

DEVELOPMENT OF CHILDREN'S WORKSHEETS IN IMPROVING COGNITIVE DEVELOPMENT OF CHILDREN AGE 5-6 YEARS

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Abstract: This study aims to develop children's worksheets (Lembar Kerja Anak/LKA) that comply with the guidelines established by the Ministry of Education and Culture to support the learning process and facilitate children's cognitive development. The worksheets are designed to help children understand learning materials and achieve optimal cognitive development during classroom activities. This research employed a Research and Development (R&D) method using the procedural development model proposed by Borg and Gall. Data collection instruments included validation questionnaires and learning outcome tests. The validation questionnaires were used to determine the feasibility and validity of the developed product based on expert and teacher assessments, while the learning outcome tests were conducted to measure the effectiveness of the worksheets through comparisons between pre-test and post-test results. The initial trial involved 8 children, followed by a field trial involving 8 children at Pembina Jekan Raya State Kindergarten. The results of the teacher response validation questionnaire indicated that the developed LKA product achieved a very valid category in the initial trial. The findings demonstrate that the developed worksheets for children aged 5–6 years are feasible and effective as learning media to support and improve children's cognitive development. Therefore, the development of LKA can be an alternative learning resource that supports meaningful and engaging learning experiences for early childhood education.

Keywords: Development, Children's Worksheet, Cognitive Development

INTRODUCTION.

Education is an important process in developing human potential. According to Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, education is a learning process that enables students to actively develop their potential, including spiritual intelligence, self-control, personality, intelligence, noble character, and skills needed for themselves, society, nation, and state. Education is not merely an effort to provide children with academic knowledge but also a process of guiding and developing all aspects of children's potential. John Dewey defines education as a process of social continuity, while Ahmad D. Marimba explains that education is a conscious effort carried out by educators to guide the

physical and spiritual development of learners toward the formation of a complete personality. Therefore, education should be provided from an early age through the collaboration of families, schools, and communities to support children's optimal development.

Early childhood education (ECE) is an educational service provided to children from birth until approximately six years of age. This period is considered a crucial stage because children experience rapid growth and development that will influence their future abilities. The quality of children's development depends greatly on the stimulation and learning experiences they receive during early childhood. Therefore, appropriate learning methods are needed to achieve educational goals effectively. Learning methods are strategies used by teachers to deliver learning materials according to predetermined objectives. The selection of appropriate learning methods is essential because it determines children's ability to understand and achieve expected competencies.

One of the learning media that can support children's development, particularly cognitive development, is children's worksheets (Lembar Kerja Anak/LKA). Children's worksheets are learning tools in the form of activity sheets containing information, instructions, questions, and tasks that children need to complete. The use of worksheets can increase children's involvement in learning activities and provide structured learning experiences. Worksheets can be applied through various learning strategies, both heuristic and expository approaches, to support children's understanding and skill development (Syahputra, 2022).

Based on preliminary observations conducted at Pembina Jekan Raya State Kindergarten, teachers have used children's worksheets in magazine formats during learning activities. However, the presentation and completion procedures of these worksheets have not fully followed the standards established by the Ministry of Education and Culture. According to the guidelines for developing student worksheets, several important components must be included, such as titles, learning instructions, competencies to be achieved, supporting information, tasks, and activity steps (Nurfauziah, 2017). The preparation of children's worksheets should also consider several stages, including curriculum analysis, identification of worksheet needs, determination of worksheet titles, and worksheet development.

Therefore, this study aims to develop children's worksheets that are in accordance with the standards established by the Ministry of Education and Culture and can stimulate children's cognitive development. The development of appropriate worksheets is expected to facilitate children's learning processes, improve learning quality, and provide meaningful learning experiences in early childhood education.

RESEARCHMETHOD.

