

# The Effect of Montessori Technique- Based Big Book to Improve Early Reading skill and Learning Motivation for fourth grade students in Elementary School

Nurul Istiq'faroh

*Department of Primary School Teacher Education, Universitas Nahdlatul Ulama Sidoarjo  
Email- istiqfaroh.pgsd@unusida.ac.id*

Erif Ahdhianto

*Department of Primary School Teacher Education, Universitas Nisantara PGRI Kediri, Indonesia  
Email- erifargaz@gmail.com*

**Abstract:** The low level of reading comprehension in elementary school students can certainly affect their learning motivation in the learning process. To overcome this problem, this study aims: to investigate the effect of the Montessori-based Big Book on understanding Early Reading Skills and Learning Motivation. Quasi-experimental design was applied in this study. There were 26 students (14 males and 12 females) from SDN Pucang 4 as an experimental group and 23 students (13 males and 10 females) from SDN Pucang 2 were included as a control group. Data analysis in this study used an independent sample t-test with a significance level of 0.05. The results showed that students in the experimental group had higher scores better than the control group. This shows that the Montessori-based Big Book significantly promotes understanding of Early Reading Skills and Learning Motivation in the experimental group compared to control group students.

*Keywords – Montessori Technique- Based Big Book, Early Reading skill, Learning Motivation*

## **INTRODUCTION**

Elementary school education is the primary foundation to form the students' knowledge before understanding other branches of science. According to Jalongo (2007), children's brain will develop 80 % when they are eight. Research shows that children are born with one hundred billion brain cells. When they reach an early age, these cells will continue to grow until several times the initial connection about twenty thousand connections. Therefore, motivation and intensive coaching are needed by children in developing their potential.

Learning motivation is an element that can maintain student attention and involvement during the learning process (Hong, Huang, Hsu, & Shen, 2016). Research from Shin (2017) states that gender and learning motivation can influence students' academic achievement. This opinion illustrates that learning motivation is an important foundation that can have an impact on student achievement in school.

In addition to motivation to learn, the first step to develop and optimize the potential that exists in low grade elementary students is to master the ability to begin reading. The learning motivation turns out to have a relationship with students' early reading (Morgan, et al, 2008). The early reading ability for students can not just appear without support for students to be motivated to read. According to Stack & Barksdale (2015) encouragement and support when students read, is something important and can have a positive

effect on students' reading ability. The learning motivation influences the development of students' reading skills (Solheim, Uppstad & Walgermo, 2018).

Early reading is important to teach elementary students. Murdoch, Patton & Sparks (2014) also stated that the importance of early reading success in encouraging their reading skills. The early reading carried out at the beginning of school is not an easy process (Morris et al., 2017). Therefore, early reading is important basis for students' learning achievement (Glover, 2017). The teachers need to pay serious attention and design interesting learning designs for students' achievement.

The sophisticated technological development is appropriate to be utilized in the world of education in the 21st century, especially to support the selection of learning media by teachers. The meaningful and enjoyable learning will not be formed without teachers' time management and effort (Qian & Clark, 2016). Therefore, it is necessary to have learning techniques and interactive media so that learning objectives are achieved. There are two important things that can affect student learning processes including attitudes and teaching materials (Domman & Domman, 1994).

The first graders in elementary school are at the cognitive development stage. Piaget in Santrock (2011) suggested that children aged 7-11 years are in concrete operational cognitive development. At this stage the child will be able to think logically about concrete events. The media presented are concrete and related to the surrounding environment. This makes it easier for students to accept and understand material in the media.

The suitable learning media to encourage students' reading motivation in primary schools is big book. Big books are picture books that attract students and contain repetitive writing. Lynch (2008: 5) states that big books can be a powerful motivation for learning conversational words, forms, compound words, ending verbs, punctuation, abbreviations, and rhymes. Big book media has many benefits, Machado (2013) explains that the benefits of big books are to help children to focus, where they see the visual pictures in the book and the text is large so that it is not easily forgotten by children.

Big books can be used in early grades because they have characteristics that fit the needs of students. The teacher can choose the Big Book that contains the story and topic according to students' interests. Big books are presented with interesting pictures so that they can attract children's interests. Therefore, big books are classified as picture books. The general criteria in the selection of picture books are divided into five categories, namely content, story length, text, illustrations and layout (Colwell, 2013).

