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Aip Saripudin, Mawaddah Warohmah, Eti Nurhayati, et al.



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Development of Money Book to Stimulate Intelligence Mathematical Logic Early Childhood

Aip Saripudin^{a)}, Mawaddah Warohmah^{b)}, Eti Nurhayati^{c)}, Jazariyah^{d)} and Maulidya Ulfah^{e)}

State Islamic Institute Syekh Nurjati Cirebon, Perjuangan Street, Cirebon, Indonesia

^{a)}*Corresponding author: doubleaip82@gmail.com*

^{b)}*mawaddahw03@gmail.com*

^{c)}*etinurhayati@syekhnurjati.ac.id*

^{d)}*jazariyah@syekhnurjati.ac.id*

^{e)}*ulfah@syekhnurjati.ac.id*

Abstract. The background of this development research is that the researcher sees that the Child Worksheet (LKA) implemented in Lebah Kecil early school Cirebon is printed in small size and is not colored so that the child does not understand the purpose of the picture presented. The impact of the use of LKA media makes the level of intelligence of children's mathematical logic low. This research aims to develop learning media in the form of an activity book called Money Book to stimulate mathematical logic intelligence of children aged 5-6 years. This study uses the Research and Development methods through 6 stages, namely gathering initial information; product development design; product validation; product improvement; product trials; and product results. The study was conducted in Lebah Kecil early school in Cirebon. Data collection techniques with observation, interviews and questionnaires. The analysis of this study uses descriptive qualitative with percentage calculations. The results of this study are the level of mathematical logical intelligence of students in B group of Lebah Kecil early school in Cirebon City increased after the trial of the Money Book to 75.20% with the category developing as expected, Money Book media development consist of an introduction of numbers, variety of activities, and markets day, this Money Book media is declared suitable for use in learning to stimulate mathematical intelligence for children aged 5-6 years based on the results of 100% material expert validation, 78.84%, and teacher ratings by 90.00%.

INTRODUCTION

Children who are in the age range 0-6 years are referred to as early childhood. Early age is a decisive period because at that time children experience very rapid development and growth¹. Early childhood is the most crucial period in a person's life so that early childhood education institutions are needed to optimize the growth and development of children². PAUD according to the Regulation of the Minister of Education and Culture Number 146 of 2014 is an effort to foster children from birth to the age of six years through the provision of educational stimuli to help the growth and physical and spiritual development of children so that they are ready for further education²⁹.

Mathematical logic intelligence is the ability to use numbers, problem-solving logically and mathematically. This intelligence development can be done through calculation materials, numbers, patterns, geometry, statistics, problem-solving, logic, opportunities, strategy games, measurements, and or graphic instructions⁴. Children's mathematical logical intelligence can be stimulated through the use of interesting learning media⁵. Books are one of the learning media that are often used in the learning process in the classroom. The majority of students are not interested in the content of the book because of their perception that the book is boring. However, if the book can be developed with the latest innovations, the book will become an interesting learning medium⁶. If books are presented in an attractive way to children, it is hoped that it will increase children's attention and interest in books and increase children's knowledge⁷.

Researchers conducted initial observations at the Lebah Kecil PAUD in Cirebon City on March 15, 2019, in the 5-6 year age group. In this group, it is known that children's mathematical logic intelligence has not developed optimally. This can be seen in some children who have difficulty in working on questions that require children to match, group, and classify. After the researchers observed the children's activities, it turned out that the teacher used the Children's Worksheet (LKA) which was printed in small sizes so that the resulting images were small and the colors were less attractive. According to the researcher's analysis, the lack of effectiveness of the learning media causes the children to have difficulty understanding the pictures of the questions and the order of the questions so that the children have difficulty in working on questions involving mathematical logic intelligence^{8, 6}.

