

Development of Digital Teaching Materials Based on The Case Method in Play Courses For Early Children

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Abstract. Technological developments have influenced today's learning impact. This development is the increasing value of students due to the opening of access information and learning resources, learning is also easier to do implemented anytime and anywhere, the impact of technological developments has also reduce the cost of education, PG-PAUD students, Faculty of Education, Universitas Negeri Medan is a prospective educator who will become a teacher at an early childhood education school early childhood, in carrying out education in early childhood, learning is often done carried out by involving play activities, in some research play activities have a major impact on the growth and development of children, especially six aspects of child development. However, based on the observations, it turns out that. There are no teaching materials in the form of books in the learning of play courses for early childhood according to the needs of the lecture, on the other hand the case method becomes a lecture method to sharpen analytical skills, defend arguments, provide solutions on a problem, as well as the accuracy of students, based on the background of the researcher want to develop case method-based digital teaching materials in courses play for early childhood, by testing the validity and reliability of developed and tested the practicality of using these teaching materials. Development the teaching materials will be implemented using the development method by Borg & Gall which consists of the stages of preliminary study, preparation, initial product development, trial initial, initial product revision, main product trial, major product revision, final product trial, final product revision and dissemination.

Keywords: Case method, Play Courses, Early Children

1 Introduction

Current technological developments have a major influence on learning, this can be observed from the integration of technology in learning, this development also demands changes in learning as an effort to provide superior human resources. integration of technology in learning is often referred to as e-learning, the impact of this change on learning is the increase in the quality and value of student and student learning due to greater access to learning content and support, and collaboration and learning interactions, increased reach and flexibility that allow learning anytime and anywhere, on the other hand technology supports reducing costs in learning, as well as changes from time to time according to the needs of the world of work [8] in this development the teaching culture has also changed where the current teaching culture is learned. to learn [9] that is, every student must be able to find a way to learn. The development of learning also brings the cooperative learning method as a more

appropriate method to use (Johnson & Johnson, 1986) because this method facilitates students to be able to work together, exchange ideas, communicate in a more pleasant way. Changes in learning models must also be facilitated with learning instruments where in the traditional method often use the blackboard as a teaching medium but at this time it has changed by using various applications or devices with audio and video material. The influence of technology on learning should be supported by appropriate teaching materials, the teaching materials needed at this time are practical teaching materials that can be accessed anytime and anywhere, can be obtained at a low cost, and are oriented according to the needs of the world of work. [9]

PG-PAUD students, Faculty of Education, State University of Medan are prospective educators who will become teachers in early childhood education schools, in carrying out education in early childhood learning is often carried out by involving play activities, this makes mastery of teaching skills by applying play activities becomes important, therefore in lectures students are given playing courses for early childhood. In several studies, play activities have a major impact on children's growth and development, especially on six aspects of child development. on the cognitive aspect of playing activities can improve children's ability to solve problems [10] and on the psychomotor aspect of playing activities can improve jumping ability and balance while moving [12] the same impact is also seen in many other research. To support student learning, students should be provided with books as teaching materials, but based on observations, it turns out that in the learning of playing courses for early childhood, there are no teaching materials in the form of books that match the needs of lectures, so far the lecture process has been running using several printed books. which of course has not integrated the use of technology properly and the material contained is not too deep. the development of teaching materials in play courses for early childhood is considered important to do, based on research it was found that the use of digital teaching materials can increase student learning motivation [1], digital teaching materials are also considered worthy of being practical teaching materials used in accordance with with current technological developments [5]. the development of teaching materials also needs to pay attention to the lecture methods carried out in the PG-PAUD study program, the lecture method currently applied is the case method, this method helps sharpen analytical skills, defend arguments, provide solutions to a problem, and be thorough [3] Seeing the method used and the impact of the method on students, digital teaching materials will be developed based on the case method.

