

Development of Digital Based Teaching Skills Manuals in Early Childhood Micro Learning Courses

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Abstract: This study aims to determine the description of student teaching skills through digital -based manuals in micro learning courses on achieving student competencies in these courses. The output to be achieved in this study is a reputable scientific publication article in the form of Sinta 3 indexed journals, as well as the copyright of digital -based guidebooks in micro learning courses. It is expected that the creation of digital -based manuals in this micro learning course will make it easier for students to master the competencies to be achieved in these courses. The development of this digital -based guidebook is expected to be able to improve the ability of lecturers in developing learning materials in accordance with the demands of the development of the current era. The development of this digital -based guidebook is carried out oriented to product development where the development process is described as possible and the product is finally evaluated. The development of this digital -based book was carried out through a research and development research method developed by Borg Gall. The population in this study was all PG-PAUD students who attended micro learning courses and the research samples were determined randomly (random sampling). The data analysis technique used in this study uses quantitative and qualitative analysis techniques.

Keywords : Guidebooks, Teaching Skills, Digital, Micro Learning

1 Introduction

In today's digital era, education is a basic thing that is needed by every individual. The education system also continues to experience change and progress which requires everyone to learn to deal with it. Advances in science have a good impact on every human being to become a more educated human being. This education also functions to develop abilities and shape the behavior and personality of each individual student to become a knowledgeable human being. Education in the 4.0 era is the basis for changes in digital education that we inevitably have to face. Changes in education in the digital era are increasing rapidly so that we must be able to develop and improve ourselves in the process of education and learning in accordance with the demands of the times. Moreover, for almost 2 years the pandemic has occurred, so this requires learning to be carried out without face-to-face meetings. Students are expected to have a more varied learning material through electronic books/articles, learning videos from the internet, as well as other learning applications, thus digitizing learning tools has become a necessity in today's digital era.

With the rapid development of the times, it will affect the learning methods that we do.

The more the times develop, the more demands that must be had by prospective educators, especially in early childhood education. The development of the times greatly affects the quality of learning that we do. To deal with the times and the increasing complexity of the learning process that will be carried out by prospective PAUD educators, it is necessary to have teaching skills in which there are components that form the basis of the learning process in early childhood.

Teaching skills for prospective early childhood educators are very important. Micro learning is directed to the formation of teacher competencies as learning agents as contained in Law Number 14 of 2005. Micro learning is also directed to the formation of competencies based on Government Regulation Number 19 of 2005 concerning National Education Standards, where in Chapter VI article 3 it is stated that competency teachers include: (1) pedagogical competence, (2) personal competence, (3) professional competence, and (4) social competence. This competence will affect the extent to which we achieve child development in accordance with the Standards for Children's Achievement Levels (STTPA). Teaching skills are not only limited to PAUD students to transfer knowledge to early childhood, but how students can carry out play-based learning for children so that the learning process at AUD becomes good. In this teaching skill there are several components that will be considered in it, namely: Design of indicators based on High Order Thinking Skills (HOTS), design of activities and learning materials which include STEAM (Science, Technology, Engineering, Art, Math), and using the TPACK (Technology, Pedagogy and Content Knowledge) approach.

Components in these teaching skills that must be possessed by early childhood education candidates. In accordance with the times, prospective educators cannot be separated from complex demands for this period. To answer the complexities of the times, prospective early childhood educators must have good teaching skills. The early childhood education teacher education study program has one of the micro courses, in which in this course PAUD PG students are asked to conduct teaching experiments as if later they will teach in early childhood education institutions. For this reason, this study aims to make a teaching skills guidebook, where in this guidebook there will be instruments for assessing teaching skills for early childhood students. It is hoped that after having this digital-based teaching skills guidebook, PG Early Childhood Education students will be qualified in their field of education.

