

Development of Material Learning Based Multimedia for Early Childhood Inclusion Education

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Abstract—This study aims to develop learning materials based multimedia for Early Childhood Inclusion Education courses as the development of a multimedia learning model for student based on early childhood education. Method of research is R n D, development model used was the Merger of Dick & Carey, Borg & Gall Learning Models and Instructional Development Models. Result of research general conclusion, the validation of learning design experts 94.94% is feasible, 92.8% of material experts are decent and 93.5% of media experts are eligible, so recommending learning materials can be used. In the 93.07% individual trial, it was feasible, 92.7% small group trials were feasible and in the field trial 87.52% the development of multimedia-based learning materials could be used. The conclusion of expert validation and testing, the learning material for Early Childhood Inclusion Education Based Multimedia is worthy of use.

Keywords—*learning material, inclusion education, multimedia, childhood education.*

I. INTRODUCTION

Inclusion education aims to enable children with disabilities to get education together with other normal children, in a unified educational service that enables interaction and interaction to encourage an attitude of tolerance and mutual respect. *Inclusion is defined as a right to be 'equal partners', a right which government extends to all children* (Hodkinson, 2011:181). Peters says that inclusion is including disabled students with non-disabled students in every aspect of education (1999:15). Even though Dyson et al (2004:19) says that inclusion is a multi-dimensional concept around which there is much scope for misunderstanding and disagreement. Similar things conveyed by Jeznik et al that inclusion is understood as a value orientation where the acceptance of difference as a positive value of the modern community is in the foreground (Jeznik et al, 2018:1).

Early Childhood Education Programs (ECEP) is a level of education prior to elementary education as an effort to provide guidance to children from birth to age six through the provision of stimuli for physical and spiritual growth and development. Early childhood Inclusion Education is not yet in accordance with the practice of implementation and there is no specific learning for parents in educating

children with special needs in early childhood education, so this study is very much needed. Teachers' attitudes and views on barriers to inclusion might vary across cultures due to different contextual factors characterizing each education system (Amr,2016:69). Inclusion, on the other hand, means that the education system adapts to the needs of the student. In effect, this involves providing an accessible environment, alternative learning material in accessible formats, learning support and the services of personal assistance (Cardona, 2011:36). Hawkins et al (2008:14) argue that inclusive and high achieving schools are staffed by teachers whose pedagogical practices are based on beliefs that all children can learn. Development of multimedia-based inclusion education learning model material in Early Childhood Education.

II. METHOD

The method used in this study is research and development methods (R & D). Developmental research seeks to create knowledge grounded in data systematically derived from practice (Richey & Klein, 2005:24). Educational Research and Development is a process used to develop and validate educational product (Borg & Gall). Data collection is done by interviewing, observing and field studies. The results of the research data are used as a basis for needs analysis which is used as a basis for developing instructional products. Data is collected from an experienced background (natural setting) as a data source directly. This approach is determined by observing the phenomena observed by the subject of the conceptual world through actions and thoughts to understand the meanings compiled by the subject around everyday events (Kusumandari & Sukirman, 2017).

Meanwhile Validation was carried out by learning design experts, material experts and media experts who concluded that the development of multimedia-based learning materials in the Inclusion Education course was in accordance with the methods, procedures and models guided, ranging from needs analysis, planning, development to formative evaluation and trials. The three experts recommend that multimedia-based learning materials developed have been very good and feasible to use. In addition, the results of individual trials, small

groups and large groups showed that the acceptance of multimedia-based learning materials included very good categories. Then from the results of the pre-test and post-test shows that there is influence of multimedia-based learning materials in the learning process of the subject of Inclusion of Early Childhood Education. So that this model can be used as one of the learning models in universities

III. RESULT AND DISCUSSION

The results of the research data are carried out by analyzing the needs and formulation of objectives, instructional analysis, identifying behaviors and initial characters, formulating specific instructional objectives, making assessment tools, developing learning strategies, developing learning materials by making draft 1 models, draft 2 models and final draft models. Then the results of the feasibility test of the model were carried out, namely with one to one expert, learning design experts, material experts, media experts, and then revised from the experts' suggestions. After the revision, individual trials (one to one learner), small group trials, field trials (field trials) were conducted, namely pre-test post-test

A. Model draf 1

Development of draft 1 is based on the results of objective identification and analysis of general instructional objectives. This identification and analysis of needs is carried out after analyzing the results of preliminary research that has been done before. Draft 1 is made after determining general instructional objectives, analyzing learning, identifying the characteristics of learning, writing instructional goals, developing assessment instruments, and developing learning strategies.