PAUD Lebah Kecil in Cirebon City is a full-day-based school so that students do not make buying and selling transactions like schools in general. This causes children to have very little activity using money. The use of money by children can be done when the child is at home on holidays or at night, and at school during visits at the peak every week or on market days. The students of the Abu Bakar Asshidiq group (aged 5-6 years) were mostly able to recognize Rupiah money only up to a nominal value of 10.000 IDR and difficulty distinguishing the nominal Rupiah in the form of coins.

The content raised in the Money Book media is an implementation of PERMENDIKBUD Number 137 of 2014 concerning PAUD Implementation Standards that children aged 5-6 years are able to recognize objects around them. The object that became the theme in the development of this book's media was money which was included in the theme of my needs. Money is a human need as a transaction tool used by humans. This will encourage children to actualize their potential in facing the realities of life and solving problems they face⁹. One of the provisions of life skills for children is to introduce the use of money and the concept of buying and selling.

Based on the above background, the purpose of this research is to develop Money Book media to stimulate mathematical logic intelligence for early childhood in PAUD Lebah Kecil, Cirebon City. The formulation of the problem in this study is how to develop Money Book media, the feasibility of Money Book media, and the level of mathematical logic intelligence of children aged 5-6 years at PAUD Lebah Kecil Cirebon City.

Learning Media Concept

Media in the context of learning is the type of component in the student environment that can stimulate students to learn¹⁰. According to Gagne and Briggs, learning media is a tool that is physically used to deliver teaching materials. The National Education Association argues that media is communication, both printed and audio-visual, and its equipment. Media can be manipulated, heard, seen and read¹¹.

Learning media is any tool that can be used as a message distributor to achieve teaching goals¹². Learning media is needed in supporting the learning process because it can make it easier for students to digest the material than without the help of the media¹⁰. In learning, what is emphasized in the use of media is the message conveyed¹¹. In learning, what is emphasized in the use of media is the message conveyed¹⁰. So learning media is a tool used as an intermediary message to achieve learning objectives. The ideal learning media is media that can increase students' motivation and learning outcomes¹³.

The Encyclopedia of educational research argues that the benefits of learning media are (1) laying concrete foundations for thinking in reducing verbalism (2) attracting students' attention (3) laying important foundations for learning development (4) providing a comfortable and growing experience independent activities for students (5) foster regular and continuous thinking, especially those related to daily life and (6) add variety in learning activities¹⁴.

The types of learning media can be classified, namely: (1) visual media, namely media that present ideas or ideas, facts, through the presentation of numbers, symbols, pictures, words, and sentences¹⁵. Visual media serves to channel messages from the source to the recipient of the message through visual forms. (2) Audio media, is a type of media related to the sense of hearing. The message to be conveyed is poured on the auditive symbols. Types of audio media, including recorders, radios, and other objects that produce sound. (3) Audio-visual media, presenting messages in audio form. The types of audio-visual media include bracelet films, motion films, videos, and TV programs¹⁰.

The Concept of Multiple Intelligences

Gardner in 1983 formulated the theory of multiple intelligences or Multiple Intelligences. This theory emphasizes that every human being has multiple intelligences and has several dominant bits of intelligence. Multiple

Intelligences is an assessment of a person's ability to solve problems and produce something ¹⁶. Each individual is different because they have different combinations of intelligence ¹⁷. Here are the nine bits of intelligence in the theory of Multiple Intelligences:

