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ENHANCING THE QUALITY OF TEACHING MODELS IN DEVELOPING THE CHARACTERISTICS OF EARLY CHILDHOOD EDUCATION THROUGH *PROJECT-BASED LEARNING*

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Abstract

In education, issues relating to learning models have always been a fascinating topic of conversation. This research aims to develop a teaching model for Early Childhood Education (PAUD), that can facilitate the learning process in developing children's characteristics from an early age. The teaching materials developed are prepared using a Project Based Learning (PBL) approach. This research includes development research or the Dick and Carey Research and Development (RnD) model. The development stages focus on children's play activities to determine instructional goals, analyze learning materials, analyze children's abilities in the context of playing while learning, assess learning targets, develop instruments, develop project learning-based learning strategies, and apply them to learning. The development of science and technology is also a challenge in line with the continuity of education which demands rapid change and adaptation to circumstances. A learning process that produces innovation in quality and competitive graduates with maximum academic and professional abilities in their fields and with personalities in line with national education goals. The research results show that teaching materials using the Project-based Learning approach can make it easier for educators to achieve goals in forming children's character from an early age through children's play activities according to their needs. On the other hand, children are required to participate actively, generate motivation, think coherently, and be assessed as being able to develop media that suits the learning needs and aspects of the child's development.

Keywords: Project-based learning; Teaching model; Characteristics of Early Childhood

Abstrak

Dunia pendidikan berada pada persoalan yang berkenaan dengan model pembelajaran senantiasa menjadi salah satu topik perbincangan yang begitu menarik. Penelitian ini dilakukan sebagai tugas akhir Program Studi Pasca Sarjana Pendidikan Anak Usia Dini Universitas Panca Sakti Bekasi, yang bertujuan untuk membuat dan mengembangkan model ajar pada Pendidikan Anak Usia Dini (PAUD), yang dapat memudahkan proses pembelajaran dalam membentuk karakteristik anak sejak usia dini. Bahan ajar yang dikembangkan disusun dengan pendekatan Project Based Learning (PBL). Penelitian ini termasuk penelitian pengembangan atau Research and Development (RnD) model Dick and Carey. Adapun tahapan pengembangan menitik beratkan kepada kegiatan bermain anak untuk menentukan tujuan instruksional (instructional goals), menganalisis bahan pembelajaran, menganalisis kemampuan anak dalam konteks bermain sambal belajar, menentukan target pembelajaran, mengembangkan instrumen, mengembangkan strategi pembelajaran berbasis project learning dan menerapkannya pada pembelajaran. Perkembangan ilmu pengetahuan dan teknologi, juga menjadi tantangan sejalan dengan keberlangsungan pendidikan yang menuntut perubahan secara cepat dan beradaptasi dengan keadaan. Proses pembelajaran yang menghasilkan inovasi pada lulusan yang berkualitas dan berdaya saing dengan kemampuan maksimal, baik dari segi akademik maupun profesional di bidangnya dan berkepribadian sesuai dengan tujuan pendidikan nasional. Hasil penelitian menunjukkan bahwa bahan ajar dengan pendekatan Projeck Based Learning dapat mempermudah pendidik dalam mencapai tujuan dalam pembentukan karakter anak sejak dari usia dini melalui kegiatan bermain anak sesuai kebutuhan. Selain itu, anak di tuntut turut berpartisipasi aktif, membangkitkan motivasi, berpikir runtut dan dinilai mampu mengembangkan media yang sesuai dengan kebutuhan belajar dan aspek perkembangan anak.

***Kata Kunci**: Project based learning; Model ajar; Karakteristik Anak Usia Dini*

Introduction

In the world of education, the learning model is the creation of a learning method to improve the process of children's play activities sustainably through education by requiring innovation and creation. As a logical answer to the dynamics of human life that are constantly moving forward and changing. Based on sources obtained from the Global Competitiveness Report from the World Economic Forum, show that university graduates in Indonesia have not answered the needs and market demands of the career world in this modern era. As a result, unemployment among Indonesia's higher education graduates has increased significantly (Wibawa, 2017). Meanwhile, graduates and workers from abroad continue to compete fiercely in Indonesia's job market.

