

Development of *Kucermat* Media for Early Writing Skill Children Aged 5-6 Years

Yuni Dwi Suryani¹⁾, Nurbiana Dhieni²⁾, Sri Wulan³⁾

^{1),2),3)} Prodi PAUD, Universitas Negeri Jakarta, Jakarta Timur, Indonesia
Email: ¹⁾Yunidwisuryani.yds@gmail.com, ²⁾ndhieni@unj.ac.id, ³⁾sriwulan@unj.ac.id

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Abstract

Early writing is one of the needs needed in preparation for elementary school. Research and development carried out to develop learning media to improve the readiness of early writing for children 5-6 years in the city of Palembang. KUCERMAT media development is based on needs analysis. KUCERMAT media development uses the ADDIE model (analysis, design, development, implementation, and evaluation). KUCERMAT Trial Media was carried out with a pre-experimental experimental method with a one-group pretest-posttest design. The number of respondents in the KUCERMAT media trial were 25 children. The results of the analysis of the difference in the total average of the pretest and posttest showed an increase in children's early writing by 22.81%. Then the statistical analysis of paired sample t-tests was calculated by using the IBM SPSS Statistics 22 obtained t count value of 17.777 with a significance value (2-tailed) of 0,000 to 0,000 <0.05. While the ttable value of 2.06 with n-1 = 24. Thus tcount > ttable so that it can be used to improve the KUCERMAT media effectively used to improve the readiness of early writing in children aged 5-6 years.

Keywords: *Writing Readiness; Kindergarten; KUCERMAT Media.*

Abstrak

Kesiapan menulis merupakan salah satu kemampuan yang dibutuhkan sebagai dasar persiapan menuju ke sekolah dasar. Penelitian dan pengembangan yang dilaksanakan bertujuan mengembangkan media pembelajaran untuk meningkatkan kesiapan menulis permulaan anak 5-6 tahun di Kota Palembang. Pengembangan media KUCERMAT dilakukan berdasarkan analisis kebutuhan. Pengembangan media KUCERMAT menggunakan model ADDIE (*analysis, design, development, implement, dan evaluate*). Uji efektivitas media KUCERMAT dilakukan dengan metode eksperimen *pre-experimental* dengan desain *one-group pretest-posttest*. Jumlah responden pada uji efektivitas media KUCERMAT sebanyak 25 anak. Hasil analisis perbedaan total rata-rata dari *pretest* dan *posttest* menunjukkan terjadi peningkatan menulis permulaan anak sebesar 22,81%. Kemudian analisis statistik *paired sample t-test* dihitung dengan aplikasi IBM SPSS Statistik 22 memperoleh nilai t hitung sebesar 17,774 dengan nilai signifikansi (*2-tailed*) sebesar 0,000 sehingga $0,000 < 0,05$. Sedangkan nilai t tabel sebesar 2,06 dengan $n-1=24$. Dengan demikian $t_{hitung} > t_{tabel}$ sehingga dapat disimpulkan bahwa penggunaan media KUCERMAT efektif digunakan untuk meningkatkan kesiapan menulis permulaan pada anak usia 5-6 tahun.

Kata Kunci: *Kesiapan Menulis Permulaan; TK B; Media KUCERMAT.*

INTRODUCTION

Education needs to be given early to children. Child development during early childhood is in the golden age (Hariawan, Ulfatin, AY, & Arifin, 2019). In this period when compared with adolescents and adults, children's brain development works optimally. Children absorb various knowledge in the form of experience through interaction with the surrounding environment. Internal and external stimuli or stimuli provided to help optimize the child's development and growth. All the potentials and abilities of children determine the quality of children's development in the future. One fundamental aspect that needs to be developed during early childhood is writing.

Writing becomes one of the important activities in early childhood classes (Gerde, Skibbe, Wright, & Douglas, 2019). Generally writing as a means to express feelings, ideas, or ideas conveyed through a series of words or sentences in the form of written language. In preschool children, children's writing is in the form of strokes, symbols, pictures, and resembles the shape of letters. Each writing that the child scratches has a meaning and story in it.