- a. Linguistic intelligence is the ability to think in words and use language to express and appreciate complex meanings ¹⁸. So linguistic intelligence can not only be seen from verbal abilities but also nonverbal abilities.
- b. Visual-spatial intelligence evokes the capacity to think in three-dimensional ways ¹⁸. This intelligence predominantly uses the sense of sight to catch an object. The object can be remembered from every angle in great detail.
- c. Mathematical logic intelligence is a person's ability to measure, calculate, complete mathematical operations, and consider propositions and hypotheses ¹⁸. Mathematical logic intelligence is not only about the ability to operate mathematics but also everything that involves the ability to think logically, critically, and symbolically.
- d. A kinesthetic intelligence that a person capacity to move objects and fine physical skills ¹⁸. Suyadi said that Kinesthetic intelligence is a person's ability to move objects and subtle physical skills ¹⁹. Kinesthetic intelligence is the ability to combine the mind and the physical to produce perfect movements.
- f. Interpersonal intelligence is the ability to understand and interact with others effectively ¹⁸. People with high interpersonal intelligence will have many friends because they can establish good relationships with the people around them. They also speak politely and do not offend others.
- g. Intrapersonal intelligence is the ability to make accurate perceptions of oneself and to use such knowledge in directing and planning one's life ¹⁸. Intrapersonal intelligence makes a person understand himself more than anyone else.
- h. Naturalist intelligence is sensitivity to the natural environment, such as enjoying environmental conversion, awareness of natural phenomena, awareness of ecological problems, and enjoying observing nature ²⁰. People with high naturalist intelligence have sensitivity to natural objects, such as animals and plants ²¹.
- i. Existential or spiritual intelligence is related to a person's ability and sensitivity to know and answer the deepest questions regarding human existence or existence ²². His intelligence is important for someone to have because spiritual intelligence will always make a person have peace of mind in their activities because they feel the presence of Allah SWT in their lives.

Mathematical Logic Intelligence

Mathematical logic intelligence according to Gardner is the ability related to sensitivity in calculating and abstract thinking, logical thinking, and scientific. Behaviors that show mathematical logic intelligence are the ability to make classifications, numerical abilities, use patterns, make inferences and generalizations, calculate, and test hypotheses ²⁰. According to Meliala, mathematical logic intelligence is the ability to use numbers and calculations, patterns and logic, and a scientific mindset ²³.

According to Gardner, mathematical logic intelligence involves three interrelated areas, namely mathematics, logic, and science ¹⁸. Children who have high mathematical logical intelligence are generally able to recognize and understand the concepts of number, time, and the principle of cause and effect, can observe objects and understand the function of these objects, and are good at solving problems that require logical thinking ²⁴. The benchmark of children's cognitive development can be seen from their ability to coordinate various ways of thinking to solve problems ²⁵. Children with high mathematical logic intelligence will like playing activities related to counting objects and thinking logically.

Pre-school age children are the right time to give interest in counting, compiling, forming buildings, finding patterns, measuring, and estimating ²⁶. According to Wahyudi and Damayanti, mathematical thinking and skills for children include matching, grouping, arranging, counting, separating, measuring, and comparing. Children also learn through their experiences with shapes, sizes, spaces, numbers, and number symbols ²⁷. At the age of six or seven, children have mathematical logic skills such as being able to compare the number of objects. After the child has mastered the concept of comparison, the child can perform other basic numerical operations, namely addition, subtraction, division, and multiplication ²⁸.

As for the STPPA PERMENDIKBUD No. 137 of 2014 concerning the National Standards for Early Childhood Education, indicators of mathematical logic intelligence for early childhood are part of the cognitive development aspect which consists of three parts, namely learning and problem-solving, logical thinking, and symbolic thinking ²⁹.

METHOD

This research uses Research and Development (R&D) research methods. The research and development method is a research method to produce certain products, and test the effectiveness of these products^{30 31}. Research and development carried out by researchers adopted the stages of research proposed by Borg & Cell developed by Sugiyono This study only uses 6 stages of the 10 stages, a preliminary study that collects initial information; product design to be developed; product validation by media and material experts; product improvement; limited trial; and final product³¹.

Sources of data needed in this study include primary data and secondary data. Primary data sources in this study were obtained from students, teachers, and school principals at PAUD Lebah Kecil. This study uses secondary data obtained through documents in PAUD Lebah Kecil Cirebon City. The Money Book media trial was conducted on 12 students in group B (aged 5-6 years) at Lebah Kecil PAUD Cirebon 3 times.

Data collection techniques used in this study were observation, interviews, and questionnaires. Observations are used to observe the learning process, the use of Money Book learning media, and the level of children's mathematical logic intelligence. Interviews to obtain information about the teacher's needs for learning media for mathematical logic intelligence. Questionnaires are used to determine the feasibility and quality of Money book media³².