In this context, the issue of relevance, link, and match is still ongoing in Indonesia. For example, the lack of cooperation between graduate users, the business world, and educational institutions, and the lack of innovation and creativity in the learning process (Wibawa, 2017). Logically, the target that leads to the orientation of linear and conventional national education development is one of the triggers. In addition to what is referred to above, the learning orientation has also not touched on the 'how' (process), but still on the 'what'. This of course results in unplanned incidental learning. In the learning process, educators still rely on their knowledge, not the needs of children (students), followed by methods and strategies that vary according to the context and content of learning. The results of the study only touch on the theoretical level, so development is not fully integrated with the needs of children. This is because there are still many conventional approaches that only lead to efforts to know and understand/Lower Order Thinking Skills (LOTS), not at the level of children actively participating in discussions to analyze and create/Higher Order Thinking Skills (HOTS).

Educators and children must be able to combine various elements of knowledge so that children's play activities are more holistic and integrative. Therefore, it is necessary to conduct studies and discussions to unravel where problems occur so that the learning process does not stay in place.

In this case, many factors delay transformative and productive learning. There are at least two significant factors. The first is internal factors such as children's intelligence, unmotivated, or other limitations. Second, external factors include conservative learning culture, learning media, resources, and learning materials that are still difficult to access.

Project learning is a child-oriented learning process to encourages active exploration (Nagarajan & Overton, 2019) by utilizing projects and tasks resulting from joint discussions between educators and children (Mergendoller & Thomas, 2001). In its implementation, the project method is carried out systematically by involving children in acquiring knowledge and skills through ongoing research assignments, authentic questions, and well-designed products. Projects in Project Based Learning are based on challenging questions and projects. Children play a central role in designing, solving

problems, and making decisions that allow children to work independently (Sumarni, 2015).

Teaching materials are additional resources and learning media that provide information and insights into the role of educators and students. This is necessary so that learning outcomes in the form of knowledge, skills, and values embedded in attitudes must be conveyed by every educator so that the expected results can be maximized and on target. Project-based learning is expected to be able to provide solutions to problems that often occur in the learning process to explore and foster creative thinking (Mergendoller & Thomas, 2001) and solve problems that often occur in real life so that children have life skills and can innovate (Bilgin, Karakuyu, & Ay, 2015). The project approach is believed to motivate and increase children's sensitivity in solving problems (Turgut, 2008) and deciding things interdisciplinary (Vogler et al., 2018).

Teaching models can also help children master learning, and evaluate the implementation process (Daryanto, 2013). The teaching model is done systematically and measurably so that the teaching materials developed can be evaluated. In addition, the Education Unit Level Curriculum and its devices, which are also a reference in its preparation, are packaged in a form that allows children to learn on their own (individually) within a specified time. So that it can help educators and students cooperate in children's play activities. A teaching model includes several aspects that are needed, namely goals to be achieved, play activities that are by the needs of children with learning outcomes, exercises, and evaluations (Fatikhah, 2015).

Project Based Learning is an inquiry-based learning approach that offers a reform path in the learning process, namely student-centered (Sumarni, 2015), the use of interdisciplinary concepts, involving experience and the use of technology to answer questions and solve contextual problems (Krajcik & Blumenfeld, 2006; Markham, Larmer, & Ravitz, 2003; Holm, 2011). Project-based learning is constructive. The goals to be achieved are clearly stated. Through this approach, children can collaborate (Suranti, Gunawan, & Sahidu, 2017), communicate, and conduct critical reflection in learning practices. This approach has been widely used from primary education to higher education (Kokotsaki, Menzies, & Wiggins, 2016; Guo, Saab, Post, & Admiraal, 2020). There are advantages to this approach, namely emphasizing product creation (Novak & Krajcik, 2019), learners conducting presentations or performances to help overcome complex challenges, children working independently in the implementation of projects for a certain amount of time, educators serving as facilitators (Ismuwardani, Nuryatin, & Doyin, 2019) as well as mentors and instructors in the progress of ongoing project implementation (Holm, 2011). Project-Based Learning (PBL) as a method to determine teaching materials for early childhood education educators is expected to achieve their learning outcomes (competencies). These competencies are determined in the learning media of ECE, including in the program characteristics that are taught. The application of this teaching model can be successful with the competencies that must be

