



## Web-Based Application to Measure Motoric Development of Early Childhood

Daviq Chairilisyah<sup>1</sup>  
*Universitas Riau, Indonesia*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.01>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** Parents and early childhood educators still find it difficult to find ways to self-identify children's motor development, there needs to be innovation that measures motoric development can be easily used by parents. The purpose of this study is to identify indicators of motor development in early childhood, make measuring instruments, and create a web-based measurement application. This Research and Development methodology uses mix method data analysis. This research is located in Indonesia with a sample of 590 participants. The results of the study show that valid and reliable measurement instruments for motoric development from the results of testing as many as 97 indicators are considered high value. Applications made by Information Technology experts to produce a systematic performance measurement system, making it easier for users, teachers / parents who are famous to get the results of the examination quickly and accurately. The implications of research are expected to be able to build a measuring device with the application of technology that is more developed in aspects of child development in addition to motor development, to become a facility for assessing early childhood development that makes it easier for educators to use it.

**Keywords:** Early Childhood, Motoric Development, Web Based Application Instrument.

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media): 2503-0566**  
**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup>Corresponding Author:  
Daviq Chairilisyah  
Universitas Riau, Indonesia  
Email: daviqch@yahoo.com

## 1 INTRODUCTION

Hurlock, (1999) states that motoric development is defined as the development of maturity in controlling the movement of the body and brain as the center of motion. Physical development is very closely related to children's motoric development (Rolina & Muhyidin, 2015). Motoric development is a development of elements of maturity and control of body movements that are closely related to the development of motoric centers in the brain (Helmawati, 2015). Motoric development is the development of controlling physical movement through central activity, with coordinated nerves and muscles. Control comes from the reflections development and future activities that existed at birth. Monnas, (2018) revealed the term motoric development refers to the meaning of physical development, where physical development means that children have achieved a number of abilities in controlling their motoric.

Motor development during infancy and childhood depends on the characteristics of the child's growth and maturity and interaction with the environment in which a child is raised. Opportunities and barriers from the environment in children to move or interact with biological growth and maturation determine children's motor performance. Malina, (2003) provide a brief overview of motor development during infancy and children. Critical evaluation for specific movement patterns; important points of dynamic system work; proving genotype of motor development; metabolic and physiological motor development; looking for a relationship between motor development and brain growth, postnatal birth and growth status; and look for the social context of motor development. Motor development and early childhood are preferred over the characteristics and environment of the child. Motorcycle development is a plastic process. Variations in the order, time and tempo of development and level of expertise are related to various biological factors (genotypes, body size and composition, metabolism) and environment (special practices, atmospheric maintenance, maintenance of the atmosphere, playing opportunities and objects) that interact dynamically. Children are also dynamic beings and, in many ways, choose how they want to interact with certain environments even when faced with opportunities or certain environmental stimulation, for example when they are asked to dance. Research findings suggest specific contributions of these factors and their interactions with variations in motor development during infancy and early childhood need to be established in more complex research designs.

According to Richard, (2013) gross motoric is a body movement that uses large or most muscles or all body parts that are affected by the maturity of the child itself. Motoric development is the development of controlling physical movements through the activities of coordinated between the nerve centers, nerves, and muscles. The gross motoric is a physical movement that require balance and coordination between members of the body, using large muscles, part or all of the body. Gross motoric development is the development of body movements that use large or most muscles or all parts of the body that are affected by the maturity of the child itself. Actually, the assumption that motoric development will develop automatically with increasing age is a wrong assumption (Ali, 2012). Motoric development in children needs help from parents and educators in early childhood education institutions, from the side of what is helped, how to help appropriately, how the types of exercises are safe for children in accordance with the stages of age and how enjoyable physical motoric activities for a child (Hasnida, 2014). The ability to carry out movements and physical actions for a child is related to self-confidence and the formation of self-concept (Pendidikan, Kebudayaan, & Indonesia, 2014). Therefore, motoric development is as important as other aspects of development for early childhood (Purna & Kinasih, 2015). The fundamentals of motor skills are an important focus for motoric development of early childhood. Barnett et al., (2016) conducted research on Fundamental Motor Skill (FMS) by using peer-reviewed literature

to support perspectives. The result is defining FMS, discussing the context of what skills can be considered fundamental, discussing how the development of these skills relates to the broader health context of development, and recommends the use of different pedagogical approaches when teaching FMS. Research has concluded that FMS promotion is an important focus in Physical Education (PE) and sports and provides future research questions for investigation.

In order to provide appropriate stimulation, parents and educators of early childhood need to identify early levels of child motoric development so that the stimulation given is appropriate (Carson, Collins, & Carson, 2016). It is still difficult for parents and early childhood educators to self-identify children's motoric development (Suyadi, 2014). There needs to be innovation in motor development measurement tools that can be easily used by parents and early childhood educators.

A study of tool assumptions for early childhood shows that physical activity assessment instruments or tools are needed for preschool years to overcome the gap in physical activity research at an early age. Existing physical activity measures are developed for school-age children (3, 7). Without a physical activity assessment tool for the early years of schoolchildren, researchers relied on steps in motor skills to assess physical activity. This approach fails to assess multi-dimensional aspects and a lifetime of physical activity. Then the researchers developed a Tool for Assessment of Preschool Physical Activity (Pre-PLAy) that must be completed by Early Childhood Educators (PAUD) for children aged 18 months until entering TK (around age 4). Pre-PLAy is designed to measure physical activity that assesses the following domains of physical literacy, consistent with the literature: Competence of movements, coordinated movements, motivation, and enjoyment. Knowledge of the importance of physical activity has also been identified as a domain of physical literacy (Cairney et al., 2018).

Based on the background of the above problems, the objectives of this study are: 1) Identifying indicators of motoric development in early childhood based on ages 0-6 years, 2) Making measuring instruments for motoric development for children aged 0-6 years old, 3) Making applications for early childhood motoric development measurement tools Web-based. The benefits of the research expected from the results of this study can facilitate teachers and parents to identify early levels of motoric development in their children and can become scientific references in measuring motoric development in early childhood.

Based on the background and problems above the researcher was interested in conducting research with the title "Create the Applications to Measure the Motoric Development on Early Childhood Web-Based".

## 2 METHODS

The type of Research is Design and Development Research. This study is using a qualitative and quantitative data analysis approach. Analysis of the initial data and the validity of the instrument is using a qualitative approach. This study follows the framework of the research process development model of ADDIE (Analysis, Design, Development, Implementation and Evaluation) (Azwar, 2014).

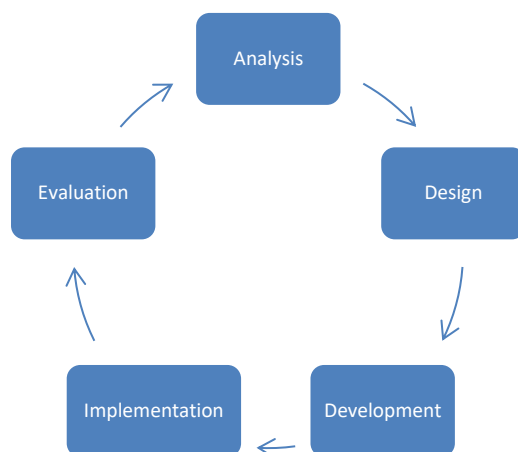
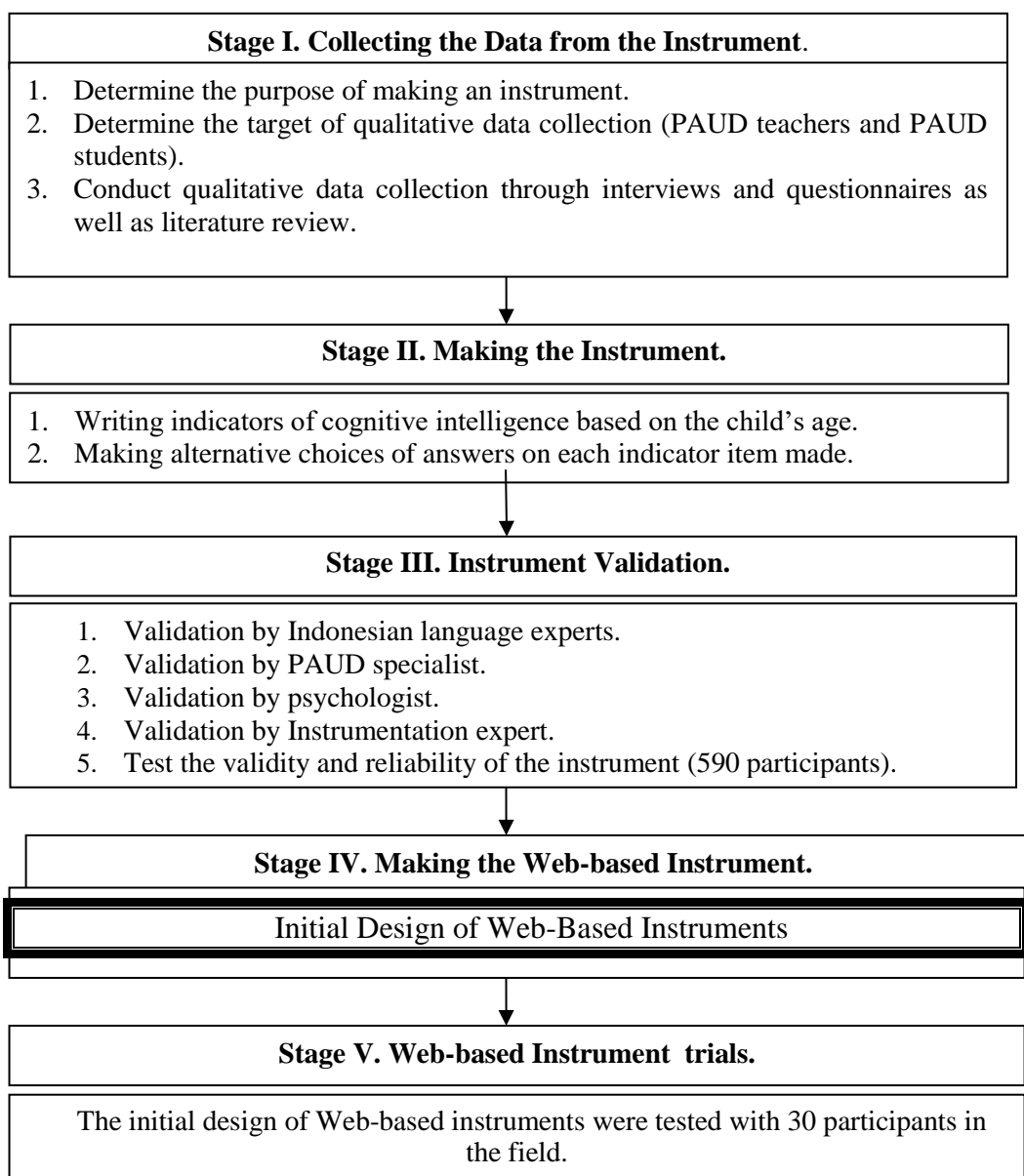


Figure 1. Model framework of the research process for developing the ADDIE model

According to the ADDIE procedure framework model, the procedure of making the motoric development instruments is as follows:



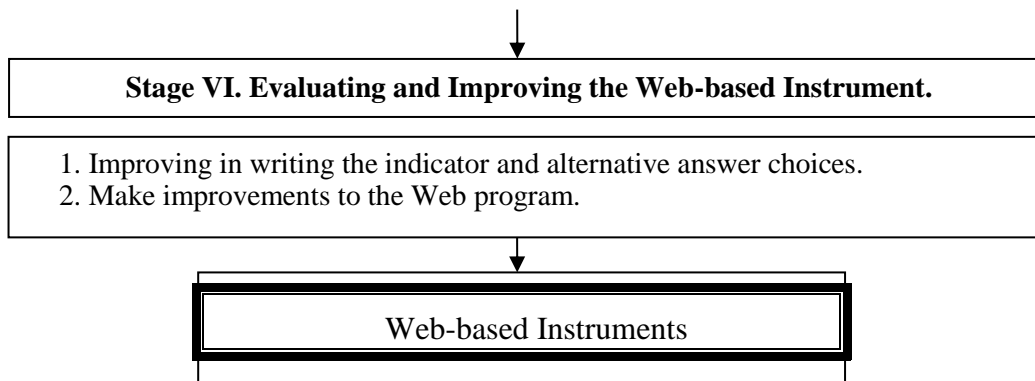


Figure 2. The Framework Process of Making AUD Motoric Development Instrument

The population in this study were all early childhood (Child Care Park, Playgroup, Kindergarten A and Kindergarten B) in Pekanbaru City. The sampling technique uses a quota sampling technique. According to Hiryanto, (2013) quota sampling is a technique for determining samples from populations that have certain characteristics to the desired number (quota). The number of samples of this study is 590 participants.

In order to obtain data in accordance with the subject matter that will be revealed in this research, tools or instruments that reflect the overall indicators to be measured and tested their validity and reliability. Instruments must be well designed to produce empirical data (Sani & Yunus, 2018). To obtain data on indicators of motoric development and the manufacture of motoric development measurement instruments for children aged 0-6 years, the data collection techniques used were observation sheets. Observation is a technique of collecting data with direct observation. Observation is done by observing the motoric development of children aged 0-6 years.

The research instrument was made based on the interval scale with the Likert method. The Likert scale has five alternative answer categories and has interval scores 1-5, but in this study to avoid dubious answers, the values in the middle are omitted so that the intervals are 1-4. The results for the supporting answers from each question were given the highest score, and the results for the answers that did not support were given the lowest score (Santioso, 2016). Then score 1 is given if the motoric development of Undeveloped Children (BB), score 2 is given if the motoric development of Children is Growing (MB), score 3 is given if the child's motoric development develops according to Expectation (BSH), and score 4 is given if the child's motoric development develops the child very well (BSB).

Both qualitative and quantitative data analysis approach were used in this study. Analysis of the initial data and the validity of the instrument is using a qualitative approach. Quantitative statistical approach to measure the validity and reliability of a measuring instrument after being tested on respondents. Explanation of data analysis is as follows:

1. Initial Data Analysis
  - a. Literature Review Analysis.
  - b. Student of Early Childhood Study Program Review Analysis.
  - c. Teacher of Early Childhood Review Analysis.
2. Instrument Validation Analysis
  - a. Validation by Language Expert.
  - b. Validation by PAUD specialist.
  - c. Validation by Psychologist.
  - d. Validation by Instrumentation expert.

e. Statistical Validity and Reliability of the Item.

The Alpha Cronbach formula is used to test the measurements reliability as a whole. To measure the validity of each item and the indicator, Pearson formula is being used.

### 3 RESULT AND DISCUSSION

#### Result

#### 3.1 The Procedure of Making AUD Motoric Instruments

- a. Instrument Data Collection Stage.
- b. Instrument Making Stage.
- c. Instrument Validation Stage.

#### 3.2 Valid and Reliable Instrument Result

Table 1. Data Normality Result

	Tests of Normality					
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Motoric Aspect	.034	590	.093	.996	590	.107

Lilliefors Significance Correction

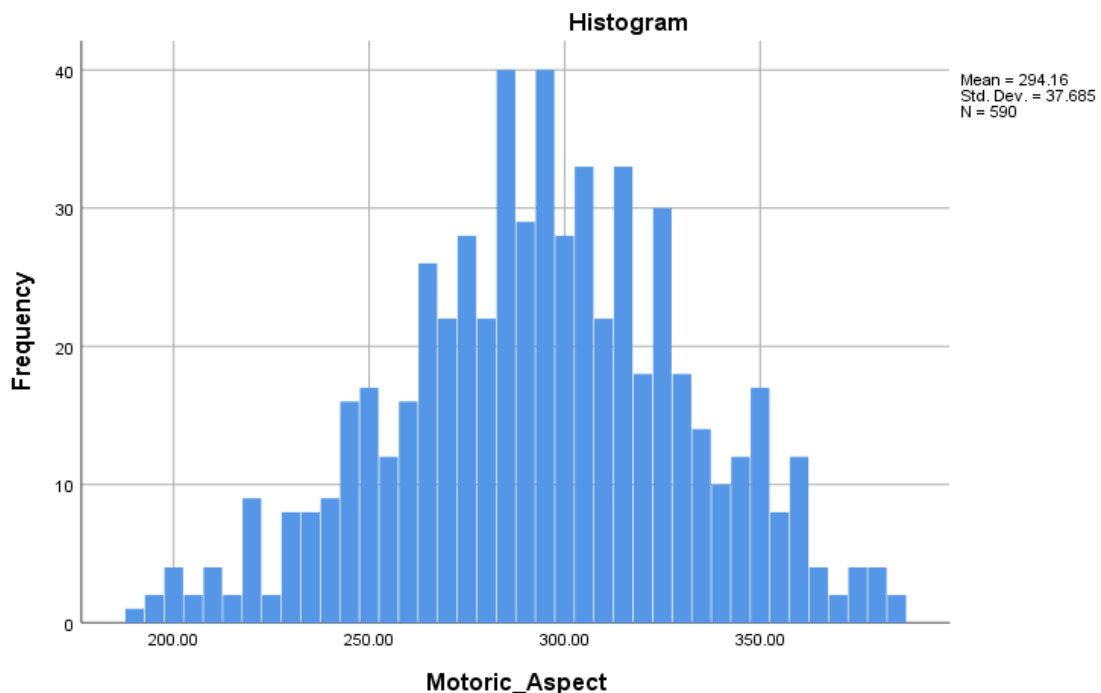


Figure 3. Plot Histogram

From the data normality test result by using Kolmogorov-Smirnov, it was obtained that the variable motoric child development data was in a distribution that had met the normal distribution. Requirements for normal approved data variables in data distribution have a significance > 0.05

(Azwar, 2014). For motor development children have a significance of  $0.093 > 0.05$ . It can be concluded that the variable children's motoric development comes from the normal population at a significance level of 0.05, so that the variables are statistically distributed normally and deserve to be used as research data.

Then, the measurement of the validity of each question indicator and testing the reliability of the instrument as a whole were carried out. The results of the validity test were obtained based on each indicator item measuring the motoric development of children aged 0-6 years based on the table below.

Table 2. Valid and Reliable Indicators of Motoric Development Instruments on 0-6 years Early Childhood

AGE	INDICATOR	VALIDITY
<b>0-3</b>	<b>Gross Motoric</b>	
<b>Months</b>	1. Try to rise his head when being faced down.	0,57
	2. Look to the right and left.	0,82
	3. Tilt to the right and left.	0,65
	4. Rise and hold his head up.	0,72
	<b>Fine Motoric</b>	
	1. Make a grasping reflex when his hand palm being touched.	0,62
	2. Play hand and foot's fingers.	0,57
	3. Put finger into his mouth.	0,61
	4. Hold things or toys.	0,68
AGE	INDICATOR	VALIDITY
<b>3-6</b>	<b>Gross Motoric</b>	
<b>Months</b>	1. Lay on his stomach with appointed chest and with two hand supported.	0,56
	2. Sit with help.	0,79
	3. Rise both of his feet when being lay down.	0,63
	4. Held his head up while sitting with help.	0,49
	<b>Fine Motoric</b>	
	1. Hold things with his 5 fingers.	0,72
	2. Play things with hand.	0,56
	3. Grab the thing in front of him.	0,71
AGE	INDICATOR	VALIDITY
<b>6-9</b>	<b>Gross Motoric</b>	
<b>Months</b>	1. Lay down back and forth without any help.	0,68
	2. Grab the reachabel thing.	0,76
	3. Hit, throw, or drop things he holds.	0,83
	4. Crawl all over the place.	0,54
	5. Sit without help.	0,61
	6. Stand while being held.	0,74
	<b>Fine Motoric</b>	
	1. Hold thing with his tumb and index finger (pinch).	0,65
	2. Ruple the paper.	0,73
	3. Transfer one thing from one hand to another.	0,82
AGE	INDICATOR	VALIDITY
<b>9-12</b>	<b>Gross Motoric</b>	
<b>Months</b>	1. Stand without being held.	0,53

2. Walk by holding into something..	0,73
3. Walk into some steps with help.	0,65
4. Clap while jump.	0,49
<b>Fine Motoric</b>	
1. Place food he holds into his mouth.	0,72
2. Scratch his head.	0,64
3. Hold small thing and thin (for example: piece of puzzle or paper).	0,75
4. Transfer things from one hand to another.	0,56

AGE	INDICATOR	VALIDITY
<b>12-18 Months</b>	<b>Gross Motoric</b>	
	1. Walk few steps without any help.	0,61
	2. Go up and down the stairs or higher place by crawling.	0,72
	3. Can rise from sitting.	0,87
	4. Do a kick the ball motion.	0,51
	5. Roll all over the place	0,58
	<b>Fine Motoric</b>	
	1. Make free sketch.	0,85
	2. Stack up 3 cubes.	0,69
	3. Hold his glass with 2 hands.	0,84
4. Put things into a container.	0,74	
5. Spill things from the container.	0,49	

AGE	INDICATOR	VALIDITY
<b>18- 24 Months</b>	<b>Gross Motoric</b>	
	1. Walk by his own without fall down.	0,62
	2. Jump in place.	0,79
	3. Go up and down the stairs or higher place with help.	0,74
	4. Walk few steps back.	0,65
	5. Pull and push light things.	0,53
	6. Throw the ball to the front without losing balance.	0,72
	7. Kick the ball to the front.	0,69
	8. Stand with one leg for one or two seconds.	0,76
	9. Do a squat.	0,71
<b>Fine Motoric</b>		
1. Make a vertical and horizontal line.	0,59	
2. Flip the book pages eventhough it's not perfect yet.	0,62	
3. Tear up the paper.	0,63	

AGE	INDICATOR	VALIDITY
<b>2-3 Years</b>	<b>Gross Motoric</b>	
	1. Walk while tiptoeing.	0,67
	2. Jump to the front and back with two legs.	0,53
	3. Throw and catch ball.	0,85
	4. Dance by following the rhyme.	0,61
5. Go up and down the stairs or higher/lower place by holding onto something.	0,75	



**Fine Motoric**

- |   |      |
|---|------|
| 1. Rumble the paper or fabric by moving all 5 fingers.                                | 0,57 |
| 2. Fold fabric/paper eventhough it's not perfect yet.                                 | 0,65 |
| 3. Cut the paper without any pattern.   | 0,62 |
| 4. Finger,s coordination is good enough to hold flat things like toothbrush or spoon. | 0,85 |

AGE	INDICATOR	VALIDITY
<b>3-4 Years</b>	<b>Gross Motoric</b>	
	1. Run while brings something light (ball).	0,48
	2. Go up and down the stairs or higher place by using alternately leg.	0,75
	3. Walk on the pretty wide board.	0,63
	4. Jump down from the height less than 20cm (below the height of children's knee).	0,57
	5. Mimick simple calisthenics motions such as tree motion, bunny hoping	0,65
	6. Stand with one leg.	0,62
	<b>Fine Motoric</b>	
	1. Pour water, sand, or seeds into a container (bowl, bucket)	0,79
	2. Put small things into a bottle (stick, pebble, seed).	0,57
	3. Lacing with pretty big thing.	0,63
	4. Cut the paper by following a straight line pattern.	0,68

AGE	INDICATOR	VALIDITY
<b>4-5 Years</b>	<b>Gross Motoric</b>	
	1. Mimick the animal motions, the tree blown away by the wind, airplane.	0,63
	2. Do a hang motion.	0,61
	3. Do a jumping motion, and running coordinately.	0,53
	4. Throw things directedly.	0,51
	5. Catch things precisely.	0,83
	6. Do the anticipation motion.	0,66
	7. Kick something directedly.	0,54
	8. Use toys outside of class.	0,66
	<b>Fine Motoric</b>	
	1. Make a vertical, horizontal, left/right curve, turn left/right and circle.	0,84
	2. Copy a pattern.	0,61
	3. Coordinate between eye and hand to do complicated motion.	0,69
	4. Do a manipulative motion to produce a pattern by using some medias.	0,54
	5. Express himself by doing an art by using some medias.	0,59
	6. Control the hand movement by using fine muscle (pinch, stroke, poke, clench, twist, entwine and squeeze).	0,72

AGE	INDICATOR	VALIDITY
<b>5-6 Years</b>	<b>Gross Motoric</b>	
	1. Do coordinated body movement to train the flexibility, balance and agility.	0,59
	2. Do coordinated eye-feet-hand-head movement in mimicking a dance or calisthenics.	0,58
	3. Do physical game with rule.	0,64

4. Good at doing left or right hand.	0,75
5. Do a self sanitary activity.	0,68
<b>Fine Motoric</b>	
1. Draw according to his idea.	0,79
2. Mimick a pattern.	0,53
3. Do some exploration with various media and activity.	0,71
4. Use stationary and cutlery right.	0,65
5. Cut the paper according to the pattern.	0,58
6. Stick the picture precisely.	0,66
7. Express himself through doing drawing motion precisely.	0,77

---

### 3.3 Making Web-based instruments

The research instrument containing indicators of measuring instruments that are valid and reliable from the results of testing directly to 590 participants of early childhood from the age of 0-6 years will be included in the Web program. The Web program is made by Information Technology experts to be able to produce a systematic performance measurement tool, making it easier for users and can make it easier for teachers/parents to get results quickly and accurately. The following are some of the displays of the dialog box in the Web-based motoric measuring instrument that has been created.

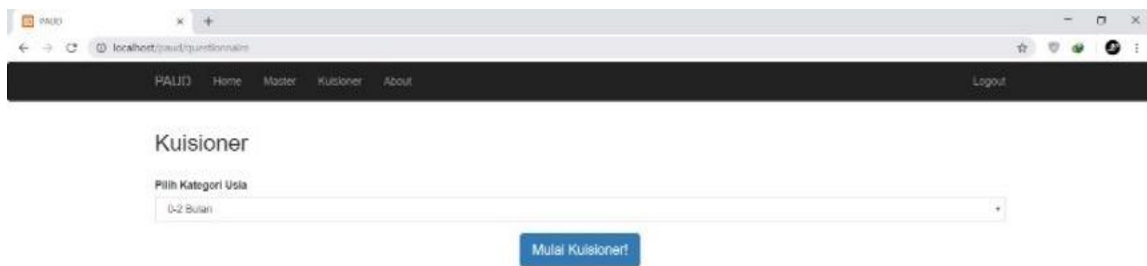


Figure 4. The Web Display of the AUD's Motoric

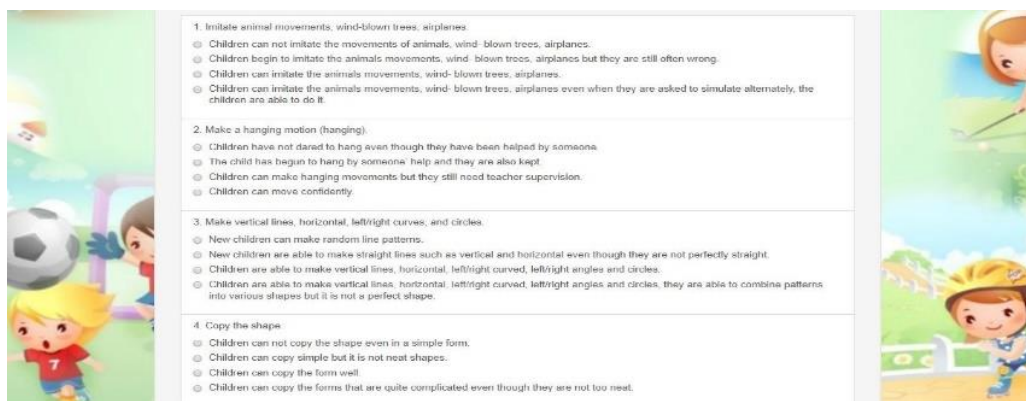


Figure 5. The Web Display of the Motoric Instruments' Test of AUD

Item validation will use the validity for each item and also reliability for the overall measuring instrument. Validation of validity and reliability of this measurement tool was obtained after

researchers conducted a direct trial of children aged 0-6 years from various levels of PAUD education. According to Hiryanto, (2013) quota sampling is a technique for determining samples from populations that have certain characteristics to the desired number (quota) namely: Child Care Park, Play Group, Kindergarten A and Kindergarten B. The results obtained from the trial of the instrument are then measured by using statistical methods to obtain valid items and reliable measuring instruments as a whole. Validity values above 0.44 are considered valid items (Azwar, 2014). While the overall value of the reliability of the measuring instrument is at a value of 0.82, where this value is in the good category for a measuring instrument (Sani & Yunus, 2018). Based on the results of the validity test, the alpha value for each indicator below 0.44 will then be discarded and cannot be used as a valid indicator of measuring instruments. While an alpha value of more than 0.44 will then be validated to be a valid indicator of measuring instruments (Richard, 2013). The results obtained indicate that as many as 150 indicators are considered to have a high value of validity to measure cognitive intelligent of early childhood at the age of 0-6 years. The research instrument containing indicators of measuring instruments that are valid and reliable from the results of testing directly to 590 participants of early childhood from the age of 0-6 years will be included in the Web program. The Web program is made by Information Technology experts to be able to produce a systematic measurement tool for motor skills, making it easier for users and easier for teachers or parents to get measurement results on children's motor skills quickly and accurately.

### *Discussion*

Measuring and assessing aspects of children's motor development is needed to see the target of achieving motoric abilities of children. Application of measurements to assess motoric development of children will be easier if related to technology. The research findings in product validation measuring the motoric development of children is very high, this can be seen from the results obtained indicate that as many as 150 indicators are considered to have high validity values to measure motoric competence of early childhood at the age of 0-6 years.

The findings of this study are supported by research conducted by Rao et al., (2018) that the scale of the East Asia-Pacific Early Childhood Development is the first attempt to create developmental assessment tools based on various cultures and values from various countries in the world region. Scales were given to a representative sample of 7757 children (3869 girls), ranging in age from 36 to 71 months, from Cambodia, China, Mongolia, Timor-Leste, Papua New Guinea, and Vanuatu. The results illustrate similarities and variations in the trajectory of early child development in all contexts. that developmental measurement tools for early childhood are urgently needed including indicators of development that have been validated and appropriate measurement tools and supporting applications to be able to apply measurement of children's abilities easily.

Similarly, research developed by Griffiths, Toovey, Morgan, Spittle, & Pe (2018) aimed at developing a gross motor assessment tool that has an important role in identifying, diagnosing, and evaluating motor difficulties in childhood. The aim of this review is to systematically evaluate psychometric properties and clinical utility of gross motor assessment tools for children aged 2–12 years. Methodological quality varies from poor to very good. The conclusion of the results of the study is that the majority of gross motor assessment for children has excellent validity. The highest test-retest reliability is BOT-2, MABC-2, PDMS-2 and TGMD-2. Bayley-III has the best predictive validity at 2 years of age for later motoric results. There is no assessment tool that shows good evaluative validity. Further research on evaluative gross motor assessment tools is needed.

Another finding in the development of research is data about the development of child motor variables in distributions that have met the requirements as a normal distribution. The motoric development of children has a significance of  $0.093 > 0.05$ . Based on the results of the validity test as many as 97 indicators are considered to have high value. Valid and reliable instruments of research results from the test results, then included in the Web program. This high validation instrument can be used by early childhood educators to measure the motoric development of children in different, fast and accurate ways given the importance of the accuracy of assessment for early childhood so that it can be used as a reference for evaluating children's motoric development, whether it requires more specific stimulation to overcome problems in children's motoric development. Because the motoric development of children is important for their future physical development.

The following is a Loprinzi, Davis, & Fu (2015) aimed at the effectiveness of physical communication (PA) during childhood needed for a better understanding of roles as adults. The researcher proposes a conceptual model that illustrates the influence of the hypothesis of developing motor skills on physical activity of children and adults, while providing an overview of current empirical research related to this model. The results showed consistent and emerging evidence that showed that adequate motor skills competencies, especially gross motor and motor skills, were associated with increased levels of physical activity during preschool, child and adolescent years, with the development of early motor skills also affecting physical activity. The arrangement of physical education seems to be a suitable environment for the development of motor skills. Applying the right strategies to target the development of motor skills in childhood is very important in helping shape the behavior of children's PA, their experiences related to PA, and maintaining their PA.

The findings in the development of the study found that data on the development of motor child variables in the distribution that had met the normal distribution. The motoric development of children has a significance of  $0.093 > 0.05$ . Based on the results of the validity test as many as 97 indicators are considered to have high value. Valid and reliable instruments of research results from the test results, then included in the Web program. This high validation instrument can be used by early childhood educators to measure the motoric development of children in different, fast and accurate ways given the importance of the accuracy of assessment for early childhood so that it can be used as a reference for evaluating children's motoric development, whether it requires more specific stimulation to overcome problems in children's motoric development. Because the motoric development of children is important for their future physical development.

#### 4 CONCLUSION

Based on the results of the research that has been done, the conclusions are:

This study succeeded in determining 97 indicators of motor development in early childhood based on ages 0-6 years. At the age of 0-1 years consists of 30 indicators, ages 1-2 years consist of 22 indicators, ages 2-3 years consists of 9 indicators, ages 3-4 years consists of 10 indicators, ages 4-5 years consists of 14 indicators and 5-6 years old consists of 12 indicators. The results of this instrument will be in the form of reports on children's motoric development profiles, children's identity and suggestions for development for children that can be printed out directly through the Web using the internet. This measuring instrument is also equipped with assessment rubrics that are very detailed and based on real behavior in children so that respondents will be easier in choosing answers.

The contribution of this research this measuring instrument is made based on a Web program, so that it is expected that every parent at home or teacher at school can do it, does not need to go to a child expert or Psychology expert directly because it may be constrained by time, distance, personal busyness, or costs.

This motoric development measurement tool uses a scoring system based on the assessment observations by parents or teachers in schools based on the age of the child. Apart from that, this measuring instrument is equipped with suggestions for improvement for children if the child has weakness or lacks normal motor development.

## 5 REFERENCES

- Ali, A. (2012). Persepsi guru terhadap penggunaan kurikulum berasaskan bermain bagi aspek perkembangan bahasa dan literasi murid prasekolah. *Malay Language Education Journal (MyLEJ)*, 2(1). Retrieved from [https://www.researchgate.net/publication/327953978\\_Persepsi\\_guru\\_terhadap\\_penggunaan\\_kurikulum\\_berasaskan\\_bermain\\_bagi\\_aspek\\_perkembangan\\_bahasa\\_dan\\_literasi\\_murid\\_prasekolah](https://www.researchgate.net/publication/327953978_Persepsi_guru_terhadap_penggunaan_kurikulum_berasaskan_bermain_bagi_aspek_perkembangan_bahasa_dan_literasi_murid_prasekolah)
- Azwar, S. (2014). *Reliabilitas dan Validitas Edisi 4*. Yogyakarta: Pustaka Pelajar.
- Barnett, L. M., Stodden, D., Miller, A. D., Cohen, K. E., Smith, J. J., Dudley, D., ... Morgan, P. J. (2016). Fundamental Movement Skills : An Important Focus Only Leads to a Limited Number, 219–225.
- Cairney, J., Clark, H. J., James, M. E., Mitchell, D., Dudley, D. A., & Kriellaars, D. (2018). The Preschool Physical Literacy Assessment Tool : Testing a New Physical Literacy Tool for the Early Years, 6(June), 1–9. <https://doi.org/10.3389/fped.2018.00138>
- Carson, H. J., Collins, D., & Carson, H. J. (2016). The fourth dimension : A motoric perspective on the anxiety – performance relationship The fourth dimension : A motoric perspective on the anxiety – performance relationship, 9858(February), 0–21. <https://doi.org/10.1080/1750984X.2015.1072231>
- Griffiths, A., Toovey, R., Morgan, P. E., Spittle, A. J., & Pe, M. (2018). Psychometric properties of gross motor assessment tools for children : a systematic review, 1–14. <https://doi.org/10.1136/bmjopen-2018-021734>
- Hasnida. (2014). *Analisis Kebutuhan Anak Usia Dini*. Jakarta: Luxima.
- Helmawati. (2015). *Mengenal dan Memahami PAUD*. Bandung: PT Remaja Rosdakarya.
- Hiryanto. (2013). *Pemetaan Tingkat Pencapaian Mutu Program Pendidikan Anak Usia Dini (Paud) Di Propinsi DIY*. Yogyakarta. Retrieved from [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjP37f67OvhAhWQfn0KHerYAYYQFjAAegQIAxAC&url=http%3A%2F%2Fstaffnew.uny.ac.id%2Fupload%2F132049754%2Fpenelitian%2Fartikel.Pemetaan%2BTingkat%2BPencapaian%2BMutu%2BPAUD.pdf&usg=AOvVaw2rOeU\\_uBESC0jA7yMQGkDc](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjP37f67OvhAhWQfn0KHerYAYYQFjAAegQIAxAC&url=http%3A%2F%2Fstaffnew.uny.ac.id%2Fupload%2F132049754%2Fpenelitian%2Fartikel.Pemetaan%2BTingkat%2BPencapaian%2BMutu%2BPAUD.pdf&usg=AOvVaw2rOeU_uBESC0jA7yMQGkDc)
- Hurlock, E. B. (1999). *Perkembangan Anak Jilid I*. (Erlangga, Ed.). Jakarta.
- Loprinzi, P. D., Davis, R. E., & Fu, Y. (2015). Early motor skill competence as a mediator of child and adult physical activity Early / Middle Childhood. *PMEDR*, 2, 833–838. <https://doi.org/10.1016/j.pmedr.2015.09.015>
- Malina, R. M. (2003). Motor Development during Infancy and Early Childhood : Overview and Suggested Directions for Research. *International Journal of Sport and Health Science*, 2(5), 50–66. Retrieved from <http://www.soc.nii.ac.jp/jspe3/index.htm>

- Monnas, L. B. (2018). Insight stories : Looking into teacher support in enhancing scientific thinking skills among pre-school students. *Journal of Educational Sciences.*, 2(1), 19–25. Retrieved from <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwj5gbmw7uvhAhXG7XMBHSJsCQUQFjAAegQIAxAB&url=http%3A%2F%2Fjournal.unri.ac.id%2Findex.php%2FJES%2Farticle%2Fdownload%2F4892%2F4615&usg=AOvVaw1iPo6H265h7U4V789iWiUY>
- Pendidikan, M., Kebudayaan, D. A. N., & Indonesia, R. Peraturan Menteri Pendidikan Dan Kebudayaan Republik Indonesia Nomor 137 Tahun 2014 Tentang Standar Nasional Pendidikan Anak Usia Dini (2014).
- Purna, R. ., & Kinasih, A. S. (2015). *Psikologi Pendidikan Anak Usia Dini*. Jakarta: PT. Indeks.
- Rao, N., Sun, J., Richards, B., Weber, A. M., Sincovich, A., Darmstadt, G. L., & Ip, P. (2018). Assessing Diversity in Early Childhood Development in the East Asia-Pacific.
- Richard, D. (2013). *Aplikasi Teori Pembelajaran Motorik di Sekolah*. yogyakarta: Diva Press.
- Rolina, N., & Muhyidin. (2015). Metode & Media Pembelajaran (jilid 4). In *Ensiklopedia Pendidikan Anak Usia Dini*. yogyakarta: Pustaka Insan Madani.
- Sani, N. A., & Yunus, F. (2018). Amalan Perancangan , Pelaksanaan dan Pentaksiran dalam Proses Pengajaran dan Pembelajaran Pranumerasi di Tadika Swasta. *Jurnal Pendidikan Malaysia*, 43(2), 101–110. <https://doi.org/http://dx.doi.org/10.17576/JPEN-2018-43.02-10>
- Amalan
- Santioso, L. . (2016). *Tes Minat dan Bakat Anak*. Jakarta: Penebar Swadaya Group.
- Suyadi. (2014). *Manajemen PAUD (TPA-KB-TK/RA)*. yogyakarta: Pustaka Pelajar.



## Whole-Language Approach: Improve the Speaking Ability at Early years School Level

Gusti Yarmi<sup>1</sup>  
*Universitas Negeri Jakarta, Indonesia*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.02>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** The purpose of this study was to find out the information whether the whole language approach can improve the speaking ability for third-grade students' elementary school. The subjects of this study were 22 of the third-grade students of elementary school Rawamangun, East Jakarta. The method of the study was action research conducting using model of Kemmis and Taggart. Data collection and analysis using data triangulation techniques. The results of the study show that speaking ability is one of the important skills used to communicate so it needs to be developed for grade 3 elementary school students. The result showed that the whole language approach can be applied as a method in improving students' speaking ability for third-grade elementary school. Therefore, teachers need to develop a whole language approach to language learning. So that it, can improve students' speaking ability.

**Keywords:** Elementary student 1<sup>st</sup> grade, Speaking ability, Whole language approach

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media): 2503-0566**  
**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup>Corresponding Author:  
Gusti Yarmi  
Universitas Negeri Jakarta  
Jln Rawamangun Muka. Jakarta Timur, Indonesia  
Email: gyarmi@unj.ac.id

## 1 INTRODUCTION

One of the language skills is speaking. Speaking helps students transfer and share the information, asking questions, conduct the ideas, tell stories and communicate with others effectively and efficiently. When we talk about speaking, it is not just to say words through the mouth. But it means delivering and conducting the message through words from the mouth. As the study of Leong & Ahmadi (2017) phase that the issue of speech is often overlooked in some classes by teachers. So, students do not have enough chances to talk either in the classroom or outside. This ability must be practiced to students. It is important for teachers to be aware of the stages of language development that their students are going through. This awareness includes developing an understanding of mental and behavioral attributes related to each stage of student speech development, as well as an understanding of the physical and psychological needs of students. The teacher has two jobs at the development stage, the first is caring for and protecting students, both physically and mentally, and the second is giving developmental stimulation instructions (Nunan, 2018).

This situation was also found in the classroom which this language skill has not been taught and explored completely by teacher at schools. Based on the observation of the learning process at SDN Rawamangun 11 East Jakarta, the researcher found that Indonesian language learning in the classroom was not taught completely combined. The result of learning process only set up to the competence in reading, writing, and counting than the ability to speak. The approach used is generally using a teacher-centered approach, so that, when the students were in the learning process, they get bored and didn't excite. In addition, the student's learning position does not change. Students sit facing to the board so that learning tends to be monotonous. Teacher used conventional method and do not give any chances for the students to interact with his or her friends.

The method used by the teacher is classical method, so that the students were only more stimulated in their listening skill. This result made students' language development is not well increased. It can be seen when students are asked to express an opinion, only certain students who dare to speak. Similarly, in asking question, only certain students who did. The same thing occurred when they were in a discussion group, some of the students were silent, some of them were busy with their selves, and they didn't take part in the discussion. Furthermore, there were 3rd graders who didn't dare speak at all. Mastery of public speaking is a competency that is needed in elementary school. Strangely, however, systematic research on increasing public speaking competencies among elementary school children is still scarce. To overcome this gap, Herbein et al., (2018) in her research developed and evaluated training in public speaking for elementary school children. Training, extracurricular enrichment program, consists of 12 units which include speaking anxiety, nonverbal communication, and completeness. Repeated randomized controlled trials (N = 65 elementary school children) were used to investigate the effects of training on public speaking skills and speaking anxiety. The dependent variable is assessed through self-assessment (the level of public speaking skills, speaking anxiety) and the video rating of public speech (suitability of public speaking skills). The findings reveal the effects of positive training on overall public speaking skills: children who are active in the training produce more appropriate speech skills in terms of nonverbal skills and speaking management but do not affect speaking anxiety.



Based on the problems described above, researcher tried to conduct a research to overcome the existing problems in SDN Rawamangun 11, East Jakarta by using an effective learning approach that combines all skills in language learning (listening, speaking, reading, and writing). The appropriate learning approach that researcher found to solve this problem was by applying an integrated language approach (whole language). Because, according to Moghadam & Adel (2011) the important one of teaching and learning objective is to build up the communicative competence of the students. They also stated that a whole language approach combined all the skills which are treated in a more interconnected manner.

In the same opinion, whole language approach is a complete approach in improving students' competence in language learning, especially students' speaking competence. The Whole language approach advocated by some experts, such as Goodman (1986), Weaver, (1990), Schwarzer, (2001). They agreed that the function of language (both oral and writing) is to serve the authentic purposes. It means, both oral and written functions in communication are supposed as a meaningful and important facilitator that has some purposes. To overcome that unexpected situation, the researcher found that a whole language approach can be one of the language approach method that appropriate for students and enable them in language learning goals. Whole language was declared by some authors such as Goodman, (1986) stated that whole language is a philosophy of language learning instead of specific teaching strategy. It means that whole language is a study of psycholinguistics which examines the human nature in the language learning was a part of philosophy of it.

There is a study of learning to improve speaking skills in early childhood using the whole language method. Phadung, Suksakulchai, & Kaewprapan (2016) investigates the effects of using interactive e-stories for teaching early literacy on word recognition, understanding stories and application stories. The research was conducted in two classrooms in Thailand's southern border province with ethnic minority children at the kindergarten level. The sample consisted of 60 children who used Pattani Malay as a mother tongue, and who had little experience with Thai, the language of instruction in kindergarten classrooms. The experimental class has 30 children who learn with an interactive e-story. The control class has 30 children who study with a paper version of the electronic story. Both groups were taught to use the entire language approach for 45 minutes per day for 8 weeks. This study used the pretest-posttest design on word recognition and story application, and only the posttest design on story comprehension. The results of the study show a positive effect of using interactive stories and presenting alternative methods to encourage the learning of early literacy of ethnic minority children. These results show an increase in children after using interactive e-stories and significant differences in word recognition and story applications.

Other research related to the whole language approach to improve children's language skills conducted by Chen, Cheng, & Chou, (2016) aims to explore the effects of the Curriculum of All Languages on language development and literacy of preschoolers. Researchers design appropriate developmental curricula for preschoolers to guide children to develop language skills and related coping strategies that are appropriate during learning and playing. There were 30 children in this study, and qualitative research methods were applied to collect data, including, observation notes, texts for interview dialogue, children's worksheets and daily life activity plans. Produce findings, that when teachers apply the whole language approach to thematic instruction into routine activities children can improve children's language skills. The language growth of children in reading habits, the introduction of words of the environment, listening, understanding, oral expression,

writing, and the planting of self-confidence, preschool educators and their parents also transforms their old thinking towards an entire language approach and offers support that enough in children's learning. Therefore, some suggestions for development through a whole language approach are proposed for preschool teachers, parents and further research.

Based on the problems mentioned earlier, as well as similar studies that have been carried out but have not been widely carried out in Indonesia, researchers are interested in conducting research to find out information on whether the whole language approach can solve problems in Rawamangun 11 Elementary School, East Jakarta, namely, how speaking skills students can be improved. So, the focus of this research is to improve the speaking ability of low-grade elementary school students by applying the whole language approach. Based on the above problems the researchers formulated the research question: "How to improve speaking skills through the whole language approach to third grade students of Rawamangun 11 Elementary School, East Jakarta? And can applying the whole language approach improve students' speaking abilities in the three classes of Rawamangun Elementary School?"

### *Speaking*

Many definitions of "speaking" that have been stated by some scholars such as Marzuki, Prayogo, & Wahyudi (2016); Saepudin, Sukaesih, & Rusmana, (2018); Seong, (2017); Yegani, (2017). Speaking in general can also be interpreted as a delivery of one's intentions (ideas, thoughts, content) to others by using spoken language so that the intent can be understood by others. The sense of speaking specifically has been expressed by Tarigan & Guntur, (1981, p. 15) that speech is the ability to speak articulation sounds or words to express, convey thoughts, ideas, and feelings. From this quote can be described that speaking that not only involves the child's speech organs but also the psychology because when a child speaks then indirectly, he is expressing himself. It also noted that the speak ability is the ability to express intentions, ideas, and thoughts orally so that can be understood by others. Nunan, (2018) argues, when someone says they know another language, it can automatically be said that they can speak that language. It may be acceptable to claim knowledge about a language based on the ability to read it but this is no longer a problem. For second and foreign language learners, each of the four skills - listening, speaking, reading and writing - presents its own challenges. Speaking, like writing, is a productive skill, which means that students must produce their own language rather than the process language produced by others. Unlike writing, spoken language must be produced in real time, so in most conversational conversations there is almost no time to reflect on what you want to say or how to say it, to mentally practice speech, or edit it. In communicative meetings in real life there is social pressure to produce a word and fear of making mistakes in the conversation.

Ngalimun & Alfulaila (2014, p. 34) noted that the principle of language preparation and literature learning materials in school is alignment. That is, the four language skills (listening, speaking, reading, and writing) are developed together and integrated. It means that language learning should be presented with a whole approach. The purpose of the principle sequence in this language is none other because each language skill is interrelated with each other. Given the importance of informative public speaking skills, even among elementary school children and the lack of available and evaluated interventions or stimulations, Herbein et al., (2018) develops and evaluates enrichment programs to improve speaking skills in children. In particular, they developed a program aimed at fostering informative speaking skills in public elementary school children and they evaluated programs through self-reports and video assessments using randomized controlled trials with repeated measurements.

However, speaking well and successfully requires more than being able to produce understandable speech. The statement must also be in accordance with the social context in terms of the level of formality, politeness, the status of the intended person, and so on. Learners need to know how to use conversation strategies such as indicating their lack of understanding, checking that they are correctly understood, finding ways to express themselves when they do not know the right words, taking turns, adding something relevant to a topic, changing the subject, and so. Finally, they need to know how to make relevant contributions in a coherent way (Nunan, 2018). In addition to the establishment of a good method of learning to speak, can be done by helping students overcome problems in learning to speak. So, teachers need to know the factors that affect their speaking performance. As quoted in the study of Tuan & Mai, (2015) students' speaking performance can be influenced by factors derived from performance conditions (time pressure, planning, performance standards and amount of support Walter, (2010) affective factors (motivation, confidence and anxiety, listening ability and feedback during speech activities (Harmer, 1991).

A study that examines students' self-confidence with speech performance was conducted by T Macintyre, Clément, Dörnyei, & Noels, (2011), they studied the effects of confidence on speech performance. The results show that students' willingness to communicate is partly determined by their self-esteem. Park, Hyesook & Lee, (2014) also examined the relationship between anxieties of student level 2, self-esteem and speaking performance. They concluded that self-confidence significantly affects the performance of students speaking. They stated that if students were more confident, they would have better speaking performance.

According to Weaver (1990, pp. 3–4), whole language is the result from various studies such as the theory of language acquisition, literacy culture, psycholinguistics, developmental and cognitive psychology, anthropology and science education. Therefore, whole-language approach provides new insights in teaching a more intact language because student is taught how to understand language more meaningfully and develop all the language skills such as listening, speaking, reading and writing in a more fun way. Buckingham & Alpaslan (2017) investigates whether learning outside the classroom for early childhood can contribute to increasing the value of speaking skills, and has a positive impact on children's willingness to communicate. Recorded communicative exercises provide speaking practice assignments that are out of sync with the classroom teacher as the children's interlocutors, while the control group receives traditional paper-based training. The contents of the material used in both groups are based on the class syllabus. Comparison of speaking test scores from the control and experimental groups revealed that, over a four-month period, the use of interactive recordings contributed to a significant increase in the oral performance of children assessed. The implementation was very successful in increasing the value of speaking tests of children who initially received lower scores. Subsequent ANOVA analysis revealed that the experimental group showed an increase in their ability to respond confidently with minimal pauses and doubts, although the length of the response did not change significantly. This is one proof that learning using the whole-language method can improve children's speech.

Whole language teaching philosophy emphasized on addition of a huge quantity of picture books, children's songs, children's poems, articles and language games to the thematic activities as children's reading materials. Such reading materials not only helped children to develop sensitivity to words, but also helped them cultivate comprehension of the stories and raise their concentration ability little by little. Other than teacher's reading the picture books, the class also proceeded co-reading for several times. Among the activities, what interested children is Question and Answer (Q&A). The teacher proposed a question for children to search for certain interesting

events or figures in the book, and answer it was in which page. In fact, searching for such answers is a kind of assessment, test, memory, or sensitivity to the images, and invisibly raises their concentration and comprehension abilities. Nunan, (2018) said, in order for effective learning of speaking skills to early childhood, it is very important that the curriculum model, class organization, teaching methods, assignments, and materials must be age-appropriate. This follows from the discussion in the previous section. Children at different stages of development view the world differently and have different abilities. They respond differently, both cognitively and emotionally, to different stimuli and instructions.

According to Goodman (2014, pp. 66–73) there are several characteristics of the whole language approach according to the experts, among others: 1) Whole language is a positive view of the learner, 2) Whole language gives assertion about the role of teacher in learning process, 3) Whole language views language as learning center, 4) Whole language applies a double curriculum. Goodman, (2014, p. 58) also suggests that there are seven characteristics that indicate the whole language class are: Classes that apply whole language full of printed materials, students learn through models or examples, students work and learn according to the level of development, students share responsibility in learning, students are actively involved in meaningful learning, students take risks and free to experiment, students get positive feedback both from teachers and friends. So, for teacher or school whose applied learning with whole language approach when it has been applied those characteristics. Classes are not clean from writing, but students can access books or stationery in the classroom. The teacher should also be a model for students in the language, but also students must be actively involved in learning. In connection with group experience in producing words, especially when this process is led by the teacher. The opportunity to express words verbally for children may be lacking. For example, the words listed on the experience sheet might only come from 6 or 7 children's oral narratives, while others might not have the opportunity to talk about what they think; as a result, the number of people participating in group discussions should not be too large, so that each child has more opportunities to participate in speaking. This is suggested by Chen et al., (216) in the use of a whole language approach for early childhood.

The above opinion is reinforced by other experts on learning strategies using the Whole Language approach. Each approach has its own characteristics because it relates to the purpose of the learning itself. There are some strategies for applying whole-language approaches that support learning conditions so students can develop their language skills increased according to Cambridge Ur, (1996, pp. 184–187); 1) Immersion, 2) Demonstration, 3) Expectation, 4) Responsibility, 5) Employment, 6) Approximation, 7) Feedback. By applied those strategies above supposed whole language learning objectives is achieved.

## 2 METHODS

The study aims to obtain empirical data about speaking activities using the whole language approach that can improve the speaking ability to third grade students of elementary school. The method used is classroom action research. The objective of action research is to improve the effectiveness and efficiency of educational practices. Thus, action research is a way to improve learning practices in the classroom or educational practices in schools. In action research there are two activities that are done simultaneously those are activity of action and activity of research.

Both activities can be performed by the same person or by different people collaboratively. Referring to this opinion the research implementation seeks good cooperation between researcher and elementary school teacher (executor action) and other researcher member (observer of research activity).

The design of the action intervention uses Kemmis and Taggart model (1988). The working procedure according to Kemmis & McTaggart, (1988) is basically a cycle that includes the stages: (a) plan, (b) action, (c) observation, and (d) reflection, then proceed with re-planning, action, observation, and reflection for the next cycle, and so form a spiral process.

The data of action research are 22 of the third-grade students of SDN Rawamangun Jakarta who are following the subjects of Bahasa Indonesia. The role of the researcher in this action research is as the planning leader. As a leader, the researcher conducted an observation on the learning of Bahasa Indonesia session. Then the researcher made the action plan which was discussed with the teacher and other researcher member. Expected action intervention result is considered successful when 80% of the number of students showed improvement in speech by achieving a percentage score of 80.

The action research conducted to know the improvement of speaking ability using whole language approach. Data are divided into two types: (1) data monitoring action (Bahasa Indonesia subject), and (2) research data (third grade students). The action monitoring data is used to control the suitability of the action implementation with the plan. While the research data is data about research variables, namely the ability to speak of third grade students. The collected data is used for analysing the research data to obtain an overview of the speaking ability improvement in Bahasa Indonesia subjects. The research instrument used for the action observation is action monitoring. This instrument is in the form of observation sheets and field notes. While the instrument used to collect research, data is a preferment test instrument or performance for speech skills.

The technique used in capturing the monitoring action data is notes (by using observation). The observation was done directly with assisted using camera and handy-cam. Data collection techniques used to capture research data is a test of students speaking skills (practice). This research uses triangulation technique to validate the data. The triangulation is comparing what the informant with the opinions of others

Research data analysis uses the Miles and Huberman technique, that is: (1) data reduction, (2) data display, (3) conclusion, verification, and reflection. In the data reduction phase, the collected data are described, sorted according to predetermined criteria, selecting relevant data and irrelevant data. At the data display stage, relevant data are presented in the form of tables or diagrams.