This research was conducted at Pembina Jekan Raya State Kindergarten using a Research and Development (R&D) method. The development model applied in this study was based on the procedure developed by Borg and Gall, which consists of several stages: (1) preliminary information gathering, (2) planning, (3) initial product development, (4) initial field testing, (5) product revision, (6) main field testing, (7) final product revision, and (8) dissemination and implementation. This model was used to develop children's worksheets (Lembar Kerja Anak/LKA) that are appropriate for early childhood learning needs.

The data collected in this study consisted of quantitative and qualitative data. Quantitative data were obtained from the scores of validation questionnaires completed by experts, teacher response questionnaires, parent response questionnaires, and learning outcome tests. Meanwhile, qualitative data were obtained from suggestions, comments, and feedback provided by validators, teachers, and parents regarding the developed children's worksheets. The collected data were analyzed to determine the feasibility and effectiveness of the developed LKA as a learning medium to support children's cognitive development.

RESULTANDDISCUSSION.

Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System states that education is a learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation and state. The meaning of education is not only to be able to send children to school to gain knowledge, but it is broader than that. Children will grow and develop well if they get a *comprehensive education*. According to John Dewey, education is defined as *social continuity of life*. According to Ahmad D. Marimba, education is the conscious guidance by the educator to the physical and spiritual development of the educator towards the formation of the main personality. Education should be carried out from an early age which can be done in the family, school and community. Education is an act or effort of the older generation to impart their knowledge, experience, skills and skills to the younger generation, as an effort to prepare them to be able to fulfill their life functions both physically and spiritually. Thus, it can be concluded that education is to help guide children by developing and directing all their potential so that all their life goals are achieved. The essence of education is more than just the delivery of knowledge, but how to build a positive attitude towards the values of life. Therefore, the government, families and the community must work together in children's education for a better life.

The implementation of Early Childhood Education must be based on various foundations, namely juridical foundations, philosophical foundations, and religious foundations as well as scientific foundations theoretically and empirically.

a. *Juridical Foundations*

The juridical basis (law) related to the importance of early childhood education is implied in the amendment to the 1994 Constitution article 28 paragraph 2 states that every child has the right to survival, growth and development and the right to protection from violence and discrimination. Meanwhile, article 28C paragraph 2 states that every child has the right to develop himself through the fulfillment of his basic needs, the right to education and benefit from science and technology, art and culture, in order to improve his quality of life and for the welfare of mankind.

b. *Philosophical Foundations*

Early Childhood Education is part of lifelong education, as a concept that has been popularized by UNESCO with the term "Life long Education". Early childhood education is not limited to the classroom only, but includes the entire learning system that can be implemented outside the classroom. Learning in PAUD is an interaction between children, parents, or other adults in a certain environment to achieve developmental tasks, according to the child's potential. This interaction is reflected in a relationship between children, so that they have meaningful experiences, and the learning process can take place effectively.

c. *Scientific and Empirical Foundations*

Early Childhood Education must basically include scientific aspects that support children's lives and are related to child development. The scientific concept of PAUD is isomorphic, meaning that the scientific framework of PAUD must be built from interdisciplinarity which is a combination of several disciplines including: psychology, physiology, sociology, child education, anthropology, humanities, health and nutrition and neuroscience (the science of brain development). In developing children's learning potential, it is necessary to pay attention to the developmental aspects that will be developed in accordance with interrelated and integrated disciplines so that it is hoped that children can master some abilities well.

The term *cognitive* comes from the word *cognition* which means knowing, meaning knowing. In a broad sense, cognition is the acquisition, structuring and use of knowledge, structuring and using knowledge. Furthermore, cognitive can also be interpreted as the ability to learn or think or intelligence, namely the ability to learn new skills and concepts, the ability to understand what is happening in the environment, as well as the skill of using memory and solving simple problems. In line with what was stated by the term Maslihah (Khadijah.2016) that cognition itself can be interpreted as the ability to understand something. It means understanding shows the ability to grasp the nature, meaning, or information about something and has a clear picture of it. Cognitive development itself refers to the ability that a child has to understand something (Maslihah in Khadijah.2016).