achieved by educators and children more specifically as follows: (1) Educators and children can think logically, systematically, creatively, and innovatively in developing and implementing science and technology based on character values and developmental aspects. (2) Educators can plan, implement, and evaluate early childhood learning by utilizing learning resources and media based on science and technology and local wisdom by paying attention to the quality and needs of children (3) Educators can make learning media or Educational Game Tools (APE) according to needs and stages. This research develops teaching materials with early childhood learning media. A model of teaching materials or learning resources that is made with unique systematics to accommodate play activities according to children's needs. In this case, the educator provides guidance, assistance, and an explanation of the learning plan, and the child follows the direction of the educator so that he can learn independently. Meanwhile, the stages of organizing learning materials follow the goals that have been set by the level of ability (competence) and learning targets to be achieved. This is done to explain to children the relevance of facts, concepts, procedures, and principles in the learning process (Indriyanti & Susilowati, 2010).

Method

This study uses a qualitative approach with the Research and Development (RnD) method which is designed to develop and test a project-based learning model (PBL) in Lovely Lovita Integrated Early Childhood Education, Tanjung Pinang, Riau Islands. The RnD method was chosen because it allows researchers to develop teaching materials, test the products produced, and make revisions and improvements based on the results of field trials. RnD aims to produce products that are relevant and can be applied in the educational environment, especially early childhood learning based on the nation's character. A qualitative approach is used to dig into in-depth information from the perspective of learners, educators, and learning environments and to explore how the application of PBL can improve the quality of learning models and early childhood characteristics. This research has an emic perspective, which means that data is collected from narratives, expressions, and construction results from respondents, namely teachers, parents, and students. This approach emphasizes the quality of interaction and meaning resulting from the application of PBL in the context of early childhood learning. Thus, this research not only focuses on the development of teaching material products but also on the process and impact of the implementation of PBL on children's character development.

The main purpose of this study is to develop and test the application of the Project-Based Learning model in improving the quality of learning in Lovely Lovita Integrated Early Childhood Education, especially in building early childhood characteristics. Specifically, this study aims to identify learning needs in Lovely Lovita Integrated Early Childhood Education, especially in the aspects of project-based learning and children's character development. In addition, this research aims to develop project-based teaching materials that are relevant to the needs of early

childhood and the characteristics of the ECE curriculum. The study also examines the effectiveness of the PBL model in improving children's critical thinking skills, creativity, collaboration, and social skills, as well as evaluating its impact on early childhood character development, such as independence, responsibility, and cooperation skills. Based on the results of field trials and feedback from educators and students, revision and refinement of the project-based teaching model will be carried out.

The data collection techniques used in this study include in-depth interviews, participatory observations, and documentation. In-depth interviews are used to dig up information from educators, parents, and children about their perceptions of the implementation of project-based learning models. The interviews were conducted in a semi-structured manner so that the researcher could explore more deeply the informants' responses and experiences. Participatory observation is conducted to observe firsthand the project-based learning process that takes place in the classroom, including interactions between educators and learners, as well as how children participate in project activities and work in groups. In addition, observation also includes observations on the development of children's characters, such as cooperation, independence, and a sense of responsibility. Documentation is used to collect teaching materials, learning notes, and products produced by children during project activities. Instruments that support data collection include interview guides, observation sheets, and checklists to evaluate children's character development. These instruments are specifically designed to assess how the application of PBL affects early childhood learning and character development.

Data analysis was carried out using qualitative data analysis techniques which included three stages: data reduction, data presentation, and conclusion drawing and verification. In the data reduction stage, the data that has been collected is simplified by selecting data that is relevant to the focus of the research. Irrelevant data is eliminated, while important data is systematically organized for further analysis. The data is then presented in the form of narratives, tables, or diagrams to facilitate understanding and analysis. The presentation of data includes the results of interviews, observations, and documentation related to the implementation of PBL and its impact on children's character development. Furthermore, provisional conclusions are drawn from the results of data analysis, which are then verified to ensure consistency between the conclusions and the data obtained in the field. This verification is carried out through data triangulation, namely comparing the results of interviews, observations, and documentation to ensure the validity of the findings. Data analysis is carried out continuously throughout the research process to ensure that the data obtained truly represents the experience and views of the informants and provides a clear picture of how the implementation of PBL can improve the quality of learning and character of children in Lovely Lovita Integrated Early Childhood Education.