### 3 RESULT AND DISCUSSION

#### *Result*

Speaking is one of the most important skills to be developed and improved as an effective means of communication (Leong & Ahmadi, 2017). Research related to speaking skills has been carried out by researchers Abu-Snoubar, (2017); Khodadady & Shamsaee, (2012). The results of the research ability to speak using the whole language approach are as follows.

### 3.1 Cycle I

In cycle 1, 2 meetings were held. At the first meeting students are divided into several groups. After conducting the initial learning activities, the teacher demonstrates and gives each group a picture story of "Ruri and Ayu's friendship". The teacher gives 10 minutes for each group member to read the story in turns and other friends listen to the story.

Next the teacher invited the students to give comments about the attitude of the characters. To stimulate students' speaking and thinking skills, teachers ask some questions. The question posed is "what do you think about the people characters in the story". Some students give their opinion about the story. The teacher questions are challenging questions, meaning that they can develop students' speaking skills.

Activities continued by playing games to install puzzle pieces of images about stories that have been read. Before playing the puzzle, teacher asks the students to carefully observe the series pictures that are in the story (7 images with different backgrounds). The teacher asks the students to pay close attention and memorize the story background of each picture because the puzzle game is related to retelling the story background of the image in the story. The teacher asks the students to close the stories book leads the puzzle game. Each group must work together to construct the puzzle, after that each group must retell the background of the story from the drawing that has been compiled intact.

The second meeting takes place on the day of Art. Activity begins with the teacher allowing each student to select one of the books he likes with variety of books such as: Science books, Mathematics, Civics, arts, dictionaries and other books. The teacher gives students the freedom to read and understand the topics they love from the book provided. After 10 minutes, the teacher gives the students a chance to retell the content of their reading by using their own words. In an activity of retelling the content of reading, the teacher will observe the courage aspect of the students to find out who the students dare to speak.

At the time of action (learning process) with the observer and at the end of the cycle carried out an assessment of students' speaking ability. Based on observational records at the time of learning activities and by assessing students' speaking skills, the research team conducted discussions and evaluations. In this regard, it aims to know the extent of improvement of students' speaking skill. The acquisition of speaking value in cycle I as follows:

Table 1 Students' speaking score in cycle I

No.	Score	Number of students	Percentage
1.	$\geq 80$	3	13%
2.	$< 80$	19	87%
Total		22	100,00%

Based on the table 1, the students' score in speech is still low, the students who get  $\geq 80$  score reaches only 3 people or 13% from all students. Based on the acquisition value in cycle I, it can be concluded that: (1) the ability of students in speaking is still low. Thus, classroom action research needs to be continued into the next cycle to meet the expected target.

### 3.2 Cycle II

Action planning in cycle II is prepared based on problem to be solved, that is effort to improve speech ability to student. Based on the analysis and reflection on the results of cycle I then made some improvement on the action in cycle II. The first meeting of cycle II was conducted on November 24, 2014. At this cycle II, the teacher conditioned the class to be ready to learn, to tidy up the seat, and check the attendance. Furthermore, teachers convey the purpose of learning is about "the use of command sentence". Activities

required read a series of sentence commands. Then the teacher gives explanations and some examples. After the students understand, the teacher divides the students into 4 groups (each group 5 students) to play horse whispers. The teacher explains the rules of game. Once students understand the rules, then they play horse whisper about the command line.

The teacher invites the students to sit back at their respective places, then the teacher gives to 2 students one word about the command sentence, which the two students must make a sentence about the word and put it into practice in the form of dialogue (this is done by each student with his/her on-board friend). Students make sentences of command and practice them in front of the class by playing a simple role (a role as the one who gives the command and the one as the executor).

After the activity of practicing the command sentence is completed, students and teachers tidy up the equipment that has been used. The teacher provides feedback in the form of question and answer about the activities that have been done, then the teacher closes the lesson and students have their rest time.

The second meeting of cycle II is done on November 26, 2014. In this meeting, students will make a handicraft of making a frame, each student is asked to retell the steps to make the frame. The teacher begins by praying before learning then conditions the class to be ready to learn. Furthermore, the teacher conveys the purpose of learning to be learned is about "explain the instructions to create a frame". The teacher starts the activity by dividing the students into 5 groups with 4-5 members. The teacher demonstrates some of the equipment and materials used in making photo frames. Then the teacher explained once again that the activities we are doing today are "telling the rare-step of taking a picture frame". The teacher reminded the students to pay close attention to the demonstration in front of class, which is to take a photo frame.

Furthermore, the teacher invites each student to come forward to retell in his own words about the activities he has just done, which is to recount the steps of taking a picture frame. From the results of analysis and renal assessment of students speak ability in cycle II obtained the acquisition of speaking value in cycle II as follows:

Table 2 Students' speaking score in cycle II

No.	Score	Numbers of student	percentage
1.	< 80	2	10 %
2.	≥ 80	20	90 %
	Total	22	100,00%

Table 2 show that the score of students in speaking has exceeded the predetermined target, the number of students who get the core of  $\geq 80$  has reached 20 people or has exceeded the target of 80%. The increasing in the assessment from cycle I to cycle II as the following table:

Table 3 The Result Score of Speaking Cycles

No.	Criteria	Cycle I	Cycle II	Percentage
1.	Score $\geq 80$	13%	90%	13 %
2.	Score $\leq 80$	87%	10%	90 %

In the table 3, the result show that the percentage increase in the speaking score from cycle I to cycle II reaches 77%. Based on the table 3, it can be interpreted that the ability of students to talk every cycle there is an increase. The result finding shows that the speaking ability improved through whole language approach, which the students engage in integrated language activities. In cycle II, students can utilize the books in the classroom. Students also trained to speak with the teacher's questions. In addition, learning is

also fun because it is combined with interesting activities, namely making frame. The comparison of success scores based on the determined target as follows:

Table 4 The Comparison of target success scores

Target Determined	Cycle I	Cycle II
$\geq 80 = 80\%$ (Target success = 80% of the number of students got a score $\geq 80$ )	$\geq 80 = 13\%$ (has not succeeded)	$\geq 80 = 90\%$ (successful)

The results of the research conducted show the importance of developing speaking skills for elementary school students. Utilizing speaking activities in the preparation step of the creative writing process not only enables speaking and writing skills to be managed holistically but also for the improvement of creative ideas. At the preparation stage, the development of creative thinking can be contributed by generating ideas (Bayat, 2016). Students' creative ideas can be known through communication made by students in class. Thus, speaking skills affect other skills.

### *Discussion*

The positive increase in speaking scores from the experimental group in this study supporting the findings of the results shows that speaking ability increases through the whole language approach, which students engage in integrated language activities. In cycle II, students can take advantage of books in class. Students are also trained to speak with teacher questions. with learning techniques using the question and answer method or conversation, a strategy that satisfies students. students in the activity process get help from their friends, or from the teacher, getting vocabulary easily will make it easy for them to also interact with their friends and also with the teacher. So, the process of answering teacher questions and responding to teacher instructions can be easily answered. This is because the words spoken are obtained from the previous reception. All of this illustrates the more students receive vocabulary in their previous interactions, the better their speaking skills. The results of the research conducted show the importance of developing speaking skills for elementary school students. Utilizing speaking activities in the preparation step of the creative writing process not only allows speaking and writing skills to be managed holistically but also for the improvement of creative ideas.

The findings of this study are also in line with Chen, Cheng, & Chou, (2016)'s research which aims to explore the effects of the Curriculum of All Languages on language development and the literacy of preschoolers. Find research results that can be generalized. That is, applying the whole language approach with thematic instructions into the routine activities of children can improve children's language skills. The language growth of children in reading habits, the introduction of words of the environment, listening, understanding, oral expression, writing, and the planting of self-confidence, preschool educators and their parents also transforms their old thinking towards an entire language approach and offers support that enough in children's learning.

In one of the activities in the study using whole-language through the activity of reading one of the books that students liked. By using various books such as: books of Science, Mathematics, Citizenship, arts, dictionaries and other books. In this activity the teacher assesses the child through the task of retelling the contents of the reading, the teacher assesses the aspects of students' courage to find out who the students dare to speak. The significant effects of vocabulary interventions in reading books according to Wood et al., (2018), about labeling and understanding of words provide some evidence for the effectiveness of computer-assisted or print book intensive



vocabulary instruction that includes definitions, bridges to language understanding, repetition, and morphology for speaking skills in kindergarten child and first grade elementary school. A feasible and effective approach to using rich, additional vocabulary instruction can have positive implications for elementary school children who face challenges in providing effective vocabulary instruction for speech. Other activities that can be done are contact books, writing daily contact books not only can improve children's writing skills, but also presents complete learning activities every day, so that children can have sufficient opportunities to practice. In addition, if the teacher merges into the display of the daily contact book and does group sharing from an angle of respect and appreciation, the children will get a sense of achievement, support, and encouragement.

The whole language approach is a kind of philosophy and belief in education that includes five systematic concepts, including language, students, teachers, programs, and classrooms. As for the philosophy of all languages, Chen et al., (2016) considers that all languages originate from fragments of writing, emphasizing that language is intact and cannot be divided into fragments such as syllables, words, sentences, etc. Language will become a language only when it is composed by complete sentences. The important spirit of the whole language approach lies in the word "whole," whose elements are: in complete language and social situations, we must appreciate that students as individuals who learn integral languages. Based on the description, the activities in improving children's speaking skills in this study use handicraft activities to make frames, each student is asked to retell the steps to make a frame.

The strength of the results of this study are findings that show an increase in speaking skills using the whole language approach, another finding found that teachers needed the ability to implement this whole language method approach in language learning. So that the weakness in this study is the competence of teachers who need a lot of training to improve knowledge and how to implement the whole language approach to improve children's speaking skills and other language skills. Such research is carried out by Stark, Snow, Eadie, & Goldfeld (2016)stark which seeks to investigate the level of language construction knowledge in groups of Australian teachers and to test their own abilities and confidence in that knowledge. Seventy-eight teachers from schools throughout the state of Victoria Australia completed questionnaires that included items from existing actions, as well as newly developed items. Consistent with a number of previous Australian and international studies, teacher knowledge explicitly and implicitly about basic linguistic construction is limited and very varied. The findings of this study confirm that in the field of language teaching and literacy, there is a gap between existing teacher knowledge and knowledge that is theoretically needed for implementation in the field, and therefore expected to increase the actual knowledge of the teacher. These finding challenges current pre-service teacher education and professional learning in office.

Listening, speaking, reading, and writing accompany children's daily lives, and are all functional and applied to deal with various learning objectives in the classroom. The most important whole language approach can be things that are part of the daily lives of children, and that is what they care about, natural and active learning. The process of language learning starts with the needs of children so there is no need to force learning by themselves. This illustrates routine language activities and thematic language activities, and tells how children improve their language development. Based on the research findings, it is expected that teacher teaching attitudes change from guidance oriented by teachers to be more child-centered and agree with diverse learning content

in thematic activities, and emphasize that thematic activities are not limited to language development learning, but are related to learning integrative, including natural observation, art and humanistic, or creative thinking

#### 4 CONCLUSION

Based on the research finding, it can be concluded that whole language approach can improve students' speaking ability in third grade students of SDN Rawamangun 11, East Jakarta. The percentage score of speaking increased from cycle I to cycle II was 77%. Students' speaking score increased because the learning using whole language approach. The whole language approach leads the students to learn the language from whole to parts, learn starts from the concrete to the abstract, thus impacting the inner strength to motivate the students to learn. Teachers should pay attention to the classroom environment in order to learn the language through the whole language approach to be optimally successful, such as: the learning environment at school and home study atmosphere. The environment also filled with languages written by teachers and students, focusing emphasis on topics and themes, flexible and often formed on the basis of student interest. In this approach, the class encourages collaboration, which teacher as the facilitator and gives the students the opportunity to make choices. The teacher also emphasizes the importance of trying and taking things that are challenging.

The implications of this study, speaking ability can be developed using the whole language needs further research related to the improvement of the ability to speak in other ways. Students also can use language to learn about their language knowledge and encouraged to participate more in discussion activities. This research also suggests that to improve students' speaking ability teacher can apply whole language approach in writing learning. Teacher has to treat the students more by writing practice continuously and contextually.

#### 5 REFERENCES

- Abu-Snoubar, T. K. (2017). On The Relationship between Listening and Speaking Grades of AL-Balqa Applied University English as a Foreign Language Students. *International Education Studies*, 10(12), 130. <https://doi.org/10.5539/ies.v10n12p130>
- Bayat, S. (2016). The effectiveness of the creative writing instruction program based on speaking activities (CWIPSA). *International Electronic Journal of Elementary Education*, 8(4), 617–628.
- Buckingham, L., & Alpaslan, R. S. (2017). Promoting speaking proficiency and willingness to communicate in Turkish young learners of English through asynchronous computer-mediated practice. *System*, 65, 25–37. <https://doi.org/10.1016/j.system.2016.12.016>
- Chen, L., Cheng, J., & Chou, M. (2016). Literacy Development in Preschool Children: a Whole Language Curriculum. *European Journal of Language Studies*, 3(1), 24–49.
- Goodman, K. (1986). *What's whole in whole language*. Portsmouth, NH: Heinemann.
- Goodman, K. (2014). *What's Whole in Language in The 21 st Century?* New York: Garn Press.
- Harmer, J. (1991). *The Practice of English Language Teaching. The 3th Edition*. London and New York: Longman Inc.
- Herbein, E., Golle, J., Tibus, M., Schiefer, J., Trautwein, U., & Zettler, I. (2018). Fostering elementary school children's public speaking skills: A randomized controlled trial. *Learning and Instruction*, 55(October), 158–168. <https://doi.org/10.1016/j.learninstruc.2017.10.008>

- Kemmis, S., & McTaggart, R. (1988). *The action research planner (3rd ed.)*. Geelong, Australia: Deakin University Press.
- Khodadady, E., & Shamsaee, S. (2012). Formulaic sequences and their relationship with speaking and listening abilities. *English Language Teaching*, 5(2), 39–49. <https://doi.org/10.5539/elt.v5n2p39>
- Leong, L., & Ahmadi, S. M. (2017). An Analysis of Factors Influencing Learners' English Speaking Skill. *International Journal of Research in English Education*, 2(1), 34–41. <https://doi.org/10.18869/acadpub.ijree.2.1.34>
- Macintyre, P. D., Clément, R., Dörnyei, Z., & Noels, K. A. (2011). Conceptualizing Willingness to Communicate in a L2: A Situational Model of L2 Confidence and Affiliation. *The Modern Language Journal*, 82(4), 545–562. <https://doi.org/10.1111/j.1540-4781.1998.tb05543.x>
- Marzuki, M., Prayogo, J. A., & Wahyudi, A. (2016). Improving the EFL Learners' Speaking Ability through Interactive Storytelling. *Dinamika Ilmu*, 16(1), 15. <https://doi.org/10.21093/di.v16i1.307>
- Moghadam, J. N., & Adel, S. M. R. (2011). The Importance of Whole Language Approach in Teaching English to Intermediate Iranian EFL Learners. *Theory and Practice in Language Studies*, 1(11), 1643–1654. <https://doi.org/10.4304/tpls.1.11.1643-1654>
- Ngalimun, & Alfulaila. (2014). *Pembelajaran Keterampilan Berbahasa Indonesia*. Yogyakarta: Aswaja Pressindo.
- Nunan, D. (2018). Teaching Speaking to Young Learners. In *The TESOL Encyclopedia of English Language Teaching* (First Edit). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118784235.eelt0715>
- Park, Hyesook & Lee, A. R. (2014). L2 learners' anxiety. *Comp. Educ.*, 50(1), 45–57. <https://doi.org/10.1080/03050068.2013.871832>
- Phadung, M., Suksakulchai, S., & Kaewprapan, W. (2016). Interactive whole language e-story for early literacy development in ethnic minority children. *Education and Information Technologies*, 21(2), 249–263. <https://doi.org/10.1007/s10639-014-9318-8>
- Saepudin, E., Sukaesih, S., & Rusmana, A. (2018). Peran Taman Bacaan Masyarakat (Tbm) Bagi Anak-Anak Usia Dini. *Jurnal Kajian Informasi Dan Perpustakaan*, 5(1), 1. <https://doi.org/10.24198/jkip.v5i1.10821>
- Schwarzer, D. (2001). Whole language in a foreign language class: From theory to practice. *Foreign Language Annals*, 34(1), 52–59. <https://doi.org/10.1111/j.1944-9720.2001.tb02802.x>
- Seong, Y. (2017). Assessing L2 Academic Speaking Ability: The Need for a Scenario-Based Assessment Approach. *Working Papers in Applied Linguistics & TESOL*, 17(2), 36–40.
- Stark, H. L., Snow, P. C., Eadie, P. A., & Goldfeld, S. R. (2016). Language and reading instruction in early years' classrooms: the knowledge and self-rated ability of Australian teachers. *Annals of Dyslexia*, 66(1), 28–54. <https://doi.org/10.1007/s11881-015-0112-0>
- Tarigan, & Guntur, H. (1981). *Berbicara Sebagai Suatu Keterampilan Berbahasa*. Bandung: Angkasa.
- Tuan, N. H., & Mai, T. N. (2015). Factors Affecting Students' Speaking Performance at Le Thanh Hien High School. *Asian Journal of Educational Research*, 3(2), 8–23. *Asian Journal of Educational Research*, 3(2), 8–23.
- Ur, P. (1996). *A course in Language Teaching. Practice and Theory*. Cambridge: Cambridge University Press.

- Walter, C. (2010). Teaching ESL/EFL Listening and Speaking. *System*, 38(1), 144–146. <https://doi.org/10.1016/j.system.2009.11.002>
- Weaver, C. (1990). *Understanding Whole Language from Principles to Practice*. Toronto: Irwin Publishing.
- Wood, C., Fitton, L., Petscher, Y., Rodriguez, E., Sunderman, G., & Lim, T. (2018). The Effect of e-Book Vocabulary Instruction on Spanish–English Speaking Children. *Journal of Speech, Language, and Hearing Research*, 61(8), 1945–1969. [https://doi.org/10.1044/2018\\_jslhr-1-17-0368](https://doi.org/10.1044/2018_jslhr-1-17-0368)
- Yegani, H. (2017). The Effect of Task-based and Topic-based Speaking Activities on Speaking Ability of Iranian EFL Learners, 85–93.



## Early Childhood Mindset Stimulation for Understanding Pancasila Through Affective Education

Harun Y. Natonis<sup>1</sup>

*Sekolah Tinggi Agama Kristen Negeri Kupang, Indonesia*

Maglon F. Banamtuan<sup>2</sup>

*Sekolah Tinggi Agama Kristen Negeri Kupang, Indonesia*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.03>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** This study aims to find out how to stimulate Early Childhood Mindset in Theodeosius kindergarten through affective education. This research is qualitative research. Data analysis is done by reducing data, presenting data, and drawing conclusions. The research findings show that students are very enthusiastic about following the activities of the teacher with pleasure, happiness and not feeling burdened from the beginning of the activity to the end, students can take part in the activities of the teacher well. The efforts made by TK Theodosius educators are good, so that it can be said that the teacher's efforts to train children's independence are maximized. The students have begun to instill Pancasila values in their daily lives, namely Godhead, Humanity, the Value of Unity, People's Value, and Social Justice.

**Keywords:** Affective Education, Early Childhood Mindset Stimulation, Understanding Pancasila.

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta

**e-ISSN (Online Media): 2503-0566**

**P-ISSN (Print Media): 1693-1602**

---

<sup>2</sup> Corresponding Author:

Kampus Sekolah Tinggi Agama Kristen Kupang

Jln Cat Doko, Kupang, Indonesia

Email: Machonope@gmail.com

## 1 INTRODUCTION

In today's modern era, progress is increasingly complex with various kinds of conveniences caused by technological sophistication. Along with technological sophistication, there are also increasingly complex problems that concern the issue of national character. The phenomenon of moral degradation that occurs in government, the midst of society, and the immediate environment of children has become a spectacle every day. There is a lot of inequality that is evidence that there has been a crisis of identity and characteristics for the Indonesian people. These inequalities include increasing inter-student brawls, as well as other forms of juvenile delinquency, especially in big cities, extortion / violence (bullying), predispositions of senior domination to juniors, phenomena of soccer supporters, drug use, and others. Various forms of morally deviant behavior that exist in society will have an impact on the perpetrators as well as on people's lives in general. In the context of the class, there are also several moral issues which include; physical hazards, psychological hazards, and justice or appropriateness (Hildebrandt & Zan (2015). Examples of physical hazards that contain violence in the form of hitting, pushing, or pinching. Psychological hazards can include bullying, mocking, teasing, insulting, etc., and examples of the dangers of justice or appropriateness in the form of damaging other people's things, stealing, etc.

Based on existing social problems, education and teaching systems that fail to be developed in school institutions, such as teacher ambiguity in applying the concept of moral values, methods that are less effective in moral learning, and few apply it in daily life. Hurlock, (2010, p. 288) states that although children have a strong motivation to learn to make good social adjustments, children do not get enough guidance and assistance in the learning process.

Kindergarten as a pre-school educational institution and includes systematically formal purposes aimed at providing guidance, teaching and training services in order to help students be able to develop their potential. Therefore, the curricular structure of early childhood education programs in kindergartens in order to help meet the needs of play and learn when the growth phase, has been based on four areas of development, namely: 1). Physical-motoric; 2) Cognitive language; 3). Social-Emotion and 4) Morals and Religion. Based on these four areas of development, the implementation of child learning, starting from pre-design in the form of weekly activity plans and daily activity plans, to their implementation thematically and integratedly, is expected that early childhood can achieve maximum development.: 1). physical growth and motor skills both smooth and rough; 2). development of cognitive and language abilities; 3) social and emotional skills, and 4) the cultivation of real moral and religious values in the sense that they can be seen and measured by the changes.

### *Affective Education*

Taxonomy is based on the characteristics of knowledge, skills, and attitudes known as cognitive, psychomotor, and affective learning. Affective domains are considered by many to be vague or unclear. However, systematic reviews, identified through content analysis that the most common component of the affective domain is the development of attitudes, values, motivations, beliefs, and emotions. Attitudes can be defined as positive, and negative judgments about an object, individual, group, and theory. The values, concepts, or ideals that a person feels, are things that influence the way a person understands or interprets events. Motivation, the form of positive, or negative involvement with the learning process. Confidence is an individual's perception of reality, and emotion is defined as feeling, cognition and behavior. Learning in the affective domain can

be characterized by a three-stage process that measures the influence of the type of communication on the development and assessment of student values, attitudes and behavior of students (Stephens & Ormandy, 2018).

Empathy is an affective domain response that comes from an understanding of the emotional state or condition of another person. This situation involves experiencing affective states that are congruent with the circumstances of other individuals. The process of empathy generally motivates prosocial behavior, inhibits aggressiveness, and provides a foundation for morality. Empathy as a construction that reflects the natural capacity to share and understand the subjective circumstances of others, and consists of emotions (sharing influence with others), cognitive (understanding the subjective circumstances of others from their point of view), and motivational aspects (feelings of caring for others) (Decety, Meidenbauer, & Cowell, 2018).

Social behavior as well as religious social-moral behavior as a moral and political concept, abstractly "constitutes a personal action in the relationship of horizontal-social and vertical interaction over the imperative of power within the common sphere of life which leads to the reality of the existence of the state" (Hamid, 2015) of course it is not to be understood in terms of children who are still pre-operational and pre-moral, but concrete manifestations of personal actions in the social context and forms of moral action can be formulated for learning in the play and learning environment of early childhood. For this reason, in the implementation, without having to add new areas in the existing map of developing early childhood education in kindergartens, the concept of social behavior can be developed substantially and will correlate with existing child development fields, especially in the field of social development, religious, emotions, and morals.

In the world context of work with the term Citizenship Organizational Behavior (OBC), Organ, (1988); Podsakoff et al., (2015); Podsakoff et al., (2000); Ertürk, (2007); Chou & Pearson, (2012), then pro-social studies also began to enter this OBC study (Mayfield & Taber, 2010). And not limited there, this OBC concept was adopted also in the school context (Esnard & Jouffre, 2008). So, by tracing these studies, we can map where the position of social behavior in the pre-school context. Positioning in this study is certainly to minimize the impact due to low social skills.

The results showed that children with this behavior disorder had low social skills (Cartledge, G., & Milburn, 1980) the Conduct Problems Prevention Research Group (CPPRG), 1999. They tend to show hostile prejudice, and when faced with ambiguous social stimuli they often interpret it as a sign of hostility so that it confronts it with aggressive actions. Religious social-moral behavior is a personal action in the relationship of horizontal-social and vertical interaction in the scope of shared life that leads to the reality of the existence of the state (Hamid, 2015) of course not understood by children who are still pre-operational and pre-moral thinking, but concrete manifestations of personal action in social contexts and moral actions can be formulated in early childhood learning. For this reason, in the implementation, without having to add new areas in the existing map of developing early childhood education in kindergartens. Teachers or parents are expected to have creativity in developing learning that enhances aspects of child development. Teachers and early childhood educators are expected to be a model for the development of noble personal actions in a social context. The teacher can also present learning stimulations of moral actions that can be capital for children in adulthood.

In the Global Citizenship Education discourse, competencies related to behavioral capacity, play the role of collaborative and responsible skills, have non-cognitive skills such as empathy and conflict resolution, and the ability to communicate with different people in their backgrounds,

cultures, histories and perspective (UNESCO, 2014). In line with that, the development of social citizenship skills in early childhood so that they can connect with other people to build democratic attitudes of students by respecting every difference in social reality is important to be studied further. Social-emotional competency is one of the important aspects targeted by universal prevention interventions because it builds several things, related to social outcomes, behavior, academic achievement, and plays an important role in the process of behavior change. Domitrovich, Durlak, Staley, & Weissberg, (2017) articles cover what is known about effective intervention approaches, how to support implementation, and how to support students' social and emotional learning to improve resilience.

#### *Early Childhood Mindset Stimulation to Understanding Pancasila*

The above discourse also corresponds to the four pillars in the Learning: The Treasure Within report, namely "Learning to know, to be, to be and to live together". Global Citizenship Education, which is based on three aspects, namely cognitive, socio-emotional and behavioral (behavior) emphasizes social interconnectedness and mutual respect for differences (UNESCO, 2015). In this regard, PAUD is included in a large system of education that is influenced by global politics and economics, so that it can be related to planning and implementation (Samuelsson & Hagglund, 2009). One aspect that supports the development of social behavior in child citizenship is learning through the modeling process of the micro environment. (Hurlock, 1999), revealed that learning processes that support emotional development consist of learning by trial and error, learning by imitating, learning with identification, learning through habituation, and training.

A strong relationship between planting social behavior and social citizenship skills can be designed by adapting the concept of intervention practice from a technical assistance center for early childhood which includes: peer intervention and adult-directed interventions that are proven to improve social-emotional behavior and social skills (Dunlap, Powell, & Org, 2009). From the subjects of social behavior learning citizenship in Early Childhood Education, curricular is characterized by contextual learning experiences with meaningful, integrated (value-based), value-based, challenging and activating characteristics. In the context of the approach of constructivist education, the formation of a sociomoral atmosphere based on mutual respect is one form of learning experience in school. (Hildebrandt & Zan, 2015). With this approach also, supporting efforts such as minimizing the use of external authority and sharing power so that children exercise authentic power in the classroom are carried out.

The research conducted by Bowo & Budiati,(2017) aims to provide a solution for Pancasila-based elementary school English learning models, providing a new alternative to Pancasila-based interactive English learning and building a nation's character that breathes Pancasila amid unavoidable globalization. This research contributes to combining Pancasila values as an Indonesian national identity with English as a global language. The findings of this study state that respondents agree that English subjects allow character education to be included in it, so the benefits of language learning can improve behavior and social abilities. Likewise, with Mahanani, Purnama Putra, & Kristianingsih (2018) research which focuses on developing teacher competencies to explain the analysis of understanding the values of Pancasila by teachers for learning in elementary schools. Understanding Pancasila values by elementary school teachers is very influential on the performance and learning outcomes carried out by the teacher. Understanding Pancasila Values by teachers can affect the quality of learning, social skills, and student character development. Quality of learning includes planning, implementation, and assessment. Social skills include the ability



to work together, tolerate, respect the rights of others, have social sensitivity, have self-control, and share opinions and experiences with others.

Pancasila as the ideological foundation of Indonesia is inseparable from education. At the implementation level, education is directed at building Pancasila values through learning programs. However, Indonesian education is still in poor condition, because the competence of graduates is not equivalent to graduates from other countries. This phenomenon underlies the formation of the 2013 Curriculum which emphasizes the development of Pancasila values as core competencies. Ronald Silalahi, (2016) conducts research aimed at analyzing text to reconstruct the Pancasila ideology and discuss steps to revitalize Pancasila in the Indonesian education system. The texts analyzed are the texts which are the juridical basis of the 2013 curriculum. The results obtained in the linguistic analysis are explained by the results of interviews with teachers and education practitioners to provide an overview of Indonesian education, the application of the 2013 curriculum and steps that can be taken to revitalize Pancasila in the Indonesian education system. The analysis revealed that revitalization in the Indonesian education system is absolutely necessary, because the values of Pancasila as one of the core competencies that must be possessed by students are not yet fundamentally and appropriately applied in the process of education and learning.

One such effort was implemented through instilling the Pancasila values. Because in Pancasila Education includes aspects of metaphysics, cognitive epistemology (knowledge) psychomotor and affective. The three aspects of Pancasila education must be given the same portion or given the same emphasis. So that children have begun to instill the value of the Pancasila from an early age, in order to avoid various impacts or social problems that injure the values of the Pancasila in accordance with it. Therefore, the research title is "Training the Mindset of Early Childhood to understand Pancasila through Affective Education" (a descriptive study in Theodeosius Kupang).

## 2 METHODS

This research is qualitative research. This research was conducted to reveal, discover and explore various information about Training the Mindset of Early Childhood to understand Pancasila through Affective education. According to (Sanjaya, 2013, p. 47), Qualitative Research is a research method that aims to describe in full and in-depth about social reality and various phenomena that occur in the community that are the subject of research so that the characteristics, characteristics, characteristics and models of the phenomenon are described. This research was carried out in Theodeosius Kuankobo Christian Kindergarten, Bello Sub-District, Maulafa District, Kupang City. The data collection techniques in this study are observation techniques, in-depth interviews and documentation studies. And data analysis techniques in this study are: 1). Data reduction; 2). Presentation of Data; and 3). Draw conclusions or verify.

## 3 RESULT AND DISCUSSION

### 3.1 Result

#### Description of Research Results from Theodeosius Kindergarten Teachers

From observations and interviews the authors obtained teacher data that Theodeosius Kindergarten teachers in training children's independence using several efforts were as follows:

### 3.1.1 *How are the efforts of the teacher to train the independence of children in Theodeosius Kindergarten?*

#### *Teachers must be able and skilled in developing various learning strategies*

Before the learning activities take place, the teacher must be able and skilled in compiling various learning strategies that are interesting, so that students will not feel burdened when carrying out activities, the data finds that the teacher has done that. With the skills of the teacher in preparing learning strategies, it will be easier for the teacher to train the independence of children, because the child will be responsible for the tasks given by the teacher because the activities are not boring, persevering to complete learning activities, and tidy up the equipment that has been used to play.

It was emphasized by Ms. Serly Membubu as the principal at TK Theodeosius, that the skills and strategies for learning were the duty of a teacher to stimulate child development, including in training the independence of children. Learning strategies that attract students to enthusiastically participate in activities are the best tools to reach learning targets.

Furthermore Ms. Margaritha Nomleni Liukae as the homeroom teacher of Theodeosius Kindergarten revealed that stimulating children's development is the duty of a teacher. Teachers must have the skills and develop interesting learning strategies, so that students can participate in activities safely, comfortably and happily. So, before carrying out my activities I did this to stimulate child development especially in training children's independence.

#### *The teacher creates a learning atmosphere*

Through the observations made by the author regarding the atmosphere of learning at Kindergarten Theodeosius, that the learning atmosphere in that class was good enough. Physically the teacher has prepared activities through strategies that have been compiled in an interesting manner, so that psychologically the child will not feel bored, interested in participating in learning activities, foster curiosity, and self-confidence possessed by students.

Mrs. Serly Membubu said, that an interesting learning atmosphere would make students feel happy, so students did not feel burdened with the tasks carried out by the child. Students will carry out their tasks with confidence, be responsible for every activity carried out, follow the existing regulations, this will lead to increased development of children's independence. The teacher can integrate independence learning with children's learning activities both in the atmosphere in the classroom and outside the classroom, so that children can cooperate and compete.

Through the data obtained by the author, that Theodeosius Kindergarten teacher has provided interesting learning activities. The activities of students are very necessary in every learning activity, both in the classroom and outside the classroom. When students carry out activities the teacher always gives direction, guidance, and freedom to students to complete the activities that have been given by the teacher, so that later students can be independent in each activity.

When outside the classroom (playing at the school yard) students are free to play with their friends. Not only playing with one group of friends, but students are always given direction to play together with other groups so that they can socialize learning to be independent in dealing with various situations in the environment, so that everyone will eventually be able to think and act on their own.

#### *The teacher must see concrete examples in all things taught*

All behaviors carried out by the teacher are examples for students. If a teacher does an example

that is not good or negative, then it is possible that students will imitate what the teacher does. According to Kindergarten teacher Theodeosius the author has provided concrete examples and habituations that will foster a child's independence. Such as: disposing of garbage in its place, washing hands before eating, tidying up utensils after use, brushing teeth after eating, tidying up toys and putting them in place and other activities.

It can be concluded that the teacher is an example for students at school, so that whatever is done by a teacher, both positive and negative things will affect the development of students, especially in children's independence. Because sometimes teachers underestimate small things, such as throwing trash in its place, washing hands before eating. Even though this greatly affects the independence of students.

### 3.1.2 *What are the factors that support and inhibit the teacher in exercising independence in Theodeosius Kindergarten?*

#### *Supporting factors in training children's independence*

##### 1) Theodeosius Kindergarten Curriculum

The curriculum used at TK Theodeosius still refers to the Minister of National Education Regulation No. 58 of 2003. Childhood Teacher Theodeosius is very enthusiastic about the indicators that are appropriate to the needs and development of children, so they will not burden students in participating in each activity learning. All learning activities are associated with interesting games, so students are always cheerful and happy. Likewise, when teachers train children's independence, the teacher refers to the indicators contained in the curriculum.

##### 2) Teacher's enthusiasm and awareness are very high

As Ms. Sarilah has revealed, one of the supporting factors in training children's independence is that with a very high enthusiasm and awareness of teachers, it can have an important influence on the development of children's independence.

The teacher is not only a knowledge provider for students, but he is also a person who can make students plan, analyze, and deduce the problems they face. With great responsibility will change the behavior of students to become better, teachers should have enthusiasm and awareness of the importance of independence for children.

Teachers are people who play an important role in school learning activities, especially to achieve educational goals. The higher the enthusiasm and awareness of the teacher can facilitate the achievement of the desired learning goals.

##### 3) Facilities and infrastructure that are adequate and a conducive environment

Adequate facilities and infrastructure can create a conducive atmosphere. The form of adequate facilities and infrastructure is the availability of educational tools for children, so that one child and the other do not fight, create a conducive environment for learning activities, and make children feel comfortable in participating in the activities provided by the teacher. Facilities and infrastructure are very important things in an institution. TK Theodeosius has complete facilities and infrastructure that will create a conducive environment and children will feel comfortable, safe, and happy, making it easier for teachers to train children's independence.

#### *Inhibiting factors in training children's independence*

#### 1) Parents who are overprotective and lack awareness of children's independence

Overprotective attitude is the attitude of parents who are too spoiled for children and always worried about what the child will do. Parents play an important role in the formation of children's independence. If a child is trained in independence from an early age, when they are involved in the community and school children have an independent attitude to mingle with their peers. However, if a child is not trained to be independent or too spoiled, then the child will grow into a spoiled and timid child.

Lack of parental awareness of children's independence will hamper children's development, because parents only demand that their children understand letters and numbers, after graduating from kindergarten children can read and count. Awareness in exercising independence is considered not too important.

#### 2) Unbalanced number of teachers

The balanced number of teachers will be easy to pay attention to students one by one. However, the number of teachers found to be unbalanced with 24 students. So that the teacher must pay extra attention to each student's development one by one, so that no students feel ignored by the teacher.

### 4 DISCUSSION

Based on the description above and based on the results of observations and interviews with the author of the learning process at Theodosius Kindergarten. Can the author reveal that in order to stimulate the independence of early childhood is very important in the stimulus from an early age through interesting learning activities? Early childhood learning prioritizes playing while learning and learning while playing which is oriented to the development and growth of children so as to provide opportunities for children to be active, free and creative in carrying out various activities.

Playing is a very important requirement for the development of early childhood spiritually, cognitively, physically motorically, language, social emotionally, and art optimally. Thus, the importance of playing for children in their development so that play cannot be ignored and separated from children as an integral part of children's growth and development because the child's world is the world of play. Likewise, with the development of children's independence, it is very important for children to become independent children who can carry out activities by themselves in the family environment and in the school environment. The results of observations and interviews conducted by researchers related to the development of the independence of children in TK Theodosius, that the efforts of teachers to train the independence of children in the learning process are beneficial not only for students, but teachers must be sure that an independent attitude is also beneficial for them.

Dodge, (2004) stated that "the independence of early childhood can be seen from habituating behavioral abilities of children in physical abilities (doing their own activities), being good at socializing (socializing), wanting to be various (empathetic), and able to make their own decisions with action (confidence)". Empirical findings about the origin and development of prosocial behavior from childhood to childhood have produced new information when young children act prosocial towards others, how prosocial behavior changes throughout development, and why children do or not prosocial behavior. Malti & Dys, (2018) in his study discussed the latest advances

in three areas of research namely, increasingly focused research on age-related differences in various prosocial behaviors, the psychological basis of the development of prosocial behavior has contributed to a better understanding of children's motives for prosocial behavior, and disposition and situational effects on developing prosocial behavior. The research findings address the consequences of individual differences in prosocial behavior and provide recommendations for future research directions for the use of learning methods for the development of prosocial behavior.

In this study the efforts made by the teacher to train the independence of children, that the teacher is good at composing interesting learning strategies, creating a conducive learning atmosphere, integrating learning activities with the attitude of independence of the child, and the teacher has provided a good example in stimulating children's independence. According to Aydoğan, Farran, & Sağsöz (2015), research in education has investigated classrooms as a context for learning. Among many aspects, which shows the level of instructional and emotional support in the classroom environment is the center of discussion about what patterns the teacher provides such as experiences that foster more involvement of children in learning. One of them is pleasant stimulation to build attitudes and behavior.

Ms. Sherly Membubu as Head of the Theodosius Kindergarten explained that stimulating the development of children in school is a teacher's job, so I as a kindergarten teacher must have several strategies to stimulate children's independence, create an attractive atmosphere, always integrate each activity with attitude independence of the child, as well as me as a teacher must always exemplify the independence of activities to children. As with the research conducted by Stevenson (2017) which addresses the independence of children as a conceptual framework to explore how independence in children's daily lives is related to learning in the Finnish context. This framework is articulated using everyday life behavior as a theoretical foundation and focuses on the sociocultural aspects of informal daily life such as the period when children are at home without direct adult supervision as a potentially important learning environment. Independence is also related to the discourse about the success of education, independent learning and the independent mobility of children. research findings show the independence of children in carrying out daily life as an additional factor to consider when exploring the impact of sociocultural factors on the development of independent students.

Next is the supporting and inhibiting factors of the teacher in training children's independence. Factors that support the success of moral learning, such as teachers have studied the curriculum well, enthusiasm and awareness of teachers is very high to educate, guide and care for students by providing interesting activities that do not make children bored, and adequate facilities and infrastructure, sports programs which makes children independent, as well as a conducive classroom atmosphere. While the inhibiting factor is from the family environment, namely parents who are over-protective or over-indulgent, so that children's independence is difficult to develop, and the lack of teachers in the classroom is also a limiting factor because teachers must pay extra attention to the development of students one by one.

Referring to the interview with kindergarten teacher Theodosius that the characteristics of independent children are children who can carry out their own activities, be able to socialize, be empathetic, and can make decisions with confidence. If this has been explained to students, then it can be said that the child is independent.

Thus, as research findings in the field indicate that students are very enthusiastic about participating in the teacher's activities with pleasure, joy and not feeling burdened from the initial activities to the final activities the students follow them well. Based on the theory that the authors get the

efforts made by the Theodosius Kindergarten educators are good, so it can be said that the efforts of teachers to stimulate children's independence are maximized.

#### 4.1 *Theodeosius Kindergarten student*

What children of Theodosius Kindergarten say are facts, namely what they experience: what they do, see and hear. They are honest with what they say or say. Therefore, researchers try to interpret in several ways. The basic things captured by researchers through this study are early childhood children have not been able to sit for a long time. The resistance of children is around 15 to 20 minutes. After that, their minds only focus on how they can play with friends or disturb other friends. They need playmates. Through the game they learn to live. Pancasila that was socialized at Theodeosius Kindergarten to children caught it as facts. But these facts contain values, because they need to be interpreted by researchers.

##### 4.1.1 *Godliness*

Children diligently go to Sunday school every Sunday after a public service has many meanings. There they can meet friends, joke, sing, pray, hear Bible stories especially meeting God. God is not an abstraction, far from their lives; they experience intimacy, closeness to God through Sunday school teachers.

Through prayer, children can converse with God, expressing various problems to God. They know that God hears their prayers. Although the cognitive aspects are not ready to understand, but from the aspect of affection, feeling, they can feel that God hears their prayers and answers their prayers. Because in the book of Deuteronomy 6: 6-9, it is said that the Word must be taught "repeatedly" by parents. In Israeli culture there is an education law that requires children to learn from the age of 3 years and above.

A research article suggests that the core of all curriculum decision making is learners. Theories and practices of contemporary early childhood education focus on the needs of early childhood in their learning, which gives special attention to the assessment of the socio-cultural context of each child. Early childhood is considered capable and active students rather than as recipients of deficits and passivity. What is the application of the divine game in the early years before school in a contemporary view of childhood? To what extent is this program in line with the theory and practice of early childhood? This study seeks to evaluate the existence and activities of play with the concept of faith (which is not a curriculum and also does not claim to be a curriculum) in the context of early childhood education affiliated with religion in settings before school or school (Grajczonek & Truasheim, 2017)

##### 4.1.2 *Human value*

Humans are valuable, because they are created in the image of God and (*imago Dei*) Children begin to appreciate teachers, parents, and friends by shaking hands and kissing the hands of parents or teachers. Through teachers, children are getting used to respecting others, because other people are valuable creatures. So, the formation of habits, as well as honesty and other values need to be taught through teachers and parents and other adults.

Regarding human values in early childhood education, Emilson & Johansson, (2013) outlines and discusses the development of Nordic research on democracy in the field of early childhood edu-

cation and care (ECEC). Research in a relatively short period of time has changed from the normative and political arguments for democracy in ECEC through an interest in how to improve and operationalize democratic ideas into practice, which leads to a more critical approach to dealing with the complexity of democracy. Through this process a new concept of democracy emerged that was linked to shared life and pluralism. Communication becomes important. In turn, ambiguity and even conflicting ideas seem to be accepted as the basis of democracy.

#### 4.1.3 *The value of unity*

The value of unity is one of the same abstract values as other Pancasila values. But children can learn through action, children know that they are different from one another. Different in families, neighbors, different skin colors, different tribes, regions and others. But they are united. The children already knew the song, "Garuda Pancasila", they had begun to learn the meaning of the song, affectionately they had begun to feel what it was united.

What they do, hear and see contains understanding, and the meaning of values. Even though they do not understand well, therefore understanding needs to be trained and nurtured on an ongoing basis. Values are abstract goals that are desirable and different interests between individuals, function as guiding principles across situations, and underlie actions. Thus, individual values provide a set of personal norms, that is, personal expectations or obligations that determine actions that are compatible with the world view. When do children form their own personal values? usually stops occurring during adolescence. But recently, this idea has been challenged, in part a new measurement tool, the Age-Based Value Survey for Children. This instrument gives children a picture accompanied by a description of the protagonist who takes action representing each of the 10 values. By using this instrument, children can report their values in relatively concrete terms that do not require high abstraction skills. Children recognize moral values or unity through learning instruments (Abramson, Daniel, & Knafo-noam, 2018).

#### 4.1.4 *Citizenship value*

Children have heard about elections. They heard and saw the election of the RT (Neighborhood Association) and RW (People Association) and mayor. They also heard from parents about the right to vote, but these rights need to be explained by the teacher early on. Although they personally understand what is meant by personal rights.

The Early Childhood Education and Care Institute (ECEC) in the UK has been used for anti-terrorism strategies. The promotion of Fundamental British Values (FBV), as a special step to prevent young children from being drawn into terrorism, has raised questions about the role of the ECEC sector as an instrument of counter-terrorism policy. Because of this, Robson, (2019) compiled a research article to analyze ways in which early childhood educators mediate the requirements for promoting the FBV through their pedagogical practices. Although educators are tasked with mediating specific values formulated in the political arena, their responses are complex and multi-layered. The results show that education is a daily pedagogical practice that is not limited by the institutionalized definition of the FBV. Practitioners use contextual moral pedagogy where children build an understanding of moral values and practices characterized by rich democratic dialogue.

#### 4.1.5 *Social justice*

They are sensitive to the circumstances of friends who do not bring pocket money to school. And

it has been explained to them that those who have more money need to help friends who don't. Those who have advantages need to help those who are in need. The concept of sharing has been owned by children, the task of companion or parents and the teacher is to continue to instill these loving values, to become their lifestyle from an early age.

It is important to recognize that the traditional concept of leadership has severely limited the theory of leadership for the field of early childhood. Such a traditional framework has left a legacy in childhood that 'leaders' are program directors or those who have a field role commensurate with the highest level of formal authority in the organization. In addition, being on the 'leadership path' in history is often equated with rising hierarchies that are increasingly away from direct service work. Contemporary discussion of leadership in early childhood has challenged these assumptions, extending the notion of leadership beyond traditionally privileged models of business and education leadership. More recent thinking about leadership emphasizes ideas that are more in tune with the field of early childhood including explicit values on relationships and collaboration, direct teaching and service, family involvement and a multidisciplinary perspective. Children need training to be fair leaders and uphold social justice (Nicholson et al., 2018).

## 5 CONCLUSION

The Theodeosius Kindergarten teacher always makes a strategy and integrates independence learning with children's learning activities, creates a conducive and attractive learning atmosphere, and the teacher always gives concrete examples on each activity. And the curriculum that is in Kindergarten is very helpful in the implementation of learning because the curriculum is a guide to train children's independence, enthusiasm and awareness of teachers is very high in stimulating aspects of child development including training in independence.

Affective education carried out in Theodeosius Kindergarten can have a positive impact because this affective education can have a positive impact on Theodeosius Kindergarten students in individual social development, feelings, emotions, morals, ethics especially regarding the meaning of the Pancasila based on sila-sila of pancasila.

## 6 REFERENCES

- Abramson, L., Daniel, E., & Knafo-noam, A. (2018). Journal of Experimental Child The role of personal values in children ' s costly sharing and non-costly giving. *Journal of Experimental Child Psychology*, 165, 117–134. <https://doi.org/10.1016/j.jecp.2017.03.007>
- Aydoğan, C., Farran, D. C., & Sağsöz, G. (2015). The relationship between kindergarten classroom environment and children's engagement. *European Early Childhood Education Research Journal*, 23(5), 604–618. <https://doi.org/10.1080/1350293X.2015.1104036>
- Bowo, T. A., & Budiati. (2017). Model Pembelajaran Bahasa Inggris Interaktif Menggunakan Flascard Berbasis Pancasila Sebagai Upaya Pembentukan Karakter Bangsa. *Media Penelitian Pendidikan*, 11(2), 59–74.
- Cartledge, G., & Milburn, J. F. (1980). *Teaching social skills to children*. Pergamon Press.
- Chou, S. Y., & Pearson, J. M. (2012). Organizational citizenship behaviour in IT professionals: An expectancy theory approach. *Management Research Review*, 35(12), 1170–1186. <https://doi.org/10.1108/01409171211281282>
- Decety, J., Meidenbauer, K. L., & Cowell, J. M. (2018). The development of cognitive empathy and concern in preschool children: A behavioral neuroscience investigation. *Developmental Science*, 21(3), 1–12. <https://doi.org/10.1111/desc.12570>



- Dodge, D. T. (2004). Early Childhood Curriculum Models Why What and How Programs Use them. *Exchange Organizational Behavior Teaching Journal*, (February), 71–75.
- Domitrovich, C. E., Durlak, J. A., Staley, K. C., & Weissberg, R. P. (2017). Social-Emotional competence: An essential factor for promoting positive adjustment and reducing risk in school children. *Child Development*, 88(2), 408–416. <https://doi.org/10.1111/cdev.12739>
- Dunlap, G., Powell, D., & Org, W. C. (2009). Promoting Social Behavior of Young Children in Group Settings: A Summary of Research. *Technical Assistance Center on Social Emotional Intervention for Young Children*, (August). Retrieved from [www.challengingbehavior.org](http://www.challengingbehavior.org)
- Emilson, A., & Johansson, E. (2013). Values in Nordic Early Childhood Education: Democracy and the Child's Perspective. *Choice Reviews Online*, 30(11), 30-6297-30-6297. <https://doi.org/10.5860/choice.30-6297>
- Ertürk, A. (2007). Increasing organizational citizenship behaviors of Turkish academicians. *Journal of Managerial Psychology*, 22(3), 257–270. <https://doi.org/10.1108/026839407110733089>
- Esnard, C., & Jouffre, S. (2008). Organizational citizenship behavior: Social valorization among pupils and the effect on teachers' judgments. *European Journal of Psychology of Education*, 23(3), 255–274. <https://doi.org/10.1007/BF03172999>
- Grajczonek, J., & Truasheim, M. (2017). Implementing Godly Play in educational settings: a cautionary tale. *British Journal of Religious Education*, 39(2), 172–186. <https://doi.org/10.1080/01416200.2015.1110112>
- Hamid. (2015). *Semiotika Kewarganegaraan*. Bandung: Rizqi Press.
- Hildebrandt, C., & Zan, B. (2015). Pendekatan Konstruktivis pada Pendidikan Moral Anak Usia Dini. In *Handbook Pendidikan Moral dan Karakter* (pp. 511–536). Bandung: Nusa Media.
- Hurlock, E. B. (1999). *Perkembangan Anak Jilid I*. (Erlangga, Ed.). Jakarta.
- Hurlock, E. B. (2010). *Perkembangan Anak* (6th ed.). Jakarta: Erlangga.
- Mahanani, P., Purnama Putra, A., & Kristianingsih, K. (2018). Analysis of the Influence of Understanding the Pancasila Values of Teachers on Learning in Elementary School, 244(Ecpe), 168–172. <https://doi.org/10.2991/ecpe-18.2018.37>
- Mayfield, C. O., & Taber, T. D. (2010). A prosocial self-concept approach to understanding organizational citizenship behavior. *Journal of Managerial Psychology*, 25(7), 741–763. <https://doi.org/10.1108/02683941011075283>
- Nicholson, J., Kuhl, K., Maniates, H., Lin, B., Bonetti, S., Nicholson, J., ... Bonetti, S. (2018). A review of the literature on leadership in early childhood: examining epistemological foundations and considerations of social justice, 4430. <https://doi.org/10.1080/03004430.2018.1455036>
- Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington: Lexington Books.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (2015). Transformational Leader Behaviors and Their Effects on Trust, Satisfaction, and Organizational Citizenship Behaviors. *JAI Press Inc.*, (August), 107–142. [https://doi.org/10.1016/1048-9843\(90\)90009-7](https://doi.org/10.1016/1048-9843(90)90009-7)
- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational Citizenship Behaviors: A Critical Review of the Theoretical and Empirical Literature and Suggestions for Future Research. *Journal of Management*, 25(3), 513–563. [https://doi.org/10.1016/0009-2614\(78\)85552-3](https://doi.org/10.1016/0009-2614(78)85552-3)
- Robson, J. V. K. (2019). How do practitioners in early years provision promote Fundamental

- British Values? How do practitioners in early years provision promote, 9760. <https://doi.org/10.1080/09669760.2018.1507904>
- Ronald Silalahi, U. yuwono. (2016). Research in social sciences and technology. *Research in Social Sciences and Technology*, 2(3), 58–57. Retrieved from <http://www.ressat.org/index.php/ressat/article/view/329>
- Samuelsson, I. P., & Hagglund, S. (2009). Early Childhood Education and Learning for Sustainable Development and Citizenship. *International Journal*, 41(2), 49–63.
- Sanjaya, W. (2013). *Penelitian Pendidikan (Jenis, Metode, dan Prosedur)*. Jakarta: Kencana Prenada Media Group.
- Stephens, M., & Ormandy, P. (2018). Extending conceptual understanding: How interprofessional education influences affective domain development. *Journal of Interprofessional Care*, 32(3), 348–357. <https://doi.org/10.1080/13561820.2018.1425291>  
LK  
<http://vb3lk7eb4t.search.serialssolutions.com?sid=EMBASE&issn=14699567&id=doi:10.1080%2F13561820.2018.1425291&atitle=Extending+conceptual+understanding%3A+How+interprofessional+education+influences+affective+domain+development&stitle=J+Interprof+Care&title=Journal+of+interprofessional+care&volume=32&issue=3&epage=348&epage=357&aulast=Stephens&aufirst=Melanie&aunit=M.&aufull=Stephens+M.&coden=&isbn=&pages=348-357&date=2018&aunitl=M&aunitm=>
- Stevenson, B. (2017). Children's independence: a conceptual argument for connecting the conduct of everyday life and learning in Finland. *Children's Geographies*, 15(4), 439–451. <https://doi.org/10.1080/14733285.2016.1271942>
- UNESCO. (2014). *Preparing learners for the challenges of the 21st century*. France: UNESCO. Retrieved from <http://www.unesco.org/new/en/global-citizenship-education>
- UNESCO. (2015). *Global citizenship education: topics and learning objectives*.



## Thematic Pop-Up Book as a Learning Media for Early Childhood Language Development

Novi Engla Sari<sup>1</sup>

*Universitas Negeri Padang, Indonesia*

Dadan Suryana<sup>2</sup>

*Universitas Negeri Padang, Indonesia*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.04>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** The challenge for early childhood educators to be able to provide a touch of education that is creative, innovative, smart, and fun to develop children's intelligence optimally. This study aims to develop Thematic Pop-Up Book products as learning media for the development of Early Childhood languages. The research subjects were 15 participants in class B6 of Khaira Ummah Islamic Kindergarten in the City. The research and development used data analysis using descriptive statistical analysis techniques. The results of the validity test and the practicality of the development of Pop-Up Book media at Khaira Ummah Islamic Kindergarten in Padang City were declared valid by media experts with an average score of 95%. Media Thematic Pop-Up Books, about Healthy and Unhealthy Foodstuffs were also declared valid by material experts with an average score of 95%. The results of the trial of thematic Pop-Up book products in Khaira Kindergarten Islamic Ummah were stated as a practical medium for children with a percentage increase in the test reaching 96%. Based on these results indicate that Pop-Up Book media products get a positive response from children and teachers. Media Pop-Up Book for further research can be used as a medium to improve children's cognitive, and interest in reading.

**Key Words:** Early Childhood Education, Language Development, Thematic Pop-up Book

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta

**e-ISSN (Online Media): 2503-0566**

**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup> Corresponding Author:

Novi Engla Sari

Universitas Negeri Padang

Jln Prof. Dr. Hamka Air Tawar Padang, Indonesia

Email: [novienglasari95@gmail.com](mailto:novienglasari95@gmail.com)

## 1 INTRODUCTION

Early childhood is 0-8 years old children are individuals who are undergoing a process of rapid and fundamental development for their next life. Early childhood has its own characteristics according to the stages of its age and is the right age in forming various potentials. Physical, spiritual, and resourceful potential and skills will develop for the better when fostered early. Therefore, to explore children's potential optimally, children can take part in learning in various types of education services based on age groups including, Child Care Centers for ages 0-6 years old, Playgroups and those who like for ages 2-4 years, and Kindergarten / Raudhatul Athfal and the equivalent for ages 4-6 years to help stimulate all stages of growth and development of children from an early age. Early childhood education is one form of education that focuses on laying the foundation for growth and physical development, intelligence, socio-emotional, language and communication, in accordance with the uniqueness and developmental stages that are passed by early childhood. According to the Republic of Indonesia Minister of Education and Culture Regulation No. 137 of 2014 concerning the National Standards for Early Childhood Education Article 1 paragraph 10 states that early childhood education is an effort to provide guidance to children from birth to age 6 (six) years through design education to help growth and physical and spiritual development so that children have readiness in entering further education.