Draft 1 contains the design of learning materials used by students and lecturers. The order of material from learning materials for early childhood inclusion education is composed of material that is easy to complex. This is done so that students can easily understand the contents of the material developed. The order of the draft material for early childhood inclusion education is as follows The front cover display draft 1 can be seen in the figure 1.

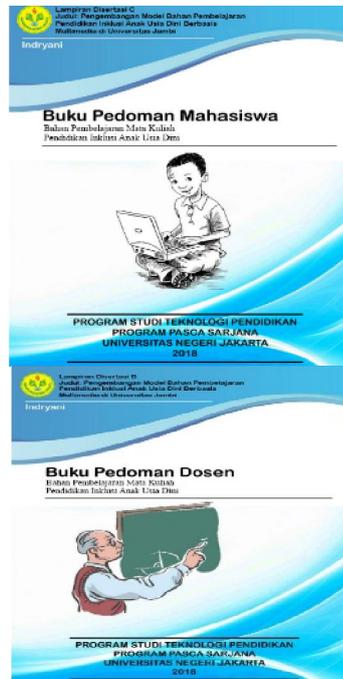


Figure 1. Model Draft 1

B. Model Draft 2

Draft 2 relates to the media used in the learning process relating to the material in teaching materials on the draft model 1 that is using the QR Code Reader application, the use of this application is because it is very easy and affordable for students where students have android phones and tablets that have applications and connections with the internet. The application is downloaded on the Play Store service on a smart Phone. Students will easily understand the contents of the module by using a URL that has been arranged according to the module's development needs, so that learning is effective and enjoyable. Changes in the direction of human behavior in the digital age implies learning also in digital form. Stage of downloading the QR CODE READER Application.

1. Select the Play Store service on the android screen follow in figure 2.



Figure 2. Select Play Store

2. Type QR CODE READER

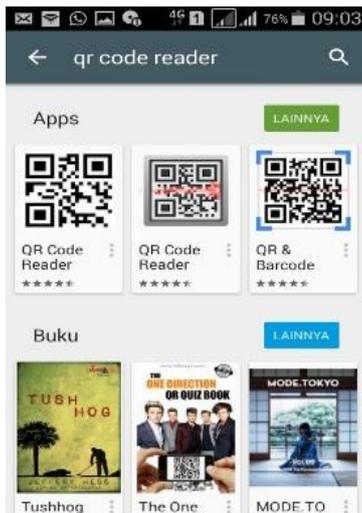


Figure 3. Find QR Code Reader

You can change the URL into a barcode through the program on <https://www.the-qrcode-generator.com/>. How to:

- Link ke <https://www.the-qrcode-generator.com/>
- Copy URL. Save Barcode

C. Model Draft Final

The final draft is a combination of draft 1 model and draft 2 model. In understanding this inclusion lecture material Students must carefully read each sub chapter of teaching materials and supporting videos in the subsection of teaching materials to facilitate understanding and application of inclusive education in schools. The lecture implementation follows the terms and conditions that apply in the lecture SOP at the faculty of teacher training and education in Jambi University. The devices needed: :

- Teaching Materials
Pendidikan Inklusi Anak Usia Dini "Mendidik dengan Hati"
- QR Code Reader Application
- Discussion Groups pada Whatsapp
<https://chat.whatsapp.com/7THpR6JWibS9RxdZjQIdJH>



Figure 4. QR Code

1. Effectiveness of the Model

After conducting the validation by a team of experts / experts, namely learning design experts, material experts

and media experts, then the next step is to conduct a trial. This trial was conducted to see the effectiveness of a product being developed. The implementation of the trial is done in 3 (three) steps, namely a) individual trials (one to one learner), b) trials of small groups and c) field trials.