Results and Discussion

The development of teaching materials uses the Dick and Carey learning design model (Dick, Carey, & Carey, 2005). The stages of developing teaching materials for learning media consist of eight processes as follows: (1) Setting learning objectives in general and specifically from the teaching model; (2) Conducting an analysis of learning media for early childhood education; (3) Examine and analyze in depth the ability of ECE educators related to social status, cognitive ability, children's learning styles, and analyze their needs in play and learning; (4) Write down the target for achieving abilities or competencies that children must achieve; (5) Developing assessment instruments to measure the achievement of learning competencies; (6) Improving learning strategies based on available resources; (7) Choosing materials and playground equipment for learning; and (8) Design and conduct evaluations. The implementation of the Dick and Carey Model design development can be summarized in the following figure:

Learning Steps and description of activities: (1) Initial Discussion of Learning according to the theme: Educators motivate children related to the learning theme of the characteristics of PAUD learning media "What are the characteristics of PAUD learning media?" "Why does the early childhood learning media have to be different from other media?" "What are the characteristics of media that can be used for learning activities?" (2) Determining Goals and Project Planning: Children are able to categorize various ECE learning media, children are able to determine appropriate media for ECE, children are able to analyze the characteristics of the use of ECE learning media; (3) Determine the Project/project that suits your abilities and needs: The project such the child is asked to do a role-play in the form of a project entitled "If I become a trader" (selling vegetables and fruits); (4) Scheduling of Project Stages, planning the play is carried out in core activities: Children do role-playing activities with several friends with roles chosen by children as needed; (5) Learning achievement targets using the education implementation of national character: Educators make plans using tools that are implemented with 18 characters as a support for character education instilled in children through play activities; (6) Assistance in 6 aspects of child development: Educators continue to provide assistance in 6 aspects of development (Religious and Moral Values, Language, Cognitive, Social-Emotional, Physical Motor, and Art) in children's play activities; (7) Learning planning using tools and media that suit the needs of children: The teaching media used are vegetables, fresh fruits provided by educators with a means of exchanging banknotes and coins that resemble real money, with a nominal amount of money from Rp.500 coins, banknotes of Rp.1000, Rp.2000, Rp.5000, Rp.10,000, Rp.20,000, Rp.50,000, Rp.100,000; (8) Implementation of learning activities and assessments: Educators prepare assessment instruments according to the number of children by including assessments of children's practices, assessments of national character in education.

Based on the research objectives, research on the development of project-based

learning materials for early childhood learning media has analyzed the children's needs for the learning model. The analysis encompassed children's needs, characteristics, and goals, as well as the structures and procedures during the analysis stage. In the analysis of children's needs and the curriculum by the learning materials in the ECE learning media, it was found that the learning materials available for ECE are very many but are not used properly through the learning media itself. So far, learning has been carried out based on project learning. However, Project-Based Learning (PBL) is only limited to making instruction media, not systematic steps that must be carried out for project learning. This is a crucial issue in this study. In addition, the guidance on the curriculum device must refer to the national curriculum. Therefore, teaching materials that support the implementation of curriculum tools are urgently needed.

Based on the analysis of educators as the development subject, the following things were found: Characteristics of early childhood educators refer to learning media. It was also found that children's characteristics and differences in children's learning styles were not optimally accommodated in the learning process. The results of the analysis of the three elements above show that the learning materials have not been systematically arranged.

Evaluation

Evaluation is a function of educational administration and is an activity to research and find out the extent of the implementation carried out in the overall process of achieving Project Based Learning in children's play activities.