Obiweluzo & Melefa, (2014)'s research investigated strategies to improve language development as factors and foundations needed for early childhood education. The survey research design was adopted in carrying out the research and a total of seventy-one teachers were randomly sampled for this study. Three research questions guide this research. This study reveals that improving strategies for language development is very important for the achievement of children's education in early childhood education. Factors such as inadequate number of specialist language teachers, lack of resources / materials, wrong models, among others, are a barrier to the process of improving children's language development in early childhood education. The findings show that teachers have an important role in the development of children's language in early childhood education. Among other things, they must plan various activities and develop various media to attract children's interests and make them eager to learn. Based on the findings, it is recommended that the government must match policies with actions to address some of the challenges facing children in language development at the level of early childhood.

Media is needed to facilitate children in the learning process. Media plays an important role in learning, because it can create interactions between children and the material to be learned. The use of media can increase children's learning motivation, so that children's attention to learning material increases. The use of media will help educators and children in the learning process. Through the right use of media and in accordance with learning needs, the learning objectives will be easily achieved. The challenge for educators is to be able to provide a touch of education that is creative, innovative, smart, and fun so that it can develop children's intelligence optimally. So, the need for interesting and fun media for children in kindergarten is very high. Reading books can be a medium for arousing children's learning motivation and can present learning information that can be repeated according to needs. The use of reading books will help children in the learning process. Through the using of appropriate reading books and in accordance with the needs of children, the goals will be easily achieved.

Previous research shows that reading shared books promotes preschool language skills and literacy. However, not many know about the potential role of book features - specifically, the role of using word books without words compared to books with text - in children's spontaneous language

production and teacher instructional support. In Chaparro-Moreno, Reali, & Maldonado-Carreño (2017), copying the verbal interactions of thirteen Colombian teachers read to early childhood groups during a reading session in Spanish using wordless picture books (condition 1) and prototypical storybooks with text (condition 2). By using Computerized Language Analysis (CLAN), they found that in the condition of the wordless word book, children produced more words, words and words significantly, and the teacher showed a higher level of instructional support. Regression analysis revealed a significant relationship between children's language production and the quality of teacher feedback during teaching literacy, indicating that wordless picture books can improve children's language by increasing teaching support.

Likewise, the study conducted by (Yu, 2009) applied Erwin Panofsky's concept of the level of meaning of works of art and the image attribute framework of Corinne Jorgensen to explore the different levels of meaning felt by children in illustrated picture books. Observations, interviews, and surveys are used for data collection and analysis of content and case studies for data analysis. Thirty-one children aged three to five years were recruited from kindergartens, public libraries, and home schools participated. The findings show that children rely on their previous experience and familiarity with literary sources to reach a level of meaning. The concept of level of meaning can provide a better understanding of representing meanings for children and children's interpretation of the meaning of visual information. Referring to this study, researchers assume that the pop-up book will provide more meaningful experience than ordinary books. It is hoped that this research can inspire teachers to be more creative in making thematic pop-up books.

Today's technology has a lot of pop-up book research that is integrated with technology such as research conducted by Nazaruddin & Efendi (2018) regarding research that illustrates the feasibility of using augmented reality pop-up books to enhance focus and object recognition for autistic children. the results of the study found that the use of pop up augmented reality books was able to increase the appreciation of autistic students towards the objects introduced to them. Indicators can be seen from increasing interest in design, duration of observation, exploration of curiosity, mastery of message content, communication when observing objects or things introduced to them. But the development of a pop-up book that is integrated with technology is still a difficult obstacle for many early childhood teachers who live in remote areas and still have difficulties with these technologies. Therefore, for early childhood teachers in Indonesia, especially in remote areas, they are required to be more creative in learning to improve aspects of children's language development.

Based on observations of researchers at Khaira Ummah Islamic Kindergarten in Padang, educators still rarely use reading books as teaching materials, reading books are still less attractive to children, so children's reading interest is low. This condition triggered researchers to develop healthy and unhealthy food reading books in the form of pop-up books. The pop-up book is expected to be a medium to arouse children's learning motivation reading books Pop-up can develop creativity and stimulate children's imagination, increase knowledge, instill children's love for reading, and be more active in learning the contents of the book. The two-dimensional display that can move in a pop-up book can present the real world in children's learning activities, so that it is in accordance with the stage of children's cognitive development which is concrete operational. The use of pop-up books will help children and educators in the learning process. Through the using of pop-up books that are appropriate and in accordance with the needs of children, the goals will be easily achieved. In addition, this book can be used independently or in groups. Therefore, researchers are interested in developing the Media Pop-Up Book Early Childhood in the Khaira Ummah Islamic Kindergarten in the City of Padang.

### *Early Childhood Education*

Early childhood is a unique individual and has its own characteristics according to the stages of its age. Wiyani & Ardy, (2016, p. 99) early childhood who are growing and developing have characteristics. Multiple theories Intelligence that shows individual differences aims to make students use all their abilities, interests, and ambitious in practice. Through this theory, educators broaden their horizons in developing programs, which pay attention to individual differences and enrich the type of intelligence by using the basics in creative ways. Likewise, linguistic intelligence can be developed through various media that are effective and interesting to children (Beceren, 2010)

### *Early Childhood Language Development*

Early childhood learns the language of the words they hear. Previous research showed greater differences in words and linguistic contexts associated with better language outcomes. One potential source is text from picture books that are read aloud to children. Many parents begin reading for their children soon after birth, so this has the potential to become an important source of linguistic input for many children. Montag, Jones, & Smith, (2015) made a collection of 100 children's picture books. Overall, picture books contain more unique types of words than lecture words on learning for children. Furthermore, each picture book generally contains more types of unique words with conversations that are suitable for children. Text of picture books may be an important source of vocabulary for children, and these findings suggest mechanisms underlying the benefits of language related to reading for children. This research provides clues that books are always liked by children and are able to improve the development of early childhood language.

Language development for children means they only need to remember what they heard and repeat the words they heard. But as Chomsky pointed out many years ago, if this is the essence of language learning, it won't be a successful communicator. Verbal communication requires productivity, namely the ability to create unlimited sayings that have never been heard before. Some aspects of language knowledge are abstract, Chomsky's key point is that because abstraction can never be experienced directly, they must emerge from the child's own mental activity while listening to speech and this activity can be stimulated through books that appeal to children (Berman, 2018).

The importance of language especially for children in early childhood education makes and designing methods to improve children's language development becomes an important task for researchers and teachers. The use of effective language gives children the power to say what they want and need. Very important for the development of children. Language is an important key to learning that allows children to understand the world around them. Language provides an important opportunity for a child to socialize with family members and other children outside his group and to manifest himself as a person (Obiweluzo & Melefa, 2014). Language helps children achieve their goals. Language is very important for the development of children during the early years of life, that is, early childhood. This stage is a critical and sensitive phase of life when rapid growth and development in mental, physical, emotional and social abilities emerges. findings from several recent studies indicate the importance of experience during the early years of life in subsequent developments (Ponitz, McClelland, Matthews, & Morrison, 2009).

Reading the same book every day for a week gives children the opportunity to become truly familiar with a story because of the many readings and extended learning opportunities. Children who may not be present, are disturbed during the story, or have difficulty learning languages are

more likely to understand the storylines and key concepts that enable them to become active participants during story time. When children get used to stories, they learn and practice important languages. skills. These include the ability to predict, understand the sequence of causal and temporal causes (i.e., learn story elements), retell stories, remember details, use vocabulary words in various contexts, answer more complex questions about stories, and learn new dialogues or social script (Wilcox, M.J., K.M, Bacon, & Thomas, 2001). Lin, (2012) also conducted research by applying content analysis for collection, organization, and related literature analysis. Lin, (2012) also conducts research by proposing plans and designs for teaching activities with innovative teaching materials. Creating the context and characteristics needed for innovative thought teaching methods, so that student-oriented creative teaching can be a digital work of teaching materials offered to students as a reference for making their picture books. Likewise, with pop-up book research with food themes, trying to present innovative learning that attracts children's interest in learning food.

An educator in the administration of childhood education should be guided by the principles, Helmawati (2015, p. 49) The PAUD Directorate declares the principle of PAUD education including, 1) oriented to the needs of children, 2) in accordance with the child's development, 3) according to the uniqueness of each individual, 4) learning activities carried out through play, 5) child-centered learning, 6) children as active learners, 7) children learn from the concrete to abstract, from simple to complex, from movement to verbal, and from oneself to social, 8) providing an environment that supports the learning process, 9) stimulating the emergence of creativity and innovation, 10) developing children's life skills, 11) using various learning resources and media in the environment, 12) children learning in accordance with its socio-cultural conditions, 13) involving the participation of parents, 14) educational stimulation is comprehensive and covers all aspects of development.

### *Learning Media*

The study from Walter-Laager et al., (2017) investigates the effects of learning media for children from interactive word learning applications and picture cards about vocabulary acquisition of 2-year-olds. His findings show that children who use the word learning application when accompanied by adults have the greatest growth in vocabulary, and those who use the application of non-accompaniment word adult learning show the second largest growth. The less successful ones are children who play with picture cards (with or without adults). Groups of children who focus on the subject matter for the longest period of time learning the most recent words, while the group that focuses on the subject matter for the shortest period of time has the smallest growth in words. Media plays an important role in learning, because it can facilitate children in the learning process. Medium can be defined as an intermediary or introduction to the communication from the sender to the recipient. Media is one component of communication, namely as the communicator of the message to the communicant. Sahlan, Asmaun, Angga, & Prastyo, (2016) also defines media as something that is channeling messages of funds can stimulate the mind, feelings, and willingness of the audience so that it can encourage the learning process on him. Learning media are tools that can help the learning process and function to clarify the meaning of the message delivered, so that it can achieve learning goals better and more perfectly.

An educator must be able to encourage and inspire children to be able to understand, apply, and develop rational and objective thinking patterns in response to substance of learning material. Learning goals are formulated in a simple and clear, but interesting presentation system. So, with the existence of interesting and clear learning media can encourage and inspire children to be able

to understand and develop rational thinking patterns. Sudjana & Rivai (2011) suggest that the benefits of learning media in student learning processes are as follows: (a) Making learning more attractive to students' attention so as to foster motivation to learn. (b) Make it easier for students to understand the lesson because the meaning is clearer so that it allows students to master and achieve learning goals. (c) Teaching methods will be more varied because learning is not only obtained from the teacher's narrative so that students are not bored, and the teacher is not exhausted. (d) Students can do more learning activities because they not only listen to the teacher's description, but also other activities such as observing, doing, demonstrating, acting and others.

### *Media Pop-Up Book*

One of the innovative medias to involve students is pop-up books. According to (Sari, 2017) a pop-up book is a book that can display images with three-dimensional effects appearing when a book is opened and gives a unique display effect when drawn in several parts. Various efforts have been made to introduce children to reading and make the reading experience more stimulating and enjoyable, especially for small children. It was found that illustrations played an important role in attracting and maintaining children's interest in reading. Therefore, children's story books are equipped with large and colorful images that describe the subject or background. Dato & Radmilovic (2010) said that pop-up books have become a very popular choice among parents and children because the pop-up book is equipped with hinged pop-up devices that provide surprise and entertainment for children.

The pop-up book is an interactive book including the means to fold and unfold the foldable surface and a means to entertain the reader. Funny tools are configured to appear or open when opening a foldable surface. Funny means consist of means to interact with readers, and interacting means are configured to be released from and reconnected to interactive books (Dato & Radmilovic, 2010). The method of using pop-up book products, manufacturers are required to have readable materials and pop-up devices that are thematically related to the theme of learning. In this case the researcher included the theme of human needs, namely the theme of healthy food. Readable material includes positioning the product so that readable material can be seen, opened or expose the pop-up book device thematically related to readable material, removing pop-up devices from the product, playing with pop-up devices, and Reinstall the pop-up device for reuse

The ability to stimulate children's imagination has been limited by the pop-up books available today because the pop-up devices have been physically integrated into the book. Rahmawati & Rukiyati (2018)'s research aims to develop a pop-up book learning media that is suitable for children aged 4-5 years and to determine the effectiveness of pop-up book learning media to improve the cognitive abilities of children aged 4-5 years. The results of the study show that pop-up books are effective for improving cognitive abilities for children aged 4-5 years. This can be seen from the results of the calculation of the paired sample t-test where the significance value of 0.00 is less than 0.05 ( $<0.05$ ), which means that the media of pop-up book learning are effective for increasing cognitive abilities for older children 4-5. Year.

Based on the analysis of the need for improved language development in early childhood in the city of Padang, the findings of previous research regarding pop-up books, researchers have a research goal to develop thematic pop-up book products according to the theme of learning. The first product designed and tested was a pop-up book to improve aspects of children's language development with the theme of healthy food. This is because there are no thematic pop-up books that can be used by early childhood teachers as learning media.



## 2 METHODS

This type of research is research and development. According to Putra, (2011) Research and Development (R & D) can be defined as a research method that intentionally, systematically, aims / is directed to find, formulate, improve, develop, produce, test the effectiveness of products, models, methods / strategies/ways, services, certain procedures more superior, new, effective, efficient, productive, and meaningful. This Pop-Up Book media was developed using a model 4-D. The 4D model includes 4 stages, which are define, design, development and dissemination.

The instrument for collecting data in this study is the documentation method carried out by recording the children of Khaira Ummah Islamic Kindergarten in Padang City. The inter-view method is used as a tool for collecting data from media experts in conjunction with suggestions, criticisms and inputs, discussions were conducted with media experts, material experts and children during field trials. The questionnaire method uses a five-point response format from the Likert scale, where the alternative response is very good / very clear, good / clear, sufficient / quite clear, less / less clear, very lacking / very unclear. Data analysis in this study was conducted using descriptive statistical analysis techniques. This technique will describe the results of the validity test, the practicality of the media Pop-Up Book

## 3 RESULT AND DISCUSSION

Development of media Pop-Up Book implemented with four stages, the define, design, development and dissemination. The results of activities in each of the stages are as follows:

### 3.1 *Define Stage*

#### 3.1.1 *Analysis Initial-End*

##### 1) Analysis of Curriculum

Development of media Pop-Up Book based on the curriculum of 2013. This was done essentially aimed at multimedia use so that children can achieve learning goals by basic competence. The material in basic competence 2.1-2.2- 2.3-2.5-26- 3.4 / 4.4- 3.6 / 4.6- 3.10 / 4.10- 3.11 / 4.11, the theme of my needs is the sub-theme of food and beverage, healthy living behavior, various kinds of healthy foods and drinks, unhealthy kinds of food and drinks that need to be mastered by children so that the media needs to be developed Pop-Up Book.

##### 2) School Media Analysis

Based on researchers' observations, the media used in reading books is still minimal used by educators, reading books are still less attractive to children, low children's reading interest in reading books.

#### 3.1.2 *Students Analysis*

Based on the analysis of students known that children age kindergarten class B at the stage of 5-6 years of age, the child will begin to achieve the clearer process of thinking where the cognitive abilities of its children will be able to assess, connect, and consider an event or event.

#### 3.1.3 *Task Analysis*

Analysis of tasks is focused more on the details of Basic Competencies for healthy living behavior, healthy foods and drinks, unhealthy kinds of food and drinks.

### 3.1.4 *Concept Analysis*

The main concepts that will be compiled in the media Pop-Up Book are that the Researchers will formulate the main concepts in healthy living behavior, healthy foods and drinks, unhealthy kinds of food and drinks.

### 3.2 *Design Stage*

At this stage there are various kinds of activities that must be carried out, among others, as follows: The first step, the researcher takes a picture of the character by taking the child's picture as the model. The finished image is then printed or printed. After printing, the next step is the cutting process using scissors and cutter then the pieces are arranged using glue. The final step is binding by combining between pages.

### 3.3 *Development Stage*

Media is Pop-Up Book made using used materials and is easy to find. Tools and materials: used cardboard, paperboard, glue, scissors, threads, crayons, rulers and needles. The pop-up book size design is 30×40 cm.

The following are described sections of the media Pop-Up Book that are designed:

#### a. Pages About Authors



Figure 1. Pages About Authors Books

b. Page Contents

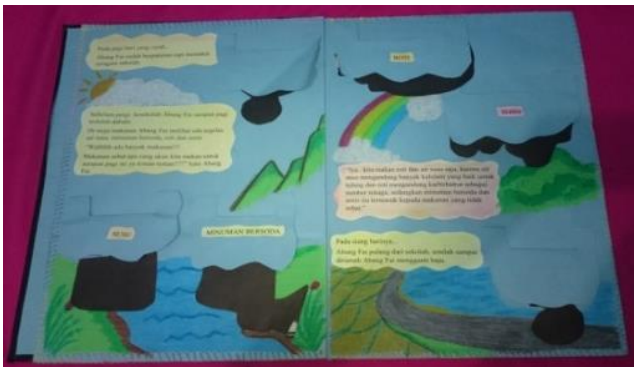


Figure 2. Pages 1 and 2 Pop-Ups closed

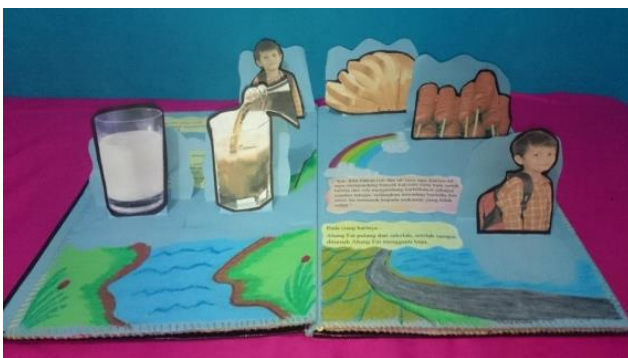


Figure 3. Pages 1 and 2 Pop-Ups Open

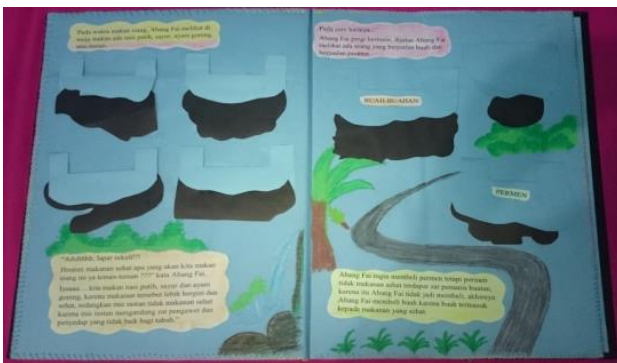


Figure 4. Pages 3 and 4 Closed Pop-Ups

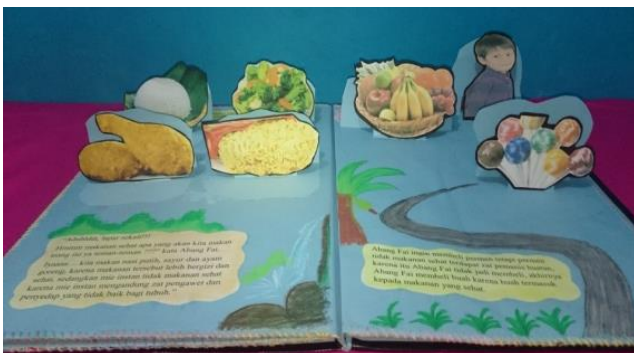


Figure 5. Pages 3 and 4 Open Pop-Ups

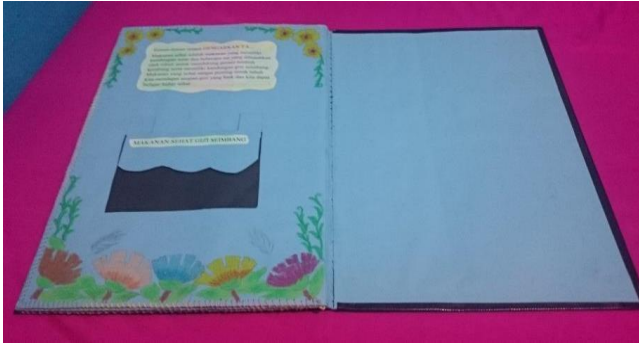


Figure 6. Page 5 Closed Pop-Ups



Figure 7. Page 5 Open Pop-Ups

The next step is to test the validity and practicality test. Test the validity of instructional media carried out by media experts and material experts. Validity with media experts by showing the media Pop-Up Book that has been created and then the media expert gives suggestions and comments. After that the author made a revision in accordance with the suggestions and comments of media experts.

Table 1. Analysis of Validity with Media Experts

NO	ASPECT OF ASSESSMENT	VALUE
		V1
1	2	3
<b>A. DISPLAY</b>		
1	Display of attractive media	5
2	Selection of color <i>background</i> and text accordingly	4
3	Grouping of appropriate Images	5
4	Text can be read clearly	5
5	Pictures and illustrations presented clearly	5
<b>B. LAYOUT</b>		
6	Size of book used efficiently	5
7	Text presented adjusted to size of book	5
8	Accurate placement of images and contents of story	4
<b>Total</b>		38
<b>Average assessment by media experts on all aspects</b>		95% (Very Valid)
<b>Average validator rating</b>		95%

Based on the results of the table above there are 2 aspects and 8 indicators in media assessment. The results of the media expert's validation state that multimedia developed is valid. The number of media expert assessment scores is 38. The average results of media expert evaluations are 95%. The display aspect is dominated by grades 4 and 5 by media experts. Whereas the layout / layout aspect is also dominated by grades 4 and 5 by media experts.

Validity with material experts is done by showing the media Pop-Up Book that has been created and then the media expert gives suggestions and comments. After that the author made a revision in accordance with the suggestions and comments of material experts. Following analysis of validation results with material experts:

Table 2. Validity Analysis with Experts Material

NO	ASPECT OF ASSESSMENT	VALUE
<b>1</b>	<b>2</b>	<b>3</b>
	<b>A. FEASIBILITY OF CONTENTS</b>	
1	The material presented is in accordance with KD	5
2	Material presented in accordance with the age stage of children	5
3	Material presented according with learning objectives	4
4	Improve cognitive abilities of children	5
5	Improve children's language skills	5
	<b>B. HABITS</b>	
6	Languages that are used effectively and efficiently	5
7	Presentation of language in accordance with the rules of Indonesian language is good and correct	4
	<b>C. PRESENTATION</b>	
8	The contents of the story are clearly explained	5
9	Systematic story order	5
10	Pictures and illustrations presented in accordance with the material	5
11	There is interaction between children and the media	4
	<b>Amount</b>	<b>52</b>
	<b>Average expert media assessment of the overall aspects</b>	<b>95% (Very Valid)</b>

Based on the table above there are 3 aspects that are assessed by material experts. In the first stage a score of 52 was obtained with an average of 95%. Assessment is dominated by number 5 and number 4.

Practical testing is carried out for children B6 Khaira Umah Islamic Kindergarten, Padang City. The following are the results of practical analysis on children based on teacher anecdotal notes:

Table 3. Practicality Analysis on Children

No	Aspects	Average of Practicality Value (%)	Criteria
1	Ease of Use	93	Very Practical
2	Attraction	98	Very Practical
3	Understanding of Material Concepts	96	Very Practical
	<b>Total</b>	<b>287</b>	
	<b>Average</b>	<b>96</b>	<b>Very Practical</b>

The results of the practical assessment of children are stated to be very practical. Based on the

table above, from the 3 aspects that become the assessment of media practicality in children. The values obtained are 93% ease of use, 98% attraction, and 96% understanding of material concepts. The average value obtained is 96%.

### 3.4 Disseminate Stage

The dissemination stage is carried out to promote media that has been developed so that it is acceptable to users. There are 3 stages of dissemination, namely validation testing, packaging, and diffusion and adoption. In the stage of validation testing, revisions have been made in accordance with the suggestions given by the validator and have been implemented to the child. For the stage packaging, diffusion and adoption is done so that it can be used by others. However, this cannot be done due to limited facilities in conducting research so that media effectiveness tests cannot be carried out. In addition, the authors also package and present the results of Pop-Up Book media development products in the form of scientific works.

## 4 DISCUSSION

Pop-Up Book media development is done through 4 stages called 4D (define, design, development, and disseminate). Development of instructional media was conducted in class B6 of Khaira Ummah Islamic Kindergarten in Padang City. Making learning media using used materials and easy to find. Tools and materials: used cardboard, paperboard, glue, scissors, threads, crayons, rulers and needles. To produce appropriate learning media, a series of media expert validation, material expert validation and practicality were carried out. The series was carried out to obtain data which would then be carried out revisions or improvements to produce appropriate and useful learning media for users.

The results of media validity indicate that the Pop-Up Book media is very valid by media experts in aspects of appearance and layout. In the display aspect there are 5 indicators, namely the attractiveness of the display, the accuracy of color and text selection, the appropriate grouping of images, the text can be read clearly. All indicators in the display aspect are considered very valid by media experts. Arsyad, (2017, p. 172) said, multimedia aims to present information in a form that is fun, interesting, easy to understand, and clear". Based on the statement, it is evident that the development of the media must pay attention to the overall visual media. It is intended that the media developed can generate passion and interest in student learning.

In the aspect of layout, there are 3 indicators, namely the size of the book used efficiently, the text presented is adjusted to the size of the book, the accuracy of the placement of images and the contents of the story. The three indicators are considered very valid by media experts. Arsyad (2017) states that visual development must meet certain technical requirements such as visuals on slides must be clear and information or messages that are highlighted and want to be conveyed must not be disturbed by other elements. This means that all elements contained in the media must be well placed. Placement of media elements should also pay attention to the clarity of the information to be conveyed.

The results of the material validity indicate that the Pop-Up Book media is very valid by material experts in aspects of content feasibility, linguistic aspects, and presentation aspects. In the aspect of content feasibility there are indicators of the suitability of the material with basic competence (KD), the material presented in accordance with the stage of the child's age, the material presented is in accordance with the learning objectives, improving children's cognitive abilities, improving

children's language skills. All aspects are stated to be very valid by material experts. This Pop-Up Book media can improve children's language and cognitive abilities. In accordance with the content of the story book about healthy and unhealthy food, it is expected that children can have healthy living behaviors and distinguish healthy and unhealthy foods.

In the language aspect there are indicators of language clarity and the suitability of the language used with KBBI. Both indicators are stated to be very valid by material experts. Therefore, the use of language in the Pop-Up Book media is very good. In the presentation aspect there are indicators related to the content of the story presented clearly, systematic story sequences, images and illustrations presented in accordance with the material, and there are interactions between children and the media. The overall indicators were very well assessed by material experts. (Safitri & Hartati, 2016) stated that elements of proper and adequate graphics and linguistics in textbooks and multimedia are expected to motivate students. Media acts as a facilitator between educators and students in developing motivation during the learning process. For that reason, choosing the right language needs to be considered in developing the media.

Practical testing of children by the teacher. The practicality of the media is related to the practicality of using the developed media. Aspects related to practicality include ease of use, attractiveness, understanding of material concepts. Practicality was carried out on 15 class B6 Khaira Ummah Islamic Kindergarten in Padang City. The results obtained are the level of practicality of the media is very practical. This means that the media developed is very good, easy to use, attractive and provides benefits to children. In aspects of ease of use, indicators of clarity of clues, ease of use of storybook media displayed with pop-up buttons, material clarity, conformity of material with pictures of story content and images, completeness of material, and language used were considered very practical in children. On aspects of attractiveness, indicators of media appearance, color choices, and motivation to learn are also considered very practical. While aspects of understanding the concept of material are also considered very good for children. Based on this assessment means that the entire media developed is very good and feasible to use. As research conducted by Dato & Radmilovic (2010) has proven by providing stimulation through pop-up books, children's imagination or users are increasingly stimulated and enhanced beyond normal reading experiences. After a removable device is played or interacts with it, it might be attached back to a book or card for future use which is a pleasure as a pop-up feature. This discovery can be implemented in a number of ways, and is not limited to books or cards, but can be used in various other methods of implementation

## 5 CONCLUSION

Based on the results of the research and discussion that have been conducted, there are a of things that can be concluded, namely the development of media Pop-Up Book in Khaira Ummah Islamic Kindergarten in Padang City, declared by media experts to be very valid with a 95% average score. The media Pop-Up Book on Healthy and Unhealthy Food material is also stated to be very valid by material experts with an average rating of 95%. The development of media Pop-Up Book at Khaira Ummah Islamic Kindergarten was stat-ed to be very practical for children by teachers with a 96% average score. Based on these results indicate that the media product Pop-Up Book received a positive response for children and teachers. Media Pop-Up Book can be used as a medium that improves children's language, cognitive, and reading interest, so that children can like reading. This research generally runs smoothly, but there are still some obstacles that researchers face. These constraints are that children cannot use the media one by one because of the

lack of the ability of researchers to make many storybooks. But children can orderly read story books alternately. Thus, the development of the media Pop-Up Book conducted at the Khaira Ummah Islamic Kindergarten is feasible.

## 6 REFERENCES

- Arsyad, A. (2017). *Media Pembelajaran*. PT Raja Grafindo Pustaka.
- Beceran, B. Ö. (2010). Determining multiple intelligences pre-school children (4-6 age) in learning process. *Procedia - Social and Behavioral Sciences*, 2(2), 2473–2480. <https://doi.org/10.1016/j.sbspro.2010.03.356>
- Berman, R. A. (2018). Language Development and Literacy. *Encyclopedia of Adolescence*, (October), 2093–2103. [https://doi.org/10.1007/978-3-319-33228-4\\_19](https://doi.org/10.1007/978-3-319-33228-4_19)
- Chaparro-Moreno, L. J., Reali, F., & Maldonado-Carreño, C. (2017). Wordless picture books boost preschoolers' language production during shared reading. *Early Childhood Research Quarterly*, 40, 52–62. <https://doi.org/10.1016/j.ecresq.2017.03.001>
- Dato, A., & Radmilovic, V. (2010). Interactive Book With Detachable, Pop-Up Device. *Patent Application Publication*, 1(19), 20–25. <https://doi.org/US 2007/0293118A1>
- Helmawati. (2015). *Mengenal dan Memahami PAUD*. Bandung: PT Remaja Rosdakarya.
- Lin, R. (2012). Creative Thinking for Picture Book Creation. *IERI Procedia*, 2, 30–35. <https://doi.org/10.1016/j.ieri.2012.06.047>
- Montag, J. L., Jones, M. N., & Smith, L. B. (2015). The Words Children Hear. *Psychological Science*, 26(9), 1489–1496. <https://doi.org/10.1177/0956797615594361>
- Nazaruddin, M. A., & Efendi, M. (2018). The Book of Pop Up Augmented Reality to Increase Focus and Object Recognition Capabilities for Children with Autism. *Journal of ICSAR*, 2(1), 9–14. <https://doi.org/10.17977/um005v2i12018p009>
- Obiweluzo, E. P., & Melefa, O. M. (2014). Strategies for Enhancing Language Development as a Necessary Foundation for Early Childhood Education. *Journal of Education and Practice*, 5(5), 147–155. Retrieved from [www.iiste.org](http://www.iiste.org)
- Ponitz, C. C., McClelland, M. M., Matthews, J. S., & Morrison, F. J. (2009). A Structured Observation of Behavioral Self-Regulation and Its Contribution to Kindergarten Outcomes. *Developmental Psychology*, 45(3), 605–619. <https://doi.org/10.1037/a0015365>
- Putra, N. (2011). *Research & Development*. Jakarta: Raja Grafindo Persada.
- Rahmawati, D. I., & Rukiyati, R. (2018). Developing Pop-Up Book Learning Media to Improve Cognitive Ability of Children Aged 4-5 Years. *Atlantis Press*, 249(Secret), 60–69. <https://doi.org/10.2991/secret-18.2018.10>
- Ros, R., & Demiris, Y. (2012). Human Behavior Understanding, 7559, 40–51. <https://doi.org/10.1007/978-3-642-34014-7>
- Safitri, D., & Hartati, T. A. W. (2016). Kelayakan Aspek Media dan Bahasa Dalam Pengembangan Buku Ajar dan Multimedia Interaktif Biologi Sel. *Florea*, 3(2), 9–14. Retrieved from [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwj987v6iurhAhVm63MBHU-eCzMQFjAAegQIBhAC&url=http%3A%2F%2Fjournal.unipma.ac.id%2Findex.php%2FJF%2Farticle%2Fdownload%2F794%2F724&usq=AOvVaw0vnFUWEgaIBjOUyS\\_L3RDB](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwj987v6iurhAhVm63MBHU-eCzMQFjAAegQIBhAC&url=http%3A%2F%2Fjournal.unipma.ac.id%2Findex.php%2FJF%2Farticle%2Fdownload%2F794%2F724&usq=AOvVaw0vnFUWEgaIBjOUyS_L3RDB)
- Sahlan, Asmaun, Angga, & Prastyo, T. (2016). *Desain Pembelajaran Berbasis Pendidikan Karakter*. Yogyakarta: Ar-Ruzz Media.



- Sari, S. A. (2017). The Development of Pop-up Book on the Role of Buffer in the Living Body. *European Journal of Social Sciences Education and Research*, 10(2), 213. <https://doi.org/10.26417/ejsr.v10i2.p213-221>
- Sudjana, N., & Rivai, A. (2011). *Media Pengajaran*. Bandung: Sinar Baru Algensindo.
- Walter-Laager, C., Brandenburg, K., Tinguely, L., Schwarz, J., Pfiffner, M. R., & Moschner, B. (2017). Media-assisted language learning for young children: Effects of a word-learning app on the vocabulary acquisition of two-year-olds. *British Journal of Educational Technology*, 48(4), 1062–1072. <https://doi.org/10.1111/bjet.12472>
- Wilcox, M.J., M., K.M, Bacon, C. K., & Thomas, S. (2001). *Enhancing Children ' s Language Development in Preschool Classrooms Using Literacy to Target Verbal Language Goals*. *Enhancing Children ' s Language Development in Preschool Classrooms Encouraging Complex Verbal Reasoning*. Arizona. Retrieved from <http://icrp.asu.edu>
- Wiyani, & Ardy, N. (2016). *Konsep Dasar PAUD*. Yogyakarta: Gava Media.
- Yu, X. (2009). Levels of meaning and children: An exploratory study of picture books' illustrations. *Library and Information Science Research*, 31(4), 240–246. <https://doi.org/10.1016/j.lisr.2009.07.003>



## Syntactic Analysis of Language Acquisition in Three-Year-Old Children Based on Cultural Background

Nur Lailiyah<sup>1</sup>

*Universitas Nusantara PGRI Kediri*

Intan Prastihastari Wijaya<sup>2</sup>

*Universitas Nusantara PGRI Kediri*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.05>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** The variety of languages and cultures in the community will indirectly affect the acquisition and development of children's language. This will be seen when children change residence, where new dwellings, different variations or dialects. At the PAUD Nusantara University School Laboratory PGRI Kediri, most children from various regions, they are migrant families in the city of Kediri and need adaptation in the new environment including the language. This study uses a qualitative descriptive approach, the purpose of which is to describe the acquisition of language of three-year-olds in terms of cultural background and to describe the average length of speech of three-year-olds based on Mean Length of Utterance (MLU). The research subjects were four children from Tulungagung, Kediri, Malang and Surabaya. The results of speech analysis show that the average research subjects from Tulungagung, Malang, Kediri and Surabaya had an average MLU of 2.92 in stage VI, which meant that they were still at a low stage, which at the age of three was already at the stage VII 3.0-3.5 words per speech. Based on the results of the analysis, it is recommended that teachers and parents improve stimulation and find appropriate strategies for the acquisition and development of children's language.

**Keywords:** Acquisition of children's language, Cultural background, Syntax Analysis

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media) : 2503-0566**  
**P-ISSN (Print Media) : 1693-1602**

---

<sup>1</sup> Corresponding Author:

Nur Lailiyah

Universitas Nusantara PGRI Kediri

Jln. KH. Ahmad Dahlan No. 76, Mojoroto, Kota Kediri, Jawa Timur, Indonesia

Email: lailiya86@unpkediri.ac.id

## 1 INTRODUCTION

Every child has the development of different language skills, starting from early age to adulthood. Starting from the simple to the most complex. Variations can be observed at each level of description ranging from individuals to social especially in the skills of language (Seamus & Morten, 2018). Children learn languages more easily than adults (Hartshorneab, Tenenbauma, & Pinker, 2018). The development of a child's language skills will increase with age and the stimulus that children get (Hetherington, 2003).

Language skills are the result of a combination of all children's development systems, because language skills are sensitive to slowness or damage to other systems. Language skills increase as the brain develops. Language processing, especially understanding complex sentences, is supported by brain tissue (Qia et al., 2019). Language skills involve motor, psychological, social-emotional abilities. When getting a language, the child is faced with a challenge to decode relationships between certain greeting entities, which require certain grammatical sayings and the thematic roles played by each entity. So that this can be done, the child must implement it linguistic cues and regularities provided by certain languages (Vissiennon, Friederic, Brauer, & Wu, 2016). Language mastery can be seen as a type of mastery of skills, just as in learning to ride a bicycle, play a musical instrument, or draw; and the need to gain knowledge about the abstract structure of language (Chater & Christianshen, 2018).

Communication patterns of children aged 2-3 years experience rapid language development. In the age of 2 years most children can follow simple instructions or instructions. Children aged 3-6 years have obtained vocabulary, namely basic vocabulary (nouns, verbs, adjectives, number words, pronouns, words related to kinship, and prepositions), derivative vocabulary (prefix suffixes, suffix suffixes, affixes infix, and confix inflations), and vocabulary (Smith, 2010). After hearing the first words of sentences, toddlers can properly exploit prosodic information to access the syntactic structure of sentences to help determine the syntactic categories of ambiguous words and to correctly identify the intended meaning (Carvalho, Dautriche, & Lind, Christophe, 2017). Three year-old children represent abstract sentences, have syntactic representations for nouns, verbs, "surface subjects", and "surface objects", have semantic representations for "agents" and "patients", and flexibly map out the relationship between syntax and semantics (Thothathiri & Snedeker, 2008); (Giulia & Virginia, 2008).

Children's social ability is related to the ability to manage their emotion with others that are related to heart and to care each others so that children can interact well with peers or with adults in the surrounding environment (Darjowidjojo, 2010). The ability to interact is inseparable from the acquisition of language that is mastered by children. Many factors influence the acquisition and development of children's language, namely internal and external factors (Sumarsono & Partana, 2018). External factors came from outside the child, one of the external factors is the family and school environment. Children get and understand the sound of the right language and can listen well from their family. The family is informal education and the closest environment to the child. While the school is a formal education where children get a second language and transfer experience gained from the family environment (Rahardi, 2001).

The environment has an important role in children's language development. Children's language varies according to its nature, as well as the environment around children and based on that environment their culture is built (Chaer, 2003). Diverse cultures will influence the acquisition of children's language (Chaer & Agustina, 2004). Social and cultural factors also determine a child's

success or failure in language acquisition (Muhlhausler, 2010). so that every child has the characteristics and distinctive language that other children do not have, which is why the differences between individuals are created.

Children acquire language from their cultural environment through imitating the language they hear, and bring it to the school environment (Sumarsono, 2013), so that even though the child controls dozens of words but the child has not been able to use the words maximally, the child only uses a few words communicate with friends at school. This is due to the fact that some children have different cultures so that they need new adaptations and similarities in the understanding of language in their schools, similar things are also found in previous studies that local language culture or environment can inhibit the acquisition of children's language (Hakim, 2016).

Child language acquisition is associated with the acquisition of syntax. One language development that is typically experienced by children is syntactic development. In the initial period the child uses one-word sentences, two-word sentences, three-word sentences, and so on until the complete sentence stage structure. In general, three-year-olds develop syntax at different stages, while words that contain meaning in the sentence uttered by a child can be measured by the Mean Length of Utterance or MLU. MLU is a concept used to measure linguistic products produced by children (Roni, 2016). Four factors that influence the syntax acquisition of children aged two years and three years are natural factors, cognitive development factors, social background factors and heredity; intelligence and language mastery style (Hutabarat, 2018).

Language acquisition as a process takes place in the brain of children, is obtained from their first language or his native language. Language acquisition is usually distinguished from language learning. Language learning is related to the processes that occur in children learning a second language after he learns his first language. Thus, language acquisition is related to first language acquisition (B1), while learning language is related to the second language (B2) when children interact with their environment. Vocabulary that can be mastered by children aged 3-6 years is the basic vocabulary (nouns, verbs, adjectives, number words, pronouns, words related to kinship, and prepositions), derivative vocabulary (prefix suffix, suffix suffix, affix infix, and confix inflations), and vocabulary (Salnita, Atmazaki, & Abdurrahman, 2019).

The MLU calculation is done by dividing the morpheme number with the utterance number. The higher the child's MLU, the higher the language's mastery of the child. But the reality in the field is not all three-year-old children have high MLU, as in children at PAUD Nusantara University School Laboratory PGRI Kediri comes from families who have different backgrounds, so that when interacting with schools with peers is still difficult. In line with the research, that the incompatibility of the results of this MLU can be influenced by differences in children's language environment, the higher the ability to interact, the higher the value of the MLU. Whereas from the research conducted by (Bachri & Maya, 2012) showing that there is a delay in stimulating children will greatly affect the acquisition of language and calculation of children's MLU.

MLU is a tool to measure the development of child syntax. MLU was first discovered by Roger William Brown (14, April 1925 - 11, December 1997) a social psychologist from America. Brown said how to calculate MLU could be done in several steps. First, take a sample of 100 utterances. Second, calculate the number of morphemes. Third, divide the number of morphemes by the number of utterances. Signs used are for example, the form of compound (train), irregular verbs (drank), and plural irregular (children) are considered one morpheme. pay attention to the following MLU formula:

$$\text{MLU} = \frac{\text{Number of Morphemes}}{\text{Number of Utterance}}$$

Brown divides the stages of children's language acquisition based on children's MLU into ten stages (Owens, 2008), namely:

Table 1 MLU Stages According to Brown

No	Stage	MLU	Age/Month
1	I	1 – 1,5	12 – 22
2	II	1,5 – 2,0	27 – 28
3	III	2,0 – 2,25	27 – 28
4	IV	2,25 – 2,5	28 – 30
5	V	2,5 – 2,75	31 – 32
6	VI	2,75 – 3,0	33 – 34
7	VII	3,0 – 3,5	35 – 39
8	VIII	3,5 – 3,45	38 – 40
9	IX	3,5 – 3,45	41 – 46
10	X	45+	47+

In this study, the focus is on calculating the MLU language of three-year-olds who have different cultural backgrounds, namely children from Surabaya, Malang, Tulungagung and Kediri.

The results of the study are expected to contribute to the development of the science of early childhood education, especially with regard to the acquisition of children's language from various cultural backgrounds, so that it becomes a reference for teachers in developing strategies for children's language acquisition and for parents to increase stimulation in efforts to increase children's vocabulary acquisition.

## 2 METHODS

This study uses a qualitative descriptive approach, which aims to understand the phenomenon of what is experienced by the subject of research such as speech, the length of the short speech (utterance of one word, two words, and so on). The object of this research is the utterance of three-year-olds of different cultural backgrounds and will be studied through syntax. This study uses a modification of the Creswell model. (Creswell, 2012) suggests several characteristics of the Research Field namely: Stage I: Include data collection; open-ended interview, direct observation, participant observation, Phase II: Data analysis, Phase III: Data collection, Phase IV: Data analysis, and Stage V: Analyst's overall interpretation.

This research was conducted at PAUD Nusantara University School Laboratory PGRI Kediri. Whereas the execution time starts in March 2018 until July 2018. Recording is done naturally, meaning that the researcher does not make any inference, children are left to speak naturally in places not specifically provided. The research subject in question is four three-year-old children with a maximum of three months adrift.

The data source for this study was four children aged three years and each had a maximum of three months adrift. The language used by the child is a mixed language between Indonesian and Javanese but with several Javanese dialects (Tulungagung), Java (Malang), and Java (Kediri) and Java (Surabaya). The language is his first language or his native language. The data referred to in this study were the acquisition of language from the four children of PAUD Nusantara School

Laboratory PGRI Kediri University, the data were obtained through observation, recording and completed field notes. According to (Mahsun, 2005) the basic technique is used as the implementation of proficient methods if the researcher provides stimulation (inducement) to the informant to bring up linguistic symptoms expected by the researcher. The data analysis technique in this study uses data triangulation techniques. Data analysis technique, according to (Moleong, 2007) analysis of data is the process of organizing and sorting data into patterns, categories, and basic units of description so that themes can be found, and work hypotheses can be formulated. In data analysis techniques not only do data collection and data compilation, but also interpret the meaning of existing data.

The linguistic aspects in this study analysed were syntax of children's language acquisition. The analysis will be carried out qualitatively and quantitatively. The quantitative method involves analysing the distribution and estimation of the MLU as a method that determines the child's language development. Analysing data can be done in four steps, namely: (a) Speeches recorded through diaries and recordings are transcribed in sentences. The collected data is arranged in the form of the structure of the child's speech sentence. (b) Data Selection has been transcribed is processed by separating the data needed and fulfilling the requirements that are in accordance with the research objectives. selected children's speech is speech that meets the requirements of the study and can be calculated by the MLU. (c) Data Classification has been selected is in accordance with the research objectives and data that can be calculated by the MLU. How to classify the data is by grouping children's speech based on the number of morphemes in each speech. Furthermore, the number of morphemes for each speech is summed (the number of speeches is limited to only 100 utterances). Then, the number of morphemes from 100 utterances is divided by 100. (d) Presentation of Data Analysis Results, after knowing the results of the MLU, the results were analysed to find out the average MLU of the three-year-old child who was the research sample at what stage and analyse the acquisition of syntax in terms of speech length and sentence structure.

### 3 RESULT AND DISCUSSION

The results of data collection for three-year-old are as follows:

Data transcripts of 100 words of research subjects (SP), the data below has gone through the process of classifying and transliterating into Indonesian.

Number of Words per Test	Research Subject I	Research Subject II	Research Subject III	Research Subject IV
One-word sentence	Eat, rice, stuffed, ship, play, study, participate in a race, angry, happy, car, pan, open, book, dance, sing, delicious, melon, grandfather, balloon, erupt, school, mate, bag, candy, ma, run, run, kucing, black, table, pan, sea,	Holiday, play, train, eat, drink, chair, table, crap, Miss, mama, ka-sis, join, swim, burger, bicycle, bin, hand, swing, together, naughty, no, sick, milk, sing, fall, run, Alin, ask, buy, get out, pants	Drink, milk, bread, fly, bird, eat, cake, follow, An-ti, chicken, stone, fried, hot, rice, egg, take, aunt, vegetable, like, no, sun, home, school, leave, alone, standing, scared, snake, me, clothes, forget, naughty, call, fall,	Snack, rain, star, lightning, milk, lazy, play, learn, cry, beat, swing, shoes, new, drink, carry, brown, eat, fruit, like, play, ball, Miss, Mama, take, Uzan, vegetables, swings, sweet

	brother, miss, fall, rope, leg, fish, egg, drink, green, me, song		push, book, sleep, fruit	
Two word sentence	Drinking water, learning to sing, cats, cats, ships, Miss angry, eating melons, hi-jau bags, Miss singing, grandma going, eating rice, wearing clothes, barbie dolls, playgroup school, grandfather's eyes, balloons erupted, her cat ran away, Miss fell, played a rope, the eggs were delicious, her desk was black, her cat was a kit, followed her, grandpa, sick, black car	Play the train, eat burgers, dedek chairs, play swings, drink milk, play bicycles, take a vacation, ask for stars, Miss sing, Ditto pants, fall down, buy a train, play outside, buy a burger, hurt hands, join Miss	Like vegetables, go alone, fly birds, drink milk, eat bread, go to school, fried chicken, afraid of chickens, fried chicken, fear of snakes, eat cakes, join Anti, aunt is afraid, likes cakes, my shirt is new, my bag, this is my desk, hot Miss, don't know	New shoes, Ayan play, chocolate milk, rain again, want to snack, like fruit, uzan swing, Ayan cry, eat fruit, play bo-la, mama inter, su sweet, ask for stars, there is lightning, bring drink, lazy play, Uzan learns
Three One word sentence	The cat ran away, the green balloon erupted, my brother got angry, I ate sweets, ate delicious eggs, I joined the race, Miss sang songs, played cars, brother got an eye sore, my balloon erupted, I joined brother, sister played bicycle, eat using meatballs, go home with grandpa, don't want to eat, my stomach hurts, plays and doesn't want to go, go home now Miss, Miss, ask for snacks	Play the train, Miss eat the burger, this is the dedek chair, go to the deck to play the swing, drink Miss milk, brother play the bike, take a break from school, ask Miss Miss, Miss sing my balloon, dirty pants, drop Miss, buy a train tut-tut, playing out there, buy a good burger, my hands hurt, want to come Miss, dare to sleep alone, the toy plane, when to come home Miss, how many birds are Miss, I don't want to	I like vegetables, I want to go alone, people fly there, drink stowberry milk, eat chocolate bread, go to school together, tasty fried chicken, fear of chicken, want fried chicken, fear of snakes Miss, eat cakes again, eat cake again, want to join Anti, Aunt here, I play swing, want to pee Miss, ask for a five star	Have new shoes, Ayan plays football, drinks chocolate milk, Miss rain again, wants to buy snacks, doesn't like fruit, uzan plays swing, Ayan cries Miss, eats bananas, wants to play football, mama between Ayan, milk is sweet, ask for stars again, watch out for lightning, take drinking Ayan, Ayan lazy to play, Uzan learns Miss
Four One word sentence	Departing at school with my brother, sister eating fried rice, playing slides with Miss, sister wanting	Play the train tut, Miss wants to eat a burger, this chair belongs to Dedek, dedek want to play	I like to eat vegetables, want to go to school on my own, birds fly there Miss, I drink stowberry milk,	I have new shoes, I play football myself, drink chocolate milk Miss, Miss rain again, you want to

	to throw puppies, sister asking for sweets Miss, Do not want to play together, do not want to learn Miss,	swing, drink su su Miss, brother wants to play bicycle, ask for three stars Miss, Miss want to sing my balloon, dirty dirty pants Miss,	want to eat chocolate bread, go to school with my brother, fried chicken is delicious Miss, afraid of afternoon cock, want fried chicken now, want to eat cake again, I just ate bribed, my mother was angry about me, I played a lot of Miss	buy taro snacks, don't like to eat fruit, uzan wants to play swing, Ayan cries again Miss, Uzan eats bananas, wants to play football mama between Ayan school
Five word sentence	Today I eat fried rice, I woke up today, I was angry at my brother, I have toy cars, I want to buy candy boy-boy, you don't ask for my candy, I don't want to color Miss.	Miss playing the tutor train, Miss wants to eat this burger, this chair belongs to Dedek Miss, dedek wants to play swing by herself, doesn't want to drink milk Miss, brother wants to play bicycle now, ask for three more stars Miss	I like to eat vegetables Miss, want to go to school by myself now, catch birds fly there Miss, I drink this Strawberry milk, want to eat chocolate bread and strawberry, go to school with my brother, yeah, this fried chicken tastes good Miss, do not want to color now Miss, eat later at home again, dedek want to join mama miss	I have two new shoes, Udin wants to play his own ball, drink chocolate milk again Miss, Miss rain again outside, want to buy taro snacks Miss, don't eat pi-sang fruit, uzan wants to play his own swing

### 3.1 Research Subject I from Tulungagung

Table 5.1. Number of utterances

Number of words utterance	Number of utterance	Number of morphemes
One-word sentence	43	41
Two-word sentence	25	50
Three-word sentence	22	66
Four-word sentence	19	76
Five word	11	55
Total	120	288

From the data above, SP I which is three years and more than one month old can say 120 speech words or 288 morphemes. The data shows that SP I is able to express one-word sentences as many as 43 words, two-word sentences as many as 25 words, three-word sentences as many as 22 words, four-word sentences as many as 19 words and five-word sentences as many as 11 words, while the length of sentences that SP can say I have a maximum of five morphemes. SP I originating from the Tulungagung area, has its first language (B1) in the Javanese language of Tulungagung



dialect and its second language (B2) in Indonesian, so that when SP 1 learns in formal schools in the City of Kediri, when interacting with friends it will experience obstacles in processing acquisition language. Children acquire native language through exposure to language related to structured representations that can be associated with words and syntactic structures used to express a concept (Abend, Kwiatkowski, Smith, Steedman, & Sharon, 2017). If SP 1, B1 uses the Javanese language of Tulungagung dialect, then when the SP moves in the city of Kediri, the PB will be hampered by the B1 Tulungagung accent and the B1 accent of Kediri so that the development of language acquisition is still in the range of 288 morpheme.

### 3.2 *Research Subject II from Malang*

Table 5.2. Number of utterances

Number of words utterance	Number of utterance	Number of morphemes
One-word sentence	35	35
Two-word sentence	25	50
Three-word sentence	26	78
Four-word sentence	21	84
Five-word	9	45
Total	116	292

From the data above, SP II which is three years old can say as many as 116 words of speech or 292 morphemes. The data shows that SP II is able to express one-word sentences of 35 utterances, two-word sentences of 25 utterances, three-word sentences of 26 utterances, four-word sentences of 21 utterances and five-word sentences of nine utterances, while the length of sentences that SP can say II a maximum of five morphemes. SP II originating from the city of Malang, has its first language (B1) in the Javanese language of Malang accent and its second language (B2) in Indonesian, so that when SP 1 studies in formal schools in the City of Kediri, when interacting with friends it will experience processing problems language acquisition. If SP II, B1 uses the Javanese dialect of Malang, then when the SP moves in the city of Kediri the PB will be hampered by B1 Malang accent and B1 Kediri accent so that the development of language acquisition is still in the range of 292 morphemes, which are not far from SP I from Tulungagung.

### 3.3 *Research Subject III from Kediri*

Table 5.3. Number of utterances

Number of words utterance	Number of utterance	Number of morphemes
One-word sentence	39	39
Two-word sentence	33	66
Three-word sentence	29	87
Four-word sentence	18	72
Five word	11	55
Total	132	319

From the data above, SP III which is three years and more than one month old can say 132 spoken words or 319 morphemes. The data shows that SP III is able to express 39 words of one word sentence, 33 words of two words, 29 words of three words, four words of sentence are 18 words and sentence of five words is 11 words, while the length of sentence can be SP. III a maximum of five morphemes. SP III originating from the city of Kediri, has its first language (B1) in the language of the Javanese dialect of Tulungagung and its second language (B2) in Indonesian, when the SP III studies in formal schools, when interacting with friends even though the area of residence is different but language dialect, it will also experience problems in processing language acquisition. Judging from table 5.3, the acquisition of 319 morphemes is more than that of the Tulungagung, Malang, and Surabaya regions.

### 3.4 Research Subject IV from Surabaya

Table 5.4. Number of utterances

Number of words utterance	Number of utterance	Number of morphemes
One-word sentence	39	39
Two-word sentence	28	56
Three-word sentence	23	69
Four-word sentence	15	60
Five word	8	40
Total	113	264

From the data above, SP IV which is three years and two months old can say 113 spoken words or 264 morphemes. The data shows that SP IV can express 39 words in one sentence, 28 words in two words, 23 words in three words, 15 words in four words and eight words in five words, while the length of sentence can be SP. IV maximum of five morphemes. SP IV originating from the Surabaya area, has its first language (B1) in Indonesian and its second language (B2) in a foreign language, so when SP IV studies in formal schools in the Kediri City area, when interacting there will be problems in processing language acquisition. If SP 1, B1 uses Indonesian, then when the SP moves in the city of Kediri then PB-2 can be the language of the Javanese dialect of Kediri, the existence of this will certainly hinder the acquisition of both languages (PB 2), so that SP IV can only obtain a range of morphemes 264 morphemes

### 3.5 Test Measurements with Mean Length Utterance (MLU)

The formula for calculating children's utterances is:

$$MLU = \frac{\text{Number of Morphemes}}{\text{Number of Utterance}}$$

#### SP I

$$MLU = \frac{\text{Number of Morphemes}}{\text{Number of Utterance}} = \frac{283}{100} = 2,83$$

From the measurement of MLU above SP I, those aged three years and over one month have an MLU that is currently in stage VI. SP I come from Tulungagung which has B1 in Javanese.