2. Individual test (one to one learner)

Individual tests (one to one learner) are conducted on 3 people of ECEP FKIP Jambi University who have different abilities, namely 1 (one) high-capable student, 1 (one) person with moderate ability and 1 (one) low-ability person. Determination of these different criteria is taken from the grades in the previous semester.

Based on the calculation of the results of individual trials (one to one learner) taken through assessment of three indicators, namely Clarity of Learning Materials, Use of language, and design of learning materials.

a. Material clarity

Responses to respondents on the material clarity indicator point to very good results of 4.61 or 92.22%.

This result draws the conclusion that the material is clear and has been used properly.

b. Language

The indicator of happiness shows a very good rating with a value of 4.6 or 92%. This means that in terms of language it is feasible to use. However, there are suggestions that some words and sentences in paragraphs need to be fixed.

c. Design

Respondent's response to the design gave very good results, namely 4.75 or 95%. Thus in terms of design it is feasible to use.

The overall calculation of the three indicators gives very good results, with an average of 4.65 or 93.07%. With the sake of testing one to one learners is feasible to use at each level of student competency.

3. Small Group

Similar to one to one learner, small group trials were conducted in groups of students of early childhood education who had different abilities of 9 (nine) people, namely 3 (three) people. high-ability students, three moderate-capable people and 3 (three) low-ability people. Determination of these different criteria is taken from the grades in the previous semester.

As a whole the answers to the small group trial subjects on the development of the learning model for early childhood inclusion education developed included a very good category with an average of 4.63 or 92.7%. This result can be concluded that the development of learning models for early childhood inclusion education is feasible and can be used at each level of student competency.

4. Field trial

Field trial was conducted on 33 early childhood education study program students with different abilities. The results of the calculation of the results of field trials on indicators of the quality of the learning process are appropriate and effective to use. This can be seen from the acceptance value with an average of 4.39 or 87.9%. This number means that the quality of the learning process has gone well.

Based on the results of the calculation of the indicators on the quality of learning materials, it shows good and feasible results to be used with the answers of the test

subjects indicating that the assessment is an average of 4.34 or 86.84%. The indicators for the learner guideline and the tests presented are good and feasible to use, this is based on the answers of the subjects from the field trials which gained an average of 4.39 or 87.88%. This figure explains that the development of early childhood education inclusive learning models is feasible. The results of the answers to the field trial subjects showed an average of 4.38 or 87.5%. This means that the attitude of students is good and worthy of use. The description of individual, small group and field trials can be presented in the following figure 5:

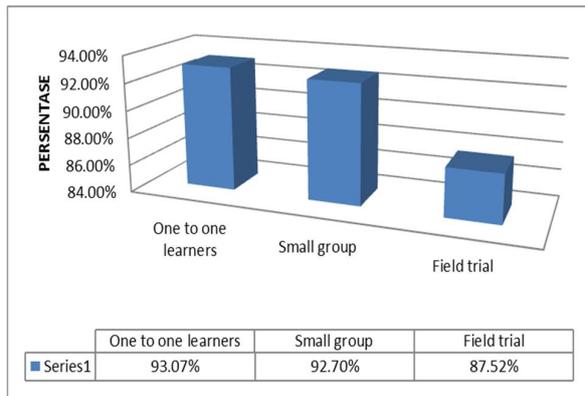


Figure 5. Level of acceptance of trials of individuals, small groups and fields

Figure 5 above shows that acceptance of the development of learning models for early childhood inclusive education is included in the excellent category. Thus, it can be concluded that the development of learning models for early childhood inclusion education has been effective until field trials or large groups, can be used as one of the learning models in universities specifically for early childhood education programs.