The data analysis technique used descriptive qualitative with percentage calculation. The stages of data analysis in this study are tabulating data, calculating percentages, describing tables, and making conclusions³¹.

RESULT AND DISCUSSION

Money Book Media Development

The design stages of the Money Book media development use a development procedure adapted from the research and development model of Borg and Gall³¹. The steps that the researchers took in developing the Money Book media only used 6 steps, namely: initial information collection, product design, product validation, product improvement, limited trials, and product results.

Based on the results of the initial observations that the researchers carried out using a grid of validated observation instruments, it showed that the mathematical logic intelligence of group B students of PAUD Lebah Kecil Cirebon City before the Money Book media trial was 48.75%. This value is included in the MB category (Starting to Develop) so it requires stimulation so that the mathematical logic intelligence of group B students increases. Therefore, researchers are encouraged to conduct research and development to stimulate mathematical logic intelligence for early childhood, namely Money Book media in group B PAUD Lebah Kecil Cirebon City.

The developed Money Book media helps teachers stimulate children's mathematical logic intelligence and introduces Rupiah to early childhood. Introducing money to children to provide supplies by teaching children life skills and skills. This will encourage children to actualize their potential in facing the realities of life and solving the problems they face⁹. Mathematical logic intelligence needs to be stimulated from an early age to help children's development in adapting to an environment that in daily life requires numeracy skills, observing objects around them, having high concentration and accuracy, thinking systematically and logically, understanding the concepts of space and time, and estimating possibilities. order of things²⁴. This shows that the intelligence of mathematical logic and the introduction of Rupiah is a provision of life skills that must be possessed by early childhood as a basis for carrying out various daily activities.

The final product of Money Book consists of three main parts, introduction to numbers, geometry, and Rupiah currency; 14 various activities to stimulate children's mathematical logic intelligence; and market day activities. The variety of activities presented in the Money Book media refers to PERMENDIKBUD No. 137 of 2014 namely STPPA in the cognitive development of children aged 5-6 years. However, the researchers did not fully incorporate these indicators into this medium. Sampling of activities from three parts of children's cognitive development, namely problem solving, logical thinking, and symbolic thinking is adjusted to the focus of media development, namely to stimulate the mathematical logic intelligence of children aged 5-6 years. The 14 activities are thickening patterns, differentiating, matching, grouping, comparing, measuring, sorting, connecting, maze, addition, subtraction, cause-effect, true-false, and problem solving. Therefore, the material in the Money Book media is by following the characteristics of early childhood, especially children aged 5-6 years.

The text in the various Money Book media activities uses a simple language style so that it is easy for children to understand. The language used in the work instructions and stories is by following the spelling and standard language that can be understood by students and teachers. The size of the text in each activity is appropriate so that it is easy to read. The combination of pictures and writing arranged in a storyline makes information easier to absorb. The text makes it more understandable and the flow is easier to follow and remember³³.

Media Money Book also presents the peak activity, namely market day which aims to introduce entrepreneurial activities, improve social skills, and stimulate children's mathematical logic intelligence. Children will learn to use money in buying and selling transactions in these market day activities. Mathematical logic games in PAUD aim to make children know the basics of learning to count from an early age so that children will be ready to take part in learning mathematics at the next level of education, namely Elementary School²⁴.

Media Money Book is a media that is included in the category of picture books. An Image is a form of semiotic function that can be considered as halfway between symbolic play and mental imagery³⁴. The use of picture books in early childhood is one of the symbolic games that can give children pleasure³⁵. Based on limited trials and interviews with classroom teachers that the pictures and colors in the Money Book media are very interesting for children so that children do not get bored and complete each activity with pleasure.