Writing is a form of communication using handwriting that is etched onto paper in the form of scribbles, making lines and drawings from left to right, then imitating the shape of letters until finally writing syllables then developing writing a certain word (H. Jackman, Beaver, & Wyatt, 2014; Morrow, 2007). Along with the experiences and opportunities that children get, the ability will further develop.

Writing during preschool is known as beginning writing. Writing practice activities carried out are introductory. The purpose of learning to write during preschool is to prepare children for basic education. Writing activities for young children are carried out gradually and

repeatedly through direct practice. During preschool, the child learns knowledge of the alphabet, symbols, or print writing (Puranik, Lonigan, & Kim, 2011, p. 465). Children learn about the shape of letters and the sound of letters. Every sound word in a language has a different written form. Then the letters joined together to form words in patterns representing a sound. Understanding how alphabetical letters come together to represent sounds in words is very important for preschoolers to write names, write letters, and spell. This ability also has an important role to support the integration of language and literacy skills which emerged as the basis of reading skills.

The success achieved by children during the development process from an early age will be the basis for further development. Optimizing children's development from an early age requires readiness. Readiness is a skill needed to prepare a developmental task (Seefeldt & Wasik, 2008). In addition, readiness is a set of skills needed for children's success in school (Graue, 2010).

Writing readiness is needed to underlie a child's development from being able to write to be able and skilled at writing simple letters and words. Writing readiness helps to optimize the writing ability that children have initially in the form of strokes until finally skilled at writing letters to form certain words. Research conducted by Ohi et al. (2013, p. 507) that one of the main things that need to be done before teaching a child to write is to train the child's fine motor skills first. Then, the teacher guides the child to teach how to hold a pencil correctly.

As for learning activities about letters that help children encourage readiness to write the name "name writing" (Kirk & Clark, 2016, p. 139). The activity of writing letters based on the child's name is one of the writing activities that are of interest to the child. Writing in the form of

a child's long name or in the form of a long word should be done on children who have understood the principles of the letters of the alphabet and spell. The introduction to writing preschool children is done by writing the letter beginning with the child's name and nickname. For children, there is an emotional connection attached to the child with the name he has. In addition to writing names, children also have a great interest in learning to write letters of family and friends' names. Letter writing activities in the form of basic knowledge and skills. This activity helps children to understand the knowledge of the alphabet, letter writing, printed writing symbols, and spelling. This helps the child to develop an understanding of the relationship between letter shapes and letter sounds. In addition, it is also necessary to teach children to write by introducing new words. For example the letter 'a' for 'apple', the letter 'b' for 'duck', and so on.

There are several theories put forward by experts regarding the stages of early childhood writing development. The writing stage is a process that needs to be passed by children so that the ability to write children like adults. There are 6 stages of writing as follows: (1) writing via drawing; (2) writing via scribbling; (3) writing via making letter like form; (4) writing via making random letters or letters strings; (5) writing via invented (temporary); and (6) writing via conventional (Morrow, 2007).

There are two developments in beginning writing, namely, pre alphabetic and alphabetic writing. The development of writing pre alphabetic writing and nonrepresentational drawing ie writing made by children can not be read. Children's writing is still in the form of scribbles or pictures that do not have reading meaning. Streaks produced by children in the form of images that illustrate the imagination of children. Then, alphabetic writing and

representational drawing, that is, children's writing becomes easy to read. Children can recognize various uses of the alphabet to form words (Jalongo, 2007).

Writing activities for young children are carried out gradually and repeatedly through direct practice. Optimizing children's writing skills requires scaffolding (Quinn, Gerde, & Bingham, 2016). The classroom environment needs to provide a variety of media that is rich in print or letter symbols. For example, posters, alphabet books, storybooks, and letter cards as scaffolding needed by children. Scaffolding provided by the teacher must be in accordance with the stages of child development so that children get the opportunity to develop optimally.