### SP II

$$MLU = \frac{\text{Number of Morphemes}}{\text{Number of Utterance}} = \frac{292}{100} = 2,92$$

From the measurement of MLU above SP II, those who are three years old have an MLU that is currently in stage VI. SP I come from Malang which has B1 in Javanese

### SP III

$$MLU = \frac{\text{Number of Morphemes}}{\text{Number of Utterance}} = \frac{319}{100} = 3,19$$

From the measurement of MLU above SP III, three years old has a high MLU and is in stage VII. SP I come from Kediri which has B1 in Javanese.

### SP IV

$$MLU = \frac{\text{Number of Morphemes}}{\text{Number of Utterance}} = \frac{278}{100} = 2,78$$

From the measurement of MLU above SP IV those who are three years and two months old have an MLU that is (-) and is in stage VI. SP IV comes from Surabaya which has B1 in Indonesian.

### 3.6 Analysis Based on Language Acquisition

First language acquisition, children are also able to compile sentences even though they are still very simple. In terms of logic, sentences are defined as utterances that convey complete thoughts composed of subjects and predicates. Understanding that the subject is about what something is said, and predicate is what is said about the subject, which needs to be considered is that the term subject and predicate refers to function, not to the type of word. Note the following footage of SP IV conversations that are three years and two months old:

- SP IV :I want to snack
- PP :Yes later, you haven't taken a break
- SP IV :Don't want to
- PP :Yes. patiently completed first color it
- SP IV :*Don't want it*
- PP :You can't get a star later
- SP IV :*Nothing*

From the conversations above SP IV originating from the city of Surabaya which have MLU 2.64 appear to answer questions with simple sentences, SP IV more often uses two-word sentences with the pattern KVK + KVV and KVK + VKV. SP IV, which has a first language, Indonesian seems to be a process of self-adjustment as well as the language that it hears, so the sentence spoken is very simple and from the syntactic level it is still in the two-word utterance

Pay attention to the three-year old SP I conversation:

- PP : Why are you crying?  
SP I : Where is Mommi, *Miss*?  
PP : Later you will be picked up from school  
SP I : *want to come with mommi, now!*  
PP : Mama is still on the trip  
SP I : I want to go home  
PP : Come on now we play again

From the conversation above SP I originating from Tulungagung which has MLU 2.88, it seems dominant to use a sentence in the form of a statement, SP I more often uses three-word sentences with the pattern KVKV + KVKV + KVKK and VKV + KVV + KVKVKK. SP I, which has a first language, Javanese does not seem to experience difficulties in interacting even though it is still in the process of adjusting in a new environment that has a new accent, so the sentences spoken are more complete than SP 1 and from the syntactic level they are still in the utterance three words.

Note the footage of SP II conversations that are three years and two months old

- PP : Want to play cars?  
SP II : *Want it, but it's broken?*  
PP : Here, Miss corrected  
SP II : Can be alone  
PP : Yes  
SP II : *How come it can't*  
PP : Come on here, I help you

From the conversation above SP II originating from Malang City which has MLU 2.92 the dominant uses three-word sentences, even though the MLU value is higher than SP II and SP II, but it has not been maximized in the use of the sentence.

The pattern used by SP II is KVK + CVCV + CVCVK and KVK + KVK + CVKV. In the sentence that is spelled out SP II seems to have a level, syntax is in the three-word utterances as well as SP I, but the SP II of the resulting speech is more active-critical, whereas in SP II the spoken speech tends to be active-passive.

Pay attention to the footage of SP III conversations that are three years and one month old:

- SP III : *Miss, ask for a sticker*  
PP : May  
SP III : Ask for three, which is yellow  
PP : One first  
SP III : *I don't want to, just three, Miss.*  
PP : Later

From the conversation above SP III originating from Kediri which has MLU 3.19 it seems active to use sentences in the form of commands, SP III more often uses four-word sentences with KVKKV + KVKV + KVKK + KVKKV and KKVK + KVV + KVKVKKV + KVKV + KVKK, Footage in the utterances of the four SP above, can be proof that three years old children can already use sentences. The sentences that are usually pronounced are still very simple but can stand as sentences. Orally the words spoken by SP can be said as sentences, because sentences in spoken language begin with silence interrupted by pauses and end silence as well.

The four SP have different levels of MLU, with heterogeneous members of a speech community and various cultures in the family environment being an influence on stimulation of children's language acquisition. When the stimulation and habituation of the language obtained by the child is enough, there is no obstacle in the acquisition of children's vocabulary, so it is not difficult for children to interact in the language environment. But conversely if child stimulation is not enough then this becomes an obstacle for children when interacting in society, he will tend to become an active listener without understanding the meaning of the language he hears.

Understanding of the language that is heard also greatly influences the acquisition of children's language, especially in the language environment that children have a culture that is different from the language environment at home. So that when interacting with friends and the community environment children will tend to take longer vocabulary absorption, this is because the child will tend to think of the meaning of the language he just heard.

### 3.7 Average Test Length Analysis

From the data that has been obtained, transcribed, selected, and classified, it is analyzed to find out the number of children's utterances calculated with the Mean Length Utterance (MLU), then the last to find out the average MLU of the child is calculated through the formula below:

$$\begin{aligned}
 &\text{Average value} \\
 &= \frac{\text{Amount of all data}}{\text{Lots of data}} \\
 &= \frac{2,83+2,92+3,19+2,78}{4} = \frac{11,72}{4} \\
 &= 2,93
 \end{aligned}$$

Based on the results of the MLU measurements above, the average length of speech of children is 2.93. When adapted to Brown's opinion (in Owens, 2008), fourth the subject of the study is still in stage VI, which means that the acquisition of children's language at PAUD Laboratory School is still low because at three years of age it is generally in stage VII 3.0-3.5 words per speech. There are two processes that will occur when the child is getting his first language (PB 1), namely the process of competence and process performance (understanding and language products produced). Both processes have different meanings. Competence is a process in grammar mastery that takes place unconsciously, so it becomes a condition for the process of performance (understanding and production of language). The process of understanding involves the ability to perceive sentences that are heard. While the process of producing sentences involves the ability to produce sentences themselves. Of the four research subjects already have a vocabulary that is qualified in language acquisition, but is still constrained in the process of understanding the

language that is heard so that it influences the process of performance or language products. Based on this, the teacher must understand that the process of acquiring word meanings in the language of 3-year-olds has five symptoms of semantic word transition, namely symptoms (1) excessive specifications, (2) excessive generalization, (3) overlapping, (4) towards specifications meaning, and (5) the use of meaning associations. The development of the acquisition of word meanings by children along with the development of maturity of cognition, knowledge and experience, and vocabulary in children (Nurjamiaty, 2015).

#### 4 CONCLUSION

Language acquisition of three-year-old children from Tulungagung aged three years as many as 120 speeches and 288 morphemes, from Malang aged three years and over one month as many as 116 speeches and 292 morphemes, from Kediri over three years old as many as 132 speeches and 319 morphemes, while from Surabaya three years and two months as many as 113 speeches and 264 morphemes. While speech analysis shows that the average research subjects from Tulungagung, Malang, Kediri and Surabaya have MLU 2.92 in stage VI, which means they are still at a low stage, which at the age of three is already in stage VII 3.0-3.5 word per utterance. However, it must be admitted that the acquisition of children's language does not always have to be the same, because every child has different abilities in language acquisition, depending on the stimulation of the language the child obtains in the cultural environment in which the child lives.

Parents, educators are expected to be active, caring and synergizing in helping to develop children's abilities in the acquisition of language by providing as much and as varied stimulation as possible, so that children will not experience difficulties when children interact in society. Parents and educators are expected to be more creative in stimulating language, so that language development in children can be optimized or as expected. From the point of the research, it is expected that educators who have students from several regions are expected to develop strategies in the development of early childhood language acquisition.

#### 5 REFERENCES

- Bachri, C., & Maya, R. (2012). Pemerolehan Bahasa Anak Usia 7 Tahun 3 Bulan dalam bidang Sintaksis. *Jurnal Edukasi Kultural*.
- Chaer, A. (2003). *Psikolinguistik: Kajian Teoritik*. Jakarta: PT Rineka Cipta.
- Chaer, A., & Agustina, L. (2004). *Sosiolinguistik Perkenalan Awal*. Jakarta: PT Rineka Cipta.
- Chater, N., & Christianshen, H. M. (2018). Language acquisition as skill learning. *Behavioral Science*.
- Creswell, J. C. (2012). *Introduction to Research Methods in Education*. Los Angeles: Sage Publication.
- Darjowidjojo, S. (2010). *Psikolinguistik (Pengantar Pemahaman Bahasa Manusia)*. Jakarta: Yayasan Obor Indonesia.
- Hakim, U. (2016). Studi Pemerolehan Bahasa pada Anak Usia 4 tahun (Kajian Sintaksis). *Jurnal Linguistik Terapan*.
- Hetherington, P. (2003). *Psikologi Perkembangan Anak dan Remaja Terjemahan Soemitro*. Jakarta: Universitas Indonesia.
- Hutabarat, I. (2018). Pemerolehan Sintaksis Bahasa Indonesia Anak Usia Dua Tahun Dan Tiga Tahun Di Padang Bulan. *Jurnal Dharma Agung, Xxvi(1)*.

- Mahsun. (2005). *Metode Penelitian Bahasa*. Jakarta: PT Raja Grafindo Persada.
- Moleong, L. (2007). *Metodologi Penelitian Kualitatif*. Yogyakarta: PT Remaja Rosdakarya.
- Nurjamiaty. (2015). Pemerolehan Bahasa Anak Usia Tiga Tahun Berdasarkan Tontonan Kesukaannya Ditinjau Dari Kontruksi Semantik. *Jurnal Edukasi Kultura*, 2(2).
- Owens, R. G. (2008). *Organizational Behavior in Education (4th Ed) III*. New York: Allyn&Bacon.
- Rahardi, K. (2001). *Sosiolinguistik, Kode, dan Alih Kode*. Yogyakarta: Pustaka Pelajar.
- Roni, N. S. (2016). Panjang Rata-Rata Tuturan Anak Usia 2 Tahun 7 Bulan Dalam Bingkai Teori Pemerolehan Bahasa Anak. *Jurnal Pendidikan* 2016.
- Salnita, Y. E., Atmazaki, & Abdurrahman. (2019). Language Acquisition for Early Childhood. *Jurnal Obsesi*, 3(1).
- Smith, A. (2010). Development of Vocabulary and Grammar in Young America Speaking Children Assessed with aAmerica Language Development Inventory.
- Sumarsono. (2013). *Sosiolinguistik*. Yogyakarta: Pustaka Pelajar.
- Sumarsono, & Partana, P. (2018). *Sosiolinguistik*. Yogyakarta: Pustaka Pelajar.
- Vissiennon, K., Friederic, A. D., Brauer, J., & Wu, C.-Y. (2016). Functional organization of the language network in three- and six-year-old children. *Neuropsychologia*.



## Evaluation of Content Curriculum in Kindergarten

Nurbiana Dhieni<sup>1</sup>  
Sofia Hartati<sup>2</sup>  
Sri Wulan<sup>3</sup>  
*Universitas Negeri Jakarta*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.06>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** This study aims to map the quality of the curriculum used by kindergartens in Jakarta. The mapping curriculum was done by looking at the suitability curriculum with stages of child development, accommodating children's needs, using child-centered learning processes, and utilizing technological developments. Subjects were 32 kindergarten institutions in Jakarta (North Jakarta and Jakarta Central), from 14 districts. Kindergarten institutions studied were chosen to represent each district. In collecting data, the researchers conducted an analysis content of curriculum and interview with respondents and informants in kindergarten institutions either principals or teachers in schools who selected as samples. The research team collected information as a result of observation and described in-depth interviews in the diary of researchers — the data collected from 16 kindergartens that are willing to research subject. The data consisted of curriculum documents, curriculum evaluation instruments and interviews' the results analyzed qualitatively from the beginning of the data collection process include data reduction, data presentation, and conclusion.

**Keyword:** Content, Curriculum, Evaluation, Kindergarten.

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media) : 2503-0566**  
**P-ISSN (Print Media) : 1693-1602**

---

<sup>1</sup> Corresponding Author:  
Nurbiana Dhieni  
Gedung Hatta. Lantai 4  
Jln Rawamangun muka, Jakarta Timur, Indonesia  
Email: [ndhieni@unj.ac.id](mailto:ndhieni@unj.ac.id)



## 1 INTRODUCTION

The Early Childhood Education Institute (ECE) is a means of socializing education that is suitable for children's development, must provide examples of good learning for early childhood. The process of early childhood education and learning should be carried out to provide meaningful concepts through real experience. Real experience allows children to optimally carry out activities, curiosity and place the position of educators as mentors, mentors and facilitators for children. Through the education process, it is expected to avoid forms of learning that are only oriented to the willingness of teachers to place children passively and make the teacher dominant in the class. However, whatever form of learning is given to children; it will depend on the curriculum developed by Early Childhood Education (ECE) institutions. A curriculum is a guideline of learning activities between teachers and children. The curriculum becomes a benchmark for goals, materials, methods, media, and evaluation of learning that carried out at Early Childhood Education (ECE) institutions. If the curriculum is excellent and meets curriculum principles, the ongoing learning will be useful for early childhood development.

The development of the Early Childhood Education (ECE) curriculum currently depends on the capacity of the staff owned by the educational institution or mimics the curriculum development of other educational institutions. So, the philosophy of the curriculum is not comprehensively understood by both educators and managers of Early Childhood Education (ECE) institutions. While the Directorate for Early Childhood Education (ECE) at the Ministry of Education and Culture has a function as a facilitator providing guidance and training in the preparation of curriculum in Early Childhood Education (ECE) institutions. Therefore, it is essential to evaluate the curriculum developed in ECE institutions, especially in kindergarten (TK). This evaluation obtained information on the extent of the curriculum developed by the needs of early childhood development and solutions that could overcome obstacles related to the development of the early childhood curriculum.

A role of the curriculum in learning is crucial. It is a guide in all learning process. The curriculum contains learning planning which includes learning activities and materials, learning objectives, learning methods, learning media, and learning evaluation. Thus, an effective curriculum can be a guide for higher quality learning. Curriculum development if made into a weekly activity plan or daily activity plan will be easier to understand and implement. It is very important to know the extent to which the curriculum used by the tenth kindergarten is by looking at the provisions and concepts of early childhood education at the institution.

In finding out the quality curriculum used in kindergarten, research is needed. It can be done through curriculum evaluation in kindergarten. The results of curriculum evaluation can be the main data for each component of society, academics, and practitioners about the advantages and disadvantages in the form of kindergarten curricula in the Jakarta area. Thus, the results of this study can provide suggestions for the development of the next curriculum in kindergarten.

The results of curriculum evaluation will bring up the kindergarten curriculum that is used to carry out learning in accordance with the child's developmental needs. It is important to consider that every child has different needs at each stage of age so that he needs different stimulation. The evaluation results will also represent the extent of kindergarten curriculum used that has internalized the culture of Indonesian society as a manifestation of children's nationalism. Thus, we can know the concept of childhood from an early age and what stimulation will be given to increase the love and pride of children to be part of Indonesian society. Research conducted by Odom et al., (2019) which aims to test the efficacy of the curriculum for the success of the Children's

School (CSS) for 4-year-old children enrolled in preschool programs designed to prepare them for success in their initial state school classes. The study takes place in preschool classes located in five regionally distributed states, all of which include children with disabilities and other learning needs. Participants were 1,117 children from three subgroups (i.e., children living in poverty, children learning English, and children with disabilities identified). This curriculum is also examined for children from groups who have challenging behaviors. The findings show positive effects on various assessments of vocabulary mastery, letters of knowledge, mathematics, and solving social problems in early childhood.

A curriculum evaluation will also examine the curriculum ability in recent adapting technology and information and review the easiness curriculum to implement in early childhood learning. According to the result, information about the strengths and weaknesses of the curriculum will obtain in adapting technology and information. The results of curriculum evaluation decisions by researchers can be made into a form of curriculum that is in accordance with current technological and information developments. Likewise, in the implementation of the learning curriculum in early childhood education institutions, through curriculum evaluation will get information about the ease and difficulties in forming and developing a more effective curriculum. This information helps to overcome the difficulties that still exist in the curriculum implementation.

Based on the results of first-year research in the East Jakarta, it showed that there were still many kindergartens that had not been able to develop the curriculum appropriately. Percentage obtained by 67% of curriculum conformity assessments in kindergartens studied, tend to have a child-centered curriculum, 7% for content or learning material in curriculum and activities, 60% for giving attention to the children needs in curriculum, 6% for achieving curriculum objectives, 27% for easing in daily implementation, 6% for helping curriculum to build concepts and skills, 40% for internalizing cultural values in curriculum, and 20% for adapting technology and information development in curriculum (Dhieni & Utami, 2013). It is expected that the second-year research about the evaluation of curriculum content in North Jakarta and Central Jakarta would get more accurate results.

The meaningful and concrete learning experiences are designed, implemented and evaluated in a systematic guideline called the curriculum. According to Kostelnik, Soderman, & P (2007, p. 216), the curriculum is all organized educational experiences provided for children by the early childhood program. These experiences can take place inside the classroom or beyond, involving educators, family members, and other people in the community. In its written form, the curriculum includes stated goals and objectives, strategies and activities aimed at supporting all aspects of children's development and learning, and methods of assessing children's progress and program effectiveness.

The curriculum is a series of learning program strategies and plans as well as all organized educational experiences provided to children through the learning process at the Early Childhood Education (ECE) institution. This experience can be done both inside and outside the classroom involving educators, family members, and other people in the community. In written form, the curriculum includes national goals, institutional goals, strategies and objectives of activities that support all aspects of child development and learning. There are assessments to see child improvement and effectiveness of a program. The curriculum can interpreted as a set of learning activities that are deliberately planned to be implemented in order to prepare and lay the foundations for further child self-development.

Curriculum development must describe various things including knowledge about early childhoods, individual characteristics of children, cultural values, parental desires and knowledge needed by children in society. Shepard suggested following curriculum principles Eliason & Jenkins (2008, p. 65): a) all children can learn; b) material challenges high-level thinking and problem solving; c) diverse learners are given equal opportunities; d) learning relationships within and outside of school authenticated; e) children encouraged to realize the importance of the habit; and f) children do the practice of democracy in society.

According to Jackman (2012, p. 37) compiling a curriculum that is appropriate with early childhood have to consider: a) child-centered curriculum or according to the children's willingness; b) curriculum supports all child development through planned experience to build what children want to know and be able to do; c) curriculum encourages children to learn by conducting experiments, exploration, and discoveries that will build self-control and a positive self-image; d) curriculum supports and serves children with special needs in an inclusive environment; e) curriculum provides opportunities for children of diverse cultures and languages; f) curriculum invites creativity through opportunities for discovery and activities that are not assessed to appear tolerant and respect people's work; g) curriculum facilitates physical activities and plays through activities that integrated with daily activities; and h) curriculum involves teachers and families. A developing curriculum is not compiled based on the willingness of teachers, manager, or parents but takes into children needs as an individual and as a member of the community in development and learning. Therefore, the curriculum really must be child centered.

Based on the explanation above, the early childhood curriculum must be following the children needs and development. Also, the curriculum must contain learning content that will apply to each school. The learning content must include children's knowledge, skills, and creativity. The play activities program developed consisted of social and emotional development, language development, self-understanding, community and world, creative expression and respect for art.

A curriculum has various models. According to Crosser(Jackman, 2012, p. 37), curriculum model is a structured or organized framework used in deciding everything from policies and priorities to teaching methods and assessment procedures. The curriculum model is beneficial in planning and managing experiences. As teachers, they need to learn more about models and programs for early childhood curriculum development.

According to Montessori in (Hainstock, 2002, pp. 10–11), child development is a sensitive period and easy to receive stimuli from his environment. Based on the theory of child development, it believed that every child is born with more than one talent. These talents are potential. So, children need education that supports their development by enriching their playing environment. There are principles that Maria Montessori believes are: (1) Respecting Children. Each child is unique so that educators in providing services must be individualized. Children have different abilities from one another. Therefore, educators must respect children as individuals who have extraordinary abilities. (2) Absorbent Mind. Information that enters through the child's senses quickly absorbed into the brain. The absorption of a child's brain can liken to a sponge that absorbs water quickly. Educators should not be mistaken in giving the concept to children. (3) Sensitive Periods. The sensitive period can describe as a potential that will develop very rapidly at certain times. This potential will die and will not appear again if it is not given the opportunity to develop. (4) The Environment Prepared. Educators should prepare an environment that can lead to the desire of children to learn many things. The environment prepared must be designed to facilitate the needs

and interests of children. So, educators must provide facilities and infrastructure that are appropriate to the needs and interests of children. An environment arranged in various settings so that children do not depend on adults. The environment prepared makes children free to move, play and work. (5) Self-education. Environment prepared by educators. This allows children to explore, express, and make many things without the help of adults — the results obtained by children because their works are more extraordinary and unusual than if they helped. The work produced is diverse and unique while those assisted with the work of children are the same. So actually, children can learn on their own if we provide facilities according to their potential and interests.

According to the American Montessori Society (Roopnarine & Johnson, 2005, p. 375), Montessori model curriculum content is given for children aged 3 - 6 years. There are four primary content, namely practical life, sensorial, language, and mathematics. Additionally, there are music, art, movement or motorists and drama.

Based on Roopnarine & Johnson (2005) and Gestwicki, (2007), an idea of the Bank Street approach consists of: (1) children are active learners, researchers, explorers, and artists; (2) learning occurs in a social context where children learn through interaction with their environment; and (3) understanding of cognitive and affective development is an interconnection or not separate. A basis of the Bank Street model uses the developmental-interaction approach. This approach fosters cognitive function, collects and sorts of information makes judgments, gives reasons, solving problems, using a system symbol. It cannot be separated from the process of personal and interpersonal growth, the development of self-esteem and identity, the internalization of self-control, the capacity to respond independently and to relationships with others.

Kindergarten curriculum development is the development of a set of playground plans designed to maximize learning interactions and can enrich the kindergarten children learning experience in order to produce potential behavioral changes (positive behaviors).

Some criteria for developing the kindergarten curriculum are as follows;

- (1) Curriculum suitability used with aspects and stages of child development.
- (2) Curriculum orientation used is child centered.
- (3) Learning content or material in the curriculum.
- (4) Curriculum used pays attention to children's needs.
- (5) Easiness curriculum implemented in the form of a daily learning program.
- (6) The curriculum helps children build concepts and skills through a combination of topics and material.
- (7) Consistency achievement of curriculum objectives obtained some children.
- (8) Curriculum used shows the internalization of cultural values that exist in Indonesian society.
- (9) Curriculum ability to adapt technological and information developments.

A curriculum that has been used needs to be evaluated periodically. To evaluate the curriculum needs to be determined the purpose of evaluation and design evaluation consisting of evaluation models and research methods. Then the instrument is determined to capture data and information sources. If we understand curriculum evaluation above, the curriculum can view as research. To support the definition of curriculum evaluation, Hasan (2008, p. 41) said that curriculum evaluation as an effort to collect information about the curriculum systematically and used as a consideration of the assessment and meaning of the curriculum in a particular context. It means that the curriculum cannot be valid all the time because there are limitations in the context of time.

The evaluation goal was designed and implemented as follows: (Hasan, 2008, pp. 42–43)

- (1) Providing information about the development implementation and curriculum implementation as advice in making decisions.

- (2) Determining the success and failure of a curriculum and contributing factors in a particular environment.
- (3) Developing various alternative problem solving that can be used in efforts to improve the curriculum.
- (4) Understanding and explaining the characteristics and implementation of a curriculum.

Also, another goal of curriculum evaluation is developing a curriculum that is currently in effect and how the curriculum affects children.

## 2 METHODS

An evaluation conducted was an assessment of the curriculum used by kindergarten. The evaluation target was the second-year research in kindergartens at North Jakarta and Central Jakarta. The characteristics of kindergartens in those area grouped into superior kindergarten and regular kindergarten. Research target set for kindergarten in Jakarta area is 15 kindergarten and in North Jakarta is 17 kindergarten. So, the research target was 32 kindergarten institutions in 14 sub-districts. In each administrative area, a representative kindergarten organization is chosen. The selection of kindergarten institutions as a place for observation carried out for reasons of time and energy efficiency.

An assessment scope included the curriculum suitability used with the stages of child development, child-centered of curriculum orientation, children needs, internalization of Indonesian people's cultural values into the curriculum used, and curriculum ability to adapt technological developments and information, and convenience curriculum to be implemented in learning. The scope of evaluation is integrated into the evaluation design developed.

North Jakarta has approximately 227 kindergartens. It spread in 6 sub-districts namely Kelapa Gading, Pademangan, Tanjung Priok, Cilincing, Penjaringan, and Koja. Central Jakarta had approximately 211 kindergartens. It spread in 8 sub-districts namely Tanah Abang, Cempaka Putih, Menteng, Kemayoran, Senen, Sawah Besar, Johar Baru, and Gambir. From 32 institutions, 16 kindergartens institutions were willing to submit curriculum documents.

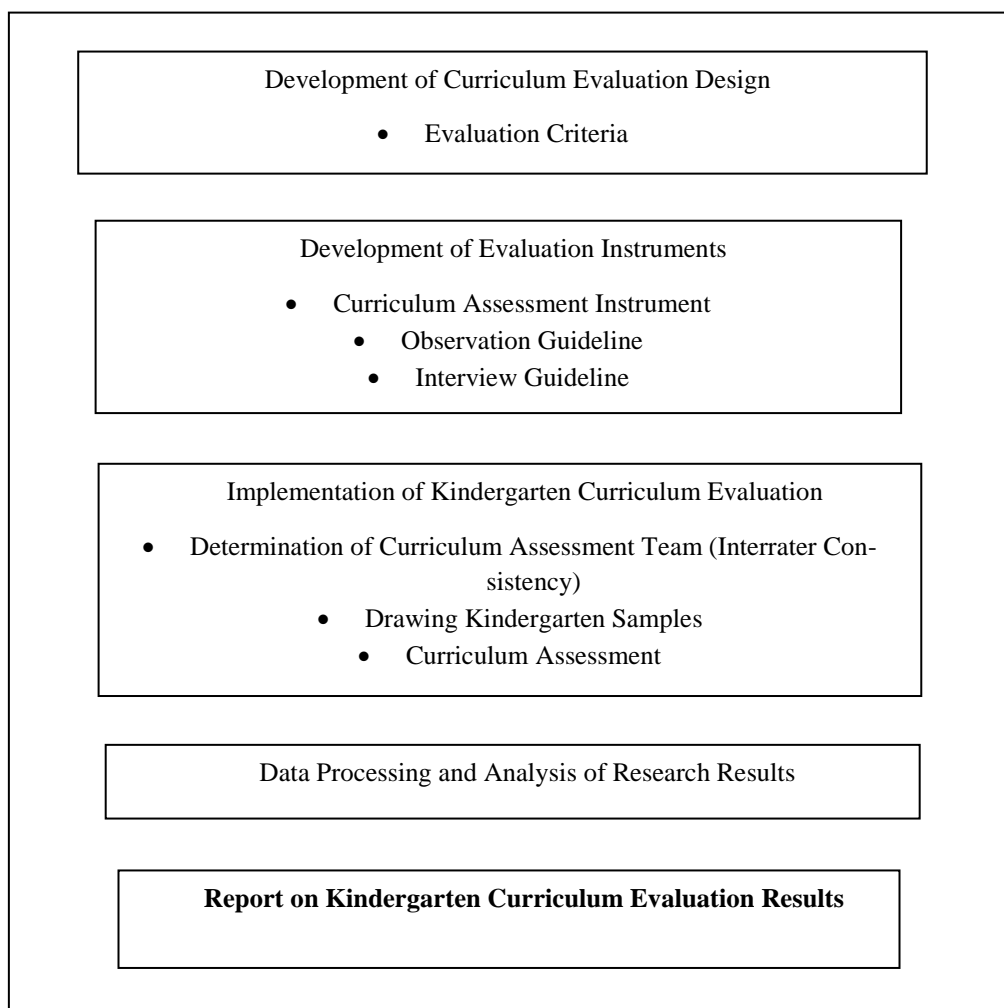
Kindergartens in North Jakarta and Central Jakarta have variations in the curriculum used for children's learning processes. The curriculum variation showed from the model and curriculum reference used. Kindergarten was a formal pathway Early Childhood Education (ECE) institution intended for children aged 4-6 years. The second year's research on kindergartens in North Jakarta and Central Jakarta, which was netted as research targets that could be categorized as among others; Public Kindergarten, Private Kindergarten, Christian Kindergarten, and Islamic Kindergarten. The four kindergartens had different characteristics.

Evaluation is done by evaluating the kindergarten curriculum developed by kindergarten with a qualitative model. The curriculum assessment carried out by Early Childhood Education (ECE) curriculum experts. The systematics of the evaluation process were as follows;

- (1) Determined the kindergarten that will be assessed in the curriculum. The kineticist kindergarten grouped into superior kindergarten and regular kindergarten, with each group represented by several kindergartens in North Jakarta and Central Jakarta.
- (2) Every curriculum obtained that assessed by several pre-determined Early Childhood Education (ECE) curriculum experts. Each appraiser used an assessment instrument developed by the research team.

(3) Assessment results analyzed according to the framework that has been built in the evaluation design to see the achievement of the evaluation indicators.

Curriculum evaluation design included assessment aspects, assessment indicators, and assessment descriptions. The assessment aspect showed the principles of developing a kindergarten curriculum. The measurement of the principles of curriculum development was an indicator that will be assessed to determine the accuracy curriculum developed by the target evaluation of kindergarten. The description assessment was an explanation of the limits of assessment based on the aspects and indicators as a means of equating perceptions between assessors. Thus, the evaluation phase of the implemented curriculum described as follows:



Picture 1. Research Design for Curriculum Evaluation

Data collection is the result of an assessment by an Early Childhood Education curriculum expert (ECE) and has credibility in assessing qualitative data. The assessment results were information provided by the assessor based on the assessment indicators contained in the instrument.

Data collections were interviews and observations conducted by the research team. It included non-numerical data that explained the background of curriculum development and how the curriculum implemented in daily learning in the kindergarten. Data analysis used qualitative data analysis — the result data of interviews and observations conducted by the evaluator team. Qualitative data analysis techniques carried out were data reduction, display (data presentation), and verification (conclusion).

Kindergarten institutions spread in 6 sub-districts in North Jakarta and eight sub-districts in Central Jakarta. Generally, 32 kindergarten institutions asked for their willingness to become research subjects, and they expressed their willingness. However, during the data collection process, only 16 kindergartens were willing to provide curriculum documents. The rest refuses for different reasons.

### 3 RESULT AND DISCUSSION

Based on the finding, an analysis of curriculum documents and questionnaires given to 16 kindergarten institutions are as follows:

#### 3.1 *Curriculum suitability used with aspects and stages of child development.*

Based on the finding, an analysis of curriculum documents and questionnaires given to 16 kindergarten institutions are as follows:

Data of public kindergarten groups have the same curriculum form, not found in the characteristics of each institution. This public kindergarten has a match between aspects of the curriculum and stages of child development. The development aspects are not consistent between the curriculum and the structure of the learning program. Private kindergartens have understood that each institution should have a curriculum and following the aspects and stages of child development. However, some institutions do not have a curriculum in the document. There are Christian kindergartens which have the specific curriculum as in the public kindergarten, and some others have a curriculum that oriented towards aspects and stages development. Likewise, with Islamic kindergarten, they have the same curriculum as the public kindergarten, and some others have the same curriculum with each other. Even so, Islamic kindergarten has a curriculum that is by the aspects and stages of child development.

#### 3.2 *Curriculum orientation used is child-centered.*

Based on the findings of public kindergarten, private kindergarten, Christian kindergarten, and Islamic kindergarten, they do not have a curriculum that matches the characteristics of their institution. Based on the documents and interviews, there were 43% which showed that the curriculum centered on new children formulated, not seen in planning. Some principles of early childhood education according to Wood & Hedges, (2016) wood, continue to have contemporary resonance such as: ECE centered on children - exploration, discovery, and research are drivers for learning and development; children learn through games and activities that are freely chosen, enabling them to develop independence, control, and autonomy; the curriculum includes all activities and experiences in the arrangement, including ethos, agreed rules, and behavior; practitioners identify children's interests and needs, and plan the curriculum in an emerging and responsive manner; the teacher can plan group activities to introduce certain curriculum content.

#### 3.3 *Learning content or material in the curriculum.*

From the results of documents and interviews, the four kindergarten categories have no learning content, including mathematics, language, literacy, computers, art, science in the curriculum. One of the private kindergartens who became samples found content and learning materials in the curriculum but did not include it in curriculum documents. The interview results have no detailed explanation of their application. There are still inconsistencies in the translation of curriculum

content. From the data, only 7% of the research objectives were consistent between the curriculum and activities consisting of content or learning material.

Wood & Hedges (2016) suggested curriculum content in the substance of early childhood education, cannot be logically identified based on knowledge about the theory of child development, but looks for what subject matter should be taught. As according to Jacman (2012), early childhood curriculum content includes competency development content for children, namely, Communication in mother tongue, Communication in foreign languages, Mathematical competencies and basic competencies in science and technology, Digital competencies, Learning to study, Social competency and citizenship, Taste initiative and entrepreneurship, awareness and cultural expression.

#### 3.4 *Curriculum used pays attention to children's needs.*

In private TK institutions and Christian kindergartens, their school principals stated that schools were concerned with the needs of children and this was stated in the curriculum documents they used. In Islamic kindergarten institutions, three kindergartens showed curriculum that pays attention to children's needs. It can be seen in curriculum documents on vision, mission and design activities while the public kindergarten curriculum emphasizes the fulfillment of children's needs and only one kindergarten that has no data.

Curriculum experts for early childhood, Dodge (2004) say making decisions about the right approach, curriculum model, and resources, the head of the program Education institutions must first consider the situation of their particular program. This includes examining: program vision / mission, philosophical beliefs held by the program (e.g., about how children learn best, how teachers grow professionally, family roles as partners in children's development and learning), mandates / requirements that must be met by the program (e.g., results, standards), staff experience and stability (for example, their ability to develop meaningful curricula, the guidance and training they will need) development (for example, time for teachers to meet together, share what they have learn about children, and engage in curriculum planning cooperation), available resources to support curriculum implementation (e.g., for material, staff development).

#### 3.5 *Consistency and achievement of curriculum objectives by some children.*

Based on documentation findings, the consistency and achievement of curriculum objectives by several children is not available in four categories of kindergarten institutions, both general kindergarten, private kindergarten, Christian kindergarten, and Islamic kindergarten. The four kindergartens did not have supporting documents regarding these criteria.

According to Haslip & Gullo (2018), repeated curriculum changes create extra work for teachers, confusion for parents and inconsistencies for children. Cost income for educational institutions can contribute to this landscape because education companies, consultants, and trainers try to sell a curriculum, approach, or solution above another. When communities appreciate the need and importance of early education, the education market is widening, attracting more vendors who claim evidence-based or research methods supported in their marketing materials. Concerns that education in general is rapidly becoming a consumer market that harms children and public goods have been discussed. Conflicts of interest need to be identified between establishments and educational institutions on the one hand and children on the other. Children need a deeper and meaningful consistency and learning experience based on community-based relationships.



### 3.6 *Easiness curriculum implemented in the form of a daily learning program.*

Only one private nursery and some Islamic children's gardens have a curriculum that is easy to apply in everyday life. Preparation of semester planning, weekly, and daily systematically arranged. While other TK institutions do not have data that shows a curriculum that is easy to apply in daily life, it can be seen in curriculum documents that are not systematically arranged for semester planning, theme programs, weekly and daily plans.

This is in line with the research conducted by Burchinal (2018) that high-quality early care and education (ECE) programs are considered to increase opportunities for all children to succeed in school, but recent findings question whether these programs affect children in anticipation. They examine studies that link the quality of early childhood curriculum (EEC) with children's outcomes, finding a rather inconsistent and simple association with the process size and structural quality that is widely used, and a more consistent and strong relationship with other ECE dimensions such as curriculum and the type of EEC program. Evidence shows that we need to focus on the contents of teaching instruction and practice, and the extent to which teachers actively scaffold learning opportunities. We also need to continue to focus on the quality of interactions between teachers and children, and on children's access to activities that are age appropriate.

### 3.7 *The curriculum helps children build concepts and skills through a combination of topics and material.*

Based on the findings, only one private kindergarten and one Islamic kindergarten explained that curriculum helps children develop concepts and skills through a combination of topics and material. Plans for learning activities that prepared by the teacher showed a material explanation that will be delivered to the child. Other findings, in kindergarten institutions that do not have data available to see curriculum criteria to build concepts and skills through topics and material integration. The results of the interviews indicate that there is no information about the steps in preparing a learning program that is combined into a curriculum.

Even though the teacher is ideally involved in all phases, the special emphasis here is the process of applying the curriculum. For example, curriculum objectives might be to help teachers interpret students' thoughts about activities and content they design to teach; support teacher learning about content to build concepts and skills through topics and material integration, especially those that may be new to the teacher; and provides guidance on the external representation of the content used by the material. Sarama & Clements, (2019) create classroom-based teaching experiments that help to track and evaluate student learning, with the aim of understanding activities that are in accordance with the curriculum. At the same time, classes are observed for information about the usefulness and effectiveness of the curriculum topics or themes with the material.

### 3.8 *Internalizing cultural values of Indonesian society in the curriculum.*

Based on the findings of private kindergarten institutions, there is only one kindergarten that internalizes the cultural values that exist in Indonesian society. It contained in curriculum documents, including; nationalism and traditional clothes. In Islamic and Christian kindergarten institutions, it shows that learning in kindergarten has not internalized the cultural values that exist in Indonesian society. They have not been detailed into the document. The range of cultural values is limited to nationalism, traditional clothes, life in the village and city. In the curriculum document found the theme of nationalism, but no specific theme indicates the cultural values that exist

in Indonesian society. While the review results of public kindergarten, curriculum documentation indicate the existence of internalizing the cultural values that exist in Indonesian society. It can be seen in the selection of themes related to Indonesian culture. It means only 56% of the research objectives internalize cultural values in the curriculum.

The research conducted by Yang & Li, (2019), namely the development of a school-based curriculum (SBCD) has been advocated to improve the quality of early childhood education in the context of modernization and globalization. However, several studies have examined how social change and globalization can shape the curriculum of early childhood. This study examined SBCD in the two Shenzhen kindergartens through interviews, observations and documents to understand curriculum innovation and how and why SBCD occurred in the Chinese capital. This study reveals that the curriculum in each case is an integrated system that balances different curriculum approaches such as the application of local culture. Also, conflict and cultural fusion are found throughout the dynamic transformation of the curriculum

### *3.9 Curriculum skills in adapting technology and information development*

Based on evaluations in private kindergartens, only one private kindergarten institution whose curriculum adapts technology and information. It can be seen in learning activities that provide information to students. Islamic kindergarten institutions showed that the curriculum used does not specific adapt technology and information. It can be seen from the selection of themes such as communication, the feast of the sacrifice and the month of Ramadan, so the scope of learning is limited to modern communication tools. The curriculum for the Christian kindergarten and public kindergarten adapted technology and information development, but only on the theme development not detailed in curriculum documents and learning activities.

Mak, Keung, & Cheung (2018) has identified five curriculum orientations for early childhood today, namely, academic, cognitive processes, social reconstruction, humanistic, and technology. In his research, Fox-turnbull (2007) reviewed the literature that argues the place for digital technology in the curriculum. Understanding and competency in developing digital technology has become an increasingly debated topic throughout the world. The area of debate includes where and when the main components of digital literacy such as computational thinking, computer science, programming, and coding must be studied. This article argues for the inclusion of digital technology in the curriculum and more specifically in the technology curriculum. A case study of New Zealand's decision-making process while moving to incorporate digital technology into the New Zealand Curriculum. When we go further into the digital era, there is international recognition of the need for digital technology in the curriculum. The introduction of digital competencies as an academic subject is a recent addition to early childhood, elementary and middle school programs in a number of countries such as Australia, England, Estonia and Cyprus. Any people believe that children need to be users of digital technology that is competent to avoid loss or marginalization and to become a guaranteed, discriminatory and effective member of society. Because it is time for early childhood curriculum to incorporate technology as a learning medium (Plowman, Stephen, & Mcpake, 2010).

## 4 CONCLUSION

Kindergarten institutions that are the target of research in North Jakarta and Central Jakarta are divided into four categories. The four categories were Public kindergartens, Private kindergartens, Christian kindergartens, and Islamic kindergartens. The kindergarten only used references from

the Minister of Education No. 58 of 2009. There were several institutions that directly adapt the government curriculum without reformulating the institution's curriculum.

Based on curriculum analysis related to curriculum development criteria, it concluded that:

The suitability of the curriculum used in learning, is in line with the aspects and stages of child development. 75% of public kindergarten institutions have the same curriculum form, not found in the characteristics of each institution. The rest do not have curriculum documents at all. Even though it has the same curriculum, there must be curriculum suitability between aspects of the child's development stage. The development aspects are not consistent between the curriculum and the structure of the learning program.

Curriculum orientation used is child-centered. Based on the findings of public kindergarten, private kindergarten, Christian kindergarten, and Islamic kindergarten, they do not have a curriculum that matches the characteristics of their institution. Based on the documents and interviews, there were 43% which showed that the curriculum centered on new children formulated, not seen in planning.

Learning content or material in the curriculum. From the data, only 7% of the research objectives were consistent between the curriculum and activities consist of content or learning material. There is no learning content, including mathematics, language, literacy, computers, art, science in the curriculum. content and learning material have been found in the curriculum but did not include it in curriculum documents. The interview results have no detailed explanation of their application. There are still inconsistencies in the translation of curriculum content.

The curriculum used is expected to pay attention to the needs of children. Based on document and interview result, private kindergarten, public kindergarten, Christian kindergarten, and Islamic kindergarten showed 69% pay attention to children's needs and contained. It can be seen in curriculum documents on vision, mission and design activities.

Consistency and achievement of curriculum objectives by some children. Based on the documentation findings, the consistency and achievement of curriculum objectives by some children are not available in the four categories of kindergarten institutions, both public kindergarten, private kindergarten, Christian kindergarten, and Islamic kindergarten. The four kindergartens did not have supporting documents regarding these criteria.

Curriculum facilitation is implemented in the form of daily learning programs. The document only lists themes, objectives, and activities in each age group. From the data, only 25% have an easiness curriculum to be implemented in everyday life. Preparation of semester planning, weekly, and daily systematically arranged. While other kindergarten institutions have no data that shows the easiness curriculum to implement in everyday life. It can be seen in curriculum documents that not systematically arranged for semester planning, theme programs, weekly and daily plans.

The curriculum helps children build concepts and skills through a combination of topics and material. 12.5% for explaining the curriculum helps children build concepts and skills through a combination of topics and material. Plans for learning activities that prepared by the teacher showed a material explanation that will be delivered to the child. The findings of other kindergarten institutions have no data available to see the criteria for building concepts and skills through topics and material integration. The interview results showed that there was no information about the steps in preparing a program that combined topics or themes with the material.

Kindergarten institutions are expected to be able to internalize the cultural values of Indonesian people in the curriculum. Only 56% of the research objectives internalize cultural values in the curriculum. It contained in curriculum documents, including; nationalism and traditional clothes. The content has not been specified in curriculum documents. The range of cultural values is limited to nationalism, traditional clothes, life in the village and city. In the curriculum document found the nationalism theme, but no specific theme indicates the cultural values that exist in Indonesian society.

Curriculum skills in adapting technology and information development. 25% of kindergarten institutions whose curriculum adapts technology and information. Information. It can be seen from the selection of themes such as communication, the feast of the sacrifice and the month of Ramadan, so the scope of learning is limited to modern communication tools. However, it is only included in the development of daily themes and is not specified in curriculum documents and learning activities.

## 5 REFERENCES

- Burchinal, M. (2018). Measuring Early Care and Education Quality. *Child Development Perspectives*, 12(1), 3–9. <https://doi.org/10.1111/cdep.12260>
- Dhieni, N., & Utami, A. D. (2013). *Evaluasi Konten Kurikulum Taman Kanak-Kanak di DKI Jakarta Tahun ke 1 dari rencana 3 tahun*. Jakarta: FIP press.
- Dodge, D. T. (2004). Early Childhood Curriculum Models Why What and How Programs Use them. *Exchange Organizational Behavior Teaching Journal*, (February), 71–75.
- Eliason, C., & Jenkins, L. (2008). *A Practical Guide to Early Childhood Curriculum 8th*. New Jersey: Pearson Prentice Hall.
- Fox-turnbull, W. (2007). Implementing Digital Technology in The New Zealand Curriculum.
- Gestwicki, C. (2007). *Developmentally Appropriate Practice Curriculum, and Development in Early Education 3rd Ed*. New York: Thomson Delmar.
- Hainstock, E. G. (2002). *Montessori untuk Prasekolah*. Jakarta: Pustaka Delapratasa.
- Hasan, S. H. (2008). *Evaluasi Kurikulum*. (U. & R. Rosdakarya, Ed.). Bandung.
- Haslip, M. J., & Gullo, D. F. (2018). The Changing Landscape of Early Childhood Education: Implications for Policy and Practice. *Early Childhood Education Journal*, 46(3), 249–264. <https://doi.org/10.1007/s10643-017-0865-7>
- Jackman, H. L. (2012). *Early Education Curriculum: A Child's Connection to the World Fifth Edition*. Belmont: Wadsworth: Cengage Learning.
- Jacman, H. (2012). Early Education Curriculum. *Pedagogical Development Unit*, (FEBRUARY 2011), 163. Retrieved from <https://www.eursc.eu/Syllabuses/2011-01-D-15-en-4.pdf>
- Kostelnik, M. J., Soderman, A. K., & P, A. (2007). *Whiren, Developmentally Appropriate Curriculum: Best Practices in Early Childhood Education 4th*. New Jersey: Pearson Prentice Hall.
- Mak, B., Keung, C., & Cheung, A. (2018). Analyzing Curriculum Orientations of Kindergarten Curriculum. In *Teacher Education, Learning Innovation and Accountability*, (pp. 135–153). Singapore: Springer Singapore. <https://doi.org/10.1007/978-981-13-2026-2>
- Odom, S. L., Butera, G., Diamond, K. E., Hanson, M. J., Horn, E., Lieber, J., ... Marquis, J. (2019). Efficacy of a Comprehensive Early Childhood Curriculum to Enhance Children's Success. *Topics in Early Childhood Special Education*.

<https://doi.org/10.1177/0271121419827654>

- Plowman, L., Stephen, C., & Mcpake, J. (2010). *Growing Up with Technology* (pp. 1–169). London and New York: Routledge.
- Roopnarine, J. L., & Johnson, J. E. (2005). *Approaches to Early Childhood Education 4th Ed.*. New Jersey: Pearson Prentice Hall.
- Sarama, J., & Clements, D. H. (2019). *From Cognition to Curriculum to Scale. Cognitive Foundations for Improving Mathematical Learning*. <https://doi.org/10.1016/b978-0-12-815952-1.00006-2>
- Wood, E., & Hedges, H. (2016). Curriculum in early childhood education: critical questions about content, coherence, and control. *Curriculum Journal*, 27(3), 387–405. <https://doi.org/10.1080/09585176.2015.1129981>
- Yang, W., & Li, H. (2019). Changing culture, changing curriculum: a case study of early childhood curriculum innovations in two Chinese kindergartens. *Curriculum Journal*, 0(0), 1–19. <https://doi.org/10.1080/09585176.2019.1568269>



---

## Development of Activity-Based Science Learning Models with Inquiry Approaches

R.Sri Martini Meilanie<sup>1</sup>

Yasmin Faradiba<sup>2</sup>

Universitas Negeri Jakarta

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.07>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** This study aims to develop an activity-based science learning model with an inquiry learning approach for early childhood that can be used to increase the sense of curiosity and scientific thinking in children aged 5-6 years. This study was conducted with research and development / R & D research methods. Data was collected through interviews, observations, questionnaires, pre-test and post-test for children. Data analysis using paired t-test. The results showed that children were interested and enthusiastic in the learning process by using a science-based learning model with the inquiry approach, Sig. (2-tailed) showing results of 0.000, so the value of  $0.000 < 0.05$  was different from before and after the use of learning models. Results show children can understand the material, more confident and has initiative to find answers for the teacher's questions about science, the child's curiosity increases to examine the information provided by the teacher, the child's understanding of work processes and procedures from science learning with the inquiry approach getting better. It was concluded that an activity-based science learning model with an inquiry approach for children aged 5-6 years used an activity model with an inquiry learning approach based on children's interests and children's needs so that children's curiosity would emerge and continue to be optimally stimulated.

**Keywords:** Inquiry approach, Learning model, Science Learning

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta

**e-ISSN (Online Media): 2503-0566**

**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup> Corresponding Author:  
R.Sri Martini Meilanie  
Universitas Negeri Jakarta, Indonesia  
Email: [r.srimartini05@yahoo.com](mailto:r.srimartini05@yahoo.com)

## 1 INTRODUCTION

One of the efforts to advance the Indonesian nation is to educate the life of the nation. It can be started through education from an early age. Early age is a golden period. The National Association for the Education of Young Children (NAEYC) states that based on the results of the psychology research on child development, there is a general pattern that can be predicted regarding the development during the child's first life, namely in the age range 0-3 years, 3-5 years, and 6-8 years. UU No. 20 Th. 2003 concerning the National Education System (SISDIKNAS) states that Early Childhood Education (PAUD) is an effort to provide guidance to children from birth to six years of age through the provision of educational stimuli to help physical and spiritual growth and development so that children have readiness in entering education. Furthermore, UU RI No. 20 Th. 2004 states that early childhood education is one of the institutions that organizes education for early childhood that cannot be ignored because it becomes a forum to provide stimuli in order to develop properly.

The main objective of early childhood education is to improve aspects of child development including aspects of religious, cognitive, linguistic, motoric, and artistic values and morals. To achieve this goal, programs for early childhood are arranged contextually, can be embedded in children and meaningful in accordance with children's development and achieved according to planned targets (Ginsburg & Golbeck, 2004); (Justice & Kaderavek, 2004). It can be understood that in preparing learning for early childhood must be arranged in a real, interesting and easily absorbed by the child.

One aspect of this development is the cognitive aspect of the child. Curiosity can be categorized as part of cognitive aspects because it involves a thought process. Curiosity is a potential that is stored in human beings who acts as a motivator to continue learning, looking for new insights and innovations and can influence the success and performance of children in various fields in the future (Walin & Grady, 2016); (Lindholm, 2018). One of the factors that identify early childhood active in learning is curiosity. Curiosity encourages children to pay much attention to an activity to get more specific information. Basically, every early childhood has the potential for high curiosity. Knowledge is an ability to recognize the effectiveness of questions to be able to solve mysteries (Jirout, 2011). Children who are active in asking about things that are found in their surroundings are a sign that the child has a high curiosity.

Stimulating curiosity and the desire to seek answers from within the child so that it continues to develop requires the right process. The formation of a child's curiosity can be initiated by inviting children to explore the surrounding environment according to their interests. Appropriate stimulation can help children to foster curiosity then the child will be motivated to actively find out the answers to the things he wants to know. The participation of parents and teachers is the main thing in the process. Ideally, in the classroom educators always try to foster a child's curiosity through various ways and strategies (Walin & Grady, 2016).

Some research investigated opportunities provided by parents to children in order to facilitate science learning and promote careers related to science. Themes were identified and then categorized into two main factors namely a) parental support and b) parents' academic expectations. Supporting factors for parents include supporting children in choosing science activities, providing assistance in improving children's achievement in science, involvement in increasing interest in science, involvement of activities related to science, and supporting career choices related to science. The academic parental expectation factor identifies the sixth theme, namely continuous parents' interest in children's achievements in science. These identified factors

can help schools to plan effective educational interventions that involve parental collaboration in increasing children's interest in science learning (Halim, Abd Rahman, Zamri, & Mohtar, 2018). The attitude of parents and families to the science of everyday life can play an important role in shaping children's scientific aspirations. Therefore, parents must provide better and more comprehensive support so that children can compete in this era of globalization. Parental support affects the development of children's education because parents not only have children interested in the field of science in school but also family history influences children's tendency to be interested in science. In addition, parents' beliefs about science can significantly influence children's interests and motivations in science (Buday, Stake, & Peterson, 2012); (Maltese & Tai, 2011); (Bustamance, White, & Grienfield, 2018); (Nugent et al., 2015).

Parents who have high hopes for their children to grow into popular individuals, forcing them to study in areas that are not in their children's interests. This will reduce their thinking ability and their motivation to learn. As such, it is important for parents to understand the interests of children and to keep up with developments, so that effective actions can be planned and taken to improve children's abilities for their future (Yahya & Ismail, 2011). The success of the child's curiosity formation, ability to study and the ability to find answers to the surrounding phenomena that children see is very dependent on the commitment of parents and teachers. Particularly for the school it is important to pay attention in developing the school's vision to carry out learning. This is because curiosity is the basis for children's scientific thinking / logical thinking process to be formed optimally.

Parents who succeed in influencing their children's career choices are those who have enough information, share that information with their children, and help their children in the process of making career decisions and appropriate courses (Lukas, 2015). Previous research shows that during early childhood, parents function as the most important motivating factor in the lives of their children and this includes career decisions. Previous findings also showed that the level of education of parents has a significant correlation with the desirability of children. During early childhood, parents provide guidance by developing children's skills and observing their academic improvement. Parents provide support to improve their achievements in science and mathematics during the early education stage (Cridge & Cridhe, 2011).

The problem is most children aged 5-6 years haven't high curiosity about the phenomena occurs around them. Most children are passive in learning. Some of the factors that cause this are lack of stimulation from both parents and teachers, lack of understanding and mindset of parents and teachers in understanding their functions, duties and responsibilities in stimulating children. Parents unconsciously dispel the child's curiosity potential, for example when children ask about something and parents does not provide a basic for their children motivation to find out more. The priority is academic ability, especially reading, writing and arithmetic. Play and explore activities for the environment according to the understanding of parents is a less useful thing. Even though through exploration, children can be stimulated by their reading, writing and arithmetic abilities. Children are passively accustomed at home, school so in science learning activities teachers are rather difficult to invite children to try to find / explore what phenomena children want to know. Some teachers also do learning without understanding the goals to be achieved and their impact on children's behavior. In the learning process the teacher is only limited to carrying out core activities, not yet reaching the awareness of interpreting the learning process towards the formation of children's scientific reasoning. Then the learning model used is a conventional learning model. This is what encourages to be able to find innovative learning models in order to stimulate cognitive development of children, especially in high curiosity.



Problems related to children's curiosity can be stimulated and realized through activities exploring in various fields according to their interests such as knowledge of nature, sports, art and so on (Borowske, 2005). When children are given the freedom to explore and explore the environment according to their interests, the child will find something new. Children will be increasingly curious about the things they have just met and will eventually ask parents and teachers to get the desired answers. As parents and teachers, they should not immediately give answers to children but only give instructions / steps so that children are more curious and try to think, looking for ideas to get the final answer.

Science is one content that can be introduced to stimulate children's curiosity. Science activities are effective techniques in acquiring basic concepts and positively influencing the development of concepts that already exist in children (Doğru & Şeker, 2012). Science is closely related to experimental activities, exploration and exploration that involve children to practice directly in learning. In societies that depend on scientific development, supporters and obstacles in the development of children's curiosity in school curricula and science education are essential (Lindholm, 2018). It is understandable that teachers continue to innovate on things that can support the development of children's curiosity to continue to develop optimally. A fundamental understanding of the concept of science in early childhood develops during the early years of school (Guo, Piasta, & Bowles, 2015), so that this can be a reference for teachers to be able to arrange learning programs in accordance with children's development.

Early childhood science education research highlights the need for early science research, especially in children from low income families. Science has a low readiness domain for children from poor economic families. This study shows a unique relationship between early science and learning approaches, in the learning approach predicting the effects on readiness of science is greater than the effects of mathematics or language readiness. This study further explores this relationship by examining the two-way potential between science and the learning approach. These results indicate that the development of children's approaches to learning is related to increasing science knowledge, and that increasing children's scientific knowledge is related to the positive development of the learning approach throughout the school year. This study provides support for future research that examines the potential of science interventions that serve as a context for developing approaches to learning skills that will help children engage in quality science learning (Bustamance et al., 2018). In connection with this research research on the development of activity-based science learning models with inquiry approaches is in line with the development of quality science learning. This can also affect all aspects of child development and school readiness.