Money Book media can increase learning motivation and attract students' attention through the presentation of attractive pictures and colors, improve children's fine motor skills by writing, and increase children's mathematical logic intelligence with the materials presented. This is in accordance with Ashar's opinion that the functions of learning media are (1) cognitive functions, learning media provide new knowledge and understanding to students about something (2) psychomotor functions, learning media have a function to improve students' physical skills, and (3) function motivation, learning media can increase students' learning motivation³⁶.

Media Money Book consists of ii + 57 pages including front and back covers. The Money Book is printed in A4 size using BW 310 gsm paper for the cover, HVS 80 gsm for the contents, and BW 230 gsm for "My Wallet". In my wallet, toy banknotes are ranging from 1.000 IDR – 100.000 IDR with a nominal value of 5 sheets each. The upper "Dompetku" contains a nominal value of 1.000 IDR – 10.000 IDR while the lower "Dompetku" contains a nominal value of 20.000 IDR – 100.000 IDR. The researcher also printed a mini money sticker with the type of Kromo paper that was cut out and placed on page 31 in the grouping activity.

Media Money Book Eligibility

Efforts to determine the feasibility of Money Book media were carried out by validating experts, limited trials of media use, and teacher assessments. Validation of the eligibility of Money Book media conducted by media experts and material experts. Validation by each expert was carried out in two stages. The trial of the use of the media was carried out 3 times on 12 students in group B of PAUD Lebah Kecil, Cirebon City. The use of the media is carried out by the classroom teacher and the researcher acts as an observer. Teacher assessment is carried out after the media trial is completed. In this study, teacher assessment was carried out by teachers of group B PAUD Lebah Kecil Cirebon City.

Phase I media expert validation obtained a percentage of 76.92% and was included in the "Decent" category but there were still some revision notes. The media expert's revision notes are on the aspect of the back cover display and the binding of the Money Book media. The improvement process that the researchers did make the Money Book media tidier. These improvements aim to make the Money Book media more attractive to use by early childhood. This is in line with Saifuddin's opinion that the purpose of learning media is to create learning to attract students' attention¹⁰. Children's interest in learning media will make them more focused on participating in learning activities in class. After undergoing repairs and conducting stage II media expert validation, Money Book media obtained a percentage of 78.84% in the "Eligible" category and without revision notes.

The Money Book media validation phase I got a percentage of 85.71% with the "Eligible" category. Although the results of validation I are included in the appropriate category with a fairly high percentage, there are still some revision notes from material experts. Revision notes from material experts, namely Money Book material are more on symbolic thinking so it is necessary to add material that stimulates problem-solving and logical thinking. According to PERMENDIKBUD No. 137 of 2014, learning and problem-solving consist of the ability to solve simple problems in everyday life and apply knowledge or experience in new contexts. While logical thinking is various abilities in determining differences, classifications, patterns, and recognizing cause and effect³. Based on this definition, the researcher decided to add 5 new activities into 6 pages, namely grouping, true-false, measuring,

causal, and problem-solving activities. After revising, the researcher validated the material expert phase II which obtained a percentage of 100% with the "Eligible" category.

The trial of using Money Book media was carried out three times because the material contained in the Money Book was very much so it would be better if the trial was not only done once. At the time of the trial, the students looked very excited to see the Money Book media because it had interesting pictures and colors so that children were more active and cheerful in learning in class. This is by following one of the principles of selecting learning media for early childhood, namely according to the characteristics of students¹⁵. The children seemed to be able to complete activities easily and some children were also able to help friends who had difficulty completing activities in the Money Book media. This indicates that children's mathematical logical intelligence has increased. According to Nurhayati, the benchmark for children's cognitive development can be seen from their ability to coordinate various ways of thinking to solve problems^{25 37}.

The researcher assessed the teacher's response regarding the feasibility of the Money Book media to stimulate the mathematical logic intelligence of children aged 5-6 years. The results of the Money Book media feasibility assessment by the teacher obtained a percentage of 90% with the "Eligible" category. The class teacher also gave positive comments on the Money Book media, namely Money Book has attractive pictures and colors so that it is liked by children and is very helpful for teachers in stimulating the mathematical logic intelligence of children aged 5-6 years. This shows that the Money Book media has a function as a tool for teachers. One of the functions of learning media is as a teaching aid that affects the environment, and the conditions created and arranged by the teacher^{38 12}.