Based on the findings of field observations, namely Pertiwi Pasma Kindergarten in Palembang, the area shows that learning to recognize letters is done using the LKA (Child Worksheet) book. In addition to using LKA, there are exercise books for children to write lines such as straight lines, slashes, curves, circles.

The process of learning to start writing in kindergarten still requires varied and interactive media. During the observation, the researcher saw the teacher using the lecture method, questions and answers, and assignments. The lecture method is used by teachers to explain learning themes, competency standards, and learning goals that must be achieved by children. In addition, the lecture method used to explain the learning material of alphabet letter recognition, pronunciation, and matters related to letter recognition. Then the question and answer method, used by the teacher to provide opportunities for children to ask questions and express opinions in the knowledge they have. Next, the assignment method is used by the teacher to see the child's ability. In this case, the

child works on the training activities that are on the children's worksheet (LKA). Children fill out worksheets using stationery in the form of a pencil.

In addition to observing instructional media and teacher competence in teaching in Pertiwi Pasma TK Group B, researchers also observed children's writing skills. There are some children who do not understand the form of letters that look like the letters 'b' / 'd', the letters 'p' / 'q', and the letters 'u' / 'v'. It is normal for children aged 5 to 6 years to be confused with writing mirror letters. However, teachers need to be aware of more risky things such as selection. Therefore, teacher competence and learning media are needed to support children's writing readiness.

Researchers also conducted a comparative study at a bookstore in Jakarta in 2019. Preliminary books for early childhood have been in the bookstore, therefore researchers conducted a comparative study to see the novelty of the initial writing readiness book that the researchers designed. The several titles of books published in 2018-2019 were analyzed.

The activities contained in these books train the child's fine motor skills by thickening dotted lines based on paper and pencil. The advantages of the pre-written book that the researchers analyzed, besides doing thickening and coloring activities, there are activities to put stickers that have been provided in this book.

While the shortcomings of the book are writing activities that exist in writing activity books generally writing activities are taught not in stages. As a result, fine motor children are not stimulated properly. In addition, thickened activities (tracing) that are carried out continuously can cause children to tend to be bored, bored, and not interested in writing. Therefore, writing a beginning that is done to

children needs to be taught gradually. Then to support children's writing abilities so that children develop optimally requires scaffolding in the form of varied and educative and interesting media so that the readiness of writing developed is optimal. This is the basis for researchers to develop a media book that emphasizes learning by playing that is fun in accordance with the level of child development. Then, the writing activities are carried out gradually and repeatedly and sharpen the fine motor skills of the child.

Based on the analysis of research and the facts of the problem, the researchers conducted research on the development of a set of instructional media for the readiness of writing letters of the alphabet of early childhood. The media that will be developed is KUCERMAT. This media is based on the concept of storytelling while learning to write with themes on animal husbandry. This research and development modifies the writing activity book in general in the form of an interactive alphabet book with the lift the flap technique and each letter is equipped with a sandpaper texture and the application of this activity is supported by the moon sand media. The development of this media is adapted to the stages of the age of children 4 to 5 years emphasizing the concept of learning by playing and hands-on activity so that the creation of a fun and meaningful learning process. Therefore, the researcher will conduct a study entitled "Development of KUCERMAT Media for Early Writing Skill".

RESEARCH METHODS

In this KUCERMAT media development research will be carried out in the city of Palembang. The subjects of this study were children aged 5-6 years who were in Kindergarten Group B. A small group trial was carried out in PAUD Arwana with a total of 10

children. Furthermore, a large group will be held in Pertiwi Pasma Kindergarten with 15 children. After a small and large group test, then tested the effectiveness at TK Pertiwi Pasma with 25 children. Furthermore, this research data collection techniques using observation, questionnaires, documentation, interviews, pretest, and posttest.