Teachers who use conventional learning models encourage practitioners and experts to continue to create innovative learning models, especially in the field of science. This still needs to be done so that there are various variations in the learning process at school. Variations in learning models will stimulate curiosity as well as children's creativity. Developing of scientific learning model innovations must be able to simultaneously change the mindset of teachers in learning process and not only oriented to worksheets, but prioritize inquiry-based learning activities. Through inquiry learning children will get used to compiling their knowledge but still remain in the direction of the teacher through giving a foothold. This is inseparable from the development of concepts and skills from infancy to early childhood in inquiry learning in science (Lind, 1998); (Youngquist & Pataray-Ching, 2004). Inquiry learning is highly recommended as a basis for children's learning, especially in the fields of science and mathematics (Anderson, 2002). It can be understood that science and mathematics require logical thinking and curiosity to be able to find

answers and prove them scientifically. as Wang et al argue that children naturally explore and learn about the environment through investigation(Wang, Kinzie, McGuire, & Pan, 2010), then adapted to class, inquiry involves a problem-solving process (Lind, 2005) where the child answers the research question (Bell, Smetana, & Binns, 2005), build their own knowledge, and develop their understanding with the support of teachers and peers. Investigation helps students to develop their personal and social understanding of the world by utilizing various perspectives and various forms of knowledge, such as mathematics, science, language. Children spontaneously ask questions, ask questions and explore, to understand the world; this is an important key to their lifelong development that must continue to be supported(Youngquist & Pataray-Ching, 2004). The inquiry approach in learning is in harmony with the competencies that must be possessed by children in the 21st century, ensuring an increase in their motivation to learn, developing observing and asking skills, and positive changes in students' attitudes towards learning. Inquiry-based learning shows that the benefits of its application are better than conventional learning related to stimulation of abilities in investigations (Caballero Garcia & Diaz Rana, 2018). The use of inquiry-based learning is prioritized, because it has proven to be an effective method for increasing student motivation in science, technology, engineering, and mathematics (STEM) and increasing children's understanding of scientific concepts (Gerli Silm, Tiitsaar, Pedaste, Zacharia, & Papaevripidou, 2015) (Wu & Lin, 2016). Based on some of these things which underlie the need for the development of activity-based science learning models with an inquiry learning approach so that it can be one solution in order to stimulate children's curiosity optimally.

## 2 METHODS

Activity-based science learning model with inquiry learning approach is the result of research and development (Research and Development). Research and development are a research method that collaborates quantitative and qualitative research methods and is packaged in certain stages in order to test the effectiveness of a product being developed / innovated and new / original products.

The research was conducted in 4 cities in Indonesia, namely Jakarta, Bogor, Tangerang and Bekasi. The research subjects were children aged 5-6 years. This research analyzes qualitative and quantitative data about the emergence of children's curiosity. Qualitative data analysis was obtained through data from the needs analysis (literature studies, comparative studies, interviews & observations) while the quantitative data obtained through the results of tests conducted before (pretest) and after the use of activity-based science learning models with inquiry learning approach (posttest) Then the test scores were analyzed through paired t-test.

## 3 RESULT AND DISCUSSION

### 3.1 Result

The model design developed was in the form of an activity-based science learning model with an inquiry learning approach. Activity-based science learning model with inquiry learning approach is the result of modification of existing learning models. The goal is to stimulate and increase children's curiosity when using the learning model. This learning model is developed based on the process as follows:

### 3.1.1 Pre-Analysis

Pre-analysis is done with an effort to find a concrete initial picture of the condition of activity-based science learning in kindergarten children. This is done in order to get an overview of the implementation of activity-based science learning activities. The problems identified are passive children in science learning activities, lack of teacher understanding in implementing science learning into the learning process. Most teachers in the learning process still use conventional learning methods.

### 3.1.2 Final draft of activity-based science learning model with inquiry learning approach

Activity-based science learning models with an inquiry learning approach designed through design, implementation and evaluation. The purpose of activity-based science learning design is set in order to stimulate and increase children's curiosity. The science learning material is based on activities to shape children's scientific thinking which is characterized by the emergence of children's curiosity and finding answers to the phenomena that occur around them. Following is the design of the science learning model based on the inquiry learning approach:

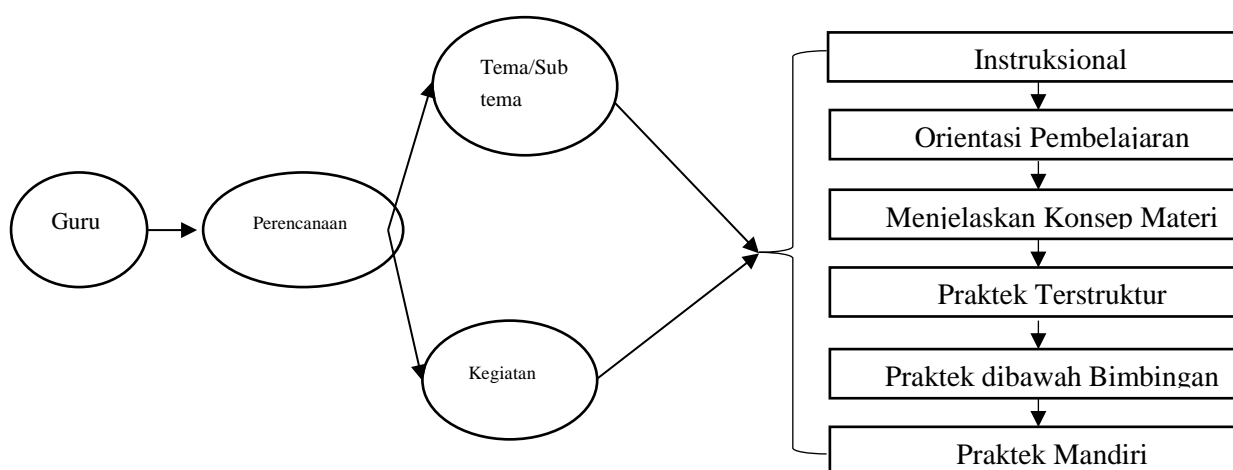


Figure.1: Design of a Science Learning Model Based on the Inquiry Approach

Activities-based science learning design steps with an inquiry learning approach can be done through:

#### *First Stage: Learning Orientation*

- The teacher determines the subject matter and appears in the form of themes / sub-themes.
- The teacher reviews the previous material by performing apperception.
- The teacher determines the learning objectives that are set and adjusted to the targets to be achieved to form a child's scientific thinking.
- The teacher determines the procedures and forms of activities that will be carried out with the child in learning activities.

#### *Second Stage: Explain the Material Concept*

- The teacher explains the concepts or new skills that the child will have.
- The teacher presents a visual representation of the tasks given with simple examples.
- The teacher ensures the child's understanding of the material taught by using observation and question and answer techniques during the process of learning activities.

### *Third Stage: Structured practice*

- Teachers guide groups of children with examples of practice directly.
- The teacher instructs to do things according to the example,
- Children respond with questions and answers.
- The teacher provides corrections to errors.
- The teacher strengthens the practice of the right child.

### *Fourth Stage: Practice with Teacher's Guidance*

- Children practice semi-independently, where all learning activities that must be done by the child are still under the guidance and guidance of the teacher (the teacher is in a position to provide reinforcement and memory).
- The teacher rotates the child to practice with other activities / examples and asks the child to observe and comment and assess the activities carried out by his friends according to the concept taught by the teacher.
- The teacher provides feedback in the form of praise, whispers and instructions for what the child is doing and about comments and evaluations of the activities carried out by the child.

### *Fifth Stage: Independent Practice*

- Children practice independently at home or in class, the teacher involves other children to give comments and assessments of the behavior of their friends. Independent practice is done several times
- The teacher delays the response back and gives it at the end of the series of practices, meaning the teacher does not directly respond to what the child is doing, but postpones until the closing activity is done. Response is given to the closing activities and concludes with the children in order to provide reinforcement.

### *3.1.3 Effectiveness Test*

The effectiveness of science-based learning model activities with inquiry approach was calculated using a quasi-experimental research method with a pre-test and post-test design on 20 respondents in an early childhood education institution. Pretest and posttest were used to measure the level of change that occurred between before and after treatment in using an activity-based science learning model with an inquiry approach. The following scores are obtained through the pretest and posttest:

Table 1. Pre-Test & Post-Test Score List Using Activity-Based Science Learning Model with Inquiry Approach

No.	Name	Pre Test	Post Test	Conclusion
1	Din	42	68	Improve
2	Far	38	67	Improve
3	Al	53	72	Improve
4	Rad	49	70	Improve
5	Shi	50	73	Improve
6	Nin	56	78	Improve
7	Wid	36	62	Improve
8	Bud	49	65	Improve
9	Nin	34	58	Improve
10	Ag	46	60	Improve
11	Her	37	62	Improve

12	Nun	48	67	Improve
13	Ti	51	65	Improve
14	Din	52	71	Improve
15	Alf	43	60	Improve
16	Ran	30	53	Improve
17	Nan	32	59	Improve
18	Ais	28	57	Improve
19	Ren	46	69	Improve
20	Bal	43	66	Improve

Based on the results in the table, it shows that there is an increase after using an activity-based science learning model with an inquiry approach. Increasing the child's score shows that the science-based learning model of activities with the inquiry approach can be accepted as one of the mediums to achieve the planned target, which is to be able to convey information and can increase the child's curiosity towards science activities. This is in line with Lua and Li in his research also obtained results that students become more confident in learning activities and feel satisfied with learning activities; students gain knowledge in accordance with the planned target (Lu & Liu, 2017).

Furthermore, in this study the effectiveness test of media use was calculated using paired t test through the SPSS application. Paired t tests are carried out on subjects tested on the condition before and after the process, or in pairs or similar subjects. The t-test formula is paired as follows:

$$t = \frac{\bar{x} - \mu_0}{S/\sqrt{n}}$$

Description:

t = value of t

– x = mean of group 1

μ<sub>0</sub> = mean of group 2

S = Standard deviation of measurement differences 1 and 2

n = number of samples

Then, the hypothesis is as follows:

H<sub>0</sub>: μ<sub>1</sub>=μ<sub>2</sub> (there is no difference between before and after the use of activity-based science learning models with the inquiry approach)

H<sub>a</sub>: μ<sub>1</sub>≠μ<sub>2</sub> (there is a difference between before and after the use of activity-based science learning models with the inquiry approach).

The following are the results of the calculation:

Table 2. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	43,15	20	8,222	1,839
	Posttest	65,10	20	6,231	1,393

Table 3. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pretest & Posttest	20	,839	,000

Table 4. Paired Samples Test- Pired Difference

		Paired Samples Test							
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	-21,950	4,524	1,012	-24,068	-19,832	-21,696	19	,000

The effectiveness test was carried out with quasi-experimental research methods through pre-test and post-test and analysis using paired t-test. The calculation value of paired samples test with SPSS obtained the mean value of -21,950 obtained from the average difference before the use of the science learning model and after the use of the science learning model. The standard deviation shows the value of 4,524 which is the standard deviation from the difference between before and after the use of the science learning model. Then for the confidence interval shows a lower value = -24.068 and upper = -19,832 which means the interval indicates the area of difference in recognition at the level of 95%. The results of the t-test showed a value of -21,696 which means that it is greater than t-table 2.56 at the level of 99%, this means that the difference in the introduction of marine life is accepted at the level of 99%. Then Sig. (2-tailed) shows the results of 0.000, so the value of  $0.000 < 0.05$  then the data shows that there are differences from before and after the use of activity-based science learning models with inquiry learning approach.

### 3.1 Discussion

This study produced a product in the form of "Activity Based Science Learning Model with Inquiry Learning Approach". The outline learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve certain learning goals and serves as a guide for learning designers and teachers in designing and implementing teaching and learning processes (Darmadi, 2017). The presence of inquiry learning based science learning models has a role to facilitate the learning process. The role of inquiry-based learning approaches can act as a potential tool to stimulate children's curiosity, as well as simple classroom techniques, which can be applied to almost all academic disciplines (Pluck & Johnson, 2011). It can be understood that the application of an activity-based science learning model with an inquiry approach can also influence the increase of children's knowledge but also can increase the creativity of the teacher in preparing learning activities.

Science is a knowledge that can be given from an early age. Studying science from an early age aims to facilitate the child's high curiosity and to be able to develop extensive knowledge about various phenomena that occur. As Saçkes stated in his research that in the United States science learning has been given in kindergartens in the fields of science and technology, such as earth and space, life, and physics (Sackes, Trundle, & Flevares, 2009). Science is a collection of knowledge used to explain natural phenomena, then the knowledge is arranged so that any new facts obtained can be confirmed by reference to other facts that were previously known. Science is a way to

uncover new parts of knowledge. This is achieved through a process of observation and testing designed to confirm whether there is an explanation proposed about something (Gross, 2012).

Based on the results of trials on activity-based science learning models with an inquiry approach, the fact is that children are stimulated by their curiosity about the theme of learning. This is in line with research on inquiry learning which reveals that science and technology learning supported by guided activities developed in line with the IBL approach (Inquiry Based Learning) has a significant effect on students' critical thinking skills in science and technology courses (Duran & Dökme, 2016). The science learning model based on an inquiry approach aims to increase children's curiosity so that later children will have the ability to think critically. Children instructed through inquiry-based learning score higher than instructed through traditional methods (Abdi, 2014). This is in line with the science learning model because the learning process takes place pleasantly, meaningfully, is centered on children and activities are carried out directly in practice.

Another finding in the use of science learning models based on inquiry approaches is that children are also active and involved in the exploration and discovery process about the themes presented. In inquiry-based science education, children become involved in many of the activities and thought processes that scientists use to produce new knowledge. Science educators encourage teachers to replace traditional teacher-centered teaching practices, such as emphasis on textbooks, lectures, and scientific facts, with an inquiry-oriented approach that (a) involves children's interest in science, (b) provides opportunities for children to use appropriate laboratory techniques to gather evidence, (c) ask children to solve problems using logic and evidence, (d) encourage children to conduct further studies to develop more complicated explanations, and (e) emphasize the importance of scientific writing and evidence-based explanations (Reiser, 2004). Inquiry-based teaching approaches support increasing children's knowledge in order to know that knowledge is the result of previous expert research (Bransford, Brown, & Cocking, 2000).

This is in addition to motivating children to continue exploring to find something so that someday in the future children can become inventors whose work will be known to many people from all over the world, also can be a means to introduce history to children about previous scientists find various fields of science's study.

The next finding is that shy children also become more confident to express their opinions. This is because there is a feeling of being able in children when doing science activities so that children are motivated to be more confident. Children's cognitive abilities automatically also increase compared before when children do learning using conventional learning models. In the early twentieth century prominent child psychologist Jean Piaget emphasized the importance of curiosity in children's cognitive development. He uses various terms to refer to curiosity and exploratory behavior, connecting them primarily with the assimilation process, which together with accommodation refers to two ways in which children adapt or learn about the world. In addition, Russian psychologist Lev Vygotsky has emphasized the role that adults play in encouraging children's exploration behavior. Vygotsky suggested that children's cognitive abilities were not established, but existed in the continuum from independent performance to what was possible in collaboration with adults. Thus cognitive abilities can be expanded through exploration and stimulation of childhood curiosity. The influence of Vygotsky and Piaget is very large in the field of child psychology and applied aspects in education (Pluck & Johnson, 2011).

High curiosity can also affect children's memory. Memory that a child remembering the process of mixing primary and secondary colors, when they remembers the characteristics of a living

being and so on. The effect of curiosity on memory may not be too strong due to various other factors. One is that children are more likely to remember answers that have more familiar words. Some of the questions kids want to ask might have answers with words that are not commonly used, while other curiosity-raising questions have a more memorable answer (Walin & Grady, 2016). Walin and Grady's research mentions that children's memory is the ability of children to remember terms or scientific vocabulary, but this study has not been studied further on scientific vocabulary because the vocabulary used is still general and this can be done in future studies.

The formation of scientific reasoning in children is a learning goal in kindergarten according to Permendiknas Nomor 137 dan 146 Tahun 2014 about standardization of early childhood development, which is realized through learning activities in schools. The learning objectives are achieved through learning activities carried out as long as the child is in school and can be followed up at home with the help of parents. The activity of learning the formation of scientific reasoning in children is a target that must be achieved by teachers in schools, so that children's scientific reasoning can develop optimally attached to children and can appear on children's behavior without being asked, forced and suppressed.

Activity-based science learning models with an inquiry learning approach were developed with regard to the development and formation of scientific reasoning in kindergarten children. Besides the activity-based science learning model with inquiry learning approach is characterized by the basis of children's development and learning, the basis of children's strengths, children's needs and interests as well as the child's social and cultural context. With this basis set 1) What activities can be given to children, interactions or learning experiences that are appropriate to the age and individual children; 2) Activities held are in accordance with the social and cultural aspects of the child so that the learning experience is easily understood by the child because the child is in that environment.

The contribution of activity-based science learning models to the inquiry learning approach in children is sought by describing the criteria for the formation of children's scientific reasoning in the design, implementation and evaluation of learning. The children's scientific reasoning values that are used as criteria for the development of children's scientific reasoning are determined through indicators of achievement of activity-based science learning outcomes with the inquiry approach. Activity-based science learning model with inquiry learning approach developed in accordance with children's development needs in the context of learning. Then directed to realize the purpose of learning to shape children's scientific reasoning. This was realized through the emergence of curiosity of children, continued the emergence of the desire to find out more than the phenomenon that children see in the surrounding environment and ended with the desire to find answers to the child's curiosity about the phenomenon he saw. The main role of the teacher is to provide appropriate footing to evaluate the success of stimulation to support children's learning (Falloon, 2019). Again, this will be achieved if the teacher's role is optimal and appropriate in providing stimulation to children.

#### 4 CONCLUSION

The development of learning models based on inquiry approaches is an existing learning model innovation with the aim of increasing the potential of children's curiosity to be stimulated and develop optimally. This is evidenced by the findings in the study, namely the child's curiosity towards the theme of learning becomes greater, children become more active in exploring and exploring the surrounding environment, children's confidence becomes higher and children's



memory becomes higher. Developments in particular science-based learning models and inquiry learning approaches for early childhood to continue to be improved so that they become more varied to create fun and meaningful learning for children.

Given the limitations in this study, it is expected that further research can be investigated on the effect of activity-based science learning models with an inquiry approach to children's memory and early childhood vocabulary acquisition.

## 5 REFERENCES

- Abdi, A. (2014). The Effect of Inquiry-based Learning Method on Students' Academic Achievement in Science Course. *Universal Journal of Educational Research*, 2(1), 37–41. <https://doi.org/10.13189/ujer.2014.020104>
- Anderson, R. D. (2002). Reforming science teaching: What research says about inquiry. *Journal of Science Teacher Education*, 13(1), 11–12.
- Bell, R. L., Smetana, L., & Binns, I. (2005). Simplifying inquiry instruction: Assessing the inquiry level of classroom activities. *The Science Teacher*, 72(7), 30–33.
- Borowske, K. (2005). Curiosity and Motivation-to-Learn (hal. 346–350).
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. Washington D.C.: National Academy Press.
- Buday, S. K., Stake, J. E., & Peterson, Z. D. (2012). Gender and The Choice of a Science Career: The Impact of Social Support and Possible Selves. *Sex Roles*. Diambil dari <https://doi.org/10.1007/s11199-011-0015-4>
- Bustamance, S. A., White, J. L., & Grienfield, B. daryl. (2018). Approaches to learning and science education in Head Start: Examining bidirectionality. *Early Childhood Science Quarterly*.
- Caballero Garcia, P. A., & Diaz Rana, P. (2018). Inquiry-Based Learning: an Innovative Proposal for Early Childhood Education. *Journal of Learning Styles*, 11(22), 50–81.
- Cridge, B. J., & Cridhe, A. G. (2011). Evaluating How Universities Engage School Student with The Science: a Model Based on Analysis of The Literature. *Australian University Review*.
- Darmadi. (2017). *Pengembangan Model dan Metode Pembelajaran dalam Dinamika Belajar Siswa*. Yogyakarta: Deepublish.
- Dođru, M., & Şeker, F. (2012). The effect of science activities on concept acquisition of age 5-6 children groups. *Kuram ve Uygulamada Eđitim Bilimleri*, 12(SUPPL. 4), 3011–3024.
- Duran, M., & Dökme, I. (2016). The effect of the inquiry-based learning approach on student's critical-thinking skills. *Eurasia Journal of Mathematics, Science and Technology Education*, 12(12), 2887–2908. <https://doi.org/10.12973/eurasia.2016.02311a>
- Falloon, G. (2019). Using simulations to teach young students science concepts: An Experiential Learning theoretical analysis. *Computers & Education*, 135(March), 138–159. <https://doi.org/10.1016/j.compedu.2019.03.001>
- Gerli Silm, Tiitsaar, K., Pedaste, M., Zacharia, Z. C., & Papaevripidou, M. (2015). Teachers' Readiness to Use Inquiry-based Learning: An Investigation of Teachers' Sense of Efficacy and Attitudes toward Inquiry-based Learning. *International Council of Association for Science Education*, 28(4), 315–325.
- Ginsburg, H. P., & Golbeck, S. (2004). Thoughts on the future of research on mathematics and science learning and education. *Early Childhood Research Quarterly*, 19(1), 190–200.

- Gross, C. M. (2012). Science concepts young children learn through water play. *Dimensions of Early Childhood*, 40(2), 3–11. Diambil dari <http://www.proxy.its.virginia.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=78303868&site=ehost-live&scope=site>
- Guo, Y., Piasta, S. B., & Bowles, R. P. (2015). Exploring Preschool Children's Science Content Knowledge. *Early Education and Development*, 26(1), 125–146. <https://doi.org/10.1080/10409289.2015.968240>
- Halim, L., Abd Rahman, N., Zamri, R., & Mohtar, L. (2018). The roles of parents in cultivating children's interest towards science learning and careers. *Kasetsart Journal of Social Sciences*, 39(2), 190–196. <https://doi.org/10.1016/j.kjss.2017.05.001>
- Jirout, J. J. (2011). Curiosity and the Development of Question Generation Skills, (1994), 27–30.
- Justice, L. M., & Kaderavek, J. (2004). Embedded-explicit emergent literacy I: Background and description of approach. *Language, Speech, and Hearing Services in Schools*, 35, 201–211.
- Lind, K. K. (1998). Science in Early Childhood: Developing and Acquiring Fundamental Concepts and Skills. Retrieved from ERIC (ED418777), 85. Diambil dari <http://files.eric.ed.gov/fulltext/ED418777.pdf>
- Lind, K. K. (2005). *Exploring science in early childhood*. (4 ed.). New York: Thomson Delmar Learning.
- Lindholm, M. (2018). Promoting Curiosity ? Possibilities and Pitfalls in Science Education, (1), 987–1002.
- Lu, S., & Liu, Y. (2017). Integrating augmented reality technology to enhance children's learning in marine education, 4622(November), 525–541. <https://doi.org/10.1080/13504622.2014.911247>
- Lukas, M. (2015). Parental Involvement of Occupational Education for Their Children. *International Multidisciplinary Scientific Conference on Social Science and Arts*.
- Maltese, A. V., & Tai, R. H. (2011). Pipeline Persistence; Examining The Association of Educational with Earn Degrees i STEM Among US Students. *Science Education*.
- Nugent, G., Barker, B., Welsch, G., Grandgenett, N., Wu, C., & Nelson, C. (2015). A Model of Factors Contributing to STEM Learning and Career Orientation. *International Journal of Science Education*.
- Pluck, G., & Johnson, H. L. (2011). Stimulating curiosity to enhance learning.
- Reiser, B. J. (2004). Scaffolding complex learning: The mechanisms of structuring and problematizing student work. *Journal of the Learning Sciences*, 13(3), 273–304.
- Sackes, M., Trundle, K. C., & Flevaris, L. M. (2009). Using children's literature to teach standard-based science concepts in early years. *Early Childhood Education Journal*, 36(5), 415–422. <https://doi.org/10.1007/s10643-009-0304-5>
- Walsh, H., & Grady, S. O. (2016). Curiosity and Its Influence on Children's Memory, 872–876.
- Wang, F., Kinzie, M. B., McGuire, P., & Pan, E. (2010). Applying technology to inquiry-based learning in early childhood education. *Early Childhood Education Journal*, 37(5), 381–389. <https://doi.org/10.1007/s10643-009-0364-6>
- Wu, S. C., & Lin, F. L. (2016). Inquiry-based mathematics curriculum design for young children-teaching experiment and reflection. *Eurasia Journal of Mathematics, Science and Technology Education*, 12(4), 843–860. <https://doi.org/10.12973/eurasia.2016.1233a>
- Yahya, A., & Ismail, N. (2011). Factor in Choosing Courses and Learning Problems in Influencing The Academic Achievement of Student's Technical Courses in Three Secondary

School in The State of Negei Sembilan. *Journal of Technical, Vocational & Eginereing Education*.

Youngquist, J., & Pataray-Ching, J. (2004). Revisiting “play”: Analyzing and articulating acts of inquiry. *Early Childhood Education Journal*, 31(3), 171–178.



## The Implementation of Multi-sensory Learning at Elementary Schools in Jakarta

Ratna Dyah Suryaratri<sup>1</sup>

*Universitas Negeri Jakarta*

Eko Hadi Prayitno<sup>2</sup>

*Politeknik LP3I Jakarta, Indonesia*

Wuryani<sup>3</sup>

*Universitas Negeri Jakarta*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.08>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** This research aims to identify the implementation of multi-sensory learning at elementary schools in Jakarta. The method used through surveys to 50 elementary schools' teachers in 5 schools. Data was collected by using questionnaire that revealed the implementation of multi-sensory learning. The result of this study showed that the use of multi-sensory learning could be more effective in maximizing learning. Through multi-sensory learning, teacher can involve students actively in the learning process and facilitate all students with different learning styles. Multi-sensory learning can be used in all lesson that integrated with curriculum and has significant implications in the real-life learning. The obstacle in implementing this learning model is founded about the lack of using of audiovisual technology and many schools do not implemented the multi-sensory learning.

**Keywords:** Multi-sensory learning, Elementary School, Audiovisual Media.

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta

**e-ISSN (Online Media): 2503-0566**

**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup> Corresponding Author:

Universitas Negeri Jakarta

Jln Rawamangun Muka, Jakarta Timur, Indonesia

Email: [suryaratri@unj.ac.id](mailto:suryaratri@unj.ac.id)

## 1 INTRODUCTION

Audio-visual thematic learning technology in improving early childhood multisensory has never developed in elementary school. The implementation of thematic learning generally uses conventional learning. The learning technology that will create in this design a combination of audio and visual or can call the media of view and hearing which makes it easy for students to learn so that it very possible for two-way communication between the teachers and students in the processes. This media can stimulate multisensory children ranging from sight, hearing, smell, taste, and taste. This learning technology will vary according to the themes in the curriculum. Learning technology that made adjusted to the grade level and the relevant themes. Also, it is also adapted to children's learning styles, namely auditory style, kinesthetic and visual.

Multi-sensory consists of two words, namely multi and sensory. The word "multi" means many or more than one, and "sensory" means the five senses. The two senses are more than one of the five senses. A multisensory approach can be applied to early childhood, children with special needs, children with dyslexia or mentally retarded children.

Basically, every child is a multisensory learner. For example, when you are 1 year old, all of his curiosity about something he has assumed by Donut then he does not directly eat it. He will hold, lick, squeeze and can also be taken after being satisfied with his curiosity so he will eat it (better parents prevent it).

This multisensory learning approach uses sensory devices, including the visual, auditory, kinesthetic (movement), olfactory, gustatory (tasting), tactile (touch). A multisensory approach is a statement that children learn well when children use multiple senses. The senses are often used, namely kinesthetic (motion), and tactile (touch) stimulation caused by the visual senses (vision) and auditory (auditory) senses. The multisensory approach is assisted with concrete media. The multisensory approach includes tracing activities (listening), listening (auditory), writing (movement), and seeing (visual). For that, the implementation of this method requires tools (media) cards, flour, lines and letters made of fabric panels, and other tools that are palpable (concrete) (Matusz, Wallace, & Murray, 2017).

The principles used in using multisensory are:

1. The atmosphere in the classrooms is pleasant. If your child's feelings are happy, he will easily receive learning.
2. Individual principles, meaning that every child is a unique person, so each child is a different intelligence and acceptance of the subject matter that provides education services becomes a priority that must be considered.
3. The principle of continuity, meaning that the implementation of a multisensory approach is carried out continuously and is not expected to be expected by the expected bias of the results. Through the principle of continuity, children will be familiar with the lessons that have been taught.
4. Sustainable principles, meaning that if the child has mastered the material that has been taught, then students learn the material at the next stage (Krueger Fister et al., 2016).

Learning often depends on a child's vision to see text and images and read information. It also depends on the child's hearing to hear what the teacher is saying. Teaching multisensory is not only limited to reading and listening. In contrast, multi-sensory teaching uses all the senses. Each lesson will not use all the senses of the child (taste, smell, touch, vision, hearing, and movement). But in most multisensory lessons, children understand the material by involving more than one method. For example, say when a child is studying oranges. Children can examine, touch, smell, and taste apples visually, not just read and listen to the teacher explain how oranges will grow. Then he might hold the orange split in two and count the number of seeds in it, one by one. That's one example of multisensory teaching. that is teaching by conveying information through things like touch and movement or part of touch and kinesthetic as well as vision and hearing.

Multisensory learning is one of them done to help to teach reading. Multisensory reading uses vision, sound, movement, and touch to help children connect language with words. In addition, multisensory teaching can also be used for teaching mathematics. Multisensory teaching in mathematics can use manipulative objects (small objects such as interlocking cubes or beam shapes) to help children do mathematical applications.

Teaching science can also be done with a multisensory approach where children carry out experiments, write down the steps and report their findings, is a multisensory learning experience. Even singing that teaches things like days of the week or country names is an example of multisensory learning.

All children can benefit from multisensory teaching, both children who have no learning barriers or children who have learning disabilities. If a student learns something using more than one sense, the knowledge gained will continue to stick in his memory. Multisensory learning can be very helpful for children with learning and attention problems. For example, these children may experience problems with visual or auditory processing. These obstacles make it difficult for them to learn information just by reading or listening.

Using many senses gives these children (and others) more ways to connect with what they learn. This type of direct learning can make it easier for students to:

1. Gather information
2. Make connections between new information and what they already know
3. Understanding and overcoming problems
4. Use nonverbal problem-solving skills (Morin, 2019)

Multi-sensor instructions help children use their learning power to make connections and shape memories. And that allows them to use various ways to show what they have learned. Multisensory teaching notes that children have different ways of learning from each other. This can help meet the diverse needs of all children, not just those who have learning and attention problems. And by providing many ways to learn, it gives every child in the class a chance to succeed (Morin, 2019).

When in the classroom, the task that must be done by the teacher is all students who have the same opportunity to learn successfully. Learning seems so easy for some children, but not for

others. by asking the teacher to generalize students who are trying to learn. In addition, the teacher must learn the material presented can be accepted by the child's brain that varies.

Barriers to meeting the needs of all students:

- How do teachers know what each child's talents are?
- How can the teacher teach lessons that are tailored for each student?
- How will the teacher spend time in the day planning and spending extra?
- How can the teacher get teaching materials that work with each type of learner?

Good learning can be done by optimizing the five senses. Because the senses act as a pathway to the brain. This is the main pathway to the child's brain:

- Auditory - through the sense of hearing
- Visual - through the sense of sight
- tactile - through the sense of touch
- Kinesthetic - through body movements

Multisensory lessons will really involve students at all levels simultaneously. Multisensory teaching is very important because it does not pay attention to the learning excellence of every child (be it auditory, visual, tactile, or kinesthetic), a multisensory lesson will benefit the excellence of learning for all students at one time.

Children who are very good at a hearing can not only hear lessons learned; Can be done by looking, holding or feeling. Auditory type of children benefits from repeating hard new content. They benefit from using hearing, so they can hear themselves more clearly. They benefit from reading aloud. Auditory students will benefit by explaining what they have to convey to other students or to their peers.

Visual type of children not only need to see what they need. They benefit from graphics or images that contain subject matter in a logical way from all activities. Visual children really like to see well-organized material that allows them to find patterns. What they get. Visual learning by equating symbols with known objects. Their strength is not given to repetition and memorization. They prefer organized content so that they can take pictures stored in the brain and are easily recovered. Visual abilities are most often excluded by tactile or kinesthetic abilities. The results of the multisensory visual learning facilitation are shown in the figure below:

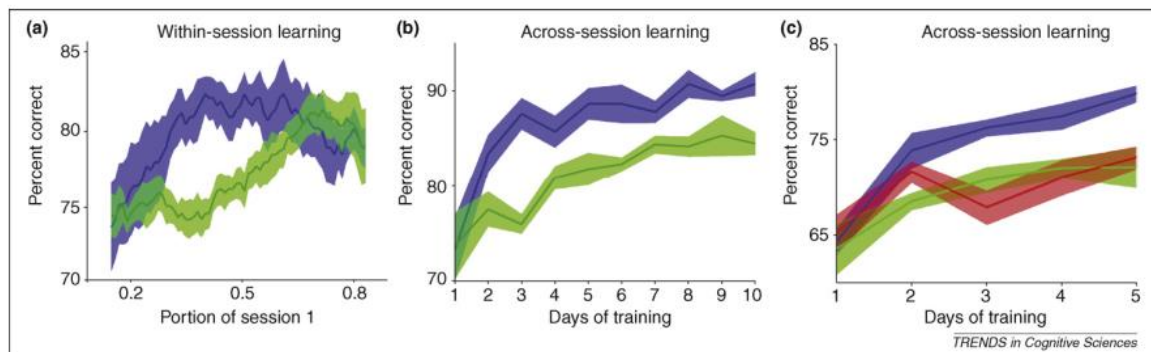


Figure 1. Results of multisensory facilitation of visual learning. Congruent (blue) auditory-visual training results in, (a) faster within-session learning and (b) greater across session learning, compared to (c) unit sensory training (red). Incongruent (green) training does not show same benefit as congruent training (blue). Data in all plots is for trials

containing only visual signals. Shaded regions indicate within subject standard error. Parts (a) and (b) reproduced, with permission, from Ref. Part (c) adapted from Ref

Children who learn with must have the opportunity to use their hands to learn. This exceeds paper and pencil learning. Tactile type children make meaning by moving things, by manipulating objects that represent the concepts they get.

Examples of good tactile materials are math calculation coins and fraction shards. Jam with moving needles and real money to calculate is also very beneficial for tactile type children. When learning to read words, cards that show words through simple pictures and words on the opposite side are far more effective than a list of words that must be memorized.

Children with kinesthetic types must move to focus and learn. They also benefit from moving in a way that changes the concept they get. Perfect examples include body movements that reflect the meaning of the new word they are correcting.

Body movements that reflect the letters of the alphabet greatly help children who learn to get the names of letters with their symbols and sounds. Children with kinesthetic types are usually also a type of visual child. Children of this type will be very happy to receive help from the teacher to move to issue donations and materials from the material to be delivered (Child1st, 2019).

Learning a cognitive activity that originates in the human brain (Matusz et al., 2017). Humans have unlimited brain abilities and ready to developed (Jansen, 2000). Teachers need to understand how the brain works especially when they learn. An understanding of learning styles strongly related to the learning process. Research related to brain-based teaching results in that learning that fun can improve learning outcomes of elementary school students (Yufiarti, 2016). The learning process can define as a process: (1) receiving information, (2) understanding and (3) remembering it.

### *Sensory*

Sensory is the process of detecting the presence of a stimulus from the outside environment through the senses (exoreceptors) (Nidiffer, Stevenson, Krueger Fister, Barnett, & Wallace, 2016). In humans there five sensory systems, namely: (1) the visual system (vision); (2) auditory (hearing); (3) somatosensory (palpation); (4) olfactory (olfactory); (5) and gustatory (tasting) (Gorjian, Hayati, & Barazandeh, 2012). The sensory system regulated by the brain in the sensory cortex region which consists of three different types, namely in the section: (1) primary sensory cortex, a system that includes the sensory cortex region that receives most of the input directly from the thalamic delivery system; (2) secondary sensory cortex, a system that includes areas that receive input from primary sensory cortex or other secondary sensory cortex; and (3) the cortex of the association, which an area that receives input more than one sensory system. The interaction of the three types of cortex characterized by hierarchical principles, functional segregation, and parallel processing.

A multisensory process defined as the influence of one sensory modality on activities produced by other modalities. However, most of the terms “multisensory” identical to the term “bimodal” (describes neurons that can activate by independent stimuli that more than one modality). Therefore, in the study of multisensory connections, bimodal identified as the first area or neuron in response to different sensory stimuli.



Multisensory techniques are often used for children with different learning styles. Techniques and strategies discuss multi-sensory. They encourage students to use part or all of them to:

- Gather information about a task
- Link information to ideas that they already understand and understand
- Logical thinking is involved in solving problems
- Learn problem-solving
- Utilizing nonverbal punishment skills
- Understand the relationship between concepts
- Save information and save for later storage

Using multisensor techniques means helping children learn through more than one sense. Most techniques are performed using vision or hearing (visual or auditory). Child's vision is used in reading information, viewing text, images or reading information based on the board. Indonesian is used to listen to what the teacher asks. The vision of children who can be approved by difficulties is approved or arranged visually. Sometimes a child's hearing may be weak. The solution to these problems is to involve the use of more children's senses, especially the use of extra (touch) and movement (kinetic). This will help the child's brain to develop tactile and kinetic to survive, as well as hearing and visual.

Students with learning difficulties overcome difficulties in one or more fields of reading, spelling, writing, mathematics, understanding listening and expressive language. Multisensor techniques allow students to use their personal area of strength to help them learn. They can choose from simple to complex, depending on the needs of students and assignments that depend.

Some researchers theorize about many students who have a field of sensory learning, sometimes called learning styles. This researcher discusses students who use techniques that learn with their style, they learn more easily, are faster and can maintain and use concepts easier to learn in the future. Most students, with difficulty or not, can enjoy a variety of acceptable multisensor techniques.

Now we can use several multisensor techniques that can be used to help students in their learning. Visual learning techniques can use the following tools:

- Text and/or images on paper, posters, models, projection screens, computers or flashcards
- Use of colors to move, information or image
- Graphic organizer outlines the parts
- Students create art, images, text, images, and videos
- The techniques agreed to above are resolved using visual approval methods and strategies.

Audio learning techniques can use the following tools:

- Books on tapes, peer-assisted reading, paired reading and computerized text readers
- Video or audio accompanying movies
- Music, songs, instruments, speech, poetry, songs and language games

Multi-sensory techniques that involve the use of touch senses are called touch methods. Tactile methods include strategies such as:

- Sand trays, raised line paper, textured objects, cat fingers, and puzzles to enhance fine motor skills

- Modeling materials such as clay and chisel material
- Using small materials called manipulatives to represent numerical values to teach math skills

The multi-sensory method of using body movements is called the kinesthetic method. This involves fine and rough motor movements.

- Games that involve jumping rope, clapping hands or other movements paired with activities while counting and singing songs related to the concept.
- Any major movement activity for students that involves dancing, throwing bean bags, or other activities involving concepts, rhythm reminders and academic competitions such as quizzes, flash card races and other learning games (Praveen, 2019).

Multisensory experience with objects and people in a child's environment the main thing to build children's understanding of their world (Krueger Fister et al., 2016). Children naturally interested in using their senses to explore the world, by touching, pinching, feeling, licking, chewing, kissing, watching, and listening to things. Children learn to use their senses appropriately so that they become more environmentally conscious and use reason to construct concepts (Shams & Seitz, 2008). Information received by children from the surrounding environment and distributed by the five senses/multisensory useful to develop various ideas for organizing actions and managing emotions for their environment (Finotti, Migliorati, & Costantini, 2018).

Multisensory experience is a starting point for concrete learning and by the stages of development and memory of children (Heikkilä & Tiippana, 2016). Sensory relationships with perceptions, feelings, thinking, and concepts produced (Shams & Seitz, 2008) can see in table 1.

Table 1. Sensory relationships with perceptions, feelings, thinking, and concepts

Sense	Perception	Feeling	Thinking	Concept
Visual	Look	Enjoy	Compare	Color
Auditory	Listen	Marvel	Contras	Tone
Tactile	Touch	Joy	Analyze	Texture
Olfactory	Smelt	Happy	Classify	Scant
Gustatory	Teste	Amazed	Describe	Flavour

Benjamin Franklin once said, "Tell me and I forgot. Teach me and I remember. Involve me and I study." Whether Franklin realized it or not, he understood what was called multi-sensory learning. Multi-sensory learning is just that - learning while using various senses.

Most learning is only visual (vision) and hearing (hearing). We read what is in our textbooks and we listen to our teachers. For some people, that is enough because of the way they learn best - by seeing and listening. But for some people, visual and auditory learning is not enough.

To question something, people must experience it. Some students need more experience than there is because of the way their brain works. There are many benefits to learning, namely kinesthetic or touch. By releasing various senses, students can discuss material in more than one way. There are better opportunities than students who will only discuss material but save it for the future. This is an example of multi-sensory learning.

Multi-sensory learning has proven to be very effective in students with different learning. First developed in the 1930s, Orton-Gillingham's approach to learning was developed specifically to help children with superior learning disabilities in reading, writing, and spelling. Over the years, educators have recognized that the same multi-sensory approach is as effective as individuals who have no learning differences. Multisensory learning seems like a lot of work - more planning, more lessons, more assessment. But, designing multi-sensory learning is easier than thought.

Humans, including children, live in a multi-sensory world. Most of what we experience, whether it's a walk in the park, our daily work in the office, and even a trip to the mall, excites more than our two senses. But that doesn't happen with education. At least, most of the time. Traditional learning usually attracts only one or two senses: vision (by reading, writing, doing written exercises, etc.), and listening (listening to the teacher and students). But, as successful as this model, it may not be the most effective when it comes to correcting new concepts and skills in the minds of students.

By involving more senses makes knowledge longer attached. By turning lessons into real experiences, it is often useful to help students develop stronger memories and to achieve a more complete understanding. It is not the same thing to hear or read about a event rather than live it, or, at the very least, experience it more comprehensively. In short, history lessons can be easily highlighted by including objects that are included in the period being studied, which can be touched and felt by students. By incorporating stronger stimuli, such as simulation settings using a VR helmet, or interactive recordings projected on the wall, the teacher can create real experiences, which are not only more memorable for students, but also more interesting and entertaining.

And history is not the only subject that can benefit from a multisensor approach. Even more abstract subjects such as algebra and even calculus can be taught by this approach, by creating meaningful examples and exercises that are more easily understood by students, and which help them use mathematics as a method for understanding real-life phenomena. Some teachers even started experimenting with Augmented Reality technology to help students develop spatial visualization skills, which are very important in various sciences such as language, mathematics, geography, history, and so on.

Another advantage of multisensory learning is more effective for all students. While 65% of people process visual information better, this is not true for everyone. Some people store information better compiling them through the auditory canal; and others need to be "approved" of the experience, or play it out, to maximize their chances of maintaining it. By developing what appeals to all - or mostly - reason, the teacher can ensure all students, and not only those who are gifted with a special way to process information that benefits from their learning.

Multisensory lessons are usually more interesting, and help students maintain attention for a longer period and become more involved in learning. Meanwhile, seating can still be tiring after a few hours, and attracting more senses can make the whole experience more stimulating and enjoyable.

Like many techniques and other challenges that increase the efficacy of education, technology provides new and more accessible tools for teachers to develop multisensory lessons. But, like

promoting, it's not only an important tool but how professionals use ways that improve the results of their efforts.

## 2 METHODS

This research uses of survey on teachers in elementary school Jakarta. Collecting data uses a questionnaire that revealed the implementation of multisensory. Respondents in this study were 50 teachers from 5 schools. Data analysis used descriptive in graphs and percentages.

## 3 RESULT AND DISCUSSION

### 3.1 *Teacher's Preparation to Thematic Learning Based on Multisensory*

Based on the interview results with teachers in elementary school it could be concluded that the teachers are ready to implement thematic learning with audio-visual assisted. This implementation have been going since two years ago with the application of "KURTILAS" curriculum (Kurikulum Tigelabas). Learning thematic is implemented for first graders until fourth grade students. This year the learning thematic will be socialized to the fifth graders and the sixth graders. Based on instrument results on 50 teachers in elementary school concluded that all the teachers have a bachelor degree. Furthermore, there were 26 teachers who have less than 10 years of experience. Next, the teachers who has experienced less than 20 years as many as 12 teachers and teachers who have more experience than 30 years as many as 12 teachers (see Table 2).

Tabel 2. Education \* Experience Crosstabulation

Count		Teaching Experience			Total
		0-10	11-20	>20	
Education	S1	26	12	12	50
Total		26	12	12	50

Furthermore, information about media training concluded that 3 teachers attended training and 47 teachers had never get training media audiovisual. They have received the KURTILAS trainings but not how to use the audiovisual media (see Table 3).

Table 3. Training \* Experience Crosstabulation

Count		Experience			Total
		0-10	11-20	>20	
Trainin g	Never	26	9	12	47
	Ever	0	3	0	3
Total		26	12	12	50

### 3.2 *Availability of Children's Audio-Visual Media*

Based on the results of the questionnaire about the media in the school, it can be concluded as follows: Type radio media there 48 teachers who have radio media at school. However, the rarely use the radio in the class (see table 4).

Table 4. Availability of Radio

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid- ity	0	2	4.0	4.0	4.0
	1	48	96.0	96.0	100.0
	Total	50	100.0	100.0	

Next speaker there 12, a teacher who has one speaker media at school and 38 teachers who has two speaker media. This media used when the ceremony held at the school.

Table 5. Speaker Availability

		Frequency	Percent	Valid Percent	Cumulative Percent
Validity	1	12	24.0	24.0	24.0
	2	38	76.0	76.0	100.0
	Total	50	100.0	100.0	

Furthermore, the availability of the projector concluded that there are two teachers who did not have a projector and 38 teachers who have projectors in their schools and 10 teachers who have more than one projector. Use of projectors rarely used in class. Generally, it only used for teacher activities and meetings with the community.

Table 6. Projector Availability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	4.0	4.0	4.0
	1	38	76.0	76.0	80.0
	2	10	20.0	20.0	100.0
	Total	50	100.0	100.0	

Television media at school generally available, only one teacher said he did not have a television. However, this media never used in class, television is in the teacher's room.

Table 7. Television Availability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	2.0	2.0	2.0
	1	48	96.0	96.0	98.0
	2	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

### 3.3 Implementation of Multisensory Learning Method

Based on results data collection from 50 teachers concluded that teachers elementary school, in general, have applied to learn multi-sensory to students, but it was still not optimal for media usage especially television and radio.

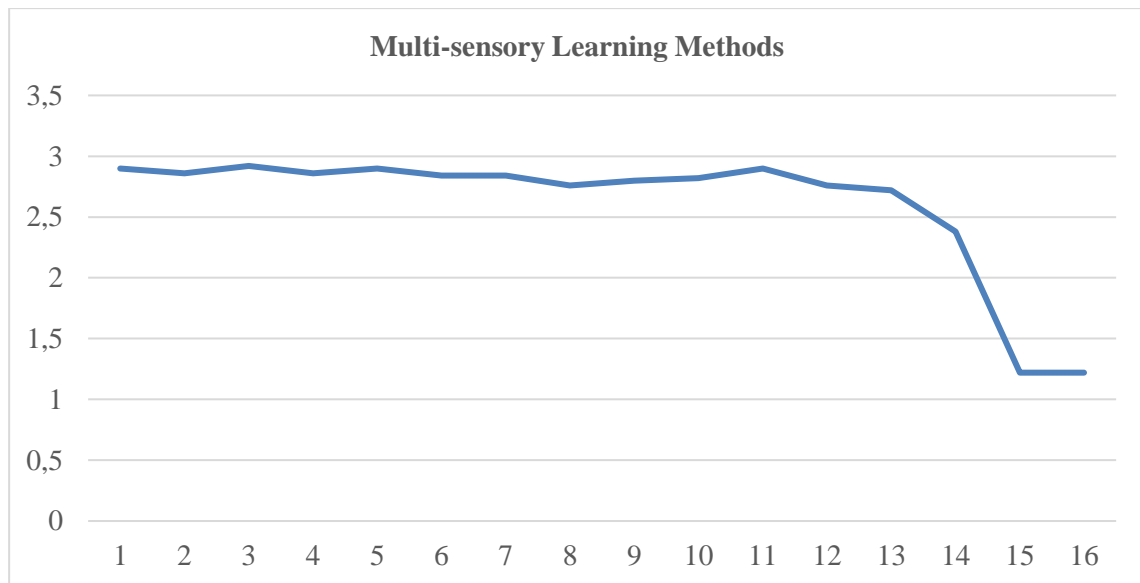


Figure 1. Multisensory Learning Method

### Discussion

Multisensory learning that involves all senses can optimize all aspects of a child's development. Children can be given the same opportunity to receive learning material. Multisensory tracking can be more effectively used than just using one session. Multisensory learning can be more effective than not using sensory at all (Shams & Seitz, 2008). So, it can be concluded that multisensory learning is more effective than just using one sense.

Multisensory learning by using various media such as projectors, speakers, television, and radio allows students to learn subject matter not only with one sense. So that it allows students to learn something in a fun way. For example, when learning to read, students not only see paper, but also hear the word in the paper on the speaker or read while moving the body to the rhythm on the projector. This method is done to allow for an association between hearing, vision and touch so that it makes it easier for the brain to work to recall letters (Komalasari, 2005).

Through multisensory learning, it allows students to see and hear more using different media, such as hearing from the teacher, from the speaker, from the radio. To see, students can see from the styles, from paper, from the projector, from television. So that more and more see and hear, allowing students to more quickly understand the material presented. This is reinforced by the opinion Rose Collin and Nicholl (2002) which suggests that more and more seeing, listening, saying and doing something is easier to learn (Olivia, 1992, p. 192)

Children will be easier to understand the subject matter if introduced to concrete media. But sometimes, not all concrete media can be done. With the advancement of technology, teachers can present concrete situations and media like the original through video shows. For example, when teachers teach about dolphins, teachers can provide videos about dolphins. From the video, children can see, hear, and share as if in a dolphin's native habitat. Children are easier to receive learning information when the child is introduced to a concrete learning perspective or in accordance with the child's life in the environment (Nurjanah, 2017). The real environment as a media can make learning more interesting.

The use of diverse media will enable students to actively participate in learning. Students are more involved in learning when they are given the opportunity to use all their senses. The use of a variety of different media will provide motivation for students. Students assume that learning is not a boring activity, but a fun activity. Watching videos through a projector gives the impression that learning is like getting entertainment. Multisensory learning is a powerful tool that can be used by students to learn like entertainment (Jurban, 2011). Learning like getting entertainment will motivate students to be more enthusiastic about learning.

Multisensory learning through audio visual media can help children in the process of learning to read. Children can associate between sound letters with visual letters. The process of learning to read multisystem makes children feel comfortable and does not make children feel difficult to learn. Audio and visual processing in the reading process will be done in a unique way so that children can read easily (Blomert & Froyen, 2010). By using audio-visual media, learning to read in children can be more easily done because it uses multisensory in the learning process.

Learning media such as computers, projectors, television, and radio are media that utilize technology. Technology can be used integrated into learning. So that the learning patterns applied by teachers are modern. The use of technology enables better engagement and improved learning outcomes as they enable students to learn with their chosen learning styles. With this media makes learning fun and allows students to connect to real-life situations (Taljaard, 2016).

The multi-sensory approach involves the use of different media, methods, and strategies in the learning process. To improve the effective teaching and learning process in the classroom, optimization of the three main visual, auditory and physical senses must be more sensitive. so that media learning becomes an integrated part of learning that is fun. In addition, audio media must have some volume and a unique sound. Media diversity and multisensory approach will increase students' active participation, understand and remember the subject matter delivered.

Teaching and learning are a process of the activity. Thus, teachers and students must consider the design of activities as part of the strategy to be included in the teaching and learning process. The teacher presents the learning topic then tells the students to summarize what they have been taught to identify what they know about the material presented (Aja et al., 2017). Activities like this will ultimately improve students' long-term memory, remember the information being studied and give students the opportunity to fully control what is taught.

#### 4 CONCLUSION

Results of the study concluded that the use of multisensory could more effective in maximizing learning. Teachers can use skills from all disciplines and multi-sensory fields that integrated with curriculum and has significant implications in real life learning. Through multisensory learning, the teacher can involve students actively involved in the learning process. The teacher can also facilitate all students with different learning styles. With multisensory learning, students get the same opportunity and learn through experience using multisensory. However, the obstacle the lack of maximum use of audiovisual media, and not all schools carry out multi-sensory learning.

## 5 REFERENCES

- Aja, S. N., Eze, P. I., Igba, D. I., Igba, E. C., Nwafor, C. C., & Nnamani, S. C. (2017). Using multi-sensory instruction in managing classroom for effective teaching and learning. *International Journal of Applied Engineering Research*, 12(24), 15112–15118.
- Blomert, L., & Froyen, D. (2010). Multi-sensory learning and learning to read. *International Journal of Psychophysiology*, 77(3), 195–204. <https://doi.org/10.1016/j.ijpsycho.2010.06.025>
- Child1st. (2019). What is multisensory learning why it so effective. Retrieved April 25, 2019, from child1st.com website: <https://child1st.com/blogs/resources/what-is-multisensory-learning-why-is-it-so-effective>
- Finotti, G., Migliorati, D., & Costantini, M. (2018). Multisensory integration, body representation and hyperactivity of the immune system. *Consciousness and Cognition*, 63(October 2017), 61–73. <https://doi.org/10.1016/j.concog.2018.06.009>
- Gorjian, B., Hayati, A., & Barazandeh, E. (2012). An evaluation of the effects of art on vocabulary learning through multi-sensory modalities. *Procedia Technology*, 1, 345–350. <https://doi.org/10.1016/j.protcy.2012.02.072>
- Heikkilä, J., & Tiippana, K. (2016). School-aged children can benefit from audiovisual semantic congruency during memory encoding. *Experimental Brain Research*, 234(5), 1199–1207. <https://doi.org/10.1007/s00221-015-4341-6>
- Jurban, S. (2011). Using Multi Sensory Approach for Teaching English Skills and Its Effect on Students ' Achievement at Jordanian School. *European Scientific Journal*, 8(22), 50–61.
- Komalasari, M. D. (2005). Metode Multisensori untuk Meningkatkan Kemampuan Membaca pada peserta didik Disleksia di Sekolah Dasar. *Proseding Seminar Nasional PGSD UPY*, 97–110. Yogyakarta.
- Krueger Fister, J., Stevenson, R. A., Nidiffer, A. R., Barnett, Z. P., & Wallace, M. T. (2016). Stimulus intensity modulates multisensory temporal processing. *Neuropsychologia*, 88, 92–100. <https://doi.org/10.1016/j.neuropsychologia.2016.02.016>
- Matusz, P. J., Wallace, M. T., & Murray, M. M. (2017). A multisensory perspective on object memory. *Neuropsychologia*, 105, 243–252. <https://doi.org/10.1016/j.neuropsychologia.2017.04.008>
- Morin, A. (2019). Multisensory Instruction: What You Need to Know. Retrieved April 25, 2019, from <https://www.understood.org/en/school-learning/partnering-with-childs-school/instructional-strategies/multisensory-instruction-what-you-need-to-know>
- Nidiffer, A. R., Stevenson, R. A., Krueger Fister, J., Barnett, Z. P., & Wallace, M. T. (2016). Interactions between space and effectiveness in human multisensory performance. *Neuropsychologia*, 88, 83–91. <https://doi.org/10.1016/j.neuropsychologia.2016.01.031>
- Nurjanah, E. (2017). Metode Multisensori Terhadap Kemampuan Mengenal Lambang Bilangan 1-10 Pada Anak Autis. *Jurnal Pendidikan Khusus*, 1–10.
- Olivia, P. F. (1992). *Developing the Curriculum* (Third Edit). New York: Harper Collins Publishers Inc.