Based on expert validation, limited trials of product use, and assessment of responses by teachers, the researchers concluded that the Money Book media developed by the researchers was suitable for use in the learning process to stimulate the mathematical logic intelligence of children aged 5-6 years in group B PAUD Lebah Kecil Kota Cirebon.

Level of Intelligence in Mathematical Logic for Children aged 5-6 years PAUD Lebah Kecil Cirebon City

Researchers conducted observations to assess the level of attainment of mathematical logic intelligence of group B PAUD Lebah Kecil Cirebon City students using a grid of previously validated observation instruments. The assessment process is carried out every time the Money Book media has been tested. This assessment aims to determine the changes in the increase in students' mathematical logical intelligence after the Money Book media trial was carried out. The level of early childhood development can be known if the assessment is carried out continuously^{39 40}. Therefore, to determine the level of mathematical logic intelligence of students of group B PAUD Lebah Kecil Cirebon City, before and after Money Book media development was calculated.

The assessment of the level of intelligence of mathematical logic carried out by researchers does not aim to measure achievement or compare the intelligence of students with one another. The essence of the assessment is to find out the extent of the progress of the child's development which can be seen from the various actions, performances, attitudes, and appearance of the child³⁹.

In the pre-assessment of Money Book media development, a percentage of 48.75% was obtained in the MB category (Starting to Develop). The result of achieving the level of mathematical logic intelligence of group B students after the Money Book media trial was 75.2% which was included in the BSH category (Developing According to Expectations). The level of logical-mathematical intelligence of the group B PAUD Lebah Kecil students experienced a significant increase after the development of the Money Book media.

CONCLUSION

Based on the results of research and development of Money Book media to stimulate the logical intelligence of early childhood in PAUD Lebah Kecil Cirebon City, it can be concluded that the development of the Money Book media is in the form of an A4 sized picture book with several pages ii + 57 pages including front and back covers. This media consists of three parts, namely the introduction of Rupiah, the concept of numbers, and geometry, 14 various activities to stimulate children's mathematical logic intelligence, and a market day with three themes, namely food and beverages, stationery, and toys. This Money Book media is suitable for use in learning at Lebah Kecil PAUD. The feasibility of the product can be seen from the results of material expert validation by 100%, media expert validation by 78.84%, and teacher response assessment by 90%. A limited trial of the use of the

product was carried out in group B on 12 students in group B of PAUD Lebah Kecil, Cirebon City 3 times. The level of attainment of mathematical logic intelligence of students in group B pre-media development is 48.75% with the category starting to develop and experiencing an increase after media development, which is 75.20% with the category developing as expected.