Media research uses the ADDIE model. The ADDIE model stands for analysis, design, development, implement, and evaluate (Branch, 2009). The ADDIE model application states that learning must be child-centered, innovative, authentic, and inspirational. The ADDIE model is a process that serves as a guiding framework for complex situations, very suitable for developing educational products and other learning resources. The ADDIE model was chosen because it has advantages over other types of research and development models. The ADDIE model prioritizes developing products according to needs that refer to the level of achievement standards, in addition to this model provides detailed directions for the stages of development. Therefore, researchers used the ADDIE model to develop and produce products in the form of KUCERMAT media aimed at increasing the readiness to write alphabet letters in children aged 5 to 6 years.

The development of KUCERMAT media by using the ADDIE model viz:

1. *Analysis*

The researcher analyzes the needs through various sources to find out the media that are being developed is very much needed as a means for initial writing preparation. The research needs analysis includes literature studies, preliminary studies, and comparative studies. Literature study, the researcher examines several international and national journals as well as books related to the problem of

writing readiness. Furthermore, researchers conducted a preliminary study with observations made at Pertiwi Pasma Palembang Kindergarten to see the sources used as learning media for writing during the learning process. Then the researchers conducted a comparative study by analyzing books in national bookstores in Jakarta. The books analyzed are writing activity books for children aged 5-6 years.

2. *Desain*

Researchers developed the KUCERMAT media design in the form of an activity book with a flap-based story concept and were supported by moon sand for the readiness to write alphabet letters of kindergarten children in group B aged 5 to 6 years. The alphabet book design is based on animal-themed flap and letters which are sandpaper texture. The contents of media material regarding the readiness to begin with include tracing, thickening, and tracing lines, shapes, and letters. In addition, researchers also want to compile an indicator of the ability to be achieved and an instrument for measuring readiness to write letters of the alphabet.

3. *Development*

At this stage, KUCERMAT media will be developed for children aged 5 to 6 years. Products that have been made based on an initial draft are subject to expert testing. After conducting an expert test, evaluations, input, and suggestions from experts were obtained. Then, the researchers make revisions as an action on the results of evaluations, suggestions, and input from experts. From the results of the revision, the product will then be tested into small groups and large groups.

4. *Implement*

This stage is testing the KUCERMAT media to children aged 5-6 years.

5. Evaluate

After conducting several stages including analysis, design, development, and implementation. The final stage of this development is evaluation. Evaluation is carried out to overcome various obstacles found during trials and to be a guide for revising developed media products that can be said to be practical, feasible, valid, and effective.

Next, test the effectiveness of the media using a pre-experimental research design with One Group Pretest-Posttest Design. In the design of the One Group Pretest-Posttest Design, the results of the treatment can be known to be more accurate, because it can compare with the situation before being given treatment (Sugiyono, 2015).

The experiment in this study used one group so that it did not use the control class. Before being given treatment using KUCERMAT media, the researcher conducted a preliminary test to see the readiness of writing children before being given treatment.

Before conducting media effectiveness, researchers validate instruments that measure initial writing abilities. The experts conduct construct validation for the pretest and posttest instruments. After being declared feasible and revised according to input from experts, the instrument was tested on 10 children. The effectiveness test of the media aims to see an increase in the readiness of beginning children writing 5-6 years through the media. Data analysis using statistical analysis paired t-test (paired t-test).

RESEARCH RESULT

a. Expert Validation

The feasibility of this media can theoretically be proven by validation by experts. Expert validation is an assessment conducted by experts to assess the extent to which this media can meet the requirements of various aspects of development. In this study, the media was validated by experts in the field of early childhood education, language, and learning media. Here is the theoretical feasibility of the media, as follows:

a) Psychology and Early Childhood Education Expert

Psychology and Early Childhood Education experts who validate these media are Dr. Phil Zarina Akbar, M.Psi. Early Childhood Educational Psychology Expert works as a lecturer at the Faculty of Education at the Jakarta State University.

b) Linguist

The linguist who validates this media is Dr. Gusti Yarmi, M.Pd. Linguists work as lecturers at the Faculty of Education at the Jakarta State University.

c) Learning media expert

The learning media expert who validated this media was Dr. RA. Murti Kusuma Wirasati, S.IP., M.Sc. Media expert works as a lecturer in Educational Technology at Jakarta State University.