1.1 Micro Learning Courses

Teaching skills are important and are a fundamental provision before actually plunging into teaching staff. Descriptively teaching is defined as the process of conveying information or knowledge from the teacher to students, the delivery process is often also considered as a process of transferring knowledge [6]. Micro learning courses are based on the activities carried out in the learning process. In general, the study material for this course includes: 1) explaining the concept of competence and teaching skills in general, preparing teaching implementation instruments, types of teaching skills and how to implement them, 2) compiling teaching implementation instruments, 3) explaining types of teaching skills and implementation: a. Skills to open and close learning; b. Asking skills; c. Skills provide reinforcement; d. Skills in holding variation methods; e. Explanation skills; f. Small group leadership skills; g. Individual teaching and guiding skills; h. Class management skills; i.

Skills in carrying out assessments during the implementation of individual, group and classical learning activities.

According to Mc. Micro teaching [2] is to describe and explain how the teaching process works, which develops the abilities and expertise possessed by prospective teachers so that they become potential teachers. While Mc. Laughlin and Moulton define that micro teaching is showing how a teacher determines the various components of teaching and also the parts in the teaching and process. So, when teaching practice can be done one by one the aim is to facilitate the teaching process. Micro learning that students get is the beginning that will determine the success or failure of someone to become a professional teacher in the world of work later. The general objective of micro-learning itself is to train basic teacher abilities and skills that students must possess before entering the world of work. While the specific goals are to train prospective teachers to be skilled in making learning designs, getting the teaching profession, and growing self-confidence.

1.2 Development of a Digital-Based Teaching Skills Handbook

The development of technology and communication has caused significant changes to the current learning models and patterns. The use of science and technology causes the teacher's role and function to become smaller, because many teacher tasks, especially in conveying knowledge, are replaced by technology. Such a shift in the function and role of the teacher must be prevented, because with such a condition the teacher will not be able to prepare graduates who have excellence in the physical, intellectual, skills, moral and spiritual fields. They cannot carry out their role as drivers of social change in a better direction, as well as building the future of superior national civilization [5]. This situation encourages someone to have a device (gadget) such as a computer, laptop, smartphone, and others. This tool can be a tool that can be used by teachers or lecturers in learning both inside and outside the school.

Developing a digital-based handbook requires adequate preparation so that the handbook can be effective in communicating the message conveyed. The aim is that the handbook that is compiled fulfills several of the characteristics previously described above. In the learning environment, the use of digital- based manuals as tools or equipment in carrying out the learning process or interactions between lecturers and students as well as learning resources is the utilization of the latest technology today. In this teaching skills handbook there are several components that will be considered in it, namely: Design of indicators based on High Order Thinking Skills (HOTS), design of activities and learning materials which include STEAM (Science, Technology, Engineering, Art, Math) , and using the TPACK (Technology, Pedagogy and Content Knowledge) approach.

According to Resnick, the definition of higher-order thinking skills is one of the complex thinking processes in describing material, making inferences, building representations, analyzing, and building relationships by involving the most basic mental activities. This skill is also used to underline various high-level processes according to Bloom's taxonomy levels. According to Bloom, skills are divided into two parts. The first is low-level skills that are important in the learning process, namely remembering, understanding, and applying, and the second is those that are classified into high-level thinking skills in the form of analyzing, evaluating skills. , and creating [1] Meanwhile, the TPACK approach itself is used as a reference in improving the quality of education. The TPACK concept also has a relationship with increasing creativity, collaboration and learning accountability as well as a new

curriculum in which technology plays an integral role and supports learning [4]

The use of digital-based media in the implementation of learning will be better because the learning material presented is more diverse. The media can be in the form of electronic books or articles, learning videos that can be obtained from the internet, virtual reality. Students can get all of that through the use of gadgets and applications that are in their hands very easily.

1.3 Implementation of Micro Learning Lectures in the Teacher Education Study Program Early Childhood Education

The Micro Learning course is one of the courses that students can take in semester VI. This course has a load of 2 credits and only students who have filled out a study plan card are entitled to attend lectures for this course. Lectures are held once a week with a total of 16 meetings where this year the meetings are held online and offline (Hybrid Learning). Students in this course are not only given theory but also practice which is very useful for applying knowledge from theory that has been studied so far which is obtained from courses in the previous semester. In this course, students are more focused on applying the 8 teaching skills, namely opening and closing skills, explaining skills, asking questions, giving reinforcement skills, guiding small group discussion skills, managing class skills, varying skills, and individual teaching skills [3]. This course also provides students with broad opportunities to develop an understanding of the material being studied. Students can also learn to analyze things with a critical mindset on a scientific basis and develop skills in teaching.