REFERENCES

1. Suyadi and M. Ulfah, *Konsep Dasar PAUD* (PT Remaja Rosdakarya, Bandung, 2015).
2. C.M. McWayne, M. Owsianik, L.E. Green, and J.W. Fantuzzo, *Early Child. Res. Q.* (2008).
3. Permendikbud, *Peraturan Menteri Pendidikan Dan Kebudayaan No. 146 Tahun 2014 Tentang Kurikulum 2013 Pendidikan Anak Usia Dini* (2014).
4. J.M. Mintorogo, A. Adib, and A.W. Suhartono, *J. DKV Adiwarna* **1**, 13 (2014).
5. M. Siregar, *ECRJ (Early Childhood Res. Journal)* **2**, 9 (2019).
6. L.S. Clark, *Commun. Theory* (2011).
7. B. Harris and D. Petersen, *Math. Policy Res. Inc.* **1** (2017).
8. M. Ulfah, E. Nurhayati, and H. Abyati, *AL-ATHFAL J. Pendidik. ANAK* (2019).
9. M. Yoga, *Saatnya Membekali Anak Dengan Kecakapan Hidup* (Metagraf, Solo, 2018).
10. Saifuddin, *Pengelolaan Pembelajaran Teoretis Dan Praktis* (Deepublish, Yogyakarta, 2014).
11. Hasnida, *Media Pembelajaran Kreatif Mendukung Pembelajaran Pada Anak Usia Dini* (Luxima, Jakarta, 2014).
12. Z. Zulkarnain, S. Heleni, and M. Thahir, in *J. Phys. Conf. Ser.* (2020).
13. P. Nikken and J. Jansz, *Learn. Media Technol.* (2014).
14. R. Sundayana, *Media Dan Alat Peraga Dalam Pembelajaran Matematika* (Alfabeta, Bandung, 2014).
15. R. Susilana and Cepi Riyana, *Media Pembeajaran* (CV Wacana Prima, Bandung, 2018).
16. H. Gardner, *Multiple Intelligences New Horizons* (Basic Books, New York, 2006).
17. H. Gardner, *Multiple Intelligences* (Daras Books, Jakarta, 2013).
18. L. Campbell, B. Campbell, and Dee Dickinson, *Metode Praktis Pembelajaran Berbasis Multiple Intelligences* (Intuisi Press, Jakarta, 2007).
19. Suyadi, *Teori Pembelajaran Anak Usia Dini Dalam Kajian Neurosains* (PT Remaja Rosdakarya, Bandung, 2014).
20. M. Jamaris and Edwita, *Am. J. Educ. Res.* **2**, (2014).
21. A. Saripudin, *J. Awlady* **3**, (2017).
22. Hanafi, *Saintifika Islam. J. Kaji. Keislam.* **3**, 1 (2016).
23. M.B. Ilmi and A.H. Rosyidi, *J. Ilm. Pendidik. Mat.* **1**, 21 (2016).
24. R. Tuladia, *Meningkatkan Kemampuan Berhitung Anak Melalui Media Gambar Buah-Buahan Pada Kelompok B Di TK Peripabri Kota Bengkulu*, Universitas Bengkulu, 2014.
25. E. Nurhayati, *J. Awlady* **1**, (2015).
26. I. Novikasari, *J. Bunayya* **2**, (2016).
27. D. Suryana, *PAUD Stimulasi Dan Aspek Perkembangan Anak* (Prenadamedia, Jakarta, 2017).
28. H. Gardner, *Frames of Mind: The Teory of Multiple Intelligences* (Basic Books, New York, 2011).
29. Permendikbud, *Peraturan Menteri Pendidikan Nasional No 137* (2014).
30. Sugiyono, *METODE PENELITIAN PENDIDIKAN* (2019).
31. Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, Dan R&D* (Alfabeta, Bandung, 2017).
32. Sugiyono, in *Metod. Penelit. Ilm.* (2014).
33. Y. Arifianti, *Bull. Vulkanol. Dan Bencana Geol.* **6**, 17 (2011).
34. J. Piaget and B. Inhelder, *Psikologi Anak, The Psychology of The Child* (Pustaka Pelajar, Yogyakarta, 2010).
35. I.H. Kiromi and Puji Yanti Fauziah, *J. Pendidik. Dan Pemberdaya. Masy.* **2**, 107 (2015).
36. R. Asyhar, *Kreatif Mengembangkan Media Pembelajaran* (Gaung Persada, Jakarta, 2011).
37. J.W. Santrock, *Adolescence (16th Ed.)* (2016).
38. N. Suryani and L. Agung S, *Strategi Belajar Mengajar* (Ombak, Yogyakarta, 2012).
39. H. Rasyid, Mansyur, and Suratno, *Asesmen Perkembangan Anak Usia Dini* (Gama Media, Yogyakarta, 2012).
40. S. Hadi and Novaliyosi, *Pros. Semin. Nas. Call Pap. Progr. Stud. Magister Pendidik. Mat. Univ. Siliwangi* **562** (2019).