1.1 Playing

Playing for early childhood based on culture is one of the subjects in the PG-PAUD study program, Faculty of Education, State University of Medan. This course consists of 3 credits that students can study in semester 5, this course provides the skills needed by prospective educators in educating early childhood by applying play activities so that learning objectives can be achieved more effectively, implementing play activities must of course be based on the knowledge that appropriate so that the impact or benefits of playing activities can be maximized and in accordance with the objectives to be achieved in learning, the implementation of play activities in early childhood learning should also be equipped with strategies or collections of games owned by prospective educators so that learning can be more flexible, students in learning the eye This course must also understand the factors that can affect play activities such as the environment, child's personality, gender, culture and other

factors. and the most important thing is that students must be aware of their role as teachers in implementing play activities in early childhood learning, including efforts to preserve culture-based games that are rarely used by early childhood, understand the impact of technological developments and times on children's playing activities, and On the other hand, playing can also be implemented as therapy in early childhood and children with physical and mental limitations. Along with the development of the current era, it turns out that it affects the development of play itself where at this time various educational game tools have been found that can help the development of six aspects of early childhood, thus adding to the important role of prospective educators to master skills in creating educational game tools. All of these skills are arranged in 16 meetings in lectures that provide learning experiences in the form of theory and practice.

Playing and early childhood are two things that are close together so that both of them influence each other where the growth and development of early childhood can be optimized through play activities, the growth and development of early childhood also influences the play activity itself where playing activities which were originally very simple turns into a little more complicated where early childhood begins to enter mutually agreed rules in playing or early childhood starts to like games based on simple competition. playing is often used as a medium in achieving learning goals for early childhood at school, based on research related to the impact of playing on learning it seems to have a positive impact on early childhood, on the cognitive aspect the impact of playing has increased the ability of early childhood in problem solving and increased skills in in terms of creativity [10] and on the psychomotor aspect of play activity has significantly increased the ability of early childhood in jumping and balance when moving[12], on the affective aspect of play activity should be directed at the awareness of young children early to implement healthy lifestyle behaviors including managing diet and exercise [4] Of course, the benefits of playing do not only have an impact on the three aspects above, playing also has an impact on aspects of language, religious and moral values, art, and others. Seeing the impact of play activities on early childhood development makes the need for students to master skills in play courses for early childhood to be absolutely mastered by students. Mastery of skills in play courses for early childhood will certainly get better if students have relevant reference sources to study. one source of teaching materials that students can learn is teaching materials, teaching materials are anything that can support the learning process [13], specifically the form of teaching materials developed in this study is an electronic book (e-book) which contains material that supports the learning process. The lecture materials given to students for one semester are:

- a. The basic concept of playing for early childhood
- b. Benefits of playing and development of play
- c. differences in gender, environment, and culture in play
- d. Good environment to play
- e. Educational game tools
- f. The role of the teacher in play activities
- g. Play for children with special needs and as therapy
- h. Designing play activities

The development of teaching materials will be adjusted to the material, but to maintain the quality of the development of teaching materials the researcher will focus on several materials so that the depth of the material is obtained, the material is not discussed as a whole so that the development of teaching materials avoids too wide a development area. the development of teaching materials will focus on the basic concept of playing for early

childhood and the benefits of playing in early childhood. Apart from focusing on these materials, the development of teaching materials will also be adjusted to the application of the case method in these teaching materials.

The case method is a learning method that stimulates students to study real and fictitious cases to develop students' ability to solve problems in cases through critical and creative thinking skills. development of teaching materials will be carried out by conducting literature studies on research results and certain cases related to lecture material. The teaching materials developed are of course equipped with instructions as a reference for students in carrying out learning with the case method.

The culture-based play course for early childhood is carried out over a period of 16 weeks where each week lectures are held once a week, the total meetings in this course are 16 meetings, lectures in this course begin with agreeing on lecture contracts and semester learning plans, followed by the lecture process every week, when the lecture takes place the lecturer uses various methods in learning such as the lecture method, project based team discussions, case method, problem based learning and other methods. lectures in this course are based on the IQF curriculum with a blended learning approach and flipped classroom, lectures in this course also have an assignment system with 6 assignments such as routine assignments, CBR, CJR, Project, Mini Research and Idea Engineering and Mid Semester and Final Exams Semester as an evaluation of learning outcomes. lectures during the covid 19 pandemic had made the whole meeting conducted online in the previous semester.