Learning media such as pictures, graphics / diagrams that attract attention can help optimize and motivate students' reading and writing processes in school (Usaid, 2014). Big books fit the characteristics and needs of students in the early grades. Big books are children's books that are enlarged and allow children to see and react to printed pages as read (Colville & O'Connor, 2006; Strickland & Cullinan, 2004). In addition to an attractive physical appearance, media development must also pay attention to the material presented.

In this study, the learning techniques used is Montessori technique developed by Maria Montessori, a philosopher who involved the scientific training, experience, and insight to develop challenging educational methods (Gutek, 1974). Montessori understands that education is not only as delivering information but also helping children to grow to be wise adults and contribute to everyday life (Lillard, 2018). This learning emphasizes the all aspects not only the cognitive ones. Montessori-based learning encourages the development of academic and social skills (Schroeder & Mallet, 2014).

Maria Montessori conducted several experiments on students' interesting learning method. It was found that students learnt due to several characteristics, namely interesting, grad, auto-education, and auto-correction (Montessori, 2002). An additional characteristic is the contextual learning media (Lillard, 2005). The contextual learning will be deeper and enrich students' understanding better than abstract learning. Learning material provided is related to the environment around students. This will facilitate students in understanding the material.

Referring to the importance of appropriate learning media in increasing students' motivation, this researchers focus on developing a Montessori technique-based big book media to increase students' early reading and encourage their learning motivation. Thus, the objective of this study is to produce an effective

big book in improving students' early reading skill and their learning motivation. . The research questions are:

1. Is there significant difference in early reading skill and learning motivation between experimental and control classes?
2. Is there a significant increase in early reading skill and learning motivation between experimental and control classes after the treatment?.

## RESEARCH METHOD

### RESEARCH DESIGN

This research uses nonequivalent comparison-group design. This design is one of the strongest quasi-experimental research designs (Johnson & Christensen, 2014). In this study, researchers provide pretest and posttest for students in the experimental and control classes. After treatment, researchers compared the conditions before and after treatment in both classes. The dependent variable is early reading skill and learning motivation.

Table 1. Nonequivalent comparison-group design

Group	Pretest	Treatment	Posttest
Experiment	$X_1$	<i>Big Book</i>	$X_2$
Control	$X_3$	Conventional	$X_4$

### RESEARCH SAMPLES

The participants were 49 students of second grade (aged 8-9 years) from two state elementary schools in Sidoarjo, Indonesia. There were 26 students (14 males and 12 females) from SDN Pucang 4 as an experimental group and 23 students (13 males and 10 females) from SDN Pucang 2 were included as control group. The experimental group students were taught using the Montessori technique-based Big Book, and the control group were taught using conventional methods. The two schools were classified into the best school in the Sidoarjo based on school's accreditation. The data of school was obtained from the education office of Surabaya. All students were from the same socioeconomic background and had equal education taught by teachers with less than 10 years of teaching experience. This research was conducted in November-December 2019.

### INSTRUMENTS

#### The Early Reading Performance Test

The test used was a performance test for early reading skills. The test was through reading the text while the indicator was adopted from Morrison (2012) as presented in Table 2.

Table 2. Early Reading Assessment Grid

Aspects	Indicators	Maximum Score
Pronunciation	Accuracy in pronunciation	20
Intonation	Accuracy in intonation when reading	20
fluency	Reading fluency	20
clarity	Voice clarity in reading	20
Whole reading	The integrity of the letters from the words spoken	20
Total score		100

After 2 experts' feedback was obtained, the rubric was tested on 35 students in the fifth grade of Al Falah Elementary School. The results of the test were analyzed using the Product Moment correlation. the

results of rubric validity test were categorized as valid if  $r_{\text{observed}} \geq 0.334$ . Table 3 shows that all indicators in the rubric were categorized as valid. In addition, the RCr reliability coefficient was 0.718.

Table 3. The validity of Early Reading Instruments

Sub-scales	$r_{\text{observed}}$	$r_{\text{table 5\%}} (n=35)$	$P$	Criteria
Pronunciation	0,858	0,334	0,000	Valid
Intonation	0,857	0,334	0,000	Valid
fluency	0,874	0,334	0,000	Valid
clarity	0,421	0,334	0,010	Valid
Whole reading	0,362	0,334	0,031	Valid

#### Learning Motivation Observation Rubric

The observation rubric was used to evaluate student learning motivation from internal and external aspects. Indicators of learning motivation were adopted from Sansone & Harackiewicz (2000) as presented in Table 4.