Validation

The pre-validation stage is carried out by asking for input from educators regarding the media they developed. Furthermore, the design of the teaching model development was validated to assess its effectiveness in the learning process compared to using the teaching model. This is done by asking for assessment and input from educators who are experienced in assessing the process of learning activities, in this case, the teaching model related to the assessment of conformity with ECE, learning technology, and language accuracy. At the design validation stage, educators are asked to assess the design and product planning made to see the effectiveness of the teaching model. Therefore, differences can be seen before and after using the teaching model. The researchers asked educators who had experience in the fields of learning design or technology, early childhood education, and the linguist. An educator assessing the validation of the teaching model. This assessment results in evaluations and suggestions that are useful for improvement in the development of teaching models.

After validation, the next step is to perform a readability test. The readability test was carried out on educators as users of the teaching model. The teaching model is used in the process of playing with children in learning to conduct assessments and provide input on the teaching. In addition, readability tests are also carried out on

fellow educators to get suggestions and input to improve the teaching model. The final stage will produce a revised and improved teaching model in the form of a learning plan.

The results of the validation, educators made planning and materials were shown with a score of 86 with a percentage of 93.4% (average score of 3.73). This shows that the material is of good quality (good category), while educators with the media rated 69 with a percentage of 86.25% (average score of 3.45), indicating that the display teaching model used is included in the decent category. Finally, the educator's assessment in terms of language assessment is 40 with a percentage of 90.9% (average score of 40), meaning that the language used in the preparation of the teaching model is good and correct grammar. In general, the three educators explained that the teaching model is suitable to be used in learning activities from assessment.

The development of teaching materials in the media produces a teaching model that can be used for learning activities. The teaching model above consists of six aspects of development as follows: (1) Early childhood moral development media in religious aspects; (2) Media for the development of cognitive aspects of early childhood; (3) Learning media for the development of early childhood language aspects; (4) Learning media for the development of social and emotional aspects of early childhood; (5) Media for the development of physical-motor aspects of early childhood; (6) Media for the development of early childhood art aspects;

All aspects of development in learning are systematically arranged to understand the subject matter and create media that follows the aspects of children's development and stages of development systematically and effectively. A concept map is needed to accurately measure the achievement of Learning Outcomes. Therefore, learning indicators were developed for each learning outcome by emphasizing children's abilities and skills in designing appropriate learning media for ECE.

Observation

The observation was carried out to obtain information about children's experiences when educators used ECE media teaching materials with projects in learning activities. The data from the observation results are explained as follows: (1) ECE media teaching materials with a project learning approach can help children be more structured in participating in learning. This can be seen from directed learning. (2) Teaching materials for learning based on ECE media projects help children be directly involved in learning activities. This involvement can be seen when educators and children participate in designing, describing, and creating learning media projects for early childhood. (3) Teaching materials based on the ECE media project can motivate children in children's play activities in the implementation of learning because they are directly involved in determining, designing, and making media while playing. (4) Early childhood media learning materials with a project learning approach encourage and motivate children to think systematically and sequentially. This can be

seen from the media designed and developed by educators with children with a straightforward and referential theoretical and procedural foundation. (5) Children can easily understand the flow of learning conveyed by using a project approach. This can be seen from the ability of children to develop media by their learning needs and by the aspects and stages of their development. (6) Children can use teaching materials based on ECE media projects easily. This can be seen from the absence of obstacles when children use teaching materials in learning activities or presentation activities. (7) Teaching models that use learning media ease the task of educators in presenting learning because it is a reference in carrying out learning and teaching process activities.

Teaching materials that contain learning tools are made in writing on the learning plan prepared by the educator, and used by the educator to achieve the learning objectives. According to Suparman (2012), teaching materials are prepared for a play activity contained in the curriculum set based on general and special learning objectives, children's characteristics, and learning strategies for each purpose. Teaching materials are components that are closely related to the content of each media and must be relevant to the goals, characteristics of children, and learning strategies. Teaching materials for all media used must be well designed by educators in each class so that the discussion of the activity material that will be given for a semester's learning purpose and learning outcomes can be determined (Hidasari, Natalia, & Pramana, 2018).

This teaching model was developed using the Project Based Learning approach. The selection of project learning is based on thinking about play activities while learning by doing according to the plan. The idea of learning is to practice it to build the child's knowledge and experience directly (Tascı, 2015). They must be motivated and centered in learning so that learning is not only fixated on what the educator conveys (Lenz, Wells, & Kingston, 2015). Project Based Learning is a constructivist approach that integrates theory and practice (Bender, 2012), where educators and children work together to discover and build knowledge through active learning and hands-on activities (Zajkov & Mitrevski, 2012).