- Praveen, A. V. (2019). What is Multisensory Teaching Techniques? Retrieved April 25, 2019, from <https://www.lexiconreadingcenter.org/what-is-multisensory-teaching-techniques/>
- Shams, L., & Seitz, A. R. (2008). Benefits of multisensory learning. *Trends in Cognitive Sciences*, 12(11), 411–417. <https://doi.org/10.1016/j.tics.2008.07.006>
- Taljaard, J. (2016). A review of multi - sensory technologies in a Science , Technology , Engineering , Arts and M athematics ( STEAM ) classroom. *Journal of Learning Design*, 9(2), 46–55.



## Modifying the Instrument of Self-Regulation in Early Childhood Assessment

Retno Pangestuti<sup>1</sup>  
Anissa Lestari Kadiyono<sup>2</sup>  
Surya Cahyadi<sup>3</sup>  
Hendriati Agustiani<sup>4</sup>  
*Universitas Padjadjaran*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.09>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** Self-regulation for pre-school children is very important to support children's adjustments in all situations and conditions. The current problem is the instrument of self-regulation is more focused on regulation in learning which is not suitable for young children. This study aims to examine the validity and reliability of Preschool Self-Regulation Assessment (PSRA) in Indonesia by modifying several children self-regulation theories. The instrument was translated from English into Indonesian and it retranslated into the native language by linguists. The questions, then, were validated through a process of professional judgment and cognitive debriefing. The study was carried out to 179 children aged 6 to 7 years old. Data were analyzed by using confirmatory factor analysis (CFA). It showed that there are 5 dimensions of children's self-regulation, namely: attentional focus, behavioral control, self-motivated, self-autonomy and emotional control. The result showed that the five-dimensional model is agreed with the data and prove to measure children's self-regulation. Cronbach's alpha coefficient value was 0.899, indicating high scale reliability. Thus, the pre-school children's self-regulation assessment has well psychometric for further use.

**Keywords:** Children's self-regulation, Confirmatory Factor Analysis, Construct validation, Pre-school self-regulation assessment, Reliability

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media): 2503-0566**  
**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup> Corresponding Author:  
RetnoPangestuti  
Universitas Padjadjaran  
Jln Raya Bandung Sumedang No. KM 21, Hegarmanah, Jatinangor, Jawa Barat, Indonesia  
Email: retno16004@mail.unpad.ac.id

## 1 INTRODUCTION

The term of self-regulation, in general, is often associated with several other terms of self-skill, namely self-management, self-direction and self-control or self-monitoring. Some experts who formulate self-regulation argued that the notion of self-regulation is more comprehensive because it includes self-management and self-supervision (Blair & Diamond, 2008; Pino & Whitebread, 2010; Wang, Hamaker, & Bergeman, 2014). Self-regulation is defined as the ability to regulate a person's behavior, so as to hold impulses, maintain focus, and do the work, even if there are other more interesting alternatives available. Children 3-6 years old can voluntarily internalize self-regulation and can show the self-awareness. Self regulation demands flexibility and the ability to be patient forget the desired results, this is because when a child is very want to do something, the child will get it easily forget the rules there is. Children can just run to the middle the way to catch the ball or take it cakes are forbidden to them consumption. In many children, development of full self regulation develop perfectly until it enters the age of the early child and spends at least three year.

Self regulation is the main basis socialization that can connect all developments, physical, cognitive, social, and emotional. For example, when a child tries to insert his finger into an electrical contact, then he remembered the cry of people his parents always forbid him put hands into electrical contacts, he immediately pulled his hand with spontaneous. The child stops himself do something he remembers not he should do. The child already showed self-regulation. To stop the child put his finger in in the contact, the child must conscious of understanding and remembering what is said his parents. Although thus, cognitive awareness alone is not enough, hold yourself too need emotional control. Before children can controlling their own behavior, children must be able to manage, or controlling, and regulating emotions negative by getting help from parents, through actions positives exemplified by parents. Like always giving a warning reasonable for children, and behave politely. Child will be with itself remembers and processes what done by parents. This is because of parents is the main educator and caregiver for children, educate children well and true means to develop totality of potential children old people will apply parenting according to him right so the child becomes smart and disciplined according to desire. Application of parenting important right in formation of child behavior. Parenting parents are the best way can be taken in educatin child as a manifestation of taste responsibility to children. Parents must apply the parenting pattern right and in accordance with the child to get it supporting the success of self regulation child.

Self-regulation of children can be interpreted as the capacity of the children to delay behavior, tendencies or desires, maintain attention, abide by social rules, control and regulate their emotion (Radiah Smith-Donald, Raver, Hayes, & Richardson, 2007). It includes the ability to control impulsive behavior and the ability to delay what the child wants now for future purposes. Smith-Donald also emphasized that the development of children's self-regulation follows the concept of maturity. Self-regulation develops based on the level of the child's age development. Grolnick & Farkas (2002) defined self-regulation as one's capacity to self-initiate cognitive, behavioral and emotional capacities to accomplish a task. Self-regulation also serves to reduce emotional and behavioral responses, facilitating the use of more effective coping skills that can moderate the relationship between household chaos and behavioral problems by reducing the experience of stress among children living in a chaotic home environment, allowing children to divert or focus their attention and energy in an adaptive way.

Other experts who also consistently examine self-regulation in children are (Smith-Donald et al., 2007; C Blair & Diamond, 2008; Raver et al., 2011) who focused their re-search on a psychological perspective. Blair et al emphasized that self-regulation ability will not be separated from the executive function of the neuron system. Executive function will develop along with the maturity of the brain in the frontal lobe. Furthermore, C Blair & Diamond (2008) concluded the results of their observations on pre-school children that self-regulation developed along with the biological and psychological maturity stage of children. Clancy Blair & Raver (2015) continued their research related to children's self-regulation with readiness to attend school. The results conclude that there are important internal factors to identify children's school readiness, such as the existence of proper self-regulation to follow instructions, control emotions and adjust the transition period. They even said that self-regulation ability is more important than intelligence capabilities measured through IQ.

Research from Eisenberg, Valiente, & D.Eggum (2010) and Bierman et al., (2008) tried to connect self-regulation that focused on children's emotional control to their school readiness. These experts agreed that the definition of self-regulation is varied but it can be emphasized as a process to manage and change emotional conditions due to their social expectations. Children who have good self-regulation are able to recognize their feelings and emotions that related to their learning motivation and how emotions affect their behavior (Eisenberg, Hofer, & Vaughan, 2007). Eisenberg et al added that emotional self-regulation is a regulatory process that can be controlled and influenced by external factors, such as parenting behavior. The other study from Bentley (2013) about children's self-regulation focused on the mediator functioning of school engagement. Parental involvement and parent-child warmth were also shown to have an indirect effect on school engagement by child's self-regulation. On the research which is titled *The Contribution of Children's Self-regulation and Classroom Quality to children's Adaptive Behaviors in the Kindergarten Classroom*, Rimm-Kaufman, Curby, Grimm, Nathanson, & Brock (2009) concluded how important children self-regulation for successful adaptive in the transition period in kindergarten.

### *Children's Self-Regulation Theory Perspective*

#### *Social Cognitive Theory*

This theory emphasizes the ability of children to perceive their environment and assess their ability to control their external environment (Bronson, 2000). Another expert, Zimmerman (2002) stated that children's self-regulation in specific learning leads to their ability to develop realistic goals in completing tasks, use effective strategies to focus on completing tasks and monitor themselves to assess their effectiveness in completing tasks. For example, a child aged 5-6 years who is still attending kindergarten, gets the task of coloring one page from a picture book. With his self-regulatory ability, he can plan how to complete the task quickly, to ignore interference from friends around him and to use experiences he had previously encountered to use effective ways to color the image.

#### b. Sociocultural Theory

The sociocultural perspective emphasizes the child's self-regulation skills that is shaped by the social and cultural environment. One of the theories that supports this perspective is Vygotsky's theory (Verenikina, 2010) which assumed that children are able to develop higher self-regulation abilities but their goals and strategies are determined by the culture of their social environment and facilitated by their supervisor (teacher or parent). For example, in the task of coloring the picture, children will be better in developing their own regulation if parents or teachers direct

effective ways of completing tasks quickly, giving examples of how to modify colors, keeping children away from disruption of the surrounding environment, and so forth.

#### c. Motivation Theory

Based on the perspective of motivation theory, there are three things from environmental factors that facilitate children's self-regulation, they are: 1) child autonomy support; 2) child competency support and 3) developing relationships with children (Grolnick & Farkas, 2002). Furthermore, this theory tries to trace from the theory of self-determination. Grolnick & Farkas explained that children would be better to manage themselves if their opinions were responded positively by parents or educators and they were given the opportunity to make their own decisions. To support their competence, parents and other educators must be able to provide clear instructions and consistent regulations. The third way is to form a positive environment. Parents and educators must be able to present warm relations, full attention and concern for the needs of children.

#### d. Biological Perspective

Based on a biological perspective, the child's internal characteristics are different from one child to another even though they are in the same age range. Various studies provide conclusions that temperament and genetic characteristics influence the development of children's self-regulation (Eisenberg et al., 2007).

Based on some of the theoretical backgrounds above, this research refers to motivation theory and socio-cultural theory that see children's self-regulation influenced by the surrounding social environment and individual maturity of children.

The researchers noted that research on children's self-regulation in Indonesia had not developed widely and was aimed more at other subjects, such as adolescents, students and adults. Likewise, with research relating to children's self-regulation, there are less specialized studies in Indonesia that use PSRA to measure children's self-regulation. Some studies that focus on self-regulation of children still use questionnaire method that given to parents or teacher in Kindergarten (Amanda, Antara, & Magta, 2016; Rochmah, 2017). Based on this background, the purpose of this study was to develop children's self-regulation instruments by modifying the Pre-school Self-Regulation Assessment instrument to be suitable for using in pre-school children in Indonesia.

#### *Sub-dimensions of Children's Self-Regulation*

According to the theoretical background, there are many different concepts about the sub-dimensions of self-regulation, Zimmerman (2002) who emphasizes the concept of self-regulation in self-regulated learning defines "goal-directed behavior" as a sub-dimension of self-regulation. Eisenberg et al., (2010) describe the sub-dimensions of children's self-regulation to be: (a) Self-control, (b) Attentional focused, (c) Self-directed and (d) Self-autonomy.

In several studies of children's self-regulation (Eisenberg, Spinrad, & Eggum, 2010) the self-directed sub-dimension is replaced by the term children's ability to self-motivated. Each sub-dimension can be described into several aspects that cover it.

In this study, the concept of children self-regulation is adopted from the theory of Smith-Donald et al., (2007) and Eisenberg, Valiente, et al., (2010). It has emphasized that sub-dimension of self-regulation covers; attentional focus, behavioral control, self-motivated, self-autonomy and emotional control. The self-regulation in sub-dimension develops and functions interdependently but influences each other as a system.

1) Attentional focus is a component of cognitive function. This refers to processes and abilities such as maintaining attention, ignoring annoying and irrelevant stimuli, staying alert for the purpose of the task and coordinating the attention during the task (Tanribuyurdu, Findik, Yildiz, & Guler, 2014).

2) Behavioral control can be interpreted in several different perspectives. In behavioristic theory, the development of the regulation of children's behavior is focused on learning strategies to control various impulses. While in the developmental perspective, regulation of behavior is a development process and there are different characteristics in each stage of development.

3) Self-Motivated. This third dimension is related to how children are able to motivate themselves to reach a goal. Furthermore, Eisenberg, Valiente, et al., (2010) describe that in pre-school children, this motivation might come from external factors which are going to become internal motivation.

4) Self-Autonomy. Children will be able to regulate themselves if their opinions are responded positively by parents or educators and they are given the opportunity to make their own decisions. To support their competence, parents and other educators must be able to provide clear instructions and consistent rules. The other way is to form a positive environment.

5) Emotional control is the capacity of children to be able to control their feeling and express their emotions in the right ways that are acceptable to their social environment. Further explained by Grolnick & Farkas (2002) that the regulation of children's emotions can be interpreted as the ability to adjust emotional conditions flexibly, yet it is not the ability to control his own emotions without determining by their environment.

## 2 METHODS

The methodology of this research was quantitative approach. It used hypothesis, a literature review, and a quantitative data analysis. Creswell (2014) explains that quantitative research is “employing strategies of inquiry such as experimental and surveys, and collect data on predetermined instruments that yield statistical data”.

### *Participants*

Participants were 196 people included: (1) Three educational psychology and child development experts to acquire professional judgment, (2) Nine kindergarten teachers to follow cognitive debriefing process, (3) Five Psychologists whom participated in trial test for 179 pre-school children ages 6-7 years old in two provinces; Banten and West Java, Indonesia. Subjects were selected randomly in 6 kindergartens within two provinces.

### *Research procedure*

The study was conducted in three stages: (1) Researchers adapted the Pre-School Self-Regulation Assessment (PSRA) developed by Smith-Donald et al., (2007). The manual instrument and observation guideline were translated from English into Indonesian and then re-translated to the native language by experts. The researcher also added self-motivated and self-autonomy dimensions based on the theory of Eisenberg, Valiente, et al., (2010). (2) Validation of the content is conducted through professional judgment by discussion and interview the Educational Psychology and Child Development experts from Gadjah Mada University and State Islamic Institute of Surakarta. While cognitive debriefing process is conducted through focus group discussions in

two groups of kindergarten teachers. (3) Try Out. The instrument that has been prepared was tested to kindergarten students in South Tangerang, Banten and Cipadung, Bandung, West Java. In this trial, the kindergarten teacher provided assessment task instructions to the children, while the psychologists acted as observers in those assessment processes. Before conducting the instruction of assessment, all kindergarten teachers were given a briefing first. Each teacher gave instructions for one group of children consists about 5-6 children. Each of Psychologist observed 2 children. This process evaluated behavior of students in self-regulation dimensions with a range of values from 0 to 3 on each behavior indicator.

#### *Validity and Reliability Test*

The data obtained then tested construct validity using Confirmatory Factor Analysis and reliability test by using Cronbach's Alpha approach.

### 3 RESULT AND DISCUSSION

#### 3.1 *Content Validity*

##### 3.1.1 *Professional Judgement*

Table 1. Recommendations of the Results of Expert Judgment

<b>Number</b>	<b>Type of assignment</b>	<b>Sub dimensions measured</b>	<b>Experts Recommendation</b>
1	Balance Beam	Attentional Focus Behavioral Control Self-Motivated Self-autonomy	Can be used
2	Tower Task	Emotional Control Attentional Focus Behavioral Control Self-Motivated Self-autonomy	Can be used
3	Tower Cleanup	Emotional Control Attentional Focus Behavioral Control Self-Motivated Self-autonomy	Can be used
4	Toy Sorting	Emotional Control Attentional Focus Behavioral Control Self-Motivated Self-autonomy	Can be used
5	Toy Return	Emotional Control Attentional Focus Behavioral Control Self-Motivated Self-autonomy	Can be used
6	Pencil Tap	Emotional Control Self-Motivated	Can be used

		Self-autonomy	
		Emotional Control	
		Attentional Focus	
		Behavioral Control	
7	Toy wrap	Emotional Control	Not recommended
		Behavioral Control	
8	Snack delay	Emotional Control	Not recommended
		Behavioral Control	
9	Tongue Task	Emotional Control	Not recommended
		Behavioral Control	

The professional judgement process involves 3 Psychologists of Child Development. The results of this assessment recommend several things related to the development of the Pre-school Self-regulation instrument. First, a number of children's play tasks are linked first to the assessment of the observed behavioral indicators. In the original manual of PSRA compiled by Smith-Donald et al., (2007) and Goyette et al., (2006) there are 9 sets of children's play tasks. Based on the assessment of the development psychologist team, there are 6 tasks that fully assess all dimensions of a child's self-regulation. Three other tasks only assess the two dimensions of self-regulation. With this consideration, the researchers tried to use 6 sets of play assignments that assessed all dimensions of children's self-regulation. The results are described in table 1 above.

The second step related to the observation assessment sheet. The PSRA recommends several indicators that can be used to assess children's self-regulation based on a series of tasks mentioned above. Of the 18 assessment indicators, psychologists agreed to categorize them based on the dimensions of children's regulation to facilitate data input. The results of the observation indicators are listed in table 2 below.

Table 2. Indicators of Pre-School Children Self-Observation Assessment

No	Dimension	Sub-dimension	Score
1	Attentional Focus	Attention	0-3
		accuracy	0-3
		concentration	0-3
		not easily disturbed	0-3
		thinking and planning	0-3
2	Behavioral Control	refrain	0-3
		willingness to wait	0-3
		waiting for the transition	0-3
		interactive	0-3
3	Self-Motivated	Cooperate	0-3
		Active	0-3
		comfortable	0-3
4	Self-Autonomy	self confidence	0-3
		obedience	0-3
		self-control	0-3
5	Emotional Control	Positive emotions	0-3
		Negative emotions	0-3
		Intentional	0-3



### 3.2 Cognitive Debriefing

Cognitive debriefing process was conducted through focus group discussions by kindergarten teachers, who will act as the instructor in the assessment process. The main purpose of focus group is to get the respondent's validation on a series of children's play tasks that have been approved in advance in the professional assessment process. Validation is taken by asking the respondent to understand the manual procedure of the task and conducting a trial of the series of tasks. The result showed that some task equipment can be adjusted, such as on the balance beam, tape is replaced by a rope and the tower is replaced by a beam in kindergarten. Some tasks are also adjusted to the routine activities of children's play, such as cleaning up the game tools after they play and change the type of game to adjust the child's activities. This series of tasks is also recommended to be done classically to shorten time.

### 3.3 Construct Validity and Reliability

Based on the output of the CFA (in figure 1), it can be seen that each dimension has a loading factor with a value above 0.50. The overall model assessment based on the model compatibility index taht also concludes the appropriate results.

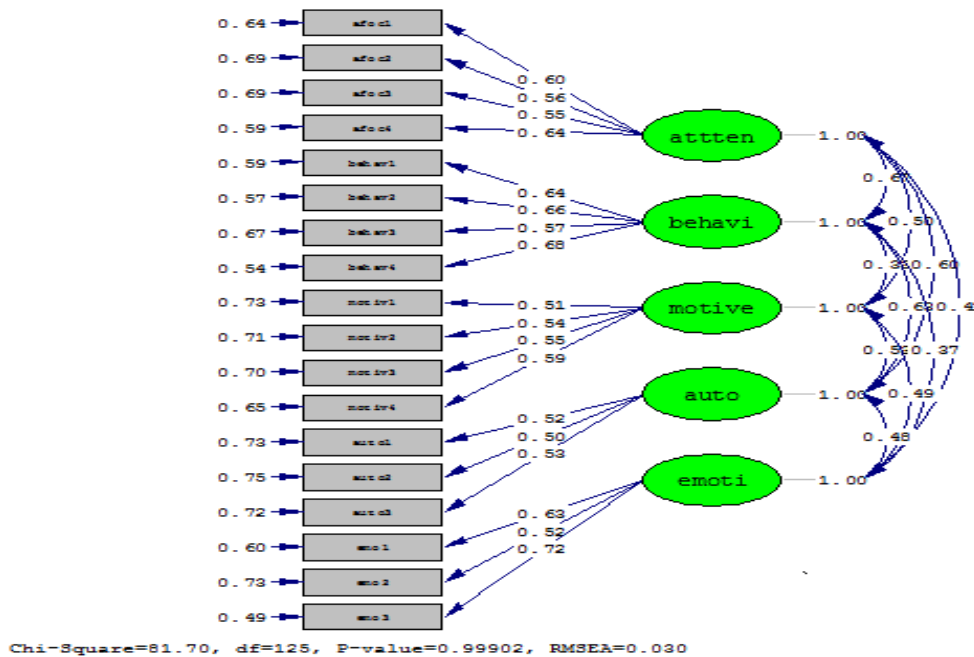


Figure 1. Output of Confirmatory Factor Analysis Results of Pre-School Children's Self-Regulation Assessment Tests

The following are the CFA calculation results in the table 3.

Table 3. The Confirmatory Factor Analysis Result

Overall Size of Model Match Test	Benchmark	Value of Model	Model Match to Data
	Value for Match Model (rule of thumb)		
Absolute Fit Measure			
Probability from $\chi^2_{count}$	$\geq 0,05$	0.99902	Good
Df	$\chi^2_{count}/df < 2$	0,6536	Good
Goodness of Fit Index (GFI)	$\geq 0,9$	0.94	Good
Adjusted Goodness of Fit Index (AGFI)	$0,8 \leq AGFI$	0.97	Good
Root Mean Square Residual (RMR)	$RMR \leq 0,05$	0.036	Good
Standardized Root Mean Square Residual (SRMR)	$SRMR \leq 0,05$	0.047	Good
Root Mean Square Error Of Approximation (RMSEA)	$RMSEA \leq 0,08$	0.030	Good
Incremental fit Measure			
Normed Fit Index (NFI)	$\geq 0,9$	0,92	Good
Non-normed fit index NNFI	$\geq 0,9$	1,05	Good
Comparative fit index (CFI)	$\geq 0,90$	0,94	Good
Incremental fit index (IFI)	$\geq 0,9$	1,04	Good
Relative fit index (RFI)	$\geq 0,9$	0.91	Good

Based on the data listed in table 3 above, the overall assessment of the child's self-regulation measurement model is declared fit, with a 0.099 Chi-Square value ( $p\text{-value} > 0.05$ ) and the Goodness of fit statistics index produced by LISREL; NFI=0.92, NNFI=1.05, CFI=0.94, IFI= 1.04 and RFI=0.91 all is fit. Of the twelve parameters of goodness of fit compared, all values are fit. Therefore, it can be concluded that the measurement model of self-regulation of children proved to be fit with empirical data. The child's self-regulation measurement model consisting of 16 assessment indicators was valid (with a loading factor value above 0.5) and fit to be used as a measure of children's self-regulation.

The following table 4 consist of the values of validity and reliability on each of the assessment indicators. In 4 items that measure attentional focus, the value of Cronbanca's alpha ranging from 0.94.7 as well as in the 4 items that measure the behavioral control of the value of Cronbanch's alpha ranging from 0.94.8. In line with the 3 items that measure self-autonomy is also has the value of Cronbanch alpha ranging from 0.94.8. Likewise, with the 4 self-motivation items and 3 emotional control items that have an average cronbanch alpha value of 0.948.

Table 4. Reliability and Validity of Self- Regulation

Scale Mean	: 58,8379
Variance	: 98,3824
Scale Std	: 9,9188
Alpha	: ,9542
Max	: 72,0000
Min	: 32,0000
Cron. Alpha	: ,9507

	<b>Mean</b>	<b>Var</b>	<b>Std</b>	<b>Alpha</b>	<b>Item</b>	<b>Validity</b>
<b>1</b>	55,506	87,072	9,331	0,947	ATTENTIONAL FOCUS1	Valid
<b>2</b>	55,597	87,047	9,330	0,947	ATTENTIONAL FOCUS2	Valid
<b>3</b>	55,672	87,343	9,346	0,947	ATTENTIONAL FOCUS3	Valid
<b>4</b>	55,747	87,596	9,359	0,949	ATTENTIONAL FOCUS4	Valid
<b>5</b>	55,526	88,186	9,391	0,948	BEHAVIORAL CONTROL1	Valid
<b>6</b>	55,640	87,685	9,364	0,949	BEHAVIORAL CONTROL2	Valid
<b>7</b>	55,474	88,518	9,408	0,947	BEHAVIORAL CONTROL3	Valid
<b>8</b>	55,577	86,829	9,318	0,948	BEHAVIORAL CONTROL4	Valid
<b>9</b>	55,486	89,633	9,467	0,948	SELF MOTIVATED1	Valid
<b>10</b>	55,320	88,826	9,425	0,947	SELF MOTIVATED2	valid
<b>11</b>	56,154	88,565	9,411	0,950	SELF MOTIVATED3	valid
<b>12</b>	55,775	84,570	9,196	0,948	SELF MOTIVATED4	valid
<b>13</b>	55,818	86,291	9,289	0,948	SELF AUTONOMY1	valid
<b>14</b>	55,387	88,443	9,404	0,948	SELF AUTONOMY2	valid
<b>15</b>	55,213	89,283	9,449	0,947	SELF AUTONOMY3	valid
<b>16</b>	55,269	87,588	9,359	0,948	EMOTIONAL CONTROL1	valid
<b>17</b>	55,233	90,021	9,488	0,948	EMOTIONAL CONTROL2	valid
<b>18</b>	55,850	84,404	9,187	0,949	EMOTIONAL CONTROL3	valid

## *Discussion*

Developing self-regulation in early childhood is very important. Self-regulation is the ability to control emotions, interact positively with people others, avoid actions that are not appropriate or aggressive, and directed become an independent learner. To support the development of children's self-regulation, these skills need to be assessed and evaluated. Based on these reasons, a valid and reliable instrument is needed to measure the self-regulation of pre-school children. The purpose of this study was to develop a self-regulation instrument for pre-school children by modifying the PSRA (Pre-School Self-Regulation Assessment) instrument from Smith-Donald et al., (2007). Pre-School Self-Regulation Assessment consists of a series of tasks consisting of: 1) Balance Beam; 2) Pencil Tap; 3) Tower Task; 4) Tower Clean-up; 5) Toy Sorting; 6) Toy Return; 7) Snack delay; 8) Toy wrap; 9) Tongue task.

The development of the PSRA instrument begins with the process of translating the task manual and observation guidelines from English to Indonesian. The process of retranslating to the original language (backward forward) is also passed to ensure the similarity of meaning. Based on the study of the theory, the researchers further added the dimensions of self-motivation and self-autonomy based on Eisenberg's theory, Eisenberg, Valiente, et al., (2010) to better measure self-regulation comprehensively.

Based on the adaptation process, there are 9 child assignments in the assessment process. Furthermore, in the professional judgment process, there are only 6 sets of tasks that assess all dimensions or aspects of a child's self-regulation. Three other tasks, namely wrapping toys, delaying snacks and the task of using tongues, only assess the two dimensions of children's self-regulation. Wrapping a toy is the task where children are asked to close their eyes when the assessor pretended to wrap a toy as a gift, further measuring the child's emotional control when he patiently waits and adjusts his behavior to remain silent while closing his eyes. Another task is to delay snacks. Children are asked to wait for the distribution of snacks to be slowed down without doing any tasks. The third task suggested by experts not to be included is using the tongue. In this task the child is asked to put candy on his tongue and show for 3 seconds to the assessor.

This study attempts to measure self-regulation by combining several theories. With these considerations, researchers try to use only 6 sets of play tasks that assess the full dimensions of children's self-regulation, namely: 1) Balance Beam; It is a task that children are asked to walk on tape which is analogous to a balance beam. The running time of the child will be slowed from one stage to the next. 2) Pencil Tap. It is the task that children to be asked to follow the pencil knock rules. when the assessor taps the pencil once, the child is asked to respond twice. Conversely, when the assessor taps the pencil twice, the child must respond once. 3) Tower Task. The instruction of that task is; children and the assessor build a tower together with the blocks. They will take turns adding blocks to the tower. First children put one on, and then the assessor will put one on. And so on until it's finished. 4) Tower Clean-up. The assessors ask the children to clean up all the blocks. 5) Toy Sorting; Assessors mix toys into one box and ask children to sort them according to certain categories, for example toy vehicles are made into one place, toy animals become one, and so forth and 6) Toy Return; The assessor ask the children for returning all the toys that has been used in all activities.

The other result from professional judgement process is eighteen behavioral indicators declared valid. These eighteen behavioral indicators are taken from 28 report assessment items that adapted from the Leiter-R Socio-emotional rating scale. Measure the five dimensions of the pre-school children's self-regulation, namely attentional focused, behavioral control, self-motivated, self-

autonomy and emotional control. The self-regulation sub-dimension develops and functions interdependently, but each other's influence as a system.

The second process of the modification stage of preschool children's self-regulation measuring instruments is cognitive de briefing. This process was conducted through focus group discussion. The main purpose is to get the respondent's validation on a series of children's play tasks, that have been approved in last process. The result of the focus group discussions is some task equipment can be adjusted. Ten kindergarten teachers also recommended that some tasks are also adjusted to the routine activities of children's play. This series of tasks is also recommended to be done classically to avoid wasting too much time.

The next step is measuring instruments to the field that is involved five (5) psychologists as assessors and kindergarten teachers to assess 179 pre-school children aged 6-7 years. This trial was conducted in two province, Banten and West Java. Before taking an assessment and giving instructions, a team of psychologists and kindergarten teachers is briefed by the researcher. The trial process of this instrument evaluates student behavior in the self-regulation dimension, with a range of values from 0 to 3 on each behavioral indicator. In general, the trial process went well and smoothly. Kindergarten teachers, kindergarten students and assessors work actively together. However, there were 7 children could not participate because they were absent on the day of the assessment and 5 children could not be included because they were not 6 years old yet.

After the instrument testing process has been completed, the next step is calculating the validity and reliability of the instrument. The researcher used a factor analysis test procedure with a confirmatory approach with LISREL software. The measurements taken are a test of the model of self-regulation measurement of pre-school children. Based on the CFA output, each dimension has a high enough loading factor to measure its latent factor, with values above 0.50. Thus, the indicators used are good enough in measuring the conception of self-regulation of pre-school children. Overall model assessment based on the model compatibility index also concludes the appropriate results. (Chi-square value = 81.70; df = 125 with p value = 0.99 and RMSEA = 0.03; CFI = 0.94; AGFI = 0.97; GFI = 0.94; NFI = 0.92).

The reliability approach used in this study is Cronbach alpha internal consistency. Calculation of PSRA modification reliability produces a value of  $\alpha = 0.873$ . Value result of discrimination items ranged from 0.598 to 0.893 and there were no negative items. In general, the reliability of PSRA has been tested by R Smith-Donald et al. (2006) indicated the value of Cronbach alpha which is quite high, which ranges from 0.81 to 1.00. This coefficient showed that self-regulation tests have good reliability and can be trusted.

#### 4 CONCLUSION

The purpose of this study was to modify the children's self-regulation instrument at the pre-school age level in Indonesia. The results of the study showed that the five-dimensional model of children's self-regulation is in accordance with the data in the field. It can be interpreted that these five dimensions are proven to measure one construct: children's self-regulation. With a high value of construct validity and reliability, this self-regulation instrument for pre-school children aged 5 to 6 years old has good psychometric properties and can be used further.

## 5 REFERENCES

- Amanda, N. ., Antara, P. ., & Magta, M. (2016). Hubungan Pola Asuh Orangtua dengan Regulasi Diri Anak Usia 5-6 Tahun. *Journal Pendidikan Anak Usia Dini Universitas Pendidikan Ganesha*, 4(2), 1–11.
- Bentley, J. J. (2013). *Parental Involvement, Parent-Child Warmth and School Engagement as Mediated by Self-Regulation*. Brigham Young University.
- Bierman, K. L., Domitrovich, C. E., Nix, R. L., Welsh, J. A., Greenberg, M. T., Blair, C., ... Gill, S. (2008). Promoting academic and social-emotional school readiness: The Head Start REDI program. *Child Development*, 79(6).
- Blair, C., & Diamond. (2008). Developing your Children Self-Regulation through Everyday Experiences.
- Blair, C., & Raver, C. C. (2015). School readiness and self-regulation: A developmental psychobiological approach. *Annual Review of Psychology*, 66, 711–731.
- Eisenberg, N., Hofer, C., & Vaughan, J. (2007). Effortful Control and Its Socioemotional Consequences. In J. J. Gross (Ed.), *Handbook of emotion regulation* (hal. 287–306). New York: Guilford Press.
- Eisenberg, N., Spinrad, T. L., & Eggum, N. D. (2010). Emotion-Related Self-Regulation and Its Relation to Children's Maladjustment. *Annual Reviews Clinical Psychology*, 27(6), 495–525.
- Eisenberg, N., Valiente, C., & D.Eggum, N. (2010). Self-Regulation and School Readiness. *Early Education Development.*, 21(5), 681–698.
- Goyette, P., Carrol, K., Smith-Donald, R., Metzger, M., Young, T., & Raver, C. C. (2006). Field Administration of an Emotional and Behavioral Assessment of Head Start Children:Preliminary Findings from the Preschool Self-Regulation Assessment.
- Grolnick, W. S., & Farkas, M. (2002). Parenting and the development of children's self-regulation. In M. H. Bornstein (Ed.), *Handbook of parenting* (Vol. 5, hal. 89–110). Practical issues in parenting.
- Pino, D., & Whitebread, D. (2010). The Role of Parenting in Children's Self-Regulated Learning. *Educational Research Review*, 5(3), 220–242.
- Raver, C. C., Jones, S. M., Li-Grining, C., Zhai, F., Bub, K., & Pressler, E. (2011). CSRP's impact on low-income preschoolers' pre-academic skills: Self-regulation and teacher-student relationships as two mediating mechanisms. *Child Development*, 82(1), 362–378.
- Rimm-Kaufman, S. E., Curby, T. W., Grimm, K. J., Nathanson, L., & Brock, L. L. (2009). The contribution of children's self-regulation and classroom quality to children's adaptive behaviors in the kindergarten classroom. *Developmental Psychology*, 45(4).
- Rochmah, S. N. (2017). Hubungan Konsep Diri Guru Terhadap Regulasi Diri Anak Usia Dini. *Jurnal Tunas Siliwangi SPS UPI*, 3(2), 160–174.
- Smith-Donald, R., Carroll, K., Goyette, P., Metzger, M., Young, T., & Raver, C. C. (2006). Preliminary Validity of the Preschool Self-Regulation Assessment (PSRA).
- Smith-Donald, R., Raver, C. C., Hayes, T., & Richardson, B. (2007). Preliminary construct and

concurrent validity of the Preschool Self-regulation Assessment (PSRA) for field-based research. *Early Childhood Research Quarterly*, 22(2), 173–187.

Tanribuyurdu, Findik, E., Yildiz, & Guler, T. (2014). Preschool Self-Regulation Assessment (PSRA): Adaptation Study for Turkey. *Education and Science*, 39(176), 317–328.

Wang, L., Hamaker, E., & Bergeman, C. (2014). Investigating inter-individual differences in short-term intra-individual variability. *Psychological Methods*, 17(4), 2012.

Zimmerman, B. (2002). Becoming a Self-Regulated Learner: An Overview. *Theory Into Practice*, 41(2), 64–70.



## Evaluation Model of Expertise Practice Programs for Early Childhood Educator Teachers

Subar Junanto<sup>1</sup>

Tri Utami<sup>2</sup>

*PIAUD IAIN Surakarta*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.10>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** This study aims to create a model for developing expertise evaluation programs at the IAIN Surakarta PIAUD Department. The research method used is development research (Research and Development). The results showed that the EPPK model produced had two-dimensional constructs, namely processes and products. The dimensions of the process of publishing instrument planning, namely processes and products. The dimensions of the process of publishing instrument planning, implementation and output. The product dimensions are complete instruments of dance ability, musical ability, storytelling ability and artistic ability. This EPPK model has approved the feasibility of criteria: a. has a good format (average 79.7%), b. has approved the substance of a good evaluation model (average 79.2%), c. has a good evaluation procedure (average 80%). The EPPK model has a very good success rate, it is proven that expertise program lecturers can use the EPPK model easily. The results of the evaluation using the EPPK model can provide a complete and comprehensive description of the program for conducting expertise in the Surakarta IAIN PIAUD Department.

**Key Words:** Early Childhood Education (PIAUD), Evaluation Model, Expertise Practice Programs for Early Childhood (EPPK)

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media): 2503-0566**  
**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup> Corresponding Author:  
Subar Junanto  
PIAUD IAIN Surakarta  
Jln Pandawa, Pucangan Jawa Tengah, Indonesia  
Email: Subarjunanto82@gmail.com



## 1 INTRODUCTION

The development of the world of education requires educators to continue to innovate by constantly strengthening the four competencies that must be possessed as an educator which include personality competencies, pedagogic competencies, professional competencies, and social competencies in order to create optimal learning (Herpich & Pratoreus, 2018; Uerz, Vorman, & Kral, 2018). In addition to these four competencies, as an educator it is also required to have the skills or skills needed in the education process according to the scientific field. Since the turn of the century, educators' evaluation has been put forward as an important strategy for assuring and developing educational quality in many countries. In the six remaining countries, practices to provide feedback on educators' work were designed and implemented locally (Guri Skedsmo & Huber, 2018); Ovretveit, 2002). Therefore, to produce prospective professional educators, educational institutions implement a system that makes their graduates have the competencies and skills needed in the world of education.

As a part of PTKIN, Surakarta IAIN, especially the Faculty of Science Tarbiyah and Teacher Training strives to become a reference by holding a professional education program, carrying out the mission to prepare prospective professional educators or professional staff in accordance with the field of expertise they are engaged in. The practice of expertise is one program of activities to support the creation of professional educators. The practice of expertise is a compulsory activity that is the policy of the Faculty to all departments in FITK, without exception the PIAUD department.

This program of expertise practice was also initiated in order to help improve the competency of graduates of the PIAUD department of the Faculty of Tarbiyah and Teacher Training in order to have high competitiveness. Graduates of the PIAUD Department will be provided with the skills needed in the world of Early Childhood Education. Activities Practices of expertise carried out in the PIAUD department currently consist of practice skills including dance, music, storytelling, and fine arts skills. This does not rule out the possibility that in the future there will be added other skills in the field of education and early childhood care which are certainly needed in the field.

But the reality in the implementation of expertise practices in the PIAUD Department still has weaknesses. Based on the results of preliminary observations in the field, the problems faced were among others, firstly the problem of time allocation of expertise practice activities that were still lacking so that they were not maximized in developing the expertise of students. The second problem involves the problem of infrastructure provided by the agency in the implementation process that is lacking (the unavailability of laboratory expertise for the implementation of expertise practice activities). The third problem is the absence of an evaluation model that is used to evaluate or determine the effectiveness of expertise practice activities carried out by the PIAUD department which has been running. Assessment is used widely as a mechanism for responding to these demands and is also believed to improve student learning (Elliot, 2018).

All of these problems are certainly very influential on the continuity of the process of implementing the Skills Practice Program which ultimately results in the maximization of program output. For this reason, a structured evaluation model is needed so that it can improve the quality of the Expertise Practice Program in the Surakarta IIT FITK PIAUD Department. It is expected that the development of this evaluation model can be used to provide input for the improvement and improvement of the quality of expertise practice activities to be in accordance with the times and needs in the field.

### *Understanding Evaluation*

Evaluation has a different meaning from assessment, measurement and test (Hallinger, Heck, & Murphy, 2014). Stufflebeam, (2003) suggests that evaluation is the process of delineating, obtaining, and providing descriptive and judgmental information about the worth and object of goals, design, implementation, and impact in order to guide decision making, serving needs for accountability, and understanding the involved phenomena. Evaluation is a process of providing information that can be used as a consideration to determine prices and services (the worth and merit) of goals achieved, design, implementation, and impact to help make decisions, assist accountability and improve understanding of phenomena (Amrein-Beardsley et al., 2016; Briggs & Dadey, 2017). According to the formula, the core of evaluation is the provision of information that can be used as consideration in making decisions. In line with the above opinion Vrasidas, (2000) argues that the core of evaluation is the provision of information that can be used as consideration in making decisions. And then (Cizek, 2000) argues that evaluation is the process of ascribing merit or worth to the results of on observation or data collection.

Eseryel (2002) argues that the approach to evaluating is an objective-oriented approach. This approach only focuses attention on the objectives of the program / project and how far the goal is achieved. This approach requires intensive contact with the program implementers concerned.

So that it can be concluded that evaluation is a process of gathering information systematically through measurement, assessment, and ending with evaluation. Assessment is intended as a process of interpreting measurement data. Therefore, evaluation is a complex and continuous process to find the benefits of an activity as a consideration in determining the final decision.

### *CIPP Evaluation Model*

There are many evaluation models developed by experts that can be used in evaluating a program. One such evaluation model is the CIPP evaluation model. The CIPP evaluation model in implementation is more widely used by evaluators, this is because this evaluation model is more comprehensive when compared to other evaluation models. Evaluation of this model intends to compare the performance of various dimensions of the program with a number of specific criteria, to finally arrive at a description and judgment regarding the strengths and weaknesses of the program being evaluated. The concept of evaluating the CIPP model (Context, Input, Process, and Product) was first put in 1965 as a result of his efforts to evaluate the ESEA (The Elementary and Secondary Education Act). The concept was offered with the view that the important purpose of evaluation is not to prove but to improve (Stufflebeam, 2003; Meng & Muñoz, 2016). The CIPP approach is based on information that is not important but to improve. The CIPP model also contains a close link between one aspect and another, which is directly proportional (Seng et al., 2010). Evaluation of the CIPP model can be applied in various fields, such as education, management, companies and in various levels both projects, programs and institutions. In education, Stufflebeam's in (Steinert et al., 2005) classifies the education system into four dimensions, namely context, input, process, and product, so that the evaluation model is named CIPP which stands for the four dimensions. CCIP model was use in evaluation model because it can be done structurally and significantly (Hasan, 2009).

The CIPP model can be used to evaluate the effectiveness of an institution that operates a control system (courses or programs) then followed by evaluation in four dimensions. Each of these dimensions with meaning (a) Context evaluation (Context Evaluations); Evaluation of contexts de-

scribes the relevant environment, identification of needs and opportunities and diagnoses on certain problems, examples of analysis of learning programs, (b) Input evaluation provides information to determine how to utilize resources to achieve program objectives properly. Input evaluation is used to decide whether outside assistance is important and help determine general strategies in planning and designing programs. The results of input evaluation are often seen as policies, budgets, schedules, proposals and procedures. (c) Process evaluation (Process evaluation) provides feedback on individual responsibilities in terms of implementation. This can be fulfilled by monitoring the source of failure, providing information in deciding the initial plan during implementation and explaining what really happened. (d) Product evaluation (Product evaluation) measures and interprets the achievement of program objectives. Product evaluation also measures expected impacts and unexpected impacts.

### *Procedure for Expertise Program Practices at the PIAUD FITK IAIN Surakarta*

#### *1.1 Understanding*

According to the Big Dictionary of Indonesian Language Practice is a real statement of what is called in theory. Whereas expertise is proficiency in a science (intelligence, work). Therefore, the practice of expertise can be interpreted as the skills possessed by someone in order to apply or apply the theory that has been obtained. The practice of expertise is needed as a place for students to apply or practice their expertise in accordance with the scientific field. The practice of expertise is carried out to provide practical experience to students to apply their expertise so that there is continuity between the theory and the practice they have acquired.

The notion of expertise practice which is a reference from the implementation of expertise practice in the FITK IAIN Surakarta PIAUD Department is: (a) Expertise Practice is a program that must be taken by students in all departments at FITK IAIN Surakarta in order to have expertise in the scientific field. (2) The organizer of the achievement program for Expertise Practices is a Team formed and appointed by the Dean. (3) Students are active students who are taking part in a practical program in the Department. (4) Faculty is an academic implementing element of the Institute which has the task of carrying out expertise practices in all Departments at the Faculty level.

#### *1.2 Aim*

The purpose of implementing expertise practice in the PIAUD Department is to provide students with skills or skills that will be needed later when they become PAUD educators such as storytelling skills, music, dance, and visual arts. His expertise will also be an added value for graduates of the Surakarta FITK IAIN PIAUD in accordance with the demands of society and the world of education.

#### *1.3 General requirements*

Expertise Practice is one of the requirements for students to be able to carry out microteaching activities, expertise Practices will be reviewed at least 1 year 2 times, practices of expertise emphasize soft skills, the organizer of the Expertise Practice program is a Team formed in the Department, participants in the Skills Practice achievement program are V semester students, the Expert Practice Organizing Team provides a guidebook for implementing the Expertise Practice material.

The Expertise Practice Program in the Early Childhood Islamic Education Department, Faculty of Science Tarbiyah and Teacher Training Surakarta IAIN has a role in improving the professional competence of students in the fields of music, dance, storytelling, and visual arts. The expertise practice activities carried out in the PIAUD department also present practitioners or resource persons according to the field of expertise that will be practiced. The task of the resource person was to provide material related to the field of scholarship and also to assess whether students had been declared to have passed the practice skill.

Students who have participated in expertise practice activities and are declared pass by the resource person will be given a graduation certificate. This certificate will be used by students as a condition for participating in microteaching activities. In addition, graduation certificates for this expertise practice can also be used by students when they will later register to become an educator. The skills or skills possessed by students will be more value that will be considered by PAUD institutions when they will receive new educators. So that students graduating from Surakarta FITK PIAUD IAIN have competent graduates who are competent and answer the needs of the community. With the Skills Practices program, the target for fulfilling the professional competencies of graduates of the Early Childhood Islamic Education Department, the Faculty of Tarbiyah Sciences and Teacher Training in the fields of music, dance, storytelling, art can be achieved.

## 2 METHODS

This research is research and development. Learning evaluation models are practical skills programs that focus on the process and product dimensions. The development model that will be used is the Borg & Gall (1989) which states that research and development consists of a cycle in which products are developed, first tested in the field, and revised based on field test data. The product that you want to produce in this study is an appropriate evaluation model for expertise practice programs. Model Borg & Gall with four developmental phases. The first phase was planning which consisted of research and information collecting to include literary reviews related to the problems under study, needs analysis, and preparation for formulating the research framework. The second phase was developing the preliminary form of the product (Wahyuni & Kartawagirun, 2018). This phase was intended to develop the initial form of the product. The next phase was preliminary field testing, which consisted of an initial field testing of a limited scale. The results of this preliminary try-out were used to make improvements of the instrument items. Lastly, the final phase was final product revision. This consisted of the final revision of the developed product.

## 3 RESULT AND DISCUSSION

### 3.1 *Results of Initial Product Development*

The development of an evaluation model of the Expertise Practice Program was carried out by adopting the Borg and Gall development model through the following steps:

#### 3.1.1 *Preliminary Study*

The research on the development of the evaluation model of the expertise practice program begins with a literature review, reviews the results of relevant research, and conducts preliminary research on the implementation of the expertise practice program carried out at the FITK IAIN Surakarta PIAUD Department. The results are then discussed so as to obtain an evaluation model

of the process and product of the expertise practice program. The researcher continues by reviewing the practice program guide on expertise regarding the standard rules set in order to set the goals that want to be produced from the product expertise.

The next step in gathering information is to conduct initial research in order to analyze the needs of the evaluation model that will be developed. The subjects in this initial study were 30 people who were PAUD educators in Delanggu District, Klaten Regency. The researcher conducted a preliminary research by dividing the questionnaire to pre-educators to find out whether the users / educators in the PAUD program agreed that it needed a skill from PIAUD students to become provision when teaching Early Childhood.

The data obtained from the questionnaire were analyzed descriptively while the interview data was used as support for the data obtained from the questionnaire. Preliminary research results show that all respondents stated that the Surakarta IAIN PIAUD Department students must be equipped with several fields of expertise such as dance, fine arts, music, storytelling, parenting, and child care. Respondents also agreed that an evaluation model was needed to evaluate expertise practice activities so that the product expertise that students would have could be in accordance with the demands of PAUD institutions as users.

Meanwhile, interviews with PAUD educators and Lecturers at the Surakarta IAIN PIAUD Department strengthened the data obtained, that instruments were needed to evaluate the implementation of expertise practice programs at the IAIN Surakarta PIAUD Department to find out the accomplishments of expertise practice programs and later be used as a basis for evaluating and improving expertise practice program at the Surakarta FITK IAIN PIAUD Department to suit the demands of PAUD institutions. The information collected at this stage includes the implementation of evaluations, evaluation forms, evaluated components, facts and evaluation mechanisms in the expertise practice program. So, in general in this initial study it can be concluded that further research is needed to develop an evaluation model instrument that is able to evaluate the Expertise Practice Program.

### 3.2 *Development Results*

The scope and tools in the Expertise Program Evaluation Program (EPPK) model cover the scope of processes and products, while the EPPK model tools are instruments, scoring guidelines and criteria for good or not good, and guidelines for conducting evaluations. The scope of the Expertise Program, program process includes planning, processing and evaluating the implementation of expertise practice activities. While product coverage includes the ability of dance and music, storytelling and art.

The prototype in question is then compiled in the evaluation instrument model grid which includes:

#### 3.2.1 *Construct the Expertise Practice Program Model*

##### 3.2.1.1 *Process Evaluation*

The first step is to evaluate the Expertise Practice Program process which includes: evaluating the implementation planning and assessment carried out by the lecturer or called the facilitator of expertise practice activities.

### *Planning Evaluation*

Planning that must be assessed includes organizing expertise practice activities. In this planning stage, the practical activity facilitator has the expertise to schedule activities, develop plans for activities and activities. The technical steps for implementation are described in the User Guide to the Use of the Expertise Practice Program Model.

### *Implementation Evaluation*

The implementation of learning assessed includes classroom management, methods and strategies in delivering material, making works, and developing skills in the form of work. In conducting program evaluation, lecturers fill out assessment instruments in the form of questionnaires that have been provided. The technical steps for implementing them are described in the User Guide to the Use of the Expert Practice Program Model in product development.

### *Assessment Evaluation*

The educational assessment aspects assessed included: the type of assessment carried out, and the techniques used to assess the expertise practice program at the Surakarta IAIN PIAUD Department. In carrying out evaluation evaluations, the facilitator fills out the assessment instruments in the form of questionnaires that have been provided. The technical steps for implementing them are described in the User Guide to the Use of the Expert Practice Program Model in product development.

#### 3.2.1.2 Product Evaluation

The next step of the Expertise Practice Program is the evaluation of products in the form of skills acquired or produced by students including expertise in the fields of dance and music, storytelling skills and fine arts. In carrying out product evaluations, students fill out assessment instruments in the form of questionnaires that have been provided. The technical steps for implementing them are described in the User Guide to the Use of the Expert Practice Program Model in product development.

The next step is to prepare a prototype instrument to assess the evaluation model that will be developed. The instrument in question is a validation which includes four aspects, namely: (a) aspects of the instructions for working on the instrument on the evaluation model to be developed, (b) aspects of language, and (c) aspects of the display of the instrument. Language aspects include the formulation of communicative statements, the use of sentences that are easy to understand, while the display aspects of the instrument include the form of letters, font size, and format of the instrument. The prototype in question is arranged in the instrument grid as follows:

Table 1 Prototype in question

No	Component Evaluation	Aspect Evaluation		
		Display	Language	Instructions
1	Process			
2	products			

The next stage is done through the development of model design by confirming with experts and practitioners the Expertise Practice Program about what indicators are important to appear or not

in the evaluation model that will be developed through the Delphi technique. The Delphi respondent involved 5 people. Delphi respondents include lecturers, facilitators, and practitioners of the Expertise Practice Program in June 2018.

Table 2 Suggestions and Feedback by Experts and Practitioners

No.	Name	Suggestion and Feedback
1	Dr. Retno Wahyuningsih (evaluation expert)	<ul style="list-style-type: none"> <li>a. There are several indicators that are too general, so they need to be revised</li> <li>b. Items are adjusted according to the indicator</li> <li>c. Respondents must be sought so that not the person who is directly related is assessed, or the person who is at risk of the evaluation results</li> </ul>
2	Khasan Ubaidillah, M.Pd. I. (Early childhood education (ECE) expert)	<ul style="list-style-type: none"> <li>a. Evaluation of product aspects needs to be added</li> <li>b. There are several grammars that need to be corrected</li> </ul>
3	Mila Faila Shofa, M.Pd (ECE expert)	<ul style="list-style-type: none"> <li>a. The scope of the evaluation of the assessment should be clarified in every aspect.</li> <li>b. Assessment techniques need to be added to the interview.</li> <li>c. In product evaluation, it is necessary to add participants to show what skills their expertise is in.</li> <li>d. The writing system is corrected</li> </ul>
4	Rosyida Nur Syamsiati, M.Pd ( ECE expert )	<ul style="list-style-type: none"> <li>a. Improvements to the grammar with its content are difficult to understand</li> <li>b. Display must be distinguished for process components and products are made more attractive.</li> <li>c. Fix the writing system.</li> <li>d. The achievement of the final product needs to be added with other expertise items related to the Holistic Integrative ECD program.</li> </ul>

### 3.3 Feasibility of the Evaluation Model

#### 3.3.1 Initial Field Testing

This stage is intended to obtain preliminary information about the clarity and limitations of instruments in the evaluation model developed. At this stage expert validation of the evaluation model instruments has been carried out by previous reviewers, namely experts and educational practitioners in the Delphi technique. Respondents in this test were 7 experts and education practitioners and evaluation experts and practitioners.

This stage is carried out by providing an evaluation model instrument containing questionnaires and documents regarding the learning of the expertise practice program along with the assessment sheet to experts to assess whether the model is ready to be used to evaluate the expertise practice program. Expert assessment activities carried out in June 2018, the results obtained from this stage are scores and percentages quantitatively about the clarity and limitations of instruments in the evaluation model as well as input, suggestions, and criticism from the respondents as materials for improving the evaluation model instruments.

The results of the readability test of the learning evaluation model of the expertise practice program are presented in the table as follows.

Table 3 Results of Assessment of Readability Test of EPPK Instruments

<b>GENERAL FORMAT</b>			
<b>No</b>	<b>Indicator</b>	<b>Percentage of Scores</b>	<b>Criteria</b>
1	Packaging & Display evaluation model	69,4	Quite interesting
2	<i>Lay out writing</i>	78	Very good
3	Selection of letters, fonts, and spaces	78	Very good
4	Writing system	78	Very good
5	Use of language	83	Very good
6	Page thickness	75	Very good
7	Readability level	100	Easy to read
8	Easy to understand	92	Easy to understand
<b>MODEL SUBSTANCE</b>			
1	Evaluation guidelines	78	Easy to understand
2	Coverage Scope of evaluation	96,9	Has covered the scope of evaluation
3	Extent of component translation	78	Has described the component
4	Instructions for working on the instrument	92	Easy to understand
5	Ease to work	81	Easy to understand
6	Time to work	78	Not time consuming
7	Benefit	86	Very helpful
8	Urgency of evaluation	92	It is very important to evaluate the school
9	Achievement of evaluation	81	Easy to evaluation
10	Compared with EDS	83	Easy to use
11	Compared with other evaluation models	92	Easy to use
<b>EVALUATION PROCEDURE</b>			
1	Preparation and planning	78	Easy to use
2	Implementation of evaluation	69	Easy to use
3	Analysis of evaluation data	61	Easy to use
4	Determination of criteria for evaluation results	67	Easy to use
5	Preparation of evaluation report	75	Easy to use

Of the 24 aspects of the evaluation of the evaluation model, eighteen reached a percentage above 76% (very good), while six aspects, namely page thickness, evaluation achievement, evaluation, data analysis, criteria determination, and preparation of evaluation reports reached a percentage above 51 % (well). Suggestions and input from experts and practitioners are qualitatively summarized in the table as follows.

### 3.3.2 *Field Testing*

At this stage the product produced is an instrument of expertise practice evaluation program which is expected to be able to obtain practical and efficient information about the expertise practice program carried out at the FITK IAIN Surakarta PIAUD Department. To complete the evaluation



data, structured interviews were conducted with lecturers and students participating in the required expertise, in addition to the collection of documentation required data in the form of photos and files.

### 3.3.3 Evaluation Results for the Implementation of Expertise Practice Programs

Based on the evaluation instrument filled in by the organizers and the learning citizens of the practical skills program, it is illustrated that the implementation of this program has the criteria of "good", namely achieving a score of 3.44, as presented in Table

Table 4 Evaluation Results Implementation of expertise practice programs

Evaluation	No	Dimensi	Score	Category
Process	1	Planning	3,60	Good
	2	Implementation	3,40	Good
	3	Assessment	3,62	Good
<b>Process Average</b>			<b>3,53</b>	Good
Product	4	Dance ability	3,44	Good
	5	Musical ability	3,42	Good
	6	The ability to tell stories	3,56	Good
	7	Fine art ability	3,52	Good
<b>Product Average</b>			<b>3,49</b>	Good
<b>Evaluation Average</b>			<b>3,51</b>	Good

### 3.3.4 Reviewer Assessment Results Expertise Practice Program on EPPK Models

The trial of the Expertise Practice Program was held on July 9, 2018 by involving lecturers and students. The trial was carried out separately.