Table 4. Learning Motivation Assessment Grid

Scales	Sub-scales	Maximum score
Internal motivation	Diligent in facing the task	5
	Persistent in facing difficulties	5
	Willing to succeed	5
External motivation	Interesting learning activities	5
Total Score		20

The assessment of learning motivation was divided into several indicators. After being tested on 35 students, there were 10 indicators selected. The validity of the rubric can be seen in Table 4. The coefficient of reliability of the observation rubric on learning motivation was 0.774.

Table 4. The validity of Learning Motivation Rubric

Sub-scales	$r_{\text{observed}}$	$r_{\text{table 5\%}} (n=35)$	$P$	Criteria
Students work diligently on assignments given by the teacher	0,772	0,334	,000	Valid
Students seriously work on assignments given by the teacher	0,370	0,334	,028	Valid
Students actively discuss with friends in doing assignments	0,610	0,334	,000	Valid
The students have submitted the assignment	0,540	0,334	,001	Valid
Students try to complete assignments on time	0,567	0,334	,000	Valid
Students actively ask the teacher about the reading text that they can't	0,584	0,334	,000	Valid
Students seriously pay attention to the teacher's explanation	0,772	0,334	,000	Valid
Students dare to show the results of their task in front of the class	0,349	0,334	,040	Valid
Students enjoy learning because the media is interesting	0,772	0,334	,000	Valid
Students like to discuss with friends when working on assignments	0,548	0,334	,001	Valid

#### PROCEDURES

After the pretest, students in both groups participated in the learning activities for 4 meetings (2x35 min per session). The experimental group students used a Montessori technique-based big book. In the first

stage, the teacher started the lesson by praying together, the teacher motivated students by singing songs together. The teacher conveyed the learning objectives. The second stage, teacher arranged students' seat in order to easily pay attention to teacher's stories. The teacher read the story through the Big book. Students observed examples of reading read by the teacher word by word while pointing at each word with pronunciations and reasonable intonation. The third stage, students practiced together to read the reading text on the big book with the correct pronunciation, fluency, clarity, and reasonable intonation. In the fourth step, students took turns telling the contents of the story they had read.

Students in the control group learnt the lessons using conventional methods. The conventional method used was to provide reading text without images. The reading text was taken from the student textbooks provided by the school. Students were told to read until the end of the story. Then, they had to do a question and answer with the teacher. Learning activity ended with questions and answers and assignments.

### DATA ANALYSIS

Kolmogorov-Smirnov was used to test the normality of pre- and post-test data. After obtaining the assumptions of normality and homogeneity ( $p > 0.05$ ), parametric statistics was done. To analyze changes in scores on creativity and writing skills, paired samples t-test was used. Then, range of the increase in the pre-to-post-test score was checked using the n-gain formula (Hake, 1999); height,  $g \geq 0.7$ ; moderate,  $0.7 > g \geq 0.3$ ; and low  $g < 0.3$ . In addition, independent samples t-test was used to investigate whether there was difference in scores on creativity and early reading skill between the experimental and control groups. T-tests were performed using the SPSS version 20 program at a significance level of 0.05. Findings

#### Big Book Development

Big book was made using the CorelDraw X7 application and printed in 297 x 420 mm or equivalent A3 and manifold art paper. There were ten pages and one cover. This big book was developed in based on the curriculum of the second grade elementary school. The material presented related to folklore in Indonesia. The reading material was developed according to the age of elementary school students, namely using easy language and adequate number of words. The folklore developed were the origin of Jambi, and the legend of Cianjur city. For instance, the origin of Cianjur, which showed a good moral message and also told the origin of the region. It was expected that after reading the students could appreciate the history of their respective regions.



Figure 1. Big book Cover

#### Impact on Students' early Reading

To answer the first research question, "Is there significant difference in the early reading skills and learning motivation between experimental and control group students", paired-samples t-tests were employed. The results are presented in Table 5.

Table 5. Pre- and Post-test scores on Early Reading Skill

Groups	Mean		Gain	Criteria
	Pretest	Posttest		
Control	51.09	62.39	0,23	Low
Experimental	52.19	76.08	0,50	Moderate

Table 5 shows that the pre-test score of early reading in the control group students and experimental group students was equal. After treatment, both groups experienced an increase. The results showed that the change in score in the experimental group was higher than in the control group. The increase in score in the experimental group was 23.89 with a gain of 0.50. Thus, It can be concluded that the early reading of the experimental group students was higher than the control group.