Planning is a series of preparations to achieve goals. Planning is a guideline,

instructions that must be implemented in order to get good results as planned. According to SP. Planning is defined as the entire process of thinking and determining carefully the things that are done in the future in order to achieve the goals that have been determined (Lestarinigrum, 2017:14).

Student worksheets (LKS/LKA) are a type of learning aid. Student worksheets are in the form of sheets of paper in the form of information, questions, and questions that must be answered by students (Syahputra, 2022)... LKS/LKA is very well used to increase student involvement in learning, both used in *heuristic* strategies and *expository* strategies. In the *heuristic strategy*, LKS/LKA is used in the application of guided methods, while *expository strategy*, LKS/LKA is used to provide development exercises.

This LKS/LKA should be designed by the teacher in accordance with the subject matter and learning objectives. LKS/LKA in teaching activities can be used at the concept planting stage because LKS/LKA is designed to guide students in learning activities.

Student work *sheets* are sheets containing tasks that must be done by students. Activity sheets are usually in the form of instructions, steps to complete a task. The advantage of the activity sheet is that it makes it easier for teachers to carry out learning, for students will learn independently and learn to understand and explain a written task.

Expert Validation Results

Expert validation in this study was carried out by lecturers at the University of Palangka Raya who teach cognitive courses that are certainly competent in the supervision of LKS/LKA which is indeed made to improve children's cognitive development. The validity results that have been given by experts show a value of 3 which is in the VALID category. This shows that the development of LKS/LKA is worthy of being given to children to improve cognitive development. In this expert validation, no major revisions are required, but small revisions are still held in accordance with comments and suggestions from expert validators to improve the development of LKS/LKA in improving cognitive development.

Expert validation in this study was conducted by lecturers from the University of Palangka Raya who specialize in cognitive development courses and have the competence to assess the developed children's worksheets (Lembar Kerja Siswa/Lembar Kerja Anak). The validation results showed that the developed LKS/LKA obtained a score of 3, which was categorized as valid. This finding indicates that the developed worksheets are feasible to be implemented as learning media to support and improve children's cognitive development. Based on the expert evaluation, no major revisions were required; however, minor revisions were made according to the validator's comments and suggestions to improve the quality and effectiveness of the developed LKS/LKA.

Teacher Response Validation Results

Validation of teacher responses was conducted to assess the suitability of the developed LKS/LKA with the standards established by the Ministry of National Education and the Ministry of Education and Culture. The teacher response validation questionnaire was administered twice, namely during the initial trial and the field trial. In the initial trial, the validation of teacher responses involved two Group B teachers at Pembina Jekan Raya State

Kindergarten. The results of this validation were used to evaluate the feasibility and effectiveness of the developed LKS/LKA as a learning medium to support children's cognitive development.

Table1

ValidateTeacherResponses

No	Trials	Mark	Criteria
1	Initialtrial	3.1	Valid
2	Fieldtrials	3.9	VeryValid
Average		4	VeryValid

Based on the average scores obtained from the validation of teacher responses in both the initial trial and field trial, the development of LKS/LKA received a score of 4, which falls into the Very Valid category. Overall, the validation results of the teacher responses indicate that the developed LKS/LKA is highly appropriate for use in the learning process. Therefore, the developed LKS/LKA can be implemented by teachers as a learning medium to support and stimulate children's cognitive development.

ValidationResultsOfParentalResponses

Validation of parents' responses was conducted to assess the effectiveness of the developed LKS/LKA in stimulating children's cognitive development. The validation questionnaire for parents' responses was administered twice, namely during the initial trial and the field trial. The validation process involved eight parents of children from Group B at Pembina Jekan Raya State Kindergarten. The results of the scores obtained from the initial trial and field trial are presented as follows.:

Table2

ValidationResultsOfParentalTeacherResponses

No	Trials	Mark	Trials
1	Initialtrial	3,4	Initialtrial
2	Fieldtrials	3.6	Fieldtrials
Rata-rata		Average	4

Based on the average score obtained from the validation of parents' responses during the initial and field trials, a score of 4 was achieved, which is categorized as ****Very Valid****. Overall, the validation results of parents' responses to the development of LKS/LKA obtained a score of 4, indicating that the developed LKS/LKA meets the criteria of high validity. Therefore, the developed LKS/LKA is considered appropriate for use in the children's learning process, particularly in stimulating cognitive development.