In designing a project, the following important parts need to be considered: (1) Overview of the activities or projects to be carried out in general and in particular, (2) Learning achievement targets for play activities in learning to be achieved, (3) List of facilities and infrastructure that will be needed for the activity, (4) Determining ratings and rubrics (Roessingh & Chambers, 2011). This is in contrast to other approaches that focus more on the target speed of achievement resulting in a short learning process (Chambers, Cheung, & Slavin, 2016). Project-based learning seeks to provide a detailed and more challenging learning process for children at a predetermined unit of time to produce a useful product or work (Mergendoller & Thomas, 2001).

The learning steps of Project Based Learning according to Pondiscio (2010) are: First, asking questions and discussing at the beginning of each activity of playing

sambal learning. Learning begins by arousing children's thinking power by provoking challenging questions to motivate children. These questions will direct the child to the context of project-based learning and assign the child tasks to carry out controlled activities. The questions asked by both educators and children are questions related to the real world and begin with in-depth investigation (Solomon, 2003).

Second, students are guided and accompanied by educators in planning tasks or projects that will be carried out from the beginning to the end of the activity. These activities include determining what projects will be made or carried out by children, agreeing on a framework, choosing the most appropriate steps in the implementation of the project to be implemented, determining the implementer and person in charge of each activity, and determining the infrastructure facilities and resources needed in these activities. Project implementation.

Third, determine the time for project implementation. At this stage, children with the guidance and assistance of educators make a road map (schedule) for the implementation of activities that are adjusted to a predetermined plan. The goal is to explain to children that the implementation of a quality project requires a reasonable work schedule so that it can be carried out by the agreed work plan. This activity is carried out without burdening the child, the educator can show an example of the existing scheduling, and the child is asked to adjust the activity schedule. This is intended so that children can work or time activities comfortably and do not feel rushed to arouse children's creativity to explore and get inspired.

Fourth, educators supervise the projects that are being done by children, this stage is not only supervision when playing for children but also as a guidance process. Supervision and guidance are carried out to provide opportunities for children to be able to carry out their activities properly and correctly.

Fifth, conduct an assessment. An assessment was carried out on the children's work and performance during the play process in the project. The assessment was carried out to measure the achievement of children's work, work, and learning. In this case, educators must conduct an authentic and objective assessment.

Sixth, evaluate the activities that have been carried out. The final stage of this approach is to conduct a project evaluation. Educators and children evaluate the advantages and disadvantages of what has been implemented during the implementation of activities. On this occasion, children can explain what they have understood from the activity, their experience of discussing, their feelings during the activity, and the difficulties they feel during the implementation of the activity.

The results of this study are strengthened by research conducted by Johann, Koch, Chlosta, and Klandt (2006), that 90% of children who carry out the teaching and learning process with the stages of Project-based Learning are confident and optimistic. Achieve success in the career world and can improve children's academic achievement (Syakur, Musyarofah, Sulistiyaningsih, & Wike, 2020) positively (Mahasneh & Alwan, 2018). In addition, the results of a survey conducted by Lasonen and Vesterinen (2000)

illustrate that 78% of educators stated that children in the learning process using curriculum tools designed with a project learning approach can help children have sufficient provisions as a provision to enter the career world to a higher level because, with this approach, children not only learn concepts theoretically but also learn practically how to apply them in their daily lives.

Teaching materials with a project learning approach support learning to be more effective, creative, and innovative (Kaldi, Filippatou, & Govaris, 2011). This approach emphasizes the application of a process, results, and products (output and outcome) so that learning is more applicable and can improve children's abilities and skills. This approach is also considered more effective and superior in efforts to instill and cultivate critical thinking skills, collaboration skills (Sumarni, 2015), and problem-solving in learning (Berends, Boersma, & Weggeman, 2003; Holm, 2011). In addition, it can also produce high-level thinking skills (Fajarwati, Susilo, & Indriwati, 2017). In a review of studies comparing the project approach with the conventional approach, the project approach was proven to improve children's cognitive abilities and skills (Holm, 2011). Project Based Learning also has advantages in improving process capabilities, developing information literacy skills, and improving problem-solving skills (Mettas & Constantinou, 2008). This can positively influence parents' views of the teaching profession (Lavy & Shriki, 2008). This is because the project approach focuses more on the process of social interaction, such as: working on projects in groups that encourage collaborative learning (Helle, Tynjälä, & Olkinuora, 2006). This is in line with Vygotsky's theory of social learning which shows that learning is mostly a social process that takes place with guidance and interaction with friends.