To find out whether there is difference in early reading between the control and experimental groups students, an independent t-test was conducted (see Table 6).

Table 6. Independent t-test results on early Reading skill

	Groups	Mean	SD	Df	P
Pretest	Control	51.09	13.239	47	0,745
	Experimental	52.19	10.331		
Posttest	Control	61.35	12.752	47	0.000
	Experimental	76.08	10.194		

Students in the experimental group ( $M = 52.19$ ;  $SD = 10.331$ ) and control ( $M = 51.09$ ;  $SD = 13.239$ ) had an equal early reading score. Based on Table 6, the p-value on the pre-test score was greater than 0.05, meaning that there was no difference in early reading scores between students taught using Big book and traditional teaching before treatment ( $p = 0.745$ ). After the treatment, there was a significant difference in the early reading ability scores between students in the experimental and control groups ( $p = 0,000$ ). The experimental group students ( $M = 76.08$ ;  $SD = 10.194$ ) had higher scores than the control group students ( $M = 61.35$ ;  $SD = 12.752$ ).

#### Impact on Student Learning Motivation

To answer the second research question, "is there a significant increase in scores on early reading skill and learning motivation between students in both groups before and after the treatment", paired samples t-test were executed.

Table 7. Pre- and Post-test scores on Student Learning Motivation

Groups	mean		Gain
	Pretest	Posttest	
Control	52,17	62,61	Low
Experimental	52,31	78,46	Moderate

Table 7 shows that the pre-test score of learning motivation in control group students was higher than the experimental group students. After treatment, both groups experienced an increase. The results showed that the change in score in the experimental group was higher than control group. The score increase in the experimental group was 26.15 with a gain of 0.55. Thus, It can be concluded that the learning motivation of the experimental group students was higher than the control group after the intervention.

Next, the independent samples t-test was conducted to find out whether there was difference in learning motivation between students in the control group and the experimental group (see Table 8).

Table 8. Independent T-Test Results for Student Learning Motivation

	Grup	Mean	SD	Df	P
Pretest	Control	52.17	11,264	47	0.969
	Experimental	52,31	12,746		
Posttest	Control	62,61	10,962	47	0.000
	Experimental	78,46	10,077		

Based on Table 8, there was no differences in learning motivation between students taught using big books and conventional teaching before treatment ( $p = 0.969$ ). After the treatment, there was significant difference in learning motivation scores between students in the experimental and control groups ( $p =$

0,000). The score in experimental group students ( $M = 78.46$ ;  $SD = 10.077$ ) was higher than control group students ( $M = 62.61$ ;  $SD = 10.962$ ).

## DISCUSSION

The ability to read, especially the early reading skill for elementary school students is a big step in their cognitive development (Moscicka, 2015). This opinion shows that if students from the low class of elementary school are routinely trained to read, their vocabulary becomes wider and indirectly become more fluent in mentioning the words when reading. Reading for the low class of elementary school is important, especially in an educated society (Walker, 2015).

In the research, the impact of the Montessori technique-based big book media can improve students' early reading skill and student motivation. This is in line with research conducted by Dahunsi (2014) through Montessori-based big book media, learning activities become interesting, student-centered, and learning material is based on the concrete to the abstract. This causes learning activity to be more interactive.

The combination of images and text in the big book media can make it easier for students to recognize concepts. This is in accordance with the opinion of Hunt (1999) that the combination of verbal text and visual images is very suitable because images can stimulate student knowledge naturally and directly rather than just words so that it can help students to understand reading text better. Normaliza and Nik (2010) state that the use of big books can create a conducive learning context because children have the opportunity to interact more with their teachers and peers.

The increase in student motivation occurs due to the shape and components of the big book media. The size of the book and the combination of various colours makes students willing to learn. As revealed by Brown & Tomlinson (1999), there are several elements that must be considered in children's reading media, namely lines, colours, textures, shapes, and the basic ingredients. The colours used should be realistic (in accordance with the original). Furthermore, Brophy (2010) states that student motivation based on subjective experience, mainly related to the availability of students to be actively involved in the learning process and also their reasons for doing something.

