists of five stages which include analysis , design , (*design*), development (*development*), implementation (*implementation*) and evaluation (*evaluation*). In addition, Hishamudin (2016) revealed that the stages of this research design were carried out through the following stages: 1) **Analysis**, namely analyzing curriculum and materials, media analysis and characteristics of target users; 2) **Design** , namely the design of the material items to be presented, the preparation of the material script, and the arrangement of the flow of material delivery in the form of a flowchart ; 3) **Development**, namely the creation of media using articulate storyline software, assessment by experts, validation and revision; 4) **Implementation** , namely the limited trial phase; and 5) **Evaluation stage** , namely media revision from the results of suggestions and comments after a limited trial.¹⁰

3. Results And Discussion

Study this conducted with destination develop interactive digital module in the form of module that can be accessed on android and laptops that can be support the learning process by independent . Development carried out for produce module learning based on an articulate storyline. Following results stages development of models that have done , that is as following :

- 1) Data collection as well as information related literature and analysis (*analysis*) needs user .
- 2) Analyze needs Started *hardware* and *software* _ with designing application developed

⁹ Sugiyono. (2014). *Open Library - Method Study Quantitative, Qualitative and R&D* . Alfabeta.

¹⁰ Hishamudin, F. 2016. *ADDIE Model* . University of Technology Malaysia.

educational in accordance results analysis with determine necessary elements _ in composing design . Stages operation module learning on android devices begins with designing *flowcharts* and *storyboards* that illustrate plot navigation for get framework in implementation system ,

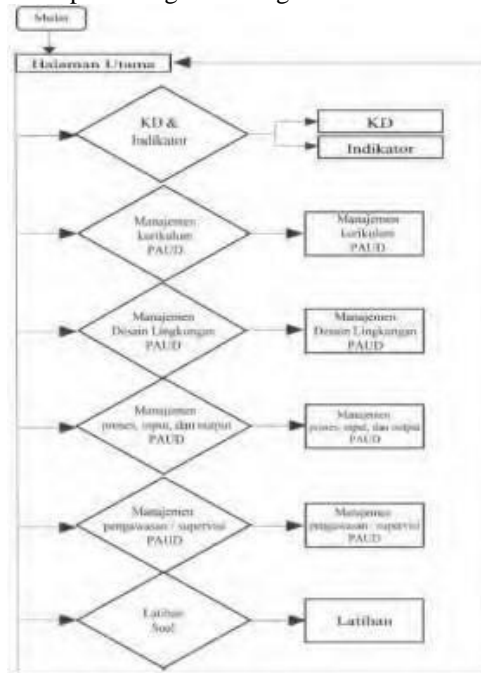


Fig. 1. Chart flow *Flow chart*

- 3) Implement module results design to in form application with use programming language and unifyBecomes unity more system _ complete , which includes : (a) Introductory Menu Display or introduction , (b) Display of Material Menu per meeting , (c) Display of Exercise Menu or Exams , (d) Information Menu Display related Applications , (d) Display of Work Practice Problems.



Fig.2. Appearance Introduction to



Fig.3. Main Menu Display



Fig.4. Material Menu Display



Fig.5. Display of Practice Questions Menu



Fig.6. Display of Problem Work Results

4) Apply media products to *user* (student), this step is To do installation product in order to worn user and train users in order to use and operate it .

| No. | Nama Mahasiswa | NIM | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|-----|----------------------------------|-------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|
| 1 | Andriani, D. Azzahra Nur. Nidana | 12021120213 | | | | | | | | | | | | | | | | | |
| 2 | Anggi, D. Nurani | 12021120210 | | | | | | | | | | | | | | | | | |
| 3 | Arifin, R. Rizki Nur | 12021120219 | | | | | | | | | | | | | | | | | |
| 4 | Citra, A. Agnesia Nur. Nurfaris | 12021120212 | | | | | | | | | | | | | | | | | |
| 5 | Dhany, M. Nurfaris | 12021120218 | | | | | | | | | | | | | | | | | |
| 6 | Hani, A. Agnesia Nur. Nurfaris | 12021120211 | | | | | | | | | | | | | | | | | |
| 7 | Hani, A. Agnesia Nur. Nurfaris | 12021120211 | | | | | | | | | | | | | | | | | |
| 8 | Mika, Nurfaris | 12021120215 | | | | | | | | | | | | | | | | | |
| 9 | Nisa, Nurfaris | 12021120214 | | | | | | | | | | | | | | | | | |
| 10 | Rizka, Nurfaris Nur. Nurfaris | 12021120217 | | | | | | | | | | | | | | | | | |
| 11 | Rizka, Nurfaris Nur. Nurfaris | 12021120217 | | | | | | | | | | | | | | | | | |
| 12 | Rizka, Nurfaris Nur. Nurfaris | 12021120217 | | | | | | | | | | | | | | | | | |
| 13 | Rizka, Nurfaris Nur. Nurfaris | 12021120217 | | | | | | | | | | | | | | | | | |
| 14 | Rizka, Nurfaris Nur. Nurfaris | 12021120217 | | | | | | | | | | | | | | | | | |
| 15 | Rizka, Nurfaris Nur. Nurfaris | 12021120217 | | | | | | | | | | | | | | | | | |
| 16 | Rizka, Nurfaris Nur. Nurfaris | 12021120217 | | | | | | | | | | | | | | | | | |
| 17 | Rizka, Nurfaris Nur. Nurfaris | 12021120217 | | | | | | | | | | | | | | | | | |