ResultsofInitialTrial DevelopmentTestsandFieldTrials

The LKS/LKA was developed to improve the cognitive abilities of children aged 5–6 years. The learning outcomes in this study were obtained through learning achievement tests by comparing the results of the pre-test and post-test to determine the effectiveness of learning after using the developed LKS/LKA. The pre-test was conducted during the initial trial phase, while the post-test was conducted during the field trial phase. The effectiveness of the LKS/LKA product was measured through the implementation of the pre-test and post-test stages using a t-test involving 8 children from Group B at Pembina Jekan Raya State Kindergarten.

During the initial trial, children were given a pre-test to determine the

effectiveness of the initial implementation of the developed LKS/LKA. Subsequently, a post-test was conducted during the field trial to evaluate the effectiveness and feasibility of the developed LKS/LKA in improving children's cognitive development. The results of the scores obtained from the pre-test and post-test are presented below.:

Table3
TheResultsOfObtainingScoresFromTrials

No	Trials	Mark	Category
1	InitialTrial(Pre-Test)	2.5	Developing According To Expectations
2	FieldTrials(Post-Test)	3.5	DevelopingVeryWell

Based on the results presented in the table above, the average pre-test score was 2.5, while the average post-test score increased to 3.5. This indicates that the post-test results were higher than the pre-test results, demonstrating an improvement in children's cognitive development after the implementation of the developed LKS/LKA. The significant difference between the pre-test and post-test results was confirmed through the t-test analysis, which showed that the value of t_{count} was greater than t_{table} . The obtained t_{count} value was 11.1940, while the t_{table} value at a significance level of 0.05 (5%) was 2.363. Since $t_{count} > t_{table}$ (11.1940 > 2.363), H_0 was rejected and H_a was accepted. Therefore, there was a significant difference in children's cognitive development between the initial trial (pre-test) and the field trial (post-test).

Furthermore, the results of the field trial (post-test) showed that the children achieved an average score of 3.5, which was categorized as ****very well developed****. The higher average score obtained in the post-test compared to the pre-test indicates that the use of LKS/LKA in the learning process was effective in improving the cognitive development of children aged 5–6 years.

Based on the validation results of the developed LKS/LKA product, several findings were obtained. Expert validation obtained a score of 3, which was categorized as ****valid****, indicating that the developed LKS/LKA was suitable for use in the learning process. Teacher response validation obtained a score of 4, categorized as ****very valid****, showing that the developed LKS/LKA was highly appropriate for teachers to implement in learning activities. Parent response validation also obtained a score of 4, categorized as ****very valid****, indicating that the developed LKS/LKA was appropriate for supporting children's learning processes.

The effectiveness test through the pre-test and post-test results showed a significant improvement, with the average score increasing from 2.5 in the pre-test to 3.5 in the post-test. The t-test results confirmed this improvement, with $t_{count} = 11.1940 > t_{table} = 2.363$. These results indicate that the developed LKS/LKA is a valid, feasible, and effective learning medium for improving the cognitive development of children aged 5–6 years.

CONCLUSION

Based on the results of the validation tests and product trials, it can be concluded that the developed children's worksheets (LKA) are highly valid, appropriate, and effective for improving the cognitive development of children aged 5–6 years. The validation results from experts, teachers, and parents indicate that the LKA product meets the established criteria for use in the learning process. Furthermore, the results of the product trials demonstrate that the implementation of LKA can support children's cognitive development effectively. This research is expected to serve as a reference for further studies and encourage the wider dissemination and implementation of LKA products in other early childhood education institutions.

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