In this course students learn about a set of knowledge, skills, and attitudes that must be possessed by a teacher. Then, students apply the concept by teaching using the right method so as to create a conducive condition. In the implementation of learning this course applies several learning methods such as: discussion, cooperative learning, discovery learning, case method, team based project, recitation, and skills training. After receiving this course, students are expected to be able to apply this knowledge to the world of work later.

2 Research Methods

This study uses the development research method proposed by Borg & Gall through three stages, namely: 1) in stage 1, a preliminary study of research and information gathering is carried out. 2) In stage 2, namely the development of research products which include: (a) plans and (b) initial products to be developed. 3) in stage 3: there are seven activities which include, namely: (a) initial field testing, (b) product revision, (c) main field testing, (d) operational product revision, (e) operational field testing, (f) final product revision, (g) dissemination and implementation. As for this study, the research stages were grouped into three stages to facilitate the research process, which in no way diminished the true meaning of each step [7].

Research is planned at the FIP UNIMED campus. This research was conducted from March to October 2022. The population in this study were sixth semester PG PAUD students totaling 60 students. With a predetermined technique, the sample is obtained, namely random sampling. The data collection technique used is by observing the treatment given to the experimental class where the data is quantitative. The data analysis used is a quantitative test

in the form of a regression analysis test. This is necessary to see how much influence it has on changes in student development from each treatment given. Observations in this study also aim to determine how far the effectiveness of book development has on students' abilities to achieve the learning achievement targets listed in the lesson plans that have been prepared previously. [8]

The data obtained in the implementation of the research will be analyzed using SPSS 20. Seeing how much the effectiveness of the development model used is the regression test and Kolmogorov- Smirnov. The data were analyzed based on the results of the items on the instrument used. The use of data collection instruments in this study is to determine needs in the field as initial data in the model development material that will be carried out. The use of the instrument also functions as a data collection process regarding the level of feasibility and effectiveness of the developed model. In this study using a Likert Scale. With this type of measurement scale, you will get a firm answer, namely a value on a scale of 1-4.

3 Results and Discussion

This research was conducted with the aim of developing digital-based books that can be accessed on smartphones, tablets, laptops or other gadgets that make it possible to support online and offline learning processes, this research was carried out through the following stages:

a. Potential and Problems

Based on the potential analysis conducted, several potentials were found, both internally and externally. Meanwhile, internally this research was supported by experienced human resources, the development of the early childhood teaching skills guidebook was carried out by researchers who are also lecturers in the course, researchers and lecturers are a combination of senior lecturers who are very experienced in micro learning courses and are integrated with young lecturers who have high morale and up-to-date ideas so that they become a force that supports this research. This research is also supported by the potential use of smartphone, tablet, laptop and other gadgets that allow displaying digital books. The existence of this technology is not something new and difficult for students and the general public so that this book is very easy to access anywhere and anyone. The complete facilities at Medan State University are also a potential support, starting from the Digital Library which provides books, journals, theses and theses as well as other sources of information that support researchers to find supporting theories, in addition to excellent internet access and good building facilities. comfort also supports researchers to coordinate among fellow research teams. In addition to this potential, it is also accompanied by problems or inhibiting factors in research, such as currently where PPKM and WFH are in force (although not fully implemented) due to the unsupportive global situation, besides that this research is designed with the application of graphic design technology which is quite difficult, thus requiring a lot of coordination in the development of early childhood teaching skills manuals.