The project learning approach is practical to motivate children. Children's activeness can contribute to expressing opinions and ideas about topics or discussions of their interests and preferences by asking questions (Beier et al., 2019). Another way is to estimate, develop theories, use different tools, use skills acquired in meaningful real-life contexts, and allow children to creatively seek answers to questions in the classroom and beyond so that learning becomes more meaningful (Baran, Maskan, & Yasar, 2018). The learning steps in project learning are made in a structured manner by considering a clear plan, procedural implementation, and measurable results. Therefore, the role of educators is needed when children are engaged in activities with structured planning.

The role of the educator is to introduce a problem (Roessingh & Chambers, 2011), then ask questions and facilitate the child to conduct research and communicate. Project-based learning will not occur without the skills of educators to develop a learning environment that allows for the exchange of ideas and open communication between educators and children, presenting factual and contextual problems so that children can be motivated to learn and think critically (Kaldi et al., 2011; Lee, Blackwell, Drake, & Moran, 2014), and supports the development of technical skills and the acquisition of in-depth knowledge. Children are encouraged to be more actively

involved in the subject matter so that children are used to making findings (inquiries). These studies have provided clear information that project-based learning is necessary to improve children's competencies; In this case, it is the competence, ability, and skills of the child.

Learning development is arranged in a learning plan. The teaching model in question is a form of teaching material that can be used as a teaching and learning guideline for educators and children. The results of the study found that the teaching model can improve the quality of children's learning for the better. Especially in the development process, the content and procedures are designed in such a way that they are arranged in stages. The steps are systematic and arranged in a meaningful sequence and by the needs of the child. In compiling learning materials, it is also necessary to pay attention to their existence with their depth and difficulty (Kabba, 2009). Therefore, it is necessary to carry out synthesis efforts, namely the process of connecting sub-sub-sub-discussions in one discussion with the entire content or learning material of the plan. Thus, the material presented feels more beneficial for children because it is prepared with a constructive approach with a project learning method. In general, the teaching model contains materials and a series of activities that include the realm of knowledge (cognitive), attitudes, and skills according to unit learning outcomes through ECE media.

Conclusions

The conclusion of this study shows that the use of project-based teaching materials in early childhood education has a significant impact on facilitating children during the learning process. Teaching materials that are structured through the Project-Based Learning (PBL) method allow children involved directly in learning, which ultimately improves teaching and learning quality. Children's active involvement provides opportunities for them to learn not only passively, but also by contributing to various activities that arouse curiosity and interest in the material being taught.

In addition, through learning media specifically designed to support the Project-Based Learning (PBL) method, learning in ECE becomes more interactive and contextual. This learning media is adapted to the needs of children's cognitive, social, and motor development so that they can build systematic and sequential thinking skills. This is especially important in the early stages of development, where children need the right stimuli to develop their logical thinking and creativity skills.

The success of Project-Based Learning (PBL) in motivating children is also an important finding of this study. Motivation built through project-based learning encourages children to be more enthusiastic in completing tasks and participating in each stage of the project with a sense of responsibility. In this way, PBL not only increases children's involvement in the learning process, but also forms important characteristics such as independence, curiosity, cooperation, and problem-solving skills.

With these significant benefits, the project-based teaching materials developed in this study are expected to help educators in designing and implementing more effective learning in early childhood education. This approach also has the potential to be a model to improve the quality of early childhood education in general. Children can also be directly and structurally involved in participating in learning, generating motivation, thinking systematically and sequentially, and developing media that are by learning needs and aspects of child development. Some of these points are an added value for the teaching materials developed.

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