Validation is done by showing the initial product (dummy) media. Expert validation assesses and provides input on the appropriateness of the media following the rules of the preparation of material and media. The following is a

table for calculating the feasibility test value of the KUCERMAT media:

Table 1. Expert Test Results

No.	Expert	Percentage	Criteria
1.	Learning media	90%	Very good
2.	Linguist	95%	Very good
3.	Psychology and Early Childhood Education	95%	Very good

Based on the data above, it can be concluded that the KUCERMAT media to improve the writing ability of beginning children aged 5-6 years is very feasible to use.

b. Small group trial results

The small group test was carried out on December 4, 2019. The respondents of this study were children aged 5-6 years in PAUD Arwana with a total of 10 children.

Based on testing in small groups obtained a percentage of 94%. Thus a small group trial of the entire KUCERMAT media product to improve the readiness of the initial writing can be categorized as feasible to be developed and used. Then, the teacher gives a response regarding KUCERMAT media. The results of the small group test serve as the basis for revising the media to produce a draft III that is prepared for the next empirical test namely the large group test. The following is the teacher's response to the KUCERMAT media from a small group trial.

Table 2. Teacher's Response Regarding KUCERMAT Media From Small Group Trials

Advantages	Deficiency
The activity book for writing readiness is very suitable given for children aged 5-6 years. This media is easy to understand, interesting, and displays images so that children can get to know the concept of writing easily	The plastic on the moon sand is thin so it is easily affected by the scratches of a child's long nails.

c. Large group trial results

A large group test was conducted at Pertiwi Pasma Kindergarten with 15 respondents. The researcher uses the interview instrument then gives the question is the teacher. The results of the trial of a large group of media products to increase the readiness, to begin with, were obtained with a percentage of 97.7%. Thus this media product is properly encoded and can be used as a medium to improve the readiness of writing children aged 5-6 years. Then, the teacher gives a response regarding KUCERMAT media. The results of the large group test form the basis for the final media development. The following is the teacher's response to the KUCERMAT media from a large group trial.

Table 3. Teacher's Response Regarding KUCERMAT Media from Large Group Trial

Teacher response

An activity book for writing readiness is perfect for children. This media is easy to understand, interesting, and displays images so that children can get to know the

d. Effectiveness test

Before conducting the effectiveness of the media, the researcher validated the instrument to measure initial writing skills. The instrument that the researchers designed was validated by early childhood education experts. After being declared feasible and revised according to input from experts, the instrument was tested on 10 children. The results of testing the validity and reliability can be seen on the attachment page.

The effectiveness test of media development products is carried out with the pre-experimental research design 'one group pretest-posttest design'. Before being given treatment the researcher gave a pretest to assess the child's early writing abilities. After that, treatment was given using KUCERMAT media and then given a posttest to measure changes in writing ability improvement after being given treatment. The effectiveness test was conducted at Pertiwi Pasma Kindergarten with 25 respondents. The study was conducted in 6 meetings ranging from pretest to posttest.

In this study, to determine the effectiveness of media researchers conducted statistical data analysis by paired sample t-test. Paired t-tests were performed by comparing pretest and posttest data. The purpose of testing is paired t-test which is to

find out whether there is a significant difference in score before and after using KUCERMAT media. Before conducting a paired sample t-test, the researcher first conducted a normality test. This test was carried out using the IBM SPSS statistical application 22.

The testing of research hypotheses and KUCERMAT media development are as follows:

Ho: $\mu_1 = \mu_2$ (there is no difference before and after using the media)

Ha: $\mu_1 \neq \mu_2$ (there are differences before and after using the media)

The results of the calculated value from the statistical analysis of paired sample t-tests obtained a tcount of 17.777 with a significance value (2-tailed) of 0.000 so that it was $0.000 < 0.05$. While the value of ttable is 2.06 with $n-1 = 24$. Thus $tcount > ttable$ so that it can be concluded that the use of KUCERMAT media is effectively used to increase the readiness of beginning writing in children aged 5-6 years.