2 Research and Methods

The type of research conducted is development research or often called research and development (RnD), this type of research aims to develop a new product or perfect a product that has been created before [7]. The product developed in this study is a case method-based digital teaching material in play courses for early childhood. To develop these teaching materials, one development method was established, namely the development method by Borg & Gall [2] which can be systematically seen in the following figure:

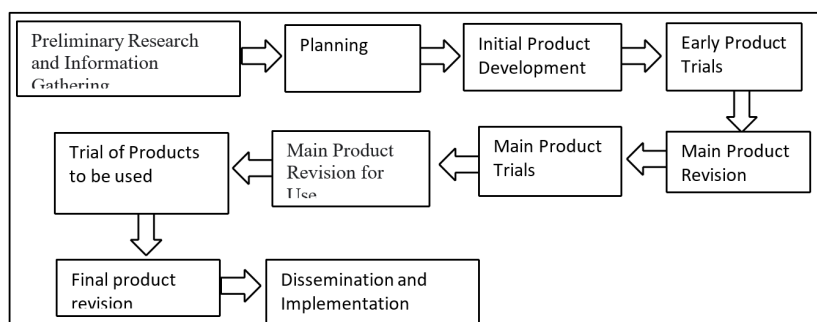


Fig.1. Development Method By Borg & Gall

The population in this study were all PG-PAUD students who took part lectures on play courses for early childhood. and samples in this study will be determined based on a random sampling technique for trial usage needs small and large scale. The data collection technique in this research is to do a literature study, interviews and distributing questionnaires, literature

study is carried out as a basis in develop teaching materials, questionnaires are given to validate designs by experts and test practicality based on questionnaires distributed to students, interviews conducted to find more detailed information related to the use of teaching materials by students, so that to collect the data instruments have been prepared in the form of Expert Validation Questionnaire, Product Readability Questionnaire, Practicality Questionnaire, and guidelines interviews with students.

Data analysis is a calculation related indicators or measurements to look for know the pattern of relationships contained in the data collected (Kothari, 2004), Technique analysis of the data used in this study is to test the validity of the content by using Aiken's V to see the agreement between experts in providing value to the product tested, then tested for reliability using Interclass Correlation Coefficient (ICC). on qualitative data, namely data from questionnaires in small group trials and For the most part, qualitative data analysis will be carried out in the form of data analysis, namely data reduction, data display, and conclusion drawing/verification [11]

3 Result and Discussion

This research was carried out by implementing the development method by Borg and Gall, this research started from the preliminary research stage and continued with planning so that an initial product could be prepared which would later be tested. The research is continued with product revisions and trials until later it can be disseminated.

3.1 Preliminary Research

Preliminary research was carried out through needs analysis, literature study and literature study. A needs analysis was carried out to see to what extent teaching materials based on the case method in play courses were deemed necessary to be developed, an analysis was also carried out to see the possibility of implementing the development of teaching materials in terms of human resources and implementation time, the research was continued by carrying out small research to go through studies literature and literature study to find out some of the things that are considered important from the product being developed, preliminary research in this study was carried out by analyzing the Semester Learning Plan in the play course for early childhood, then the analysis was also carried out through a literature study and interviews with lecturers and student.

3.2 Previous Research

Preliminary research was carried out through needs analysis, literature study and study of literature. Needs analysis is carried out to see how far the teaching materials are based the case method in the playing course is considered necessary to be developed, also analyzed carried out to see the possibility of the implementation of the development of teaching materials seen in terms of human resources and implementation time, the research was continued with carry out small research to go through literature studies and literature studies to find out several

things that are considered important from the product being developed, preliminary research in this study was carried out by analyzing the Learning Plan Semester in playing courses for early childhood, then analysis is also carried out through studies and interviews with lecturers and students.

3.3 Planning

The second stage of this research is to plan the objectives of the research, then prepare an estimate of the funds, energy and time of the research team, and proceed with the division of tasks to the research team according to the qualifications of each research member.

3.4 Early Product Development

This research is continued with the development of the initial product which includes determining the design of the product to be developed, the teaching materials developed include; (1) the concept of play, this material explains the definition and benefits of playing in early childhood, (2) the development of play, which contains the link between play and early childhood development which is observed from six aspects of child development, this material also discusses the development of play itself in accordance with the development of early childhood, (3) the personality of early childhood in playing, which discusses the personality of children in playing where in general children have their own desires and playing characters, (4) the environment and play equipment, which discusses the criteria for appropriate tools and environments used to play as well as principles in creating games for early childhood, (5) playing in the academic dimension of early childhood education where the teacher's role is very important in play activities and the types of activities that can be carried out in early childhood education with a play approach, (6) play as therapy that discusses the concept and relation of play to education inclusion, children with special needs, and children with problems.