Table 5 EPPK Assessment Results in the Expertise Practice Program

GENERAL FORMAT					
No	Indicator	Max	Score	%	Criteria
1	Packaging & Display evaluation model	40	29	72,5	interesting
2	Lay out writing	40	33	82,5	Very Good
3	Selection of letters, fonts, and spaces	40	30	75	Good
4	Writing system	40	35	87,5	Very Good
5	Use of language	40	33	82,5	Very Good
6	Page thickness	40	27	67,5	Thick enough
7	Readability level	40	36	90	Easy to read
8	Easy to understand	40	32	80	Easy to understand
MODEL SUBSTANCE					
1	Evaluation guidelines	40	31	77,5	Easy to understand
2	Coverage Scope of evaluation	40	36	90	Very much covers the scope of evaluation
3	Extent of component translation	40	30	75	Able to describe components

4	Instructions for working on the instrument	40	30	75	Easy to understand
5	Ease to work	40	31	77.5	Easy to understand
6	Time to work	40	31	77,5	time consuming
7	Benefit	40	36	81,7	Very helpful
8	Urgency of evaluation	40	36	90	Very necessary to evaluate the program
9	Achievement of evaluation	40	30	75	Able to evaluate Expertise Practice Programs
10	Compared with EDS	40	30	75	Has the same level of difficulty
11	Compared with other evaluation models	40	31	77,5	Has the same level of difficulty
<b>EVALUATION PROCEDURE</b>					
1	Preparation and planning	40	30	75	Not troublesome
2	Implementation of evaluation	40	31	77,5	Easy to do
3	Analysis of evaluation data	40	34	85	Easy to do
4	Determination of criteria for evaluation results	40	34	85	Easy to do
5	Preparation of evaluation report	40	31	77,5	Easy to do

\*Source: Results of data analysis

In general, the results of the trial show that the evaluation model of learning skills in the Expert Practice Program is good - very good. In terms of practicality, the EPPK model is categorized as practical (the facilitation aspect to be done reaches 80% and the benefit aspect reaches 81.7%). In terms of efficiency, the EPPK model is categorized as efficient, because 75% of respondents said the EPPK model was easier 77.5% said the EPPK model was easier to use compared to other evaluation models they had used. Nevertheless, this model still needs to be tested for its validity and reliability empirically in order to improve or revise to improve the EPPK model for the better.

### 3.4 Product Revision

The original instrument at the time of assessment by experts was bound together, then the next trial was separated and grouped per object or target evaluation into a book. Part 1 contains a review of the syllabus document and guidebook, part 2 on observing the implementation of expertise practice, section 3 on the skill practice assessment questionnaire, part 4 on the dance ability evaluation questionnaire, section 5 on the music skills evaluation questionnaire, section 6 on the storytelling ability evaluation questionnaire, and part 6 of the questionnaire evaluating the ability of art. Separation into seven parts aims to make the evaluation more efficient if it is based on the evaluation objectives and reduces the impression of "thick" in the previous packaging evaluation model.

Another improvement is to make a respondent's response sheet separate from the questionnaire. This is aimed at the efficiency of the evaluation model, so that the evaluation model can be used multiple times (at least once a year), the user just needs to double the response sheet. In the process, respondents gave their responses by writing a score of 1, 2, 3, 4, 5 on the response sheet that was provided based on the instructions (rubric) on the questionnaire. In addition, respondents were asked to provide explanations and improvements made to fulfill factual data as well as the conditions of each respondent in the self-evaluation carried out.

In this revision stage, the researcher completes the instrument by compiling. Based on the results of the previous data analysis, plus suggestions from respondents' input on the evaluation questionnaire column and deepening through interviews, the next step is to make repairs to the EPPK model. Improvements made at this stage are: 1) improving the writing editorial and language choices in the statements in the evaluation model without changing the number of items or indicators in the evaluation model; 2) binding into one between the evaluation instruments with the response sheet, which in the previous trial was separated, with the aim of facilitating respondents in doing it; 3) provide a rubric for each component of the statement on each evaluation instrument.

### 3.5 Final Product Study

The final product produced in this study is an evaluation model of the expertise practice program at the Surakarta IAIN PIAUD Department. Therefore, EPPK should be carried out periodically to update data and information which refers to evaluation standards with criteria: 1) utility, 2) accuracy, 3) feasibility, and 4) truth (propriety). Therefore, there must be a measuring instrument capable of evaluating the implementation of expertise practice programs, so that EPPK is presented as one of the important components of the program quality assurance that has been set.

EPPK is an effective way to find out the implementation of expertise practice programs because they can: 1) plan and improve skills practice programs; 2) provide information about the program of practice of expertise to the community and those who need it; and 3) help identify problems, correct various deficiencies, plan further programs, and control achievement of goals; The EPPK model which consists of seven components (standard) evaluations is packaged into seven (7) sections that contain various evaluation questionnaires based on the object being evaluated. The description of the seven components into seven books is as follows:

Table 6 The description of seven parts

No	Evaluation Standart	Object Evaluation	Part
1	Process	Planning	1
		Implementation	2
		Assessment	3
2	Product	Dance ability	4
		Musical ability	5
		The ability to tell stories	6
		Fine art ability	7

\*Source: Results of studies and studies from various sources

The seven parts when described are as follows:

- Part 1 : Contains a review of planning documentation
- Part 2 : Contains the implementation questionnaire
- Part 3 : Contains assessment questionnaires
- Part 4 : Contains questionnaires in dance skills
- Part 5 : Contains musical ability questionnaires
- Part 6 : Contains a storytelling ability questionnaire
- Part 7 : Contains questionnaires on fine arts abilities

An evaluation program is a unit or combination of activities that collects information about the implementation or implementation of a policy, an ongoing process that is continuous, and carried out in an organization that involves a collection of people to make decisions (G. Skedsmo &

Huber, 2016). This evaluation uses a quantitative descriptive design that is supported by qualitative data as explanatory, with a focus on quantitative picture studies of the implementation of expertise practice programs. This evaluation design is expected to be able to see the facts that occur in all components of the implementation of the expertise practice program, which will then be objectively described (Roegman, Goodwin, & Reed, 2016). The objects in this evaluation design are lecturers and students involved in the expertise practice program and all existing stakeholders. Acting as an evaluator in the EPPK is a lecturer or facilitator of the expertise practice program. In its application, the EPPK model is used to measure two dimensions of evaluation, namely the dimensions of the process, and the product. The process dimensions include, namely planning, implementation and assessment. The product dimensions in the EPPK model include four types, namely the ability of dance, musical ability, storytelling ability and artistic ability.

Overall, the EPPK model meets the standards as a tool that can be used to evaluate, because in trials carried out in the expertise practice program of the Early Childhood Islamic Education Department, FITK, IAIN Surakarta and rated "good" by reviewers to be used to evaluate the program expertise practice at the Surakarta IIT FITK PIAUD Department and able to provide a comprehensive overview and criteria regarding the implementation of a expertise practice program.

The next stage is the deployment stage of the EPPK model instrument which covers the scope of processes and products, while the EPPK model kits are instruments, scoring guidelines and criteria for good or not good, and guidelines for implementing evaluation.

#### 4 CONCLUSION

Based on the research that has been done, the conclusion is obtained about the product as follows: This study has produced a Skills Practice Evaluation Program (EPPK) model with evaluation procedure components, instruments, and evaluation guidelines. The EPPK model has a range of evaluation and evaluation procedures. The scope of evaluation includes constructs, instruments and methods of scoring. The EPPK model produced has two-dimensional constructs, namely processes and products. The process dimension includes the instruments of planning, implementation and assessment. The product dimensions include instruments of dance skills, musical abilities, storytelling abilities and artistic abilities. The method of scoring is done by giving a score to the column provided from a minimum score of 1 and a maximum score of 5. The procedure for evaluating the EPPK model is conducted from two sides of assessment, namely self-assessment (as self-evaluation) and assessment by others (as honesty control) in order to get the actual data. Assessment is done by giving a score with a minimum score of 1 and a maximum score of 5.

This EPPK model has met the eligibility criteria: a. has a good format (average 79.7%), b. has fulfilled the substance of a good evaluation model (average 79.2%), c. has a good evaluation procedure (average 80%).

The EPPK model has a very good level of effectiveness. It is proven that the expertise practice program lecturers can use it easily. The model meets the standards as a tool that can be used to evaluate the expertise practice program. The evaluation results using the EPPK model can provide a factual and comprehensive description of the implementation of a expertise practice program. From the results of the trial, it can be seen from the dimensions of planning, implementation, assessment, dance ability, musical ability, storytelling ability, the ability of fine arts to get scores in all good categories.

## 5 REFERENCES

- Amrein-Beardsley, A., Polasky, S., & Holloway-Libell, J. (2016). Validating Bvalue added^ in the primary grades: one district's attempts to increase fairness and inclusivity in its teacher evaluation system. *Educational Assessment, Evaluation and Accountability. Educational Assessment, Evaluation and Accountability*.
- Borg, W. R., & Gall, M. D. (1989). *Educational research*. New York: Longman.
- Briggs, D. C., & Dadey, N. (2017). Principal holistic judgments and high-stakes evaluations of teachers. *Educational Assessment, Evaluation and Accountability*.
- Cizek, B. J. (2000). Pockets of resistance in the assessment revolution. *Educational Measurement Issues and Practice Journal*, 192.
- Elliot, R. B. (2018). Understanding Faculty Engagement in Assessment through Feedback and Dialogues: A Mixed Methods Approach. *International Journal of Evaluation and Research in Education*, 7(2).
- Eseryel, D. (2002). Approaches to evaluation of training: Theory & Practice. *Educational Technology & Society*, 5(2).
- Hallinger, P., Heck, R., & Murphy, J. (2014). Teacher evaluation and school improvement: an analysis of the evidence. *Educational Assessment, Evaluation and Accountability*.
- Hasan, H. (2009). *Evaluasi Kurikulum (II)*. Bandung: PT Remaja Rosdakarya.
- Herpich, S., & Pratoreus, K. A. (2018). Teachers' assessment competence: Integrating knowledge-, process-, and product-oriented approaches into a competence-oriented conceptual model. *Teaching and Teacher Education*.
- Meng, L., & Muñoz, M. (2016). Teachers' perceptions of effective teaching: a comparative study of elementary school teachers from China and the USA. *Educational Assessment, Evaluation and Accountability*.
- Ovretveit, J. (2002). Evaluation of quality improvement programmes. *Quality and Safety in Health Care*, 11(3), 270–275. <https://doi.org/10.1136/qhc.11.3.270>
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (2015). Transformational Leader Behaviors and Their Effects on Trust, Satisfaction, and Organizational Citizenship Behaviors. *JAI Press Inc.*, (August), 107–142. [https://doi.org/10.1016/1048-9843\(90\)90009-7](https://doi.org/10.1016/1048-9843(90)90009-7)
- Roegman, R., Goodwin, A. L., & Reed, R. (2016). Unpacking the data: an analysis of the use of Danielson's (2007) Framework for Professional Practice in a teaching residency program. *Educational Assessment, Evaluation and Accountability*.
- Seng, K.-H., Diez, C. R., Lou, S.-J., Tsai, H.-L., & Tsai, T.-S. (2010). Using the Context, Input, Process and Product model to assess an engineering curriculum. *World Transactions on Engineering and Technology Education*, 8(3).
- Skedsmo, G., & Huber, S. G. (2016). Teacher evaluation—accountability and improving teaching practices. *Teacher Evaluation—Accountability and Improving Teaching Practices*.
- Skedsmo, Guri, & Huber, S. G. (2018). Teacher evaluation: the need for valid measures and increased teacher involvement. *Educational Assessment, Evaluation and Accountability*, 30(1), 1–5. <https://doi.org/10.1007/s11092-018-9273-9>
- Steinert, Y., Cruess, S., Cruess, R., & Snell, L. (2005). Faculty development for teaching and evaluating professionalism: From Programme Design To Curriculum Change. *Medical Education*.
- Stufflebeam, D. L. (2003). The CIPP model for evaluation. *Oregon Program Evaluators Network*.

- Uerz, D., Vorman, M., & Kral, M. (2018). Teacher educators' competences in fostering student teachers' proficiency in teaching and learning with technology: An overview of relevant research literature. *Teaching and Teacher Education*.
- Vrasidas, C. (2000). Constructivism Versus Objectivism: Implications for interaction, Course Design, And Evaluation In Distance Educatio. *International Journal of Educational Telecommunications*, 6(4).
- Wahyuni, A., & Kartawagirun, B. (2018). Developing Assessment Instrument Of Qirāatul Kutub At Islamic Boarding School. *Jurnal Penelitian Dan Evaluasi Pendidikan*, 22(2).



## Playing "CABE" (Searching and Whispering) to Increase Children's English Vocabulary

Venny Eria Ndraha<sup>1</sup>

Mozes Kuriawan<sup>2</sup>

*PG-PAUD, FKIP, Universitas Kristen Satya Wacana Salatiga*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.11>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** This study aims to increase children English vocabulary aged 5-6 years old by playing CABE or searching and whispering. This research is classroom action research that was conducted in Marsudirini Sang Timur Kindergarten, Salatiga. The Subjects of the study were 20 B1 kindergarten children. Data was collected by teaching English vocabulary by playing CABE in some cycles which includes four stages in the form of cycles, there are (1) planning; (2) implementation; (3) observation; and (4) reflection. Research instruments used in this research was in sheets observation checklist. The results of a percentage of pre-cycle was 13 %, cycle I was 31 % in first meeting and was 66 % in the second meeting, cycle II was 75 % performed in only one meeting. There is an improvement in pre-action and any action on each meeting until it reaches 75 %.

**Keywords:** Early childhood, English vocabulary, "CABE" method, Learning English

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media): 2503-0566**  
**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup> Corresponding Author:  
Venny Eria Ndraha  
PG-PAUD, FKIP, Universitas Kristen Satya Wacana Salatiga  
Jln Dipenogoro No. 52-60, Salatiga, Jawa Tengah, Indonesia  
Email: 272015009@student.uksw.edu

## 1 INTRODUCTION

The English language is the dominant language in almost every aspect of life that is very close to early childhood (Musthafa, 2010), such as in toys labels, games, and gadgets operation. There are several aspects of English; they are reading, writing, listening, speaking, and grammar. In development, children have been equipped with the introduction of English. The way children learn and how to teach them depends on the level of child development (Nugrahani et al., 2017; Nurvitasari, 2016). The basic component of learning English is understanding vocabulary. Vocabulary is the basis for writing, reading, listening and speaking. By mastering the vocabulary, children will be able to develop the language they learn, including English.

The observations conducted at the Marsudirini Sang Timur Kindergarten in Salatiga English in the B1 group aged 5-6 years showed children often experience difficulties in mastering English vocabulary. For example, when a child asked about a land vehicle described earlier, which a train in English is "train", but after being asked again, the child answers a "motorcycle". This is related to the child's memory (Imam, 2016). They learn English not intensively, only once a week which is every Thursday. Learning English is carried out during the learning process only in the core part of learning so that the habitual use of English vocabulary (such as greetings or learning prayers in English) is not done continuously or consistently at school. The learning process tends to be monotonous, the lack of variation of learning method (only using the assignment method). In addition, there is no evaluation for English so none can assume children's improvements or inputs for the learning method that has been given by teacher to the child in the class. Learning activities is like cutting papers, matching images, sticking pictures, and writing words. When teaching and learning process, communication between teacher and child during the learning process less using English.

"CABE" or Cari Berbisik method is an alternative method of learning implementation to enrich children English vocabulary. In this method of playing "CABE", children will learn about the vocabulary and meanings of the English vocabulary. This game trains children in the ability to hear, remember and express or speak.

### *Language in Early Childhood*

Language in a Large Dictionary of Indonesian Language states that "language means a system of sound symbols and arbitrary that used by members of a society to cooperate, interact and identify themselves" (Bawono, 2017). Language can also be interpreted as a tool for human interaction to convey messages or ideas that exist in the mind (Muflihah, 2019; Wiratno, T., & Santosa, 2003). In line with that the development of the language of children aged 5-6 years is divided into three parts, there are: understanding language, expressing language and literacy. From some of the meanings above, we concluded that language is a symbol of feelings and thoughts to convey meaning and purpose to others. Because language for early childhood is very important, each child must be given the right language according to their development.

Language development in early childhood consists of speaking, listening, reading and writing as well as language development in adults. In the early stages of language development children are expected to be able to use language as a passive understanding of language and can communicate effectively which is useful for thinking and learning well. Language development in children aged 4-6 years emphasizes the development of hearing, speaking, and early reading / reading early. The development of children's language as explained by Vygotsky that children learn languages from adults collaboratively, then internalized and consciously used as a means of thinking and



control devices (Vygotsky, 1986). In addition, this was also stated by Lenneberg (in Yamin, 2010, p. 137) that the development of the language of a child follows and is in accordance with the timetable of his inexorable biological development. A child cannot be forced or triggered as much as possible to be able to say something, if his biological ability has not possible to speak a word yet. This biological growth will also appear in the physical construction of a child's mouth. When a child is born, the physiology of his mouth is still very limited where the larynx is still high, his tongue is relatively large, the area of motion in the mouth is very narrow, and his tongue still rests on the back of his lips. According to Chomsky (in Yamin, 2010, p. 141) said that language acquisition is natural and an ongoing instinctive process and runs constantly step by step by following the genetic term in accordance with the principles and parameters contained in Universal grammar.

Language ability is one of the areas of early childhood development that is prepared to improve children's abilities and creativity according to their developmental stages. The development of language skills aims to enable children to express their thoughts through simple language appropriately, to communicate effectively and generate interest in speaking. The field of developing early childhood language includes the ability to listen, communicate verbally (speaking), have vocabulary and recognize symbols that symbolize it in preparation for reading and writing early childhood.

The most sensitive period of language in a person's life is between the ages of two and seven years. All kinds of aspects in language must be introduced to children before this sensitive period ends. In this sensitive period, it is very important to introduce the good and correct language, because this expertise is very useful for communicating with the environment (Montessori, 1991). Based on this theory, it is appropriate for English to be introduced to children as early as possible. Given that English is the first foreign language in Indonesia, the learning process must be done in stages. The choice of material that is appropriate to the age of the child and also effective for the cognitive development of the child's language and pleasant learning situations must be a major concern in the success of a learning process.

On the other hand, it needs to be understood that an early age is the age of play. Every child is a unique person and they need world of play to learn. The right approach needs to be created by an educator so that the process of learning English is more interesting and enjoyable without leaving the correct language rules. The approach used should be in line with the aim of introducing language in general. The goal is children understand the ways of speaking that are good and right, dare to express their ideas or opinions and can communicate with their environment.

The methods and techniques that are to be used should be selected and adjusted to the children abilities. The professionalism of an educator in developing and utilizing these methods and techniques is needed so that the learning process can run better. Teaching methods and processes in a communicative context include the context of social situations, culture, games, songs, and music, reading stories, artistic experiences, crafting and prioritizing physical movements is very suitable and effective methods. Furthermore, music and motion are very successful methods in the process of learning English, especially for early childhood (Matondang, 2005, p. 134). Essence music (song) is the art of composing tones or sounds in sequence, combination, and temporal relationship to produce compositions that have unity and continuity (containing rhythm). Various rhythmic tones or sounds are also called songs. Music or song is a unity that cannot be separated and can be used as a means in a learning process. Further more, movement (motion) comes from the

basic word motion. 'Motion' has meaning as a transition place (activity) that is done after there is encouragement (inner / feeling). Movement activities can arise after someone listens to a song. Using music and movement as an approach in the process of learning English and presenting it in an interesting and fun way in a process of teaching and learning activities help children to be happier and more active in learning and make it easier for children to understand a teaching material because in conducting learning activities children are invited to perform and demonstrate a movement. Therefore, motion and song is an activity that is very pleasant for children and can also be used as a motivation in the process of learning English in early childhood.

Movement is body language. Children express their feelings through movement activities after listening to songs. Children have an active relationship in responding to singing through motion and if the body can be described what is felt and understood by the child to music (singing). The activity of the movement itself is needed for early childhood in training and developing their gross motor skills. Singing for children is not only voices and songs, but at the same time brings the contents and meanings of songs, and displays songs with motion such as free movement or dance moves.

### *Learning English in Early Childhood*

English has become an international language that is used in almost all areas of global life. English has also become the world language that dominates the communication era to connect and transfer knowledge throughout the world. This gives the assumption that mastery of English is a very important requirement for today's modern society because mastery of English makes it easier for someone to expand their association internationally. As Fromkin said, "English has been called" the lingua franca of the world (Fromkin, V., Rodman, R. & N., 1990, p. 259). The position of English in Indonesia is the first foreign language. This position is different from the second language. Mustafa in this case states that a second language is a language learned by children after their mother tongue with the characteristics of the language used in the surrounding community environment (Mustafa, 2007). Whereas, foreign languages are another country's language that is not used generally in social interactions. The position of English in Indonesia has resulted in the rarely use of English in social interactions in the community so that English is a language that is difficult to learn because English is a foreign language that is not used daily in people's lives in Indonesia. In fact, mastering English is a very important skill in the current era of information and communication. This greatly determines how we can interact globally. The current issue of globalization requires quality human resources that are capable of communicating in various foreign languages, especially English as an international language. This foreign language expertise is needed to master science, have broad associations and a good career. This made everyone from all walks of life motivated to master English. The tendency of the community to master the foreign language made them compete with each other to enter their children to learn English as one of the skills developed. This is based on the assumption that children learn foreign languages faster than adults (Santrock, n.d., p. 313). A study by Johnson and Newport, 1991 showed that immigrants from China and Korea who started living in America at the age of 3 to 7 years had better English skills than older children or adults (Santrock, n.d., p. 313). Another study that stated that the use of mastering foreign languages was earlier, stated Mustafa, that children who master foreign languages have advantages in terms of intellectual flexibility, academic, language, and social skills. In addition, children will have the readiness to enter a social context with a variety of languages and cultures (Mustafa, 2007). So that when adults become children, they will become qualified and capable human resources. Children's understanding and appreciation of language and culture

itself would also develop if children learn foreign languages early (Mustafa, 2007). The reason is that they will have greater access to foreign languages and cultures. However, teaching English in Indonesia is different from teaching English as a second language in a country where English is a medium of communication. In Indonesia, the position of English is the first foreign language that must be taught in junior and senior high school while in elementary school is one of the local content lessons which are actually not (or) not yet a compulsory subject. Although at this time English has been tried as a foreign language as a subject or later as a "medium" in bilingual education (Chamot, 1987). In fact, a bilingual learning program is currently being tested for mathematics and natural science courses in 4th and 5th-grade elementary schools. The purpose of teaching English includes all language competencies, namely listening, speaking, reading, and writing. English is also very different from the first language of children (Indonesian, Javanese, Sundanese, and other regional languages in Indonesia). This difference in linguistics is important to understand so that learning can be justified. These differences include speech, spelling, language structure, pressure and intonation, vocabulary, and the value of foreign language cultures. English is also known as a careful language (tenses), careful numbers (singular-plural), and careful people (feminine and masculine).

The study of (O'Grady, 2008) formulated 5 (five) basic characteristics of the way a child learns English, as follows: (1) Children start learning their language by listening. The hearing is their main strength in "gathering = finding or gathering material" in aspects of the language. For children, language is sound that has functions and meanings. Interaction with the environment helps him understand context and meaning; (2) Children learn languages very quickly. Only by hearing one or two times, they can capture a reference to a sound for an object or meaning. Body language and intonation of words is a huge help for children in understanding language. Similarly, even though the child's strength in learning to speak is listening, a child cannot learn languages just by listening to the radio. Children spell interaction with the environment to gather the knowledge needed; (3) Children learn a language from its function, not its form. The child does not realize how confused it is called grammar, although he will gradually learn it. In other words, children can understand a complex set of sentences that are above a simple level, after which conclude the core and purpose of the sentence; (4) Children do not need to be notified when making a mistake in the use of language. This is because children can realize and correct it themselves and need time in the process. Let the child explore the language knowledge themselves needed by the child to correct mistakes. If parents want to help, it is enough to give the right example; (5) Children imitate or imitate language to the people who are closest and most interact with them. That is where the dialect is revealed to children. In foreign language learning, children imitate the pronunciation of words, very well, when the source of the model recites the words properly. The description above explains the main characteristic in the child's learning process is listening, imitating and experiencing.

The way children learn English and how to teach them depends on the level of child development (Nurmadiyah, 2018; Sophya, 2019; Zaini, 2015). The advantages of early childhood are one that mimics, and children are often not aware of themselves and are usually ready to enjoy the activities prepared by the teacher. In providing English subject matter, it must be adjusted to the level of child development. Material scope that can be given to early childhood, among others: 1) color names; 2) one to ten numbers; 3) family; 4) animals; 5) fruits and vegetables; 6) parts of the body; 7) I am/You are; 8) There is/There are; 9) I like/I don't like; 10) simple classroom commands like stand up, sit down, open your books etc. There are several methods in providing English language teaching activities in the journal (Khairani, 2016; Nurjanah et al., 2015), among others: 1) games

and songs with action/games and songs followed by body movements; 2) total physical response activities followed by physical movements in full; 3) tasks that involves coloring, cutting and sticking/tasks that involve coloring, cutting, and sticking; 4) simple repetitive stories; and 5) simple repetitive speaking activities that are repeated reset it. The method of teaching English that has been described above is an activity that has communicative value which is packaged in three phases called “3P” (presentation, practice, and productions) in language (Khairani, 2016; Nurjanah et al., 2015) as follows: (1) Stage of material presentation (Presentation), namely The teacher introduces several vocabulary words and there must be three things clearly, namely, what they mean, when they are used, and what they say; (2) The practice stage (Practice) that the child can listen, and speak by imitating and repeating. This activity can be done individually, in pairs, in classical groups. Language practice can be done if the child already understands English that is used; (3) Stage of disclosure/use (Production) that is a child can sing English songs or tell English that has been learned to others. From the description above, it can be concluded that the method or activity carried out can be given to children. The most important thing is to be able to create a pleasant atmosphere that can be enjoyed by children so that children feel happy to learn English in their daily lives.

#### *Mastery of English Early Childhood Vocabulary*

"Vocabulary is a collection of words that are owned by a language and give meaning if we use the language" (Khairani, 2016; Nurjanah et al, 2015). Vocabulary is a set of words known to someone and owned by a language and gives meaning. From the description above, it can be concluded that vocabulary is one of the central languages and is important in language learning. Without sufficient vocab, one cannot communicate effectively in expressing ideas both verbally and in writing. The benefits of learning vocabulary and characteristics of teaching materials (vocabulary) for early childhood, as follows: (1) helping in conveying intent or communication; (2) the number of vocabulary words directly related to fluent reading; (3) assessment of a person's intelligence can be seen from the number of vocabulary possessed; and (4) supporting the development of verbal and spatial abilities (space/place). Teaching materials given to early childhood have characteristics, as follows: (1) simple grammar; (2) type and completeness of vocabulary need to be given because there are almost no language lessons outside the classroom; (3) vocabulary is limited, so it needs to be accompanied by a picture; (4) students hardly hear English around it, so repeated pronunciation exercises are needed; and (5) vocabulary used is not far away in daily life and simple for communication (Tomlinson, 2012). One component that determines the mastery of language skills is vocabulary. Using creative methods such as activities that use technology that is close to the lives of children such as mobile phones can also build students' interest in accessing teaching content (Kurniawan, M., & Tanone, 2016).

#### *Method of Playing CABE*

“Cari Berbisik” or searching and whispering stands for the word CABE. Playing CABE is one of the activities carried out by children, which involves the active role of children in learning to train the development of their English vocabulary. In this game, a secret box will be provided containing the vocabulary according to the current learning theme. The secret box contains a picture card in which there is a vocabulary so that it attracts and makes it easier for children to remember vocabulary to be played through playing CABE. The application of the method of playing CABE is to improve children's English vocabulary, as follows: (1) tools and materials prepared are secret boxes and paper (cards) containing vocabulary in English; (2) summary of secret boxes placed in front of the class show the box and the teacher explains how to play; (3)

how to play, as follow: a. The teacher greets the children and tells a little or talks about anything (this activity aims to arouse students' enthusiasm in order to attract children's interest and curiosity) b. The teacher explains the activities that will be carried out. c. The teacher prepares the media (secret box) to be used. d. Children are divided into 4 (four) groups consisting of 5 (five) children including the group leader. e. Each group will advance to the front of the class, according to the group order. f. The group that came forward, its position was lined up like a train. g. Secret box prepared by the teacher in front of the class, each group leader will search by putting his hand in the box containing a lot of English vocabulary. h. Vocabulary obtained will be whispered to group friends until their friends are the last. i. The child whose position is at the back will express vocabulary, designate pictures and convey to his classmates the English vocabulary obtained and the meaning conveyed into Indonesian. For example, “banana” means “pisang”.

Based on the searches carried out, the researchers found several research results related to the title raised. based on data analysis, hypothesis which states that by "using message learning strategies capable of improving children's English skills" this is proven and acceptable (Imam, 2016).

## 2 METHODS

The method used is classroom action research. This research was conducted at TK Marsudirini Sang Timur, Salatiga. The subjects in this study were 20 B1student aged 5-6 years old in in TK Marsudirini Sang Timur kindergarten, Salatiga.

The purpose of this study was to increase the English vocabulary of children aged 5-6 years through the method of playing CABA at Marsudirini Sang Timur Kindergarten Salatiga. This classroom action research is carried out by following the steps of the research procedure (İlin, G., Kutlu, Ö., & Kutluay, 2013) which includes four stages in the form of cycles, there are (1) action planning; (2) implementation of actions; (3) observation; and (4) reflection. Then for data collection techniques in this study in the form of observation and documentation.

Table 1. Aspects observed

No	Aspects
1	Understanding language: a. Communicate verbally, have the vocabulary, and recognize symbols for preparation for reading, writing, and counting b. Answer more complex question
2	Literacy a. Mention known symbols' letter b. Understand the relationship between sound and letter form

Table 2. Research Instrument

Aspect	Indicator	Item
Express language	Communicate verbally, have the vocabulary, and recognize symbols for preparation for reading, writing, and counting	Children can recognize 1-2 English vocabulary
		Children can recognize 3-5 English words

		Children can recognize 6-8 English vocabulary
		Children can recognize 9-10 English vocabulary
	Answer more complex questions	Children can mention 2 English vocabulary
		Children can mention 3 English vocabulary
		Children can mention 4 English vocabulary
		Children can mention 5 English vocabulary
Literacy	Mention symbols' letter	Children can mention the next 2 letters of English vocabulary
		Children can mention the first 3 letters of English vocabulary
		Children can mention the 4 front letters of the English vocabulary
		Children can mention the first 5 letters of English vocabulary
	Understand the relationship between sound and letter form	Children can recognize 1-2 sounds and letters in English vocabulary
		Children can recognize 3-5 sounds and letters in English vocabulary
		Children can recognize 6-8 sounds and letters in English vocabulary
		Children can recognize 9-10 sounds and letters in English vocabulary

The indicator of the success of the quality of the learning process is at least "good" with improving student behavior (e.g. aspects of motivation, learning, interest in learning, student activity, collaboration, etc.) and indicators of the success of classical learning outcomes of at least 75% of the number of students who reach the specified KKM. Data analysis of children was carried out in several stages calculating the percentage increase in English vocabulary of children through playing CABE in the following ways:

(1) Percentage of ability achievement

$(\text{score observations achieved}) / (\text{maximum score}) \times 100$

(2) Maximum score = maximum score x number of items of observation (4x4=16); (3) The percentage results are filled in the tabulation table in the column (%); (4) Comparing the results of the percentage of achievement in each child with the percentage of success in each specified cycle. Achievement status is obtained from a comparison between the maximum score of each cycle and the percentage of achievement of each child, with the following conditions: (1) S: Has reached, if the percentage of achievement  $\geq$  percentage of success, (2) B: Not reached if the percentage results  $\leq$  percentage of success.

### 3 RESULT AND DISCUSSION

Classroom action research was conducted at Marsudirini Sang Timur Kindergarten in Salatiga, located at Jl. Seruni 115 Salatiga. The location of the school is quite strategic, because it is close to the community, right in front of the highway and adjacent to other schools, it is an elementary school. St. Theresia Marsudirini 77. Marsudirini Sang Timur Kinddergarten has two B classes namely B1 and B2. The study was conducted in B1 class consist of 20 children, 9 men and 11 women. Before carrying out this classroom action research, the author observed the teaching learning process to determine the development of English vocabulary skills of children aged 5-6 years old.

#### *Pre-Action Data Description*

Before conducting the research, the researcher did an observation twice and conducted English learning to find out the mastery of English in children in group B1, on October 11, 2018. The research was conducted with the opening of learning by inviting children to sing with the "baby shark" movement. The songs are sung together twice because all children already know the song and the movements. After singing a song, the researcher submitted several vocabulary words in Indonesian to the children, for example, "grandma, grandfather, daddy, mama" and asked for their English. Only five children can answer because the vocabulary is often heard by children. Vocabulary submitted, can only be answered by 5 children from 20 children in group B1. The following is a graph of the initial reflection results that are used as pre-cycle data. From the results of the data, it is known that the child's ability to learn English language skills reaches 13%. From the data above, it can be said that the status of achievement for 20 children has not been achieved because it is still below 75%. Children did not focus on the process of learning English because researchers have not used methods and teaching aids or learning media. The next step, researchers need to discuss with the class teacher about the steps that need to be taken for further learning. Based on the results of the discussion, the researcher made several plans to take the next steps to improve the quality of English learning and increase English vocabulary. The researcher agreed to implement the first cycle of the first meeting on October 18, 2018.

Table 3. Assessment of the Pre-Cycle of Children's English Vocabulary Capabilities

No	Initial	Pre Action	
		Percentage of Achievement	Achievement Status
1	Yo	75%	S
2	Ag	25%	B
3	Al	0%	B
4	At	0%	B
5	Ax	0%	B
6	An	0%	B
7	Be	0%	B
8	Ne	62,5%	B
9	Cl	62,5%	B
10	Ib	37,5%	B
11	Fi	0%	B
12	Ze	0%	B
13	Le	0%	B
14	Ka	0%	B
15	Ti	0%	B
16	Ri	0%	B
17	Be	0%	B

18	Ce	0%	B
19	Fi	0%	B
20	No	0%	B
Average		13%	

The results showed that the ability of children to learn English language skills reaches 13%. From the data above, it can be said that the status of achievement for 20 children has not been achieved because it is still below 75%.

### *Cycle I Actions*

The stages in this study are planning, implementation, evaluation, and reflection. The action planning stage in the first cycle of the first meeting begins by making a learning plan. The researcher created an activity that has been carried out as follows: (1) Prepare a Daily Learning Program Plan (RPPH) which becomes a reference for writers in carrying out the teaching and learning process or conducting research; (2) Preparing learning media that will be used to support the learning process by playing CUBE uses a secret box containing 10 vocabulary words, pictures of fruits, and watching videos about fruit using a laptop. Learning is carried out in accordance with the chosen theme; fruit names in English; (3) Compiling an observation sheet about the activities of children's English vocabulary through playing CUBE which contains aspects of assessment includes children having vocabulary, answering questions that more complex, mentioning letter symbols that are known to understand the relationship between sound and letter form; and (4) Prepare a field note sheet that will be used to record each data or event that is not listed in the observation sheet, so the writer can obtain data objectively. The first meeting of the first cycle was held on Thursday, October 18, 2018, with a fruit theme. Before carrying out the game "CUBE", the author prepares all the tools and materials that will be used, to support the activity of playing "CUBE" in increasing children's English vocabulary.

The teacher explained and gave some vocabulary to be used in the game and prepared the media (secret box) and the image. Children were divided into 4 groups, consisting of 5 children including the group leader. Each group will advance to the front of the class, according to the group order. The group that came forward make position was lined up like a train. Media that has been prepared by the teacher in front of the class, each group leader will search by putting his hand in the box containing 10 English vocabulary words to be taught. Vocabulary obtained, will be whispered to his friend who is the most back. The child whose position is at the back, his job is to express vocabulary, point to pictures and convey to his friends, the English vocabulary obtained and its meaning in Indonesian.

In carrying out the game "CUBE" researchers are involved as facilitators so that researchers can control class conditions. The activity of playing "CUBE" that has been done at the first and second meetings has been obtained data related to the English vocabulary of children with category S (already reached) and B (not yet reached). The results of English vocabulary skills in kindergarten children B1 through playing "CUBE" at Marsudirini Sang Timur Kindergarten Salatiga in the first meeting are listed in the table below:



Table 4. Results of Children with Percentage of Success of First Meeting Cycle I

No	Initial	Cycle I Actions The first meeting	
		Percentage of Achievement	Achievement Status
1	Yo	0%	B
2	Ag	50%	B
3	Al	43,75%	B
4	At	25%	B
5	Ax	18,75%	B
6	An	43,75%	B
7	Be	50%	B
8	Ne	43,75%	B
9	Cl	68,75%	B
10	Ib	43,75%	B
11	Fi	43,75%	B
12	Ze	0%	B
13	Le	43,75%	B
14	Ka	37,5%	B
15	Ti	25%	B
16	Ri	25%	B
17	Be	25%	B
18	Ce	0%	B
19	Fi	18,75%	B
20	No	12,5%	B
Average		31%	

Based on the results of the first cycle of the first meeting of the percentage increase in children's English vocabulary, from the data, on the learning process and increasing mastery of children's English vocabulary, the results were 31%. From the table above shows that there has not been an increase from each child, because it has not reached the achievement target of 75%.

The second meeting in the first cycle was held on Thursday, October 25, 2018. Before carrying out the activities of playing CABA, the researchers first prepared all the tools and materials that would be used to support the implementation of the activities of playing CABA. At the second meeting of the first cycle, the media used was still using secret images and boxes. The media used as a link for the implementation of the second CABA play, which still uses the same theme; fruit. Results of English vocabulary skills in kindergarten children B1 through playing CABA in Marsudirini Sang Timur Kindergarten Salatiga at the second meeting are listed in the table below:

Table 5. Results of Children with Percentage of Success of Meeting II Cycle I

No	Initial	Cycle I Actions Second Meeting	
		Percentage of Achievement	Achievement Status
1	Yo	75%	S
2	Ag	75%	S
3	Al	75%	S
4	At	25%	B
5	Ax	50%	B
6	An	75%	S
7	Be	43,75%	B
8	Ne	100%	S
9	Cl	100%	S
10	Ib	100%	S

11	Fi	75%	S
12	Ze	43,75%	B
13	Le	75%	S
14	Ka	50%	B
15	Ti	100%	S
16	Ri	75%	S
17	Be	0%	B
18	Ce	50%	B
19	Fi	50%	B
20	No	75%	S
Average		66%	

Based on the results of the second cycle of action in the second meeting, the percentage increase in children's English vocabulary, from the data, the learning process and the increase in children's English vocabulary mastery had an increase from the first cycle of the first meeting, resulting in 66% of the second meeting. The data above shows that there has not been an increase from each child, because it has not reached the achievement target of 75%.

Reflection in this study is evaluation or assessment in learning in action in cycle I. Based on observations and analysis in cycle I, there were several problems encountered in learning cycle I, including the following: (1) Increased English vocabulary of children in one class not evenly distributed, because there are still children who have higher ability scores and those with low ability scores (2) There are vocabulary that is easy for children to remember and there is a vocabulary that is difficult for children to remember (3) The media used is less varied, so the child's curiosity less enthusiastic in playing CUBE activities (4) While playing CUBE there are still children who tend to play together with friends, for example when each group leader comes forward to take vocabulary, the other child goes to another group and interrupts friends in other groups. The implementation of the first cycle of action is known that there are many shortcomings, so it is necessary to improve actions so that there can be a significant increase in children's vocabulary skills in English in the cycle II.

### *Cycle II Actions*

The implementation of the action in cycle II was carried out in only one meeting and the researcher prepared in advance the Daily Learning Program Plan (RPPH) as a reference in carrying out the teaching-learning process or activities of children's English vocabulary skills through the method of playing "CUBE". The researcher also carried out other activities at the stage of the implementation of the second cycle of action, namely planning improvements to some of the problems encountered during the implementation of the cycle I actions. The stages in this action research are the stages of planning, implementation, evaluation, and reflection. Improvements were made in this second cycle, including researchers trying to make a new rule in playing the game "CUBE", maximizing action that is more interacting with children, giving motivation and enthusiasm or strengthening, spurring the spirit and attention of children, researchers also change a media interesting in supporting the game "CUBE" by changing the appearance of the outer box and the image that will be used.

The results of the English vocabulary skills of children aged 5-6 years in group B1 through the method of playing "CUBE" in the second cycle meeting are listed in the table below:

Table 6. Results of Children with Percentage of Success in Cycle II

No	Initial	Cycle II Actions	
		Percentage of Achievement	Achievement Status
1	Yo	93,75%	S
2	Ag	100%	S
3	Al	93,75%	S
4	At	75%	S
5	Ax	75%	S
6	An	93,75%	S
7	Be	0%	B
8	Ne	100%	S
9	Cl	100%	S
10	Ib	100%	S
11	Fi	75%	S
12	Ze	56,25%	B
13	Le	93,75%	S
14	Ka	93,75%	S
15	Ti	75%	S
16	Ri	68,75%	B
17	Be	0%	B
18	Ce	56,25%	B
19	Fi	50%	B
20	No	100%	S
Average		75%	

Based on the data above, the results of the assessment in the second cycle action children reached 75%. This proved that in this study it was stated that it succeeded in increasing children's English vocabulary because it was able to reach the achievement target of 75%. From the results of this study, it can be concluded that the English vocabulary abilities of children aged 5-6 years old in Marsudirini Sang Timur Kindergarten can be increased through the method of playing CAFE.

The results of the evaluation of all activities about increasing the English vocabulary of children aged 5-6 years old in group B1 through the method of playing CAFE have had very satisfying results which is 75%. All children participated in CAFE playing activities very well, enthusiastically and enthusiastically from beginning to end. When the improvements made in cycle II can be seen that the improvement of children's English vocabulary skills through the method of playing CAFE has increased very significantly and has reached the level of success expected and determined, which is increase from 66% to 75%. The results of observations on the action of cycle II, about increasing the English vocabulary skills of children aged 5-6 years in group B1 through the method of playing CAFE have shown that the results of children who entered the criteria have reached 75%, so the activity of increasing English vocabulary skills children through the method of playing CAFE are stopped. In line with research (Kurniawan & Tanone, 2016), vocabulary learning is important learning to develop children's language skills. Especially in introducing vocabulary, there are various methods that are suitable for the purpose of attracting the attention of students to engage with various methods and media to support them by playing CAFE.

#### 4 CONCLUSION

The results show that the method of playing CABE increase the English vocabulary of children aged 5-6 years old in Marsudirini Sang Timur Kindergarten Salatiga. This method is applied by searching, whispering and expressing the English vocabulary and its meaning in Indonesian. The average percentage increase in English vocabulary from pre-cycle to cycle II. Before the action obtained, the results show 13%. The first cycle of the first meeting 31%, the second cycle of the second meeting 66%, and the second cycle reached 75 %.

#### 5 REFERENCES

- Bawono, Y. (2017). Kemampuan berbahasa pada anak prasekolah : Sebuah kajian pustaka. *Prosiding Temu Ilmiah X Ikatan Psikologi Perkembangan Indonesia*.
- Chamot, A. U. (1987). *Toward a Functional ESL Curriculum in the Elementary School*, in Long, Michael H. & Richards, Jack C. (eds.) *Methodology in TESOL*. New York: Newburry House Publishers.
- Fromkin, V., Rodman, R., & H., & N. (1990). *An Intoduction to Language*. New York, NY: Avon Books.
- İlin, G., Kutlu, Ö., & Kutluay, A. (2013). An Action Research: Using Videos for Teaching Grammar in an ESP Class. *Procedia - Social and Behavioral Sciences*. <https://doi.org/https://doi.org/10.1016/j.sbspro.2013.01.065>
- Imam, I. (2016). Meningkatkan Kemampuan Menyimak Siswa Kelas I Melalui Teknik Permainan Pesan Berantai Pada Pembelajaran Bahasa Indonesia. *PEDAGOGIA: Jurnal Pendidikan*. <https://doi.org/https://doi.org/10.21070/pedagogia.v3i2.62>
- Khairani, A. I. (2016). *Pendidikan Bahasa Inggris Untuk Anak Usia Dini*. Digilib.Unimed.Ac.Id.
- Kurniawan, M., & Tanone, R. (2016). Mobile learning in TESOL: A golden bridge for enhancement of grammar awareness and vocabulary mastery? *Asian EFL Journal*.
- Kurniawan, M., & Tanone, R. (2016). Mobile learning in TESOL: A golden bridge for enhancement of grammar awareness and vocabulary mastery? *Asian EFL Journal*.
- Matondang, E. M. (2005). *Menumbuhkan Minat Belajar Bahasa Inggris Anak Usia Dini melalui Lagu dan Gerak*. Jakarta: Jurnal Pendidikan Penabur.
- Montessori, M. (1991). *The discovery of the Child*. New York: Ballatine Book.
- Muflihah, M. (2019). Pentingnya Peran BAHASA dalam Pendidikan Usia Dini (PAUD). *ThufuLA: Jurnal Inovasi Pendidikan Guru Raudhatul Athfal*. <https://doi.org/https://doi.org/10.21043/thufula.v2i2.4642>
- Mustafa, B. (2007). *Pendidikan Anak Usia Dini*.
- Musthafa, B. (2010). *Teaching English to Young Learners in Indonesia : Essential Requirements*. *Educationist*.
- Nugrahani, D., Egar, N., Sumardiyani, L., & Wardoyo, S. L. (2017). *PENDIDIKAN ANAK USIA DINI BERBASIS LIFE SKILLS. E-DIMAS*. <https://doi.org/https://doi.org/10.26877/e-dimas.v2i1.102>
- Nurjanah, N, Dwiastuty, Nina, Susilawati, S. (2015). Mengenalkan Model Pengajaran Edutainment Mengajarkan Bahasa Inggris Pada Anak–Anak Usia Dini. Faktor. *Jurnal Ilmiah Kependidikan*.
- Nurmadiyah, N. (2018). Strategi Pembelajaran Anak Usia Dini. *Al-Afkar : Jurnal Keislaman & Peradaban*. <https://doi.org/https://doi.org/10.28944/afkar.v3i1.101>

- Nurvitasari, M. D. (2016). *Penerapan Aspek Perkembangan Anak Usia Dini Dalam Media Macca (Balok Susun Interaktif)*.
- O'Grady, W. (2008). Innateness, universal grammar, and emergentism. *Lingua*.  
<https://doi.org/https://doi.org/10.1016/j.lingua.2007.03.005>
- Santrock, J. (n.d.). *Adolescence* (Fifth Edit). New York, NY: McGrawHill Company Inc.
- Sophya, I. V. (2019). Desain Pembelajaran BAHasa Inggris untuk Pendidikan Anak Usia Dini. *ThufuLA: Jurnal Inovasi Pendidikan Guru Raudhatul Athfal*.  
<https://doi.org/https://doi.org/10.21043/thufula.v2i2.4639>
- Tomlinson, B. (2012). *Materials development for language learning and languange teaching*.  
<https://doi.org/https://doi.org/10.1017/S0261444811000528>
- Vygotsky, L. S. (1986). *Thought and Language*. Cambridge, M.A.: The MIT Press.
- Wiratno, T., & Santosa, R. (2003). *Bahasa, Fungsi Bahasa, dan Konteks Sosial. Bahasa, Fungsi Bahasa, Dan Konteks Sosial*.
- Yamin, M. (2010). *Panduan Pendidikan Anak Usia Dini*. Jakarta: Gaung Persada Pers.
- Zaini, A. (2015). Bermain sebagai metode pembelajaran bagi anak usia dini. *ThufuLA: Jurnal Inovasi Pendidikan Guru Raudhatul Athfal*.



## Implementation of Mathematics Learning Through Media Arrange Smart Dice to Improve Counting Ability in Early Childhood

Yelva Nofriyanti<sup>1</sup>  
Heni Meila Sari<sup>2</sup>  
*Universitas Negeri Padang*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.12>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** The implementation of mathematics learning in some kindergartens in the city of Padang has not developed optimally. While in Rahmah Abadi Kindergarten that learning mathematics, especially numeracy has been well developed. The purpose of this study was to describe the implementation of mathematical learning using smart dice media for children's numeracy in Rahmah Abadi Kindergarten. The research method used was descriptive approach qualitative. Data collection techniques used are observation, interviews, and documentation. The results showed that the implementation of mathematics learning using smart dice stacking media in kindergarten Rahmah Abadi was a child who was able to recognize numbers, count numbers 1-10 and simple summation.

**Keywords:** Media Arrange Smart Dice, Counting Ability

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media): 2503-0566**  
**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup> Corresponding Author:  
Yelva Nofriyanti  
Early Childhood Education Programs, Universitas Negeri Padang  
Jl. Prof. Dr. Hamka, Air Tawar Barat, Padang  
Email: yelvanofriyanti151195@gmail.com

## 1 INTRODUCTION

Education is a very important requirement for humans because education plays an important role in improving human resources and needs to be given since an early age. One of the educations proposed to develop the potential of children from an early age is early childhood education. The purpose of learning in kindergarten is to improve children's creativity and encourage them to get to know various kinds of knowledge. In kindergarten there are several aspects that need to be developed, namely aspects of the development of religious and moral values, aspects of cognitive development, aspects of motoric physical development, aspects of language development and aspects of social emotional development.

Every aspect of child development supports each other. One aspect of its development is the aspect of cognitive development. Cognitive abilities consist of general knowledge and science, concepts of form, color, size, pattern and mathematics. One aspect of cognitive development is mathematics learning. Learning mathematics for early childhood is designed so that children are able to master the mathematical skills needed in everyday life. Mathematics is a part of cognitive that is very important for the development of children's intelligence. According to Triharso (2013, p. 46), Mathematics is something that is related to abstract ideas / concepts arranged hierarchically through deductive reasoning.

One of the activities to improve the ability to count children through dice that is done by the teacher in class is by playing dice alternately. The game is done by throwing the dice, then the child is told to count the number of symbols on the dice, then the child is asked to show numbers and write them on the board write. But when the game takes place, there are many children who pay less attention to the activities that take place, some children are only joking and busy with their respective activities. This is due to the small size of the dice so that when the child counts the number of points on the dice it is not visible to other friends. In addition, the activities carried out look boring for children.

Dice games are activities that will be applied to improve children's numeracy skills. Dice is a small object in the shape of a cube and is used to produce numbers or random symbols (E Sovia, 2015). Dice is often used in children's games and is generally used in pairs. During this time the dice that are commonly used are small cuboid objects that are used to produce numbers. Usually on each side of the dice there are symbols in the form of numbers or are marked in such a way that when the dice is thrown on a flat plane, one side will show a certain number. The small size of the dice and the symbols in the dice cause a lack of attractiveness in calculating the child, but if the dice are made in large sizes, and the point symbol is replaced with different images and the learning method accompanied by music will increase interest children in learning using media dice.

Therefore, the author tries to modify the dice into dice that can develop children's numeracy skills. The researcher modifies a media that can improve children's numerical abilities in the form of Arranging Smart Dice so that children are easy to recognize the concept of numbers with objects. Media Arrangement Smart dice consists of many parts, namely a dice, a picture card, and small dice arranged on a pole. The way to use this media is when the teacher turns on the music, the dice are given by the child to a friend next to him. When the music is stopped, the last child holding the dice will throw the dice, and the child is asked to count the symbols on the dice. After that, the child is asked to take a picture in the box. Next the child will count how many pictures are on the card. Then the child takes a small dice and arranges it on the pole according to the

number of objects in the picture. The child matches the number of images on the card by taking the dice according to the number on the card, then the child arranges a small dice on the pole.

Based on the results of interviews of researchers with teachers in the Lubuk Begalung Kindergarten in Padang, it was found that there were 12 children in class B1 where understanding the concept of counting children was still lacking, such as numbering numbers, recognizing the concept of numbers with objects, connecting or pairing numbers with objects. Children have not been able to connect between concepts with symbol numbers, children are also often reversed in the mention and writing of numerical names, children can only mention the concept of numbers without knowing the symbol of the number.

According to the analysis, the author needs a learning media for teachers and children to carry out the learning process at school in improving children's numeracy skills. Based on that, the author develops learning media that are herded in the process of learning activities. The author gave the title of this research with "Implementation of Mathematics Learning Through Media Arranging Smart Dice on the Ability of Counting Children in Kindergarten Rahmah Abadi Lubuk Begalung Padang".

### *Early Childhood Education Concept*

Early age is the most important time in the life span of a child. Currently the growth of the brain is experiencing very rapid development, as well as its physical development. Early childhood is a figure of an individual who is undergoing a process of rapid development and fundamental to the next life (Sujiono, 2008, p. 6). Early childhood is in the age range of 0-8 years. The process of growth and development in various aspects is experiencing a rapid period in the development range of human life.

According to Suryana (2013, p. 25) states that early childhood is the most important and fundamental initial period throughout the span of growth and development of human life. At this time, it was marked by various fundamental important periods in the lives of the next child until the end of their development period. Early childhood is a person who has a very "unique" character (Mulyani, 2016, p. 19). The uniqueness of the character makes adults feel anxious, amazed and entertained if they see their funny and laughing behavior. No fewer parents make their children entertainment, after undergoing a very dense and tiring routine.

The characteristics of early childhood are unique, egocentric, active and energetic, feeling strong and enthusiastic about many things, explorative and adventurous, spontaneous, happy, and rich in fantasy, still easily frustrated, still not consider and do something, short attention, passionate to learn and learn a lot from experience and increasingly show interest in friends (Sudarna, 2014, pp. 16–17). The characteristics of early childhood are to think concretely, realism, egocentricity, a tendency to think simply and not easily accept something that is plural, animistic, sentimental, and early childhood can be said to have imagination very rich (Mashar, 2011, pp. 14–15) .

Early Childhood Education is an effort aimed at children from birth to the age of six through the provision of educational stimuli so that children grow and develop well so that they can carry out each developmental task in accordance with the stages of development. Early childhood education is a coaching effort aimed at children from birth to the age of six years which is carried out through the provision of educational stimuli to help growth and physical and spiritual development so that children have readiness in entering further education (Trianto, 2011, p. 24). The goal of early childhood education is to provide stimulation or stimulation for the development of children's potential to become human believers and fear the Almighty God, noble, healthy, knowledgeable,



capable, critical, creative, innovative, independent, confident, and a democratic and responsible citizen (Ulfah., 2013, pp. 19–20). The purpose of early childhood education is to develop knowledge and understanding of know-how and teachers, as well as those related to education and development in early childhood (Susanto, 2017, p. 23).

### *Mathematics in Early Childhood Learning Activities*

One aspect of cognitive development is learning mathematics. Learning mathematics for early childhood is designed so that children can master the mathematical skills needed in everyday life. Mathematics is a part of cognitive that is very important for the development of children's intelligence. Mathematics is something related to ideas / abstract concepts that are arranged hierarchically through deductive reasoning (Triharso, 2013). Mathematics in PAUD is an activity to learn about mathematical concepts through playing activities in daily life and is scientific in nature. The mathematical concept for early childhood is divided into several concepts that are appropriate for the development of children aged din as follows:

1. Are the items the same or different? different items are easier to match.
  - a. easier
  - b. harder
2. Are there many items that are suitable or only a few?
  - a. Easier (five or fewer items)
  - b. More difficult (more than five items)
3. Are there the same numbers in each set?
  - a. Easier (even set)
  - b. More difficult (not enough, or too much in one set)
4. Does the set "join or not join?
  - a. Joining is easier
  - b. Not joining is more difficult (Smith, 2009)

Mathematics is an important part of learning for all children in the early years and good basic preparation in the field of mathematics is an important life skill. As well as counting, this helps skills such as solving problems, solving and using forms and measuring and developing their own spatial awareness. This helps them to correct, make and evaluate patterns, which are important for early problem-solving. Introducing mathematics to children from an early age helps develop their understanding of all elements of problem solving and punishment in various contexts. Practitioners need to provide opportunities for children to develop their skills and knowledge to improve their competence and confidence in using.

Math and Play words are not available at all. For many of us, mathematics is tormenting, something we must do, and something we cannot understand and cannot do. Playing on the other side is something we like. Young children learn mathematics all the time through a variety of playing experiences. Since they argue, babies are approved by sensory impressions. The special form is very important: the baby has just finished the arrangement of the shape of the human face. At home, in groups of parents and toddlers, and children, children have many opportunities to enjoy and learn Mathematics through Play. "Playing is an effective vehicle for developing mathematical concepts and developing positive attitudes towards mathematics ... Adults in pre-school environments must be sponsored by informal mathematical experiences that children have acquired in their home environment."