Research and development of KUCERMAT media are carried out because of the gap between writing activities based on theories that are following the theory of child development with the state of the learning process that occurs in preschool institutions. Based on preliminary research namely observation and interviews with teachers and children at Pertiwi Pasma Kindergarten in Palembang that the main factor influencing children's writing abilities other than learning methods is learning media. Lack of educational learning media and children's fine motor stimulation can make children's writing abilities not to develop optimally. Also, the use of

worksheets that are drill-like tracing activities that are carried out continuously makes children tend to get bored easily, not excited, and lazy to participate in writing activities.

Though writing activities carried out in PAUD aim as a preparation (H. L. Jackman, 2012). This is done so that children have a good quality of development when entering elementary school. Inaccuracy in providing learning to write to preschoolers will be dangerous for children's development. The impact of this inaccuracy will affect especially the mentality of children so that it can inhibit the growth of children's mental intelligence. Eventually, children will have a bad perception of learning will experience boredom and lazy learning (Pratiwi, 2019). In addition, academic demands and selection of inappropriate learning methods given to preschoolers will provide academic burdens for children so that it makes children stressed (Wulansuci & Kurniati, 2019). Thus in teaching children to write at preschool requires stages and is carried out continuously in accordance with the child's age and development. Coercion in teaching writing to children who are drill is not appropriate for early childhood.

Preliminary studies conducted at Pertiwi Pasma Kindergarten showed that some children had difficulty in writing. Writing is a complex activity that requires eye and hand coordination, understanding symbols, and the sound of letters so that repeated activities help children to repeat the shape of scratches on paper or other media (Campbell, Chen, & Cunningham, 2018). The main problem experienced by children when doing handwriting is forming lines. The results also showed that children with writing difficulties had fine motor integration that had not been well developed (Tse, Siu, & Li-

Tsang, 2019). Therefore, before children learn to write letters or words, children should be trained in fine motor aspects first.

Reid, Keller-Margulis, Schanding, & Tolar (2019) in their research stated that to support children to be good at writing requires media. The use of media is very effective in arousing learning motivation. Therefore, researchers designed media that could improve writing skills, namely KUCERMAT media. KUCERMAT media is in the form of storybooks with writing activities that are developed to improve children's early writing readiness. This media was developed in accordance with aspects of the development of preschoolers.

At the time the trial and effectiveness were carried out, the researchers found that the children looked enthusiastic and eager to participate in learning to write using KUCERMAT media. Colorful media illustrations with attractive images attract attention and build children's positive attitudes toward learning. Then, writing activities carried out with storytelling activities create a learning atmosphere that is meaningful learning so that children can more easily participate in writing activities. This is in line with research conducted by Fears, Walsh, & Lockman (2019) showing that children prefer learning to write using worksheets that have pictures or supporting objects with colorful illustrations. Worksheets that only focus on children to learn to write make children tend to get bored faster when doing writing activities continuously. In addition, the use of picture books can build children to think more creatively (Tsai, Chang, & Lo, 2018). Thus, one of the success factors of KUCERMAT media product development is due to the development of this media in the form of

picture books with story concepts. Each activity book series on KUCERMAT media has writing learning exercises. The concept of stories with writing activities is developed by researchers so that children are able and like writing activities.

CONCLUSION

The KUCERMAT media that was developed aims to increase the readiness to write the beginning of children aged 5-6 years who are currently in kindergarten group B. One of the skills that are needed to enter primary school is writing. Writing is a complex skill that requires eye and hand coordination. Learning to write in kindergarten is known as early writing. In optimizing the ability to write early children need appropriate learning media. This is because the media as scaffolding is needed to support increasing the readiness to start writing in child development.

Based on the results of the expert test stated that KUCERMAT media research is feasible to be developed and used in the field. Then from the research test, it can be concluded that there is an increase in the readiness to start with using KUCERMAT media. This means that the learning objectives in the KUCERMAT media have been achieved and this media is effective.

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