b. Information Gathering Stage

At this stage, information was obtained through FGDs with the course lecturers and then by interviewing students. Based on the results of the FGD, information was obtained about the course material in the RPS and the online learning strategies that

will be implemented as well as student assignment plans. The results of interviews with students showed that some students had difficulty receiving learning materials directly through online meetings due to the influence of signals and weather which hindered lectures. This course itself is a course that has more practical material than theory so that students need a guidebook in these practical activities. Based on the results of interviews, students hope they can obtain material that can be accessed anytime, anywhere and does not require network quality which must always be good.

c. Product Design

Based on the results of the analysis on these conditions, the researcher developed a digital book with reference to the SLP in accordance with the results of the FGD with other subject lecturers. In this book, apart from discussing basic teaching skills in PAUD, it is also equipped with observation guidelines when carrying out the practice of the 8 teaching skills. Apart from that, this book also adds theories related to the concept of teaching skills itself. All materials are packaged in digital form and equipped with attractive designs and contain core material sourced from journals, books, internet sites that contain the latest data and are in accordance with current topics in the world of health and nutrition.

d. Design Validation

Design validation was carried out after the product design was agreed upon by the research team, Team discussions with experts who are experienced in writing textbooks and also assessing textbooks are carried out in design validation to determine the weaknesses and strengths of the products made by researchers.

e. Design Improvements

Based on design validation, the validator expert suggested that the developed book contains teaching tips and tricks, especially in dealing with early childhood which incidentally is a golden age where all aspects of their development must be optimized as much as possible so that it is expected to increase knowledge and increase reader motivation.

f. Initial Product Development

The research team continued the initial product development by following the expert validator's directions, each chapter in the book was developed by conducting a literature study related to the specified material title, then pouring the literature into design media by combining image elements, information text from literature studies, choosing the right color combinations. in accordance with the agreement of researchers, and determine the overall layout and design balance. Researchers also do not forget to take into account the depth of the material for discussion in digital book learning as outlined in the form of an ebook with A4 paper size with a portrait layout to make it easier to read on gadgets.

g. Early Product Trials

The initial product trial was carried out by involving two experts to provide an assessment through a questionnaire, the assessment was carried out by taking into account the eligibility aspects of the content, presentation feasibility and language aspects. The following is a table of the results of the initial product trial.

Table 1. Expert Trial Assessment

No	Observed Aspects	Rating Score		Average	Information
		Expert 1	Expert 2		
1	Content Eligibility	2,85	2,90	2,88	Enough
2	Eligibility of Presentation	2,69	2,75	2,72	Enough
3	Language Aspect	3,00	2,95	2,98	Enough
	Amount	Amount	8,60	8,57	
	Average	Average	2,87	2,86	Enough

The results of the initial product trial obtained a value of 2.86 in the sufficient category, meaning that the product was still not suitable for production so that improvements were needed, especially in aspects that were still considered not good, based on the questionnaire filled in by experts, suggestions were obtained to add questions at the end of each module.

h. Main Product Revision

The research team carried out revisions after obtaining the results of the initial product trials, revisions were carried out by paying attention to aspects that received low scores from the two experts and improving aspects of content feasibility, presentation feasibility and language aspects to be better, revisions were carried out by adding theoretical sources that referred to concepts and definitions, adjusting images to make them more accurate, adding questions at the end of the module, and consistency in the use of terms.

i. Main Product Trials

Digital books that have undergone repairs were given to 6 students who had attended micro- learning courses to conduct limited trials. The results of limited trials are presented in the following table:

Table 2. Limited Trial Assessment

No	Observed Aspects	Subject Assessment						Average
		1	2	3	4	5	6	
1	Content Eligibility	3,66	3,71	3,76	3,72	3,69	3,67	3,68
2	Eligibility of Presentation	3,61	3,64	3,59	3,85	3,64	3,66	3,59
3	Language Aspect	3,79	3,74	3,82	3,74	3,74	3,80	3,73
	Amount	11,06	11,09	11,17	11,26	11,07	11,23	11,00
	Average	3,68	3,69	3,72	3,75	3,69	3,74	3,71

Based on the limited trial, a score of 3.71 was obtained in the good category and all aspects were in the good category so that digital books could be tested on larger groups.

j. Major Product Revisions for Use.