5. Final product development model

The final product of the development of learning models for early childhood inclusion education is the final draft of the results of the development of models that have followed the procedures and principles of development and have been revised based on the advice of experts (material experts, design experts, and learning media experts) and have been tried in one to one learners, small groups, and field trials. The final product of the development of early childhood inclusion education learning models produces three models, namely conceptual models, procedural models and physical models.

a. Conceptual Model

A problem that is studied needs to see the basis of the underlying theory. A conceptual model is the type most likely to be confused with theory, as it is a general, verbal description of a particular view of reality (Richey, Klein & Tracey, 2011:8). Conceptual models can help how to examine a phenomenon that will be reviewed in a study. Thus the conceptual model will provide a way of making decisions on phenomena that occur empirically. In addition, the conceptual model is a guideline in identifying a phenomenon so that one can establish and focus on the

essentials. Then the conceptual model taken from theories will be useful in terms of science specifically on the model that will be developed. Robinson says that the design of the model impacts all aspects of the study, in particular the data requirements, the speed with which the model can be developed, the validity of the model, the speed of experimentation and the confidence that is placed in the model results (2016:279). Some of the teacher professional development models are based on assumptions and theories about teachers' needs but lacking applicability in the context of teachers' places or classroom work (Ravhuhali, 2015:57).

b. Procedural models

The development of learning material models for early childhood inclusion education is a development that is guided by the Dick and Carey model which serves as a guideline for the development of the model. The Dick and Carey model consists of 10 steps. Broadly speaking these 10 steps consist of 3 stages, namely identifying, developing and conducting formative evaluations.

c. Physical models

The physical model is the final result of the development of learning models for early childhood inclusion education consisting of textbooks, QR applications, lecturer guidelines and student guidelines

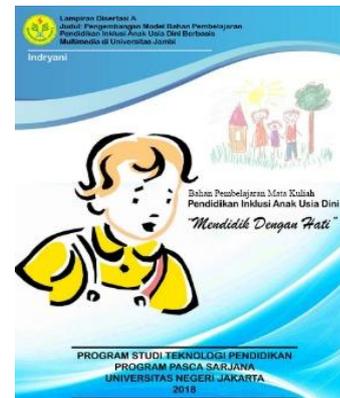
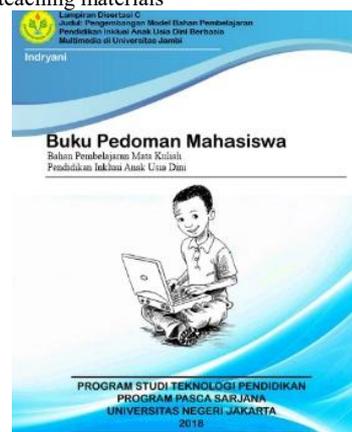


Figure 6. Final product of the physical model using the QR Code Reader Application in Early Childhood Inclusion Education teaching materials



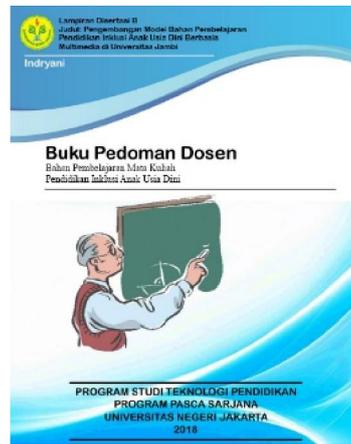


Figure 6. Cont. Final product of the physical model using the QR Code Reader Application in Early Childhood Inclusion Education teaching materials

Learning is defined as a deliberate effort by educators to support student learning activities (Kusumandari & Istyarini, 2015:33). The quality of learning depends on the quality of the design of the development of the learning model carried out by the educator or by the lecturer. The role of the lecturer in designing the learning model is the most important and very important because in the learning model there are learning materials that will be learned must meet the needs of students as learners. Lecturers are agents of change who can change education better. This gives the meaning that the learning model used in the learning process is a learning model that meets scientific principles. The process of meaningful learning builds an integrated framework of concepts and propositions organized hierarchically for a given domain of knowledge (Novak, 2010:22). Meaningful learning: according to Ausubel, "the most important single factor influencing learning is what the learner already knows (Avilori 2014:199).