Montessori technique emphasized in the use of big book media will also make students actively learn to find concepts in accordance with the material. This is in accordance with the opinion of Veermans (2014) which revealed that discovery-based learning can involve students actively in the learning process. Strengthened the results of research from Rathunde (2003) which states that Montessori students have significant results in terms of the quality of their experience in academics than students in traditional schools. The things that stand out in Montessori students are active, happy, relaxed, have a high social sense and confident in the tasks they have done during learning process.

## CONCLUSION

The results indicate that the scores on early reading ability and learning motivation on experimental group students increased after the treatment using the Montessori techniques-based Big Book higher than control group students. By using big book media in learning process, students are more communicative in getting to know simple words and sentences so that they have high motivation to learn. Thus, the results of the research indicate that the Montessori technique-based big book is effective in improving the early reading skill and student motivation in elementary school. Through the big book media, students will be more enthusiastic, pay attention to the teacher, and be interested in learning to read. This has an impact on the process and ability of students to read.

The limitation of this research is that the development of big books is only done in the development of legends (folklore). It would be better if the big book will be developed by containing many stories such as fables, fairy tales, and sage. The big book media developed at this time is for the low class students of elementary school, will be better if it also developed for to the high class students

## ACKNOWLEDGEMENTS

The researcher would like to thank Lembaga Pengelola Dana Pendidikan (LPDP) Indonesian endowment fund for education, Finance ministry of Indonesia for supporting this research.

## REFERENCES

- Brophy, J. (2010). *Motivating students to learn* third edition. New York: Taylor & Francis e-Library.
- Brown, C.L., & Tomlinson, C.M. (1999). *Essential of children's literature* (3<sup>rd</sup> ed). New York: Allyn&Bacom A Vlacom Company.
- Colville-H, S & O'Connor, B. (2006). Using big book: a standards-based instructional approach for foregin language teacher candidate in pre K-12 program. *Foreign Language Annals*. Vol 39 Nomor 3. Hlmn 487-506.
- Colwell, C. (2013). Children's storybooks in the elementary music classroom: a description of their use by orff-schulwerk teachers children's storybooks in the elementary by orff-schulwerk teachers. *Music Therapy & Special Music Education*, 5(2), 175-187.
- Dahunsi. (2014). Montessori education in nigeria. *Journal of Research & Method in Education*. 4(1), 57-60. Retrieved from [www.iosrjournals.org/ios-jrme/papers/.../104155760.pdf](http://www.iosrjournals.org/ios-jrme/papers/.../104155760.pdf).
- Doman, G., Doman, J. (1994). *How to multiply your baby's intelligence*. New York: Paragon press.
- Eberhard-Moscicka, A. K., Jost, L. B., Raith, M., & Maurer, U. (2015). Neurocognitive Mechanisms of Learning to Read: Print Tuning in Beginning Readers Related to Word-Reading Fluency and Semantics but Not Phonology. *Developmental Science*, 18(1), 106–118. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/24863157>
- Glover, T. A. (2017). A Data-driven coaching model used to promote students response to early reading intervention. *Theory Into Practice*, 56(1), 13-20. doi: <http://dx.doi.org/10.1080/00405841.2016.1260401>.
- Gutek, Gerald Lee . 1974. *Philosophical Alternative In Education*. Loyola : University Of Chicago.
- Hake, R. R. (1999). *Analyzing change/gain scores*. Retrieved from <http://www.physics.indiana.edu/nsdi/AnalyzingChange-Gain.pdf>
- Hong, Z.-W., Huang, Y.-M., Hsu, M., & Shen, W.-W. (2016). Authoring robot-assistad instructional materials for improving learning performance and motivation in efl classrooms. *Educational Technology & Society*, 19(1), 337-349. Retrieved From://pdfs. Semantic scholar. Org/7bc8/6633b65fed9b67c7282ff61937acd55dd4e1.pdf.
- Hunt, P. (1999). *Understanding childrenis Literature*. London: Routledge
- Jalongo, M. R. (2007). *Early childhood language arts*. New York: Person Education, Inc.
- Johnson, R. B., & Christensen, L. (2014). *Educational Research: Quantitative, Qualitative, and Mixed Approaches (5th ed.)*. California: Sage Publication, Inc.
- Lillard, A.S. (2005). *Montessori: The science behind the genius*. New York: Oxford University Press.
- Lillard, A.S. (2018). Rethinking education: montessori's approach. *Association for Psychological Science*, 1-6. doi:<https://doi.org/10.1177%2F0963721418769878>.
- Lynch. (2008). *Using big books and predictable books*. Scholastic: Canada Ltd.
- Machado, Jeanne. M. (2013). *Early Chilhood Experience in Language Arts: Early Literacy*. USA: Wadsworth Cengage Learning.
- Morgan, P. L., Fuchs, D., Compton, D. L., Cordray, D, S., Fuchs, L.S. (2008). Does early reading failure decrease children's reading motivation?. *Journal of Learning Disabilities*. 41 (5). Retrieved From: <http://doi.Org/10.1177/002221940832112>.