The results of the limited trial were already in the good category with a score of 3.71 but to improve the quality of the micro learning books the research team looked again at the books that had been written to minimize errors in writing and errors in image design.

k. Product Trial to be Used

The trial of the product to be used was carried out by involving 25 students to assess the micro learning book based on the feasibility aspects of the book's content, presentation feasibility, and language feasibility. The results of the product trial to be used are presented in the following table:

Table 3. Large Group Trial Results

Aspect	Aspect Description	Score	Average
Content Eligibility	Compatibility of the material with CPL/CMK	90,0	3,53
	Material accuracy	89,0	3,56
	Supporting learning materials	91,5	3,66
	Material update	88,8	3,55
Appropriateness	Serving technique	93,0	3,73
Presentation	Serving support	92,5	3,70
	Presentation of learning	93,0	3,72
	Presentation equipment	93,5	3,74
Language Assessment	Straightforward	95,5	3,82
	Communicative	95,3	3,81
	Dialogic and interactive	93,0	3,72
	Suitability with the level of development of students	92,0	3,68
	Consistency and integration of thought flow	95,5	3,82
	Use of terms, symbols or icons	91,0	3,64
	Average		3,69
	Information		Good

l. Final Product Revision

The results of product trials in the large group have shown a score of 3.69 in the good category, so revisions are not carried out again and then digital books will be processed for copyright and uploaded to the network so that students can use them.

m. Dissemination and Socialization

The research product will be disseminated to lecturers and students who have attended micro- learning lectures in the Early Childhood Education Teacher Education study program environment, and to students who have not attended micro-learning lectures will be socialized in the even semester of T.A. 2022/2023 in lectures.

4 Conclusion

This manual contains an explanation of teaching skills and types of teaching skills for a teacher, namely:

- a. Explaining the concept of competency and teaching skills in general, preparation of teaching implementation instruments, types of teaching skills and how to implement them.
- b. Compiling instruments teaching implementation.
- c. Explaining the types of teaching skills and their implementation:
 - 1) Skills to open and close learning
 - 2) Asking skills

- 3) Skills provide reinforcement
- 4) Skills in holding apriasion methods
- 5) Explanation skills
- 6) Small group leadership skills
- 7) Individual teaching and guiding skills
- 8) Class management skills
- 9) Skills in carrying out assessments during the implementation of individual, group and classical learning activities. Based on the results of the final product revision and after denomination and socialization of the use of the manual, it can be concluded that the development of a digital-based teaching skills manual for early childhood micro learning courses has been well achieved.

References

- [1] Ariyana, Yoki, dkk. (2018). *Buku Pegangan Pembelajaran Berorientasi pada Keterampilan Berpikir Tingkat Tinggi*. Direktorat Jenderal Guru dan Tenaga Kependidikan Kementerian Pendidikan dan Kebudayaan
- [2] Asmani, Jamal Ma'murAsmani. (2010). *Pengenalan dan Pelaksanaan Lengkap Micro Teachingdan Team Teaching*. Yogyakarta: Diva Press
- [3] Djamarah, Saiful Bahri. (2000). *Guru dan Anak Didik dalam Interaksi Edukatif*. Jakarta: PT Rineka Cipta.
- [4] Joy, K.-K. (2015). A Proposed Model to Increase Creativity, Collaboration and Accountability in the Online Classroom. *International Journal of Information and Education Technology*, 5(11), 873–876. <https://doi.org/10.7763/ijiet.2015.v5.630>
- [5] Nata, Abuddin. (2013). *Kapita Selektta Pendidikan Islam: Isu-Isu Kontemporer tentang Pendidikan Islam*. Jakarta: RajaGrafindo Persada.
- [6] Sanjaya, Wina. (2017). *Strategi Pembelajaran*. Jakarta: Prenada Media
- [7] Van den Akker, Jan. (1999). *Principles and methods of development research*.
- [8] Akker et al. (2018) *Design Approaches and Tools in Education and Training* pp. 1-14. Dordrecht: kluwer Academic Publishers