The development of learning models is very instrumental in the learning process. a learning in principle will be effective if it starts with the design of an effective learning model. Therefore, it is appropriate for lecturers specifically to teach in universities to improve the quality of learning by making innovations that are in line with the development of technology and science. Changes in innovation carried out are expected to increase graduates who are qualified and ready to compete in the world of work, especially education. Children having particular educational needs can be included in a certain school (Sanagi, 2016:104).

Changes in innovation carried out must be in accordance with the demands of the times. Therefore, the lecturers will be able to take advantage of the moment of innovation change that suits their learning needs and interests. Thus the role of the lecturer in learning must examine the gap between expectations and the conditions that occur in the learning process. because if the gap occurs has a large effect, it needs to be prioritized in overcoming the problem. The gap is a problem that is immediately overcome by conducting a needs analysis in the development of a learning model as a way out and as an innovation carried out.

Several studies revealed that activities carried out by various methods, discussions, problem solving, inquiry, question and answer, and also brainstorm by using multimedia to influence learning outcomes. Media is a component of learning, the use of media must be a special concern for the media can be used to achieve learning goals. Using multimedia can provide easy learning in illustrations of concepts and events that cannot be observed directly and provide higher memory.

Preliminary research shows that early childhood inclusion education carried out by teachers in schools does not yet understand by instructing teachers to work as educators. Teachers are still confused in educating early childhood specifically on inclusive education. In the case of early childhood teachers it is the output of graduates of early childhood education programs that provide early childhood inclusion education courses. Thus, it can be seen that graduates have not been able to thoroughly control early childhood inclusion education. When interviewed by the teachers in attending the subject of early childhood inclusion education, the focus has not been on the material that implements theories with practice in the field.

In addition, the predecessor research obtained from the Jambi University PG-PAUD students was informed that lecturers had not used teaching books or modules that were appropriate to their needs. The sources used are compilations of several books and have not focused on the application of early childhood inclusion education, which actually exists in general and has not yet been realized to the problems that occur in the world of work in terms of inclusive education for early childhood ECEP.

Then the results of the preliminary research from the lecturers obtained information that the majority of lecturers who teach have not carried out the learning process in accordance with the steps to develop a systematic, effective and efficient model. this is evidenced by the absence of a lecturer doing an initial ability test that will accompany where the subject matter starts. Ability tests are important in learning to set the entry behavior as the starting point of the lesson. Besides that there is no textbook that fits the syllabus and the needs of students. Students with severe intellectual disabilities rarely have the opportunity to participate in classes with other students, or to engage in decision making about their own education (Darrow, 2017:40). Inclusion is highly context dependent and resists educational approaches that attempt to apply formulas or recipes to schools and classrooms and the activities that occur within them (Forlin et al, 2013:18).

From the data from previous research, various problems from inclusive education are one of the factors which are teachers who have not been able to handle children with special needs in the regular class, the success of the implementation of inclusive schools depends on teacher competence and school and government collaboration. Not all diffable students can access good education in the SLB so that the government seeks education in the closest school with a special program called inclusion. The implementation of inclusive education requires the school to make adjustments both in terms of curriculum, facilities and learning systems that are tailored to individual needs needed by trained and professional personnel to be able to develop an appropriate

and objective education program. Including students with disabilities in general education classrooms has had significantly positive impacts on both students with disabilities and their non-disabled peers (Wright, 2015:2).

IV. CONCLUSION

Based on the results of the calculation of the indicators on the quality of learning materials, it shows good and feasible results to be used with the answers of the test subjects indicating that the assessment is an average of 4.34 or 86.84%. The indicators for the learner guideline and the tests presented are good and feasible to use, this is based on the answers of the subjects from the field trials which gained an average of 4.39 or 87.88%. This figure explains that the development of early childhood education inclusive learning models is feasible. The results of the answers to the field trial subjects showed an average of 4.38 or 87.5%.

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