3.5 First Product Trials

Preliminary product trials were carried out with the aim of seeing expert opinion about development of initial designs of teaching materials compiled by researchers, in this case researchers carry out design validation by involving experts who are experienced in terms of development of teaching materials and experts who have experience in learning to play for early childhood, based on the assessment carried out by experts, a test is carried out content validity using the Aiken V formula. The mean value of the validity test results is 0.78 where the value is within range of values with a valid category ($0.4 \leq V \leq 0.8$), based on these results it can be seen that experts tend to be consistent in giving values, through judgments by experts recommendations for improvement where experts argue that the use of language can be improved to be more dialogic and interactive, then a reliability test is carried out interclass correlation. Based on the results of the analysis it is known that the alpha value is 0.945

greater than 0.5 dan the ICC value obtained a value of 0.630 which is more than 0.5. The result indicates that there is an agreement between raters or experts in assigning values.

3.6 Major Product Revisions

The main product revision focuses on the language of delivery of material that needs to be designed more dialogic and interactive, this aims to keep the reader's motivation maintained when reading teaching materials and facilitating the delivery of information to readers.

3.7 Main Product Trials

The main product trial is carried out after completing the main product revision, at the test stage. The main product trial involves 6 sample people, Based on the results of the main product trials, the mean value is 3.44 in the good category, and in each part of the aspects assessed also achieved an average in the good category.

3.8 Main Product Revision

Main product revisions are carried out by focusing on aspects with the lowest average value, based on the results of the main product trials it turns out that the language aspect is not an aspect with an average the lowest, but the presentation feasibility aspect turns out to be the aspect with the average value lowest so that an increase in quality on the presentation feasibility aspect is necessary improved, revisions to the main product are carried out by taking into account the presentation sequence, questions and feedback.

3.9 Usage Trials

The use trial was carried out on 25 students as a sample that focused on assessing teaching materials on the aspects of content feasibility, presentation feasibility and language, the results of use trials.

3.10 Final product revision

The teaching materials developed have reached an average value of 3.48 in the good category, so that revisions to the final product do not need to be carried out and can be continued with stages Next is dissemination and implementation

3.11 Dissemination and Implementation

Dissemination and socialization are carried out for lecturers and students who have attended learning in play courses for early childhood in teacher education study programs early childhood education, while in student education teachers of early childhood education students who have not attended the lecture will be socialized at the beginning of learning in the following semester.

3.12 Plan Next Stages

This research was continued according to the previous research roadmap designed by the researcher, in the next stage the effectiveness test of the product will be carried out has been developed, the effectiveness test aims to determine the impact resulting from the use of case method-based digital teaching materials in play courses for children early age, this is of course to see how far students can get skills or learning outcomes in play courses for early childhood through the use of digital teaching materials based on the case method

3.13 Research outcomes achieved

This research has an output target in the form of publishing an article in the proceedings of The 4th International Conference on Science Education in The Industrial Revolution 4.0 (ICONSEIR) which will be held on November 24, 2022. It also targets Intellectual Property Rights on research reports which can later be obtained after the final report of the research is prepared. Research objectives are an expression of why a research is being done, this research done to find out, Prototype of digital teaching materials based on the case method in playing courses for early childhood, content validity of digital teaching materials based on the case method in play courses for early childhood, reliability of expert assessment of digital teaching materials based on the case method on the eye college play for early childhood, the results of the practicality test of digital teaching materials based on the case method in the course play for young children. The contribution of this research is the presence of case method-based digital teaching materials in Play courses for early childhood are assist students in mastering learning competencies in courses play for young children, improve students' abilities in terms of analyzing cases up to compile solutions to problems from cases given in lectures, Helping lecturers to facilitate the learning process on play courses for young children.

4 Conclusion

Based on the draft results, it can be concluded that the development of case method-based teaching materials in play courses for early childhood includes materials; (1) the concept of play, (2) the development of play, (3) the personality of early childhood in playing, (4) the environment and play equipment, (5) playing in the academic dimension of early childhood education, (6) playing as therapy

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