Fig.7. Test Attendance List Figure

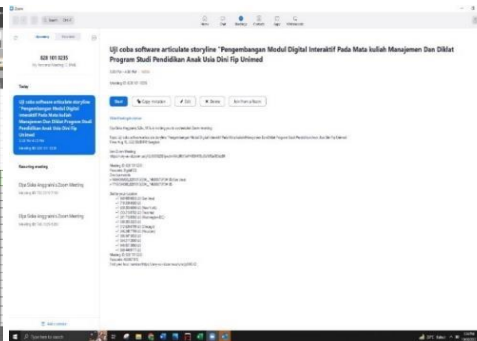


Fig.8. Invitation Zoom Trials



Fig.9. Implementation Online Trial (Online)

5) Do testing to device learning media software based valiated *articulate* storyline done by expert materials and media experts , so that conducted repairs and modifications to device learning media software interactive eye android based studying PAUD Management and Training based on input given _ user , expert material , media expert in application the media product .

Table 1. Material Expert Validation Results

| Aspect which rated | Score |
|---|-------|
| Learning | |
| 1. To suit formula competence base | 4 |
| 2. Clarity formula destination learning | 4 |
| 3 . Clarity indicator achievement competence | 4 |
| 4 . Relevance Among KD, Indicator, Theory and Evaluation | 4 |
| 5 . Clarity language which used | 4 |
| 6 . Systematic presentation Theory | 4 |
| 7 . Accuracy use term | 4 |
| 8 . Convenience understand plot Theory through uselanguage | 4 |
| 9 . Adequacy practice for dominate draft | 4 |
| 10 . Suitability evaluation with material and purpose learning | 4 |
| 11. Ability encourage desire _ know student | 4 |
| Contents | |
| 1. Suitability Theory with Basic competence | 4 |
| 2. Suitability Theory with level KD | 4 |
| 3. Clarity Theory which served | 4 |
| 4. Systematic presentation Theory | 4 |
| 5. Suitability picture with Theory | 4 |
| 6. Suitability example with Theory | 4 |
| Amount Score Max | 85 |
| Amount Score | 68 |
| Average Rating = <i>number of score obtained / number of aspects</i> | 4 |

Based on table 5 .1 in on, results validation interactive digital module in the form of Theory from media learning management and training paid by validator. it can be seen that the material of media learning which developed categorized as "Well" with score total 68 from score maximum 85 , then results average converted into the scale likert 1 – 5 so that obtained results 4 from scale maximum 5. So that from data the could concluded that Theory from media learning which developed categorized as Good, so that the developed learning media can be tested try it.

Table 2. Results Validation Expert Media

| Aspect which rated | Score |
|---|-------|
| Quality Contents | |
| 1. Truth (Veracity) | 5 |
| 2. Accuracy (Accuracy) | 5 |
| 3. Balance presentation ideas (<i>Blanced Presentation of ideas</i>) | 4 |
| 4. In accordance with details level (<i>Appropriate Level of details</i>) | 4 |
| Learning | |
| 1. Clarity destination learning (Alignment among learning goals) | 5 |
| 2. Activity (Activities) | 5 |
| 3. Evaluation (Assessment) | 4 |
| 4. Characteristics participant educate | 4 |
| Bait come back and Adaptation | |
| Content adaptation or bait come back could moved by student which different or model learning | 5 |
| Motivation | |
| 1. ability a n encourage desire _ know student | 5 |
| 2. Media capabilities add motivation student in study | 5 |
| Design Presentation | |
| Design appearance picture presented _ there is information visual and audio for increase learning | 4 |
| Interaction Use | |
| 1. Convenience operation of learning media | 5 |
| 2. Appearance interface which proportional | 4 |
| 3. Quality from interface for help | 4 |
| 4. Convenience use return | 5 |
| Accessibility | |
| 1. Convenience access application interactive digital module | 5 |
| 2. Design control and format presentation accommodate student | 5 |
| Reusability | |
| Ability for used in various variation learning and with student which different | 5 |
| Fulfill Standard | |
| Obedience to standard international and the specifications | 4 |
| Amount Score Maximum | 100 |

| | |
|---|-----|
| Amount Score | 92 |
| Average Rating = <i>number of score obtained / number of aspects</i> | 4,6 |

In table 5.2 above, the results of the validation of management learning media and training s based paud articulate storyline by the validator of learning media categorized as “Very Good” with a score of a total of 92 out of a maximum score of 100 , then the average result is converted into a scale Likert 1 – 5 so that the results are 4,6 from a maximum scale of 5. From these datait can be concluded that the learning media in the form of The developed interactive digital modules are categorized valid so that media learning which developed could in test try it to user that is student .

4. Conclusions

Research and Development learning media on eye studying Management and Training Paud in Program Studies Early Childhood Education Teacher Education Faculty Educational Science University Country Medan has successfully developed using *the Articulate Storyline* application . According to the acquisition of the results of the material expert validator's assessment resulted in a total score of 85 with a range of score 4 categorized as good, so also with results evaluation by expert media, obtained total score 92 with average score 4,6 so that including in category very good. By Therefore, the development of interactive digital-based PAUD Management and Education learning media courses this worthy made as media learning and source study independent for student .

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