Mathematics is all about solving and using shapes, space, size, and numbers to solve everyday problems such as how much masking tape is used to wrap parcels or the number of red balloons that need to be bought enough for all holiday party children. Helping children enjoy Mathematics

may be one of the most important things adults can do so children understand mathematical ways to find things and solve problems. When something has meaning, for children, they will learn it - even children choosing two years will ask for number 2 after seeing and talking about their birthday cards. Children often say 'that's my number' they compile see numbers two, three, four or five - because their age (they mean) is special to them. Likewise, the compilation of children acknowledged that they had the same number of raisins as other children, they began to apply their knowledge of equality.

The basic concepts of mathematics and numbers in early childhood education emphasize the basis for learning mathematical concepts as the initial foundation. Mathematics is given and several activities provide more comfort to children so that children can master mathematics by enjoying it. In addition, with comfort in the process of introducing mathematics, it can train and increase children's self-confidence. Children who learn comfortably math concepts and numbers and will make them believe that he is "good at math." If a child is not familiar with mathematical concepts and numbers at an early age, he will lack confidence in his abilities and may become doubtful when mathematical concepts which is more difficult later. When this happens, he may fail to believe that he is "not good in mathematics" and will automatically risk be starting failure by itself.

Children are using early math skills throughout their daily routines and activities. This is good news as these skills are important for being ready for school. But early math doesn't mean taking out the calculator during playtime. Even before they start school, most children develop an understanding of the addition and subtraction through everyday interactions. For example, Thomas has two cars; Joseph wants one. After Thomas shares one, he sees that he has one car left (Bowman, Donovan, & Burns, 2001, p. 201). Other types of introduced routines through daily routines you share with your child - you go up or down, for example. Informal activities like this one give children a jump on the formal math instruction that starts in school.

Early mathematical concepts and skills for the first-grade curriculum build on include:

- Understanding size, shape, and patterns
- Ability to count verbally (first forward, then backward)
- Recognizing numerals
- Identifying more and less of a quantity
- Understanding one-to-one correspondence (i.e., matching sets, or knowing which group has four and which has five) (Bowman et al., 2001)

### *Calculate*

One ability that is very important for children that needs to be developed in equipping the lives of children in the future and now is to provide provision for numeracy skills. Counting is not only related to cognitive abilities, but also mental, social and emotional readiness. Therefore, in implementing learning to count, it must be done in an interesting, varied and fun way.

Counting is a way of learning about the name of the number to identify the number of objects in accordance with the ability of reason in summing them up (Sujiono, 2008). Counting is a part of mathematics (Suryana, 2013). The ability to count is needed to develop children's knowledge about numbers, numbers, addition, and subtraction. In addition, counting is also the basis for the development of children's mathematical abilities to attend further education.

Calculations are the ability to count to 100 is a generally accepted standard of assessment in many kindergarten schools, parents, principals, and some teachers use oral calculations in more advanced ways of thinking the following:

- Read numbers, for example, "This is' three".
- Writing numbers, visual-motor assignments
- Match numbers to a set, or the cardinality principle, for example, count 5 seeds and answer a question, "How much?"
- Has an intuitive feel for how big the numbers are, for example, "Are 15 closers to 10 or 50?"
- Able to make reasonable guesses using numbers, for example, "small bottles cannot hold more than 0-100 carp crackers."
- Look at the relationships of parts by using vision or abstract thinking (without counting), " (Smith, 2009)

There are four step counting in early childhood, pre-counting, one-to-one counting, and counting from one to solve number problems (Newzealand, 2013). Pre-counting is an understanding of the concepts more, less and the same and an appreciation of how these are related. Children at this stage develop these concepts by comparison and no counting is involved. This is important because these concepts lay the foundation for children to later develop an understanding of the many ways that numbers are related to each other; for example, five is two more than three, and one less than six. Children often have some concept of more; this needs to be extended and refined. Less is a more difficult concept and understanding can be developed by pairing the terms less and more to help develop an understanding of the relationship between the two (Newzealand, 2013).

One-to-one counting is developing children's ability to count. Two skills are needed: • the ability to say the standard list of counting words in order • the ability to match each spoken number with one and only one object. Counting is important because the meaning attached to counting is the key conceptual idea on which all other number concepts are based. Children have often learned the counting sequence as a rote procedure. They need to learn the meaning of counting by using counting skills in a variety of meaningful situations. Start with counting small numbers, up to five objects. Once children can count reliably their knowledge of the number sequence can be extended to count both forwards and backward, from any given number (Newzealand, 2013).

The counting sets are developing children's understanding of cardinality. This means that children understand when you count the items in a set, the last number counted tells the size of that set. They also know that the number in a set will remain constant if no items are added to the set or taken from the set. Cardinality is important because it allows numbers to be used to describe and compare sets. This allows sets of items to be combined (addition) and separated (subtraction). Children develop an understanding of cardinality by counting a variety of objects into different sized sets. Counting the same set several times and in a different order develops children's understanding that the number in a set stays the same unless items are added or taken away. The ability to recognize and write numerals are important skills to develop alongside counting (Newzealand, 2013).

Counting from one to solve number problems. The counting objects to solve addition and subtraction problems. Children will need to use materials such as buttons, plastic animals, or whatever they may be playing with, to keep track of their counting. For example, children will combine 3 and 2 by first counting out "1,2,3" for the first set, then "1,2" for the second set, then physically

join the sets and counting them all “1,2,3,4,5.” Once children understand cardinality and the forward and backward number sequences they can count on or back to solve number problems. For example, 5 and 3 can be added by counting on from the largest number: “5.....6,7,8”. Using counting to solve number problems shows children that counting can be used meaningfully in a variety of situations. This helps them understand and appreciate counting as more than a rote procedure. Using counting to combine and separate groups of objects develop children's understanding of the operations of addition and subtraction. Children come to understand that when groups are combined the count gets bigger, and when groups are separated the count gets smaller. Encourage children to count a wide variety of concrete materials to solve number problems. Start by joining small sets, with a total of five and then ten items. Encourage children to count on to solve number problems by taking the focus away from counting the items in the first set. Use comments which encourage children to count on from the largest number (Newzealand, 2013).

The purpose of this study was to find out the implementation of learning mathematics through multimedia smart dice stacking for numeracy skills of children in Rahmah Abadi Kindergarten, Begalung Sub-district, Padang.

## 2 METHODS

This type of research is descriptive using a qualitative approach. Qualitative research is research that is based on the philosophy of postpositivism which is used to examine natural object conditions, where the researcher is a key instrument, the technique of data collection is triangulated (combined), data analysis is inductive / qualitative and the results of qualitative research emphasize the meaning rather than generalization (Sugiyono, 2016, p. 9). Descriptive research is data collection to provide an overview or affirmation of a concept or symptom as well as answering questions related to a research subject through surveys, questionnaires, interviews or observations (Darmadi, 2014, p. 5).

This research was conducted in the Rahmah Abadi Lubuk Begalung Kindergarten Park, Padang City, West Sumatra. The research instrument is a tool used to measure research variables. Research instrument is a tool or facility used by researchers in collecting data so that work is easier, and the results are better, in the sense of being meticulous, complete, and systematic so that it is easier processed. Instruments used to collect data in research, namely observation format, interview format, and documentation format (Arikunto, 2014, p. 203).

The data source of this study were research subjects and research informants. The subjects of this study were teachers and children in Rahmah Abadi Kindergarten and research informants were teachers and principals as leaders and policy makers in the Rahmah Abadi Kindergarten.

The validity technique of the data in this study is to use triangulation and use reference material. Triangulation in testing credibility is defined as checking data from various sources and various times (Sugiyono, 2016). Using reference materials, there are supporters to prove the data that has been found by the researcher. Data on the interview results need to be supported by the existence of interviews and documentation such as photographs.

## 3 RESULT AND DISCUSSION

Recapitulation of Post-Test Results Development of Counting Ability of Children in Experimental Classes using smart dice stacking media and control classes using numeric cards.

Based on the research, the experimental class with 15 children had the highest score of 100 and the lowest value was 68.75. From the value of the experimental class, children obtained an overall value of 1200, median 78.87 with an average value of 80 standard deviations 7.9 and the variance value 63.52.

While the control class with 15 children had the highest score of 87.5 and the lowest score was 62.5. From the value of this control class, the overall number is 1106.25, median 73.5 with an average value of 73.75 standard deviations 6.92 and the variance value is 47.88.

### 3.1 Pre-test Data Analysis

#### 3.1.1 Normality Test

Based on the normality test of the experimental class and the control class, the prices of  $L_0$  and  $L_t$  were obtained at a real level of 0.05 for  $N = 15$  as in the following table:

Table 1. Calculation Results of Liliefors Pre-test Test Experiments and Control Classes

No	Group	N	A	$L_0$	$L_t$	Explanation
1	Eksperimen	15	0,05	0,13	0,220	Normal
2	Kontrol	15	0,05	0,1943	0,220	Normal

Thus, the value of the experimental class comes from data that is normally distributed. For the control class,  $L_{count}$  0.1943 is smaller than  $L_{table}$  0.220 to 0.05. This means that the control class data comes from data that is normally distributed.

#### Homogeneity Test

The second requirement test is homogeneity testing using the Barlett test.

#### Hypothesis Test

Hypothesis testing uses t-test. From the results of hypothesis testing using the t-test the following results are obtained:

Table 2. Pre-test Calculation Results Test with t-test:

No	Group	N	Average	$t_{count}$	$t_{tabel}$ $\alpha$ 0,05	Decision
1	Experiment	15	59,16	0,448	2.04841	Accepted $H_0$
2	Control	15	57,91			

In the table df for the real level  $\alpha = 0.05$  (5%) the value of t table = 2.04841 is obtained, so the t-count is smaller than t table ( $0.448 < 2.04841$ ). Then it can be said that  $H_a$  hypothesis was rejected or  $H_0$  was accepted

### 3.2 Post-test Data Analysis

#### 3.2.1 Normality Test

Based on the normality test of the experimental class and the control class, the  $L_0$  and  $L_t$  prices were obtained at the 0.05 significance level for  $N = 15$  as in the following table:

Table 3. Calculation Results of Liliefors Post-test for Experimental Classes and Control Classes

No	Group	N	A	$L_0$	$L_t$	Explanation
1	Experiment	15	0,05	0,1924	0,220	Normal
2	Control	15	0,05	0,1642	0,220	Normal

Based on the table the experimental class value of L count 0.1924 is smaller than L table 0.220 for  $\alpha = 0.05$ . Thus, the value of the experimental class comes from data that is normally distributed. For the control class, L count 0.1642 is smaller than L table 0.220 for  $\alpha = 0.05$ . This means that the control class data comes from data that is normally distributed.

#### Homogeneity Test

If chi squared counts < chi squared table means data comes from a homogeneous group.

Table 4. Homogeneity Test Results of Experimental Classes and Control Classes

Group	A	$\chi^2_{\text{value}}$	$\chi^2_{\text{table}}$	Conclusion
Experiment	0,05	0,378	3,841	Homogen
Control				

Based on the table the count of the experimental class and the control class is smaller than the table (value < table), meaning the experimental class and the control class have homogeneous variances.

#### Hypothesis Test

The following will be described processing data by t-test.

Table 5. Results of Experimental and Control Class Post-test Value Calculation

Aspect	Experiment Class	Control Class
N	15	15
$\bar{X}$	80	73,75
$SD^2$	63,52	47,88

Based on the table above with  $dk (N_1-1) + (N_2-1) = 28$ . In the df table for the real level  $\alpha 0.05$  the price is t table 2.04841, so  $t_{\text{value}}$  is greater than  $t_{t(\text{table})}$ .

After calculating the pre-test and post-test values of the experimental and control classes, a comparison will be made between the pre-test and post-test values.

Table 6. Comparison of Results of Calculation of Pre-test Values and Post-test Values

Variabel	<i>Pre-test</i>		<i>Post-test</i>	
	Experiment	Control	Experiment	Control
Highest Score	68,75	68,75	80	73,75
Lowest Score	43,75	37,5	68,75	62,5
Average	59,16	57,91	80	73,75

So, it can be concluded that the development of the ability to count influential children with smart dice stacking media compared to numeric cards, can be seen from the value of the average achieved by the child, namely the experimental class 80 while the control 73.75.

The findings obtained from observations, interviews and documentation that the researchers did about the ability of children to recognize the concept of numbers and counting, which is known that children's numeracy capacity has not developed, either when the child counts the numbers using fingers or props that support children's numeracy.

Based on the findings, interviews, and documentation regarding the implementation of learning through the media of smart dice stacking on numeracy skills, children look enthusiastic in using this media. This was seen when demonstrating the children's media was so excited. Media Arrange smart dice consists of many parts, namely a dice, picture cards, and small dice arranged on a pole. The implementation of this media is when the teacher turns on the music, the dice are given by the child to a friend next to him. When the music is stopped, the last child holding the dice will throw the dice, and the child is asked to count the symbols on the dice. After that, the child is asked to take a picture in the box. Next the child will count how many pictures are on the card. Then the child takes a small dice according to the picture of the object on the card. Furthermore, the number of objects is matched with the number of dice that the child has taken and arranged on the pole.

Counting with dice games makes children active and does not make children bored because children are directly involved in the game. Through dice, children's learning activities are more fun so that the child does not feel that he is learning. This is in line with the opinion of Appiquantum dice games can be done in various ways and can be used to teach various kinds of mathematical concepts such as recognizing numbers, addition, subtraction, counting, multiplication concepts, volume concepts (E Sovia, 2015).

Everyone from various ages likes games that are fun and motivating. The game gives students the opportunity to discuss the concepts of fundamental numbers, such as the sequence of calculations, one-to-one correspondence, and calculation strategies. Involving math games can also encourage students to explore numerical combinations, place values, patterns, and other important mathematical concepts. Furthermore, they provide opportunities for students to deepen their mathematical understanding and punishment. The teacher must provide different opportunities for students to play games, then let mathematical ideas emerge with students who pay attention to new patterns, relationships, and strategies (Rutherford, 2015). Games are important tools for learning in elementary school math classes:

- Playing games encourages thinking math strategies composing students find different strategies to solve problems and deepen their understanding of numbers.
- When played repeatedly, this game supports the development of students' computing abilities.

- Games provide opportunities for practice, support without the need for teachers to provide challenges. The teacher can then issue or assess students and work with individuals or small groups of students.
- Games have the potential to enable students to develop familiarity with numerical systems and with "benchmark figures" (such as the 10s, 100s, and 1000s) and engage in computational practices, building a deeper understanding of operations.
- The game supports school relationships and parents. Parents can learn about learning their children's mathematics by playing games with them at home (Rutherford, 2015).

The findings of observations, interviews and documentation of the implementation of mathematics learning through smart dice stacking media that have been carried out have been well implemented seen in joint circular activities and direct practices applied by the students. Guidelines for implementing learning are usually practiced directly by classroom teachers and accompanying teachers in activity positions learn together in a circle so that it is easier for children to focus on learning.

Based on the findings and interviews about the children who took part in the learning process, it was done well, namely by direct practice carried out in the process of learning the child was able to use learning media without help from the teacher and not only that, when the child took turns using the media patiently waiting for the queue . But in terms of time, the implementation of learning does not work according to the proper procedures because there are many children and limited time so that not all children can turn in using the media.



Figure 1. Researchers explain the procedures for using media



Figure 2. Children match the number of images on the card and match them to the number of dice, then arrange them on a pole



The dice media can be used as a multifunctional media in the calculation game (Rohmah & Waluyo, 2014). Media dice is used as a game media because playing is the need of every child. The principle of learning media is beneficial for help students learn to understand something which may be difficult or complicated or to be simplified something (Suyanto, 2003, p. 161).

Based on the results of the research during the learning activities, this media is very effective to use at school because it meets the requirements of a learning media. The type of media that is designed is a smart stacking media that can develop children's numeracy skills. This media is a medium that is durable and made at affordable prices because it is made using wood and paper and can be used by all parties whether at school or at home. In line with the opinion of Arsyad (2013) explained that the criteria for learning media are in accordance with the objectives, practical, flexible, enduring, capable and skilled in using and grouping targets (Arsyad, 2013).

Based on the trials that have been conducted, there are several advantages and disadvantages. The advantages of smart dice stacking media are as follows: 1). Smart dice stacking media attracts the attention of children because the learning media uses dice that are illustrated and accompanied by music. 2). The child feels challenged when trying out the media to arrange smart dice so that the child is optimistic about counting. 3). Smart dice stacking media can train children to recognize the concept of color

Besides having the advantages of smart dice stacking media, it also has disadvantages, namely in making smart dice stacking media, it is easy, but it requires expertise and knowledge in making it.

Smart dice stacking media as one of the medias in teaching and learning activities is very useful in developing children's numeracy skills. This media consists of various features including, picture and number cards and small dice arranged on a pole. So that through the card the child can count the number of objects and be able to mention numbers. Numeracy is the basis of developing mathematical abilities that must be developed early (Oktriyani, 2017, p. 83).

One of the development activities of counting is one of the children calculates the number of objects using smart dice stacking media. The use of smart dice stacking media can make it easier for children to take part in learning activities and foster children's interest, this is because the use of smart dice stacking media can be alternated and accompanied by children's songs. In line with what was stated Arsyad (2013) that the use of learning media in the learning process can increase new desires and interests and bring influence to children.

Learning media can facilitate the learning process because learning will attract children's attention so that it can foster children's learning motivation and learning methods will be more varied. Kustandi (2013, p. 25) suggest the benefits of learning media in student learning processes, namely as follows: 1) Learning will become more attractive to students' attention, 2) Learning materials will be more meaningful, 3) Methods learning will be more varied.

Naturally, children always want to know everything. They explore concepts when interacting with their environment for example, start learning math concepts as they play and build towers using beams. When children build blocks, they sort beams based on size and color, spatial and develop reasoning skills (Harris & Petersen, 2017). Reasoning skills is meant when determining which form can be placed on top or forming a certain object according to their wishes, for example forming a plane or robot.

Preschoolers count or compare the objects they play and learn patterns and shapes. Children must interact with adults to learn the mathematical concepts they drive. Parents and teachers can provide mathematical concepts into their daily routines. For example, while building towers or reading books, parents can show and use different sizes and shapes. Daily routines and done while playing will be easier to teach mathematical concepts in pre-school children, including the concept of counting. The ability to count in early childhood can be developed with fun games.

#### 4 CONCLUSION

The results of this study describe the implementation of mathematics learning through a medium of smart dice stacking on the numeracy ability of children in kindergarten Rahmah Abadi Lubuk Begalung Padang has been well implemented as seen in the joint circular activities and the direct practices applied by the group. Guiding the implementation of learning in the form of practice is directly carried out by the classroom teacher and the accompanying teacher in the activity position to learn together in a circle so that it is easier for the child to be focused in following the learning.

#### 5 REFERENCES

- Arikunto, S. (2014). *Prosedur Penelitian*. Jakarta: Rineka Cipta.
- Azhar Arsyad. (2013). *Media Pembelajaran*. Jakarta: Rajawali.
- Bowman, B. T., Donovan, M. S., & Burns, M. S. (2001). *Eager to Learn. Eager to Learn*. Washington DC: National Academy Press. <https://doi.org/10.17226/9745>
- Darmadi, H. (2014). *Metode Penelitian Pendidikan Sosial*. Bandung: Alfabeta.
- E Sovia. (2015). *Buat Anak Anda Jago Eksakta (Rahasia Membuka Kecerdasan Eksakta Sejak Dini)*. Yogyakarta: Diva Press.
- Harris, B., & Petersen, D. (2017). Developing Math Skills in Early Childhood. Issue Brief. *Mathematica Policy Research, Inc.*, (February), 1–6. Retrieved from <http://ezproxy.library.uvic.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED587415&site=ehost-live&scope=site>
- Kustandi. (2013). *Media Pembelajaran Manual dan Digital*. Jakarta: Ghalia Indonesia.
- Mashar, R. (2011). *Emosional Anak Usia Dini dan Strategi Pengembangannya*. Jakarta: Kencana.
- Mulyani, N. (2016). *Dasar-dasar Pendidikan Anak Usia Dini*. Yogyakarta: Kalimedia.
- Newzealand, G. (2013). *Number: Early Learning Progression*.
- Oktriyani, N. (2017). Peningkatan Kemampuan Berhitung Anak Usia Dini Melalui Permainan Lingkaran Angka Di Taman Kanak-Kanak Qatrinnada Kecamatan Koto Tangah Padang. *Lectura: Jurnal Pendidikan Anak Usia Dini*, 1(1), 82-96.
- Rohmah, N., & Waluyo, E. (2014). Arithmetic Dice Media as Counting Concept Introduction Media in Early Childhood Setting. *Indonesian Journal of Early Childhood*, 3(2), 127–133. <https://doi.org/10.15294/ijeces.v3i2.9486>
- Rutherford, K. (2015). *Why Play Math Games?* US.
- Smith, S. S. (2009). *Early Childhood Mathematics*. USA: Pearson.
- Sudarna. (2014). *Pendidikan Anak Usia Dini Berkarakter*. Jakarta: Perpustakaan Nasional RI.
- Sugiyono. (2016). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Sujiono, Y. N. (2008). *Metode Pengembangan Kognitif*. Jakarta: Universitas Terbuka.

- Suryana, D. (2013). *Pendidikan Anak Usia Dini (teori dan praktik pembelajaran)*. Padang: UNP Press.
- Susanto, A. (2017). *Pendidikan Anak Usia Dini (Konsep dan Teori)*. Jakarta: Bumi Aksara.
- Suyanto, S. (2003). *Konsep Dasar Pendidikan Anak Usia Dini*. Yogyakarta: UNY Press.
- Trianto. (2011). *Desain Pengembangan Pembelajaran Tematik Bagi Anak Usia Dini TK/RA & Anak kelas awal SD/MI*. Jakarta: Kencana Prenada Media Group.
- Triharso, A. (2013). *Permainan Kreatif dan Edukatif untuk Anak Usia Dini*. Jakarta: Gaung Persada Press Group.
- Ulfah., S. dan M. (2013). *Konsep Dasar PAUD*. Bandung: PT Remaja Rosdakarya.



## The Effectiveness of Using Mind Mapping Method to Improve Child Development Assessment

Hapidin<sup>1</sup>

*Universitas Negeri Jakarta*

Yuli Pujianti<sup>2</sup>

*STIT Al Marhalah Bekasi, Indonesia*

Indah Juniasih<sup>3</sup>

*Universitas Negeri Jakarta*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.13>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** This study aims to determine the effectiveness of using mind mapping method in improving early childhood educator's skill in mastering the child development assessment. This research is quasi-experimental using a pre-test and post-test design. The population was the entire classes of early childhood education training held by LPK Yayasan Indonesia Mendidik Jaka Sampurna at Cileungsi, Bogor. The participants were 45 early childhood educators. This study used three research methods which are implemented from learning methods in child development assessment was as pre-test and post-test. Data were collected by using two instruments to measure early childhood educators for child development assessment. The data were analyzed by using t-test to measures the differences data in pre-test and post-test. The results showed that the use of mind mapping methods can help early childhood educators to improve their mastery of the development assessment concept which averages 51.9 percent. It showed significant results with t-test value is 18,266 ( $N = 10, \alpha = 0,0$ ). This capacity building is reinforced by various qualitative findings which arise from early childhood educators' awareness to change the old learning style into learning by mind mapping method as a learning method that follows how the brain works. This study also found that early childhood educators as adults who are in the stage of formal thinking have shown an understanding that mind mapping method are appropriate, fast, easy and practical in mastering various development assessment concepts. Early childhood educators believe that they can use the method for mastering other material concepts.

**Keywords:** Assessment, Brain-based teaching, Mind mapping

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta

**e-ISSN (Online Media): 2503-0566**

**P-ISSN (Print Media): 1693-1602**

---

<sup>2</sup>Corresponding Author:

STIT Al Marhalah Bekasi

Jln. KH Mas Mansyur No. 30 Bekasi, Indonesia

Email: yuli.pujianti@gmail.com

## 1 INTRODUCTION

Child development refers to sustainable, predictable biological, psychological and emotional changes that occur in humans between birth and late adolescence. The order of development is the same for all children and can be explained in terms of the development of milestones. When children develop at different levels, which are determined by the complex interactions between the environment and genetic factors, (1) the age of achievement for each range of milestones is broad. It is important not only to realize the average age of achieving milestones (i.e. the age at which half of the standard population reaches a milestone) but the age limit as good (i.e. the upper age limit at which certain milestones should have been reached). It will help doctors to convince parents/caregivers, monitor child development closely or refer children to specialists for detailed assessment and further management.

It is also important for doctors to assess the quality of skills rather than recording the age at which the milestones were achieved. For example, a child may have acquired enough language skills to allow him to speak in phrases, but he may not be skilled at using language for conversation purposes. The basic architecture of the brain is built on a continuous process that begins before birth and continues into adulthood. Maximum brain development occurs in the brain in the first three years of a child's life and hence is called the beginning of the development phase. It is important to recommend that parents engage in appropriate stimulation activities with their children, starting from the period of the newborn (Choo et al, 2019).

Assessment of child development is one of the competencies that must be mastered by educators in various early childhood education institutions. This is in line with the qualifications and competencies of early childhood educators which are confirmed in Law number 14 of 2005 concerning teachers and lecturers as well as the implementation of them in the national education minister's regulation number 16 of 2007 concerning teacher qualifications and competencies.

Assessment to support learning, the first and most important of these objectives, refers to the use of assessments to provide teachers with information that can serve as a basis for pedagogical decisions and curricula. The information presented in previous chapters on early learning about the course of episodic development in certain children and the enormous variability among young people in the background and preparation for school, about the centrality of adult responses to healthy cognitive and emotional development leads to the conclusion that what preschool teachers do to improve learning must be based on what each child brings into the interaction. An assessment that is widely understood is a set of tools for knowing this. The second reason for assessing young children is to diagnose suspected mental, physical, or emotional difficulties that may require special services. The two final objectives can be combined under the assessment rubric to make policy decisions. Each of these goals represents an important opportunity for test or assessment data to inform the assessment if the test or assessment is used carefully and well. There is no type of assessments can fulfill all of these goals; the intended purpose will determine what type of assessment is most appropriate. And there is a lot to remember about the development status of young people, including attention status and their newborn self-regulating abilities, which makes judgments more challenging than other populations (Bowman, Donovan, & Burns, 2001).

Related to the first assessment, interpretation is a dynamic assessment that requests information from various sources that are collected over time, reflected childhood experiences and interpretations of the educator or caregiver. The second assessment is formal assessment. These actions are

the first step in the process of obtaining information about children and families. Through intervention by practicing ideas or hypotheses proposed by the initial assessment procedure and more information will be obtained so that it can serve a dual purpose of perfecting assessment and improving intervention. Thirdly, the assessment has limited value without instructions or intervention. The meaning of an assessment is closely related to its usefulness and contribution in making decisions about practices or interventions or confirmation of children's continuation.

The main objectives of the assessment are to support learning and development for children and classrooms, to identify children who may need additional services, and to assist in communicating progress or obstacles with parents effectively. During the ongoing assessment, it is carried out by observing, documenting, and analyzing the abilities of children displayed in the classroom in activities when children apply their understanding and skills and integrate what they learn. Data on children's results are collected for each classroom and program to guide recipients in the ongoing improvement of the program. It also informs goal setting, ordering program materials, and planning professional staff development. Authentic assessment combines teaching, learning, and assessment to encourage thinking, learning, and full participation of higher children through all parts of the daily routine. Sustainable and authentic assessments must provide information in all domains including social and emotional development, intellectual development, language, and early literacy development, creative development, physical development, health; early learning in mathematics, science, social studies; and use of technology (NAEYC, 2003).

Guidelines when choosing and utilizing valuation methods, namely:

1. Using development and learning theories that are appropriate for planning and evaluating children and looking beyond cognitive skills to assess all children.
2. Use assessment tools and processes that are validated by reliable, cumulative, and in research that is understood by children.
3. Using children's involvement in class activities naturally, not artificially made activities, to measure children's development.
4. Documenting children's growth, development and learning over the anecdotal observations and reports, interviews of parents, providers and children; products and work samples of children; standard checklist; and children's self-assessment.
5. Involve all staff members who have regular contact with children.
6. Organize assessments in order to avoid stress for children or teachers.
7. Use the results of the assessment as a guide to curriculum and teaching decisions and the need for interventions for individuals and classrooms.
8. Use the results to determine the need for a special screening and/or intervention (NAEYC, 2003).

Almost all early childhood educators rely on some form of informal monitoring of child learning to design programs and plan curriculum, to engage in pedagogy. However, relatively few early childhood teachers systematically observe, record, evaluate, and document children's learning even though the need for systematic documentation is quickly applied in various directions, including the standard performance of new Head Start children. Teachers can learn to observe and document children's skills, knowledge and achievements as they participate in class activities and routines, interact with peers and work with educational materials. The forms of assessment embedded in the curriculum, for example, are contextual methods that allow the opportunity for children to demonstrate their knowledge or skills through active involvement in class activities (Bowman et al., 2001).

Understanding the concept and practice of assessment will provide a real picture of the teacher's competence in reviewing, finding and deciphering reports of child development appropriately, easily understood and meaningful, especially for children and parents. The quality of the process and results of the assessment also provides an overview of the quality of the learning and/or playing process that has been carried out as well as the development results obtained by each child. Thus, the mastery of children's development assessment skills becomes the needs and competencies inherent in every early childhood educator.

The assessment ability of early childhood educators includes the competency section which is rarely the material for fostering early childhood educators. Based on a preliminary study, almost all research subjects had never been trained and given material about child development assessment. The absence of training in assessment of skills is also felt by early childhood educators in different areas, both early childhood educators in formal institutions (kindergarten or Raudhatul Athfal) and non-formal institutions (Playgroups, Pos PAUD, and BKB PAUD).

Early childhood educators can conduct assessments to find out the child's development that has been achieved and not. Assessments carried out by early childhood educators can map the abilities of each child from each stage of development according to age. Educators can make appropriate efforts to help the development of children based on the results of the assessment. Educational assessment standards include attitudes, knowledge, and skills. The Minister of Education and Culture of the Republic of Indonesia in the Regulation of the Minister of Education and Culture of Indonesia Number 146, 2014 states that assessment is a process of collecting and processing information to measure the ability of children's learning outcomes. In early childhood education, it is better to know child development assessment.

Assessment can be defined as the process of gathering information about specific aspects of a child's knowledge, behavior, skill level, or personality for the purpose of making evaluative decisions (Meisels, 2001). Assessment can be done for different purposes. Screening and diagnostic tools are developed to identify and place decisions for each child. Screening is a short procedure that determines whether a child's performance is quite different from other forms of comprehensive knowledge testing. If there is suspicion of delay, the diagnostic assessment provides more in-depth information about the specific nature of the problem. For example, screening tools such as Ages and Stages of Questionnaires Bricker, D., & Squires (1999) will be provided to determine whether there is a reason to worry about the development of Sean's language. If the results of screening show a delay, in-depth assessment is the type of specific delay, strength, and needs of children, and recommendations for intervention. Assessment can also be used to identify curriculum and teaching strategies that are appropriate for each child and to document children's progress over time. For example, teachers can develop Sakara's systematic plan to document progress in attending assignments and identification that helps their teaching strategies. This type of assessment is referred to an assessment program. The assessment tool program can also be used for program evaluation purposes when comparing the group performance of children before and after teaching. For example, teachers can collect data about children's language and literacy years, before they start reading picture books, and then at the end of the year.

There are various experts provide a definition of assessment which involves processes and the technique. Assessment as a process to get information used for make decisions about students, curriculum, and programs, as well as education policy (Anthony, 2001, pp. 4–5). According to The assessment is determining the process through observation or tests on innate characteristics or someone's behavior, characteristics the program, and then set in numbers, ratings or

scores(Wortham, 2005, p. 2). Assessment can be done by making a guide observation or observation to get an assessment about child development. Teachers is involved in ongoing, strategy, and purposeful assessment and evaluation. Daily, they are active in documenting what the children in their classroom know and will need to know, the progress being made toward learning and developmental goals, and whether various aspects of their program are supporting each child growth (Kostelnik, Soderman, & Whiren, 2007, p. 166).

Child development assessment is a process that is carried out systematically to obtain information about children's abilities and development. The results of the assessment will be reports or information for teachers and parents in designing programs and needs that are appropriate to the achievement of children's development. According to Feeney, assessment authentic, namely assessment carried out during the activity learning children in life settings real and under circumstances natural(Feeney & Moravcik, 2006, p. 132). Authentic assessment can be used in various natural circumstances, for example, when children learn and play. Authentic assessment is done for measure development progress children in behavior maturity, skills, preparation stages and understanding of a concept in children. The following are some deep recording techniques observation. 1) Anecdotal Record is descriptions or depiction in writing of child behavior. 2) Running Record is another method used to record behavior children in detail described in narrative form and based on the sequence of events. 3) Time sampling is to take notes how often or to see the frequency of behavior occurs within the time period determined. 4) Event sampling used as the time sampling, for example, when a behavior tends to occur within certain time compared to happening within a period that can estimated. 5) Checklist is list of sequential behaviors that are in the inside is arranged in the system from a category. 6) The use of this technique includes activities in taking picture, using audio / video tape for various series of events (Feeney & Moravcik, 2006).

In assisting efforts to master children's development skills, this study was conducted to examine mind mapping method as an alternative to help early childhood educators master the concepts and practices of assessment. Early childhood assessments include assessments that include activities to gather information about children which are later needed to understand children correctly and to provide support in learning and development (Slentz, 2008, p. 11). The results of a study, 64.3% of kindergarten teachers in the Rawamangun Sub-District area, DKI Jakarta has learned, understood, and appraised child development appropriately. While 35.7% of teachers still have not been able to plan, implement, and report a comprehensive assessment of child development. Early childhood educators have not been able to plan learning in which there are appropriate and comprehensive development assessments. The teacher only writes results in general or sometimes not at all. There is no detailed format of assessment or instrument lattice yet to assess children. This shows that the teacher is not able to plan to record and make the development report properly (Hartati, 2012).

There are several principles that must be followed by model developers and assessment executors. The principles of early childhood assessment according to Bagnato (2007, pp. 2–6) are as follows:

1. Parents as Partner

One important part of the assessment is the role of parents. In order to get a good understanding of child development, collaboration between teachers and parents is needed

2. Developmental Appropriateness

The technique and content of the assessment must be adapted to the characteristics of the child's development.



3. Utility  
Assessment must bring benefits to the development of children, needs of institutions and parents.
4. Acceptability  
Objectives, techniques, and assessment instruments should be agreed upon by parents and teachers as professional staff at the field.
5. Authenticity  
Assessment of child development should be carried out in a natural context in order to produce information authentic.
6. Collaboration  
One important part of the assessment is the role of parents. To get a good understanding of child development, the role of parents is needed. In this regard, there must be collaboration between the teacher and parents.
7. Convergence  
Convergence from several perspectives (family, professionals) provides a better information base.
8. Equity  
Assessment must be able to accommodate individual differences. The principle of justice is considered and mandated as essential for teaching materials.
9. Sensitivity  
Assessment implementers must be given the opportunity to carry out assessments that are able to detect the complexity of child development so that the slightest development can be identified.
10. Congruence  
The assessment techniques and instruments must be in accordance with the characteristics of the child, including those who have distinctive development and those who have mild to severe defects varies.

Armstrong distinguishes management into 2 models, namely authentic assessment and standardized assessment (Armstrong, 2009, pp. 131–132). Authentic assessment including informal assistance carried out in a natural, appropriate context. Whereas standardized assessment or formal assessment, on the other hand, its implementation is almost always in artificial settings far from the real world of children. Authentic Assessment Model is an assessment model based on the real conditions that arise from the behavior of children during the process of activities and the results of these activities. Authentic assessment is carried out when children are involved in play activities, must be done naturally under conditions planned by the teacher (DIKMAS, 2015, p. 8). Authentic assessment has certain characteristics. There are six characteristics as important dimensions of authentic assessment, they are:

1. Structured recording  
Authentic assessment is not a process of passively observing children's behavior but involves the use of schedules and procedures. Both of them must have been tested and validated by professionals.
2. Developmental observations  
Observations for authentic assessments are based on hierarchy's functional competencies that follow the stages of the development path. Every initial competency is prerequisites for the next in order of expected or desired behavior.
3. Ongoing assessment

Authentic assessment of early childhood development takes place in a manner continuous for various times and opportunities different so that a comprehensive picture of child development can be obtained.

4. Natural competencies

One of the strengths of authentic assessment is its attention to the typical behavior of children in various daily routines that are familiar to children. Such natural behavior reflects the competencies gained or arising in recurring home and school situations.

5. Familiar people

Authentic assessment is carried out by figures close to the child, who know the characteristics and privileges of children a lot, are involved in repeated interactions with children every day, and of course, are familiar to the child.

6. Everyday routine.

Authentic assessment is based on natural situations that occur in the form, activity, and typical routines of children. This routine uses the influence of repeated cues in the physical environment and interactions with adults and peers (Bagnato, 2007).

Learning method and training for early childhood educators have not been widely used by using the mind mapping model. Mind mapping method comes from how individuals learn based on the brain works. The basic reference theory for gaining this understanding at this time is learning theory based on the work of the brain that is known as brain-based learning (Jensen, 2008, p. 12). This theory is a learning theory that optimizes brain function. If the brain does not have a disability the learning process that optimizes the brain can run normally. Eric Jensen gave a new paradigm of the teaching and learning process based on how the brain works. One of the core thoughts and conclusions of the big theory is an explanation of how the approaches, methods, and techniques of learning and learning are carried out about learning through understanding, interpreting and optimizing all functional brain capacities.

Roger Sperry has found that the brain has two hemispheres, the left hemisphere, and the right hemisphere (Lienhard, n.d.). According to Sperry, the two hemispheres of the brain work very differently. The left hemisphere thinks rationally, and the right hemisphere thinks emotionally. Sperry's finding showed that it is useful for making education more enjoyable, comfortable and able to bring out the hidden potential of students.

As a form of development of Sperry's thoughts and findings, Tony Buzan discovered a new method of recording (the meaning of remembering) called mind mapping. The new method records the way of working according to the workings of two left hemispheres and the right brain. When taking notes, you should not only use text but also use images. If necessary, enrich the note with color, because the brain is happy with the color. The shape of the note is then like a picture of a piece of neuron or nerve cell. Mind mapping method that was first designed by Buzan in 1970 was a technique based on students' understanding and interpretation. It is used to represent knowledge graphically and can help teachers explain complex structure and relationship concepts and to integrate new knowledge graphically with the existing knowledge. This is an example of a non-linear approach to learning that encourages students to think radically and uses only keywords and images that are connected non-linearly. In the mind map, only words, clauses, and important phrases are used and the note becomes a combination of images with several words (Blessing & Olufunke, 2015).

According to Buzan, T. & Buzan (1996) mind maps are expressions of brilliant thinking and, therefore, a function of the human mind which provides a universal key to unlock the potential of

the brain. He connects assimilation of graphical information with the way of the brain regulates information. This is a visual learning method that is categorized under the extended family of graph organizing tools built on a diagram. Other examples of organizing tools for the graph include concept maps, tree diagrams, organizational charts, and spider diagrams. Thomas, (2007) defines mind maps as strong graphs techniques that utilize a variety of cortical skills like words, pictures, numbers, logic, rhythm, colors and spatial awareness in one powerful way. Therefore, it provides the freedom to explore an infinite stretch of the brain.

The description of Buzan's thinking concept is in line with what was conveyed by MacGregor who revealed that mind maps are a method of making notes for thinking and are thinking skills in learning acceleration (Sandy, 1992). This gives an understanding that mind maps can be a method for someone to accelerate learning in mastering various concepts and meanings. As a method, Porter revealed that mind maps involve both the left and right hemisphere of the brain that is incorporated in a system to process words, logic, and sequences (Windura, 2013).

Mind mapping method is widely used in learning because it is brain-based so that it facilitates the process of mastering the material. The Mind Mapping method has an effect on student motivation (Jones et al., 2012) and can improve writing skills (Riswanto & Putra, 2012). The assessment carried out by early childhood educators using the observation method Bellman & Byrne (2013), there has been no research to help early childhood educators conduct assessments using the Mind Mapping method.

Mind maps record information like the brain does, like tree branches, to make it easier for individuals to remember the main points. Buzan's steps, both related to the findings of the mind mapping method and related to his provocative statements about brain awareness, can be a method of actions that need to be developed in order to train and foster learning and how to learn adults. Early childhood educators as adults need to be given the opportunity to understand and empower their brain functions in increasing their capacity to carry out professional tasks.

Wycoff, (1991) broadens the understanding and the use of the mind map method to broader fields. Wycoff tried to develop the application of the Buzan concept into a learning strategy using the following steps:

1. Effectively understand the learning material;
2. Make interesting and colorful presentations;
3. Choose a theme that is focused on writing;
4. Write reports that can grab the attention of readers;
5. Effectively detailing personal agendas, such as daily schedules, telephone listings, and so on

Mind mapping consists of imaginative ways of registering ideas and are effective and useful recording methods in idea generation by associations (Buzan, 1974; Goel & N. Singh, 1998). The author argues that the normal linear method for recording ideas does not use the brain efficiently so that it develops a mind map which is a dynamic way to record information. Mind maps consist of main ideas which are summarized as central images or word phrases. From the central idea, it emits the main theme of the subject as a branch. Branches consist of keywords, images or topics that are presented in related lines and they are divided into higher level sub-branches. The branches usually decrease in size and thickness which means that they are thick in the middle and finer towards the periphery. Small branches of the inner branch radiate to a much larger outer branch. To help the memory process and remember, mind maps utilize appropriate visual images which are useful for describing various themes and topics (Buzan, T. & Buzan, 1996). In addition,

several different colors are used to distinguish areas of mind maps and help to divide different categories. The map represents the team's mental model and it will represent group ideas that help create a big picture of everything the group wants to put in. Mind maps highlight the use of artistic and textual instructions to help the organization of ideas generated by the group. The main steps that must be followed to make a mind map are:

1. Start in the middle of a blank page with the main idea to give freedom to spread in all directions in a free and natural way.
2. Use words, pictures or images for a central idea. However, central images are more interesting and give the brain more buzz.
3. Use color to excite the brain because color adds extra spirit and life to the mind map and adds energy to the creative thinking process.
4. Connect the main branch to the central idea and connect the branches to the first and second levels. The brain works through associations, connecting various things together. Linking branches helps to better understand and remember the path.
5. Curved to provide a more flexible mind map and use images if they are deemed appropriate.

The mind mapping method model is a set of concepts that give an idea of how learning and learning are based on the workings of the mind. This model can be used by various ages, especially adults in mastering various concepts when studying in training or lectures. The learning process in adults is often influenced by various factors so it is very possible to master the concept of being weak and easily forgotten. To overcome this, the mind mapping model can be used as an appropriate model, especially for early childhood educators in mastering the concepts and practices of early childhood development assessment.

Using mind maps, it is possible for early childhood educators to use and empower the potential thinking power to map and understand several concepts and practice flows of child development assessment. Early childhood educators can use writing lines that describe concept maps in the mind that can be given symbols or signs to make it easier to remember. Early childhood educators can map a number of core concepts, basic and meaningful according to the way of the thinking process.

## 2 METHODS

This research is quasi-experimental research using nonequivalent control-group design (Gall, Gall, & Borg, 2007). The quasi-experimental design used in this research is a pre-test and post-test design. The population research was the entire classes in early childhood education training participants held by LPK Yayasan Indonesia Mendidik Jaka Sampurna at Cileungsi, Bogor, in 2014. The participants were 45 early childhood educators. The sample of this research was taken randomly purposive from participants in the early childhood education course. The data collected consists of learning implementation mind mapping method data. Learning implementation data were obtained from the test that measures the ability of child development assessment by early childhood educators.

### 3 RESULTS AND DISCUSSION

The results of this study can be illustrated by the pre-model development assessment skills score data with the lowest score achieved is 4 and the highest score is 20. From the distribution of scores obtained the mean of 6.7, the median of 6.9 and mode 6. The data shows that the average achievement of the development assessment mastery is still very low, even in qualitative measures it can be categorized as not yet seen the mastery of early childhood educators' assessment. There is only one participant who has an initial picture of an understanding of assessment that is quite good because he has worked in a company and is familiar with the employee assessment process.

Table 1. Pre-test Scores

Data	Pre-test Scores
Mean	6.7
Median	6.9
Mode	6.0
Lowest Score	4.0
Highest Score	20

Table 2. Post-test Scores

Data	Pre-test Scores
Mean	15.54
Median	15.26
Mode	15.00

Table 3. Difference Pre-test and Post-test Scores

Data	Pre-test Scores	Post-test scores
Mean	6.7	15.54
Median	6.9	15.26
Mode	6.0	15.00
Lowest Score	4.0	
Highest Score	20	

Mastery score data on post-test of early childhood educators obtained a mean score of 15.54, the median of 15.26 and mode 15. The data provided an overview of the mastery of developmental assessment skills after early childhood educators tried to use mind mapping method. The use of mind mapping method helps early childhood educators learn to understand a concept by using potential mind maps. The data of child development assesment mastery result in pre-model activities and post-use method can be described the comparison of scores and percentage increases for each subject of the study. Based on these data it can be concluded that there was an increase of an average of 51.9% of early childhood educators' child development assesment mastery of pre-method compared to post-use method. The results of the test analysis of the mean differences

between the two results obtained the results of t count of 18.266 ( $N = 11$ ,  $df = 10$  and  $\alpha = 0.00$ ). The results of the t-test showed that there was a significant increase in mastery of child development assessment in early childhood educators after following the use of mind mapping method.

The research findings illustrate that mind mapping method can be considered as one of the appropriate and practical learning and learning method for early childhood educators as adults. At the cognitive level (formal thinking ability), adults (early childhood educators) can reflect on learning mistakes that have been done previously, especially when following previous formal education levels (elementary to high school). Early childhood educators can find out for themselves the various mistakes in their learning process and find out for themselves the right way to update the way of learning. When they are given a little enlightenment about how to master the concept by using mind mapping method, they try in groups to learn, understand and use.

Early Childhood educators generally recognize that memorizing is a wrong, ineffective and easily forgotten way. They tried to use the mind map model as a new way of mastering concepts in child development assessment training material. When they succeeded in using the mind map model, they grew the belief that this model became the choice of a suitable model not only because it fits the way the brain works but they feel suitable, easy and practical as a way of learning adults. Through the use of mind mapping method, early childhood educators can imagine the flow of knowledge, the place to store and the basic description of that knowledge.

The early childhood educator learning strategy that uses the mind map method begins with examining the focus of the discussion, evaluating how to study with the old model, understanding the way the brain works in mind maps, drawing draft illustrations of mind maps and developing draft mind maps along with help of visuals, colors, and images. In the early stages, early childhood educators were given an orientation on the focus of mastery of concepts in child development assessments. The discussion of this focus is important as an effort to recall variously related knowledge or intersect with the knowledge in question. In the next stage, early childhood educators are invited to recognize the mind map model and its relation to the way the brain works. At this stage, early childhood educators also get a way to use mind maps to master the development assessment concept. In the third stage, early childhood educators try to reflect on their own main ideas from the assessment concept into the map of mind maps on folio paper. They try to make a flow of mind maps that illustrate how concept maps work. In the final strategy, early childhood educators illustrate mind maps with the concept of assessment by helping meaningful words, visual images, colors and flow (schema).

The mind mapping method is one of the learning options that can be used by adults (early childhood educators) who are in the development of cognitive levels of formal thinking. Early childhood educators can receive, search, organize/store and store and reproduce various knowledge (factual, concepts, procedures and metacognitive) through the use of mind maps. In addition, early childhood educators who are at the level of formal thinking are able to reflect on weaknesses and mistakes in the old ways they learn. The process is closely related to reasoning abilities possessed by early childhood educators as individuals who are at the stage of formal thinking (Thornton, 2008, p. 226). The use of a mind map model helps early childhood educators make mastery of concepts more meaningful. The meaning of the concept in the early childhood educator mind map model is accompanied by display concepts, concept sequences and concept marks with color. The excitement of the process is a means for early childhood educators to build

concepts and understandings that are meaningful and also come from initiatives and the way their brains work (Jensen, 2008).

The Mind mapping method is more effectively used in the learning process. The results of the study state that the mind mapping method is more effectively used compared to conventional methods. This implies that the mind mapping method has the capacity to help students associate ideas, think creatively, and make connections that may not be conventionally achieved by taking notes. Therefore, the results of this study conclude that the mind mapping method is one of the effective learning strategies that can be used by teachers to overcome many of the problems encountered in the learning process and to improve the output of students (Blessing & Olufunke, 2015).

Another study stated that students view the mind mapping method as an effective strategy in helping them write. Mind mapping methods can improve students' writing skills. Thus, the mind mapping method is an effective tool to help students plan and organize their writing by encouraging students to get a comprehensive and in-depth understanding of the topic of writing. Students who have inadequate drawing skills take a long time to make mind mapping because they are usually more focused on making effective mind maps with good visual aids without an estimated time to make a good writing product. However, this weakness can be overcome by the teacher giving clear instructions to remove student doubts and a limited time frame for students to make mind maps more efficiently (Yunus & Chien, 2016).

Assessment of early childhood development differs in characteristics from advanced classroom assessment. The development of early childhood is very fast, so an assessment is needed to find out whether the child is developing well (Suyadi, 2017). In carrying out an assessment of early childhood development, careful planning is needed by using techniques and instruments (tools) that precisely measure the object. Teachers are very important to have the ability to assess children's development. The mind mapping method can make it easier for teachers to assess their students.

Mind mapping method is an effective strategy to help writing activities. The assessment carried out by the teacher is an inseparable part of writing activities (Yunus & Chien, 2016). So that the mind mapping method can be used effectively to assist in planning and organizing comprehensive assessment results. By using the mind mapping method, the teacher can map the aspects of the assessment that will be carried out by the teacher towards the students, making it easier for teachers in the assessment process.

#### 4 CONCLUSIONS

The use of mind mapping method has helped early childhood educators as adults who are at the level of formal thinking reflect on how to learn effectively. The results of these reflections led to a process of reasoning that all time they used many ways of learning is wrong, monotonous, and inefficient. This result is also the basis for early childhood educators in using the mind map model.

The use of this model has helped early childhood educators to improve their mastery in the development assessment concept which sought an average of 51.9 percent. This capacity building is reinforced by various qualitative findings which are shown by the early emergence of awareness of early childhood educators to change the old model (style) in learning towards using mind mapping as learning method that follow how the brain works. This study also found that early

childhood educators as adults who are in the stage of formal thinking have shown an understanding that mind map method are appropriate, fast, easy and practical learning method in mastering various development assessment concepts. Early childhood educators believe that they can use the model for mastering other material concepts. The early childhood educator learning strategy that uses the mind mapping begins with examining the focus of the discussion, evaluating how to study with the old model, understanding the way the brain works in mind maps, drawing draft illustrations of mind maps and developing draft mind maps with the help of visuals, colors, and images. In the early stages, early childhood educators were given an orientation on the focus of mastery of concepts in child development assessments. The discussion of this focus on the important as an effort to recall variously related knowledge or intersect with the knowledge in question. In the next stage, early childhood educators are invited to recognize the mind map model and its relation to the way the brain works. At this stage, early childhood educators also get a way to use mind maps to master the development assessment concept. In the third stage, early childhood educators try to harness their own main ideas from the assessment concept into scribbled mind maps on folio paper. They try to make a flow of mind maps that illustrate how concept maps work. In the final strategy, early childhood educators illustrate mind maps with the concept of assessment by helping meaningful words, visual images, colors and flow (schema).

The mind mapping method helps organize existing knowledge and ideas. It started from a generic idea at the center, through increasing specificity at the extreme outside. By presenting ideas in different colors and with visual stimuli, it helps trigger learning and understanding. The mind mapping method is not inherently structured with the goals and action-oriented but helps to identify factors related to a topic without focus on results. Mind mapping methods have the benefit of stimulating creative thinking. Students can see actively by studying the potential of the mapping method, and how to help graphical representation in the steps of making ideas. The mind mapping method is very helpful in accelerating learning and the ability to remember information by surrounding a central idea with a network of related ideas that emanate.



## 5 REFERENCES.

- Anthony, J. N. (2001). *Educational Assessment of Student*. New Jersey: Merrill Prentice Hall.
- Armstrong, T. (2009). *Multiple Intelligences in the Classroom*. Virginia: SCD.
- Bagnato, S. J. (2007). *Authentic Assessment for Early Childhood Intervention*. New York: The Guilford Press.
- Bellman, M., & Byrne, O. (2013). Developmental assessment of children, (January), 4–9. <https://doi.org/10.1136/bmj.e8687>
- Blessing, O. O., & Olufunke, B. T. (2015). Comparative Effect of Mastery Learning and Mind Mapping Approaches in Improving Secondary School Students' Learning Outcomes in Physics. *Science Journal of Education*, 3(4), 78–84.
- Bowman, B. T., Donovan, M. S., & Burns, M. S. (2001). *Eager to Learn. Eager to Learn*. Washington DC: National Academy Press. <https://doi.org/10.17226/9745>
- Bricker, D., & Squires, J. (1999). *Ages and stages questionnaires: A parent completed, child-monitoring system* (2nd editio). Baltimore, MD: Brookes Publishing.
- Buzan, T. & Buzan, B. (1996). *The mind map book: How to use radiant thinking to maximize your brain's untapped potential*. New York: Plume.
- Buzan, T. (1974). *Use Your Head. Innovative Learning and Thinking Techniques to Fulfil Your Mental Potential*. BBC books.
- Choo, Y. Y., Yeleswarapu, S. P., How, C. H., & Agarwal, P. (2019). Developmental assessment: practice tips for primary care physicians. *Singapore Medical Journal*, 60(2), 57–62. <https://doi.org/10.11622/smedj.2019016>
- DIKMAS, D. (2015). *Pedoman Penilaian Hasil Pembelajaran*. Jakarta, Indonesia.
- Feeney, S. D. C., & Moravcik, E. (2006). *Who Am I in The Live Of Children*. New Jersey: Pearson Merrill Prentice Hall.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational Research: An Introduction* (4th ed.). New York: Longman Inc.
- Goel, P. S., & N. Singh. (1998). Creativity and innovation in durable product development. *Computers & Industrial Engineering*, 35(1–2), 5–8. [https://doi.org/http://dx.doi.org/10.1016/S0360-8352\(98\)00006-0](https://doi.org/http://dx.doi.org/10.1016/S0360-8352(98)00006-0)
- Hartati, S. (2012). *Tingkat Pengetahuan Guru TK tentang Asesmen Perkembangan Anak Usia Dini di TK Kelurahan Rawamangun, DKI Jakarta*. Jakarta.
- Indonesia, D. P. dan K. Menteri Pendidikan dan Kebudayaan, Pub. L. No. No. 146 (2014). Indonesia.
- Jensen, E. (2008). *Brain-Based Learning. Pembelajaran Berbasis Kemampuan Otak*. Yogyakarta: Pustaka Pelajar.
- Jones, B. D., Ruff, C., Tech, V., Snyder, J. D., Tech, V., Petrich, B., ... Koonce, C. (2012). The Effects of Mind Mapping Activities on Students' Motivation. *International Journal for the Scholarship of Teaching and Learning*, 6(1).
- Kostelnik, M. J., Soderman, A. K., & Whiren, A. P. (2007). *Developmentally Appropriate Curriculum, Best Practice In Early Childhood Education*. New Jersey: Pearson Education Inc.
- Lienhard, D. A. (n.d.). Roger Sperry's Split Brain Experiments (1959–1968). *The Embryo Project Encyclopedia*.
- Meisels, S. J. (2001). Fusing assessment and intervention: Changing parents' and providers' views of young children. *ZERO TO THREE*, 4–10.

- NAEYC. (2003). *Early Childhood Curriculum, Assessment, and Program Evaluation*.
- Riswanto, & Putra, P. P. (2012). The Use of Mind Mapping Strategy in the Teaching of Writing at SMAN 3 Bengkulu , Indonesia. *International Journal of Humanities and Social Science*, 2(21), 60–68.
- Sandy, M. G. (1992). *Pice of Mind*. Jakarta