- Montessori, M. (2002). *The Montessori method*. New York: Dover Publications.
- Morris, D., Trathen, W., Gill, T., Schlagal, R., Ward, D., Frey, E, M. (2017). Assessing reading rate in the primary grades (1-3). *Reading Psychology*, 38 (7), 653-672. Retrieved From: <http://dx.doi.org/10.1080/02702711.2017.1323057>.
- Morrison, G, S. (2012). *Fundamentals of early childhood education*, 5<sup>th</sup> edition (terjemahan). Jakarta: Indeks.
- Murdoch, A., Patton, J., & Sparks, L.R. (2014). Early reading succes and its relationship to reading achievement and reading volume: replication of ' 10 years later'. *Sringer*, 27, 289-211. doi: <http://dx.doi.org/10.1007/s11145-013-9439-2>.
- Normaliza, A.R & Nik, I.H. (2010). Student's perception towards the usage of the big book. *Gading Business and Management Journal* Vol. 14.
- Qian, M., & Clark, K. R. (2016). Game based learning and 21st century skills: a review of recent research. *Computers in Human Behavior*, 63, 50-58. <https://doi.org/10.1016/j.chb.2016.05.023>.
- Rathunde, K. (2003). A Comparison of Montessori and traditional middle schools: Motivation, Quality of Experience, and Sosial context. *The NAMTA Journal*, 28(3), 13-46.
- Sansone, C & Harackiewicz, J.M. (2000). *Intinsic and extinsic motivation*. London: Academic Press.
- Santrock, J.W (2011). *Educational psychology*. New York: McGraw-Hill.
- Schroeder , J.L.,& Mallett, J.D. (2014). Academic achievment outcomes: a comparison of montessori and non montessori public elementary school students. *Journal of Elementary Education*, 25 (1), 39-53. Retrieved from [pu.edu.pk/images/journal/JEE/PDF...?3\\_v25\\_nol\\_15.pdf](http://pu.edu.pk/images/journal/JEE/PDF...?3_v25_nol_15.pdf).
- Shin, S., Lee, J. K., & Ha, M. (2017). Influence of career motivation on science learning in Korean high-school students. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(5), 1517-1538. Retrieved from: <https://doi.org/10.12973/eurasia.2017.00683a>
- Solheim,O.J., Uppstad, P.H., & Walgermo, B.R. (2018). Developmental dynamics of early reading skill, literacy iterest and readers' self-concept within the first year of formal schooling. *Reading and Writing*, 31 (6) 1379-1399. Retrieved from <https://link.springer.com/article/10.1007/s11145-018-9843-8>
- Stack, M. H., Moorefield-Lang, H., & Barksdale, M. A. (2015). Able: an instrument for assessing elementary students' perceptions of access to books, beliefs, and literacy environment. *Reading Psychology*, 36(6), 499-518. Retrieved From: <tps://doi.org/10.1080/02702711.2014.893275>.
- Stricland, D.S., Galda, L., Cullinan, B.E. (2004). *Language arts: learning and teaching*. USA: Wadsworth/Thomson Learning.
- USAID. (2014). *Prioritizing Reform, Innovation, and Opportunitiesfor Reaching Indonesia's Teachers, Administrators*. Indonesia: Research Triangle Park, NC 27709-219
- Veermand, K. (2003). *Intelligent support for discovery learning intelligent support for discovery learning*. Enschede: Twente University Press.
- Walker, K, E. (2015). Preschool teachers' constructions of early reading. *Texas Journalof Literacy Education*. 3 (2), 89-100. Retrieved From: <https://files.eric.ed.gov/fulltext/EJ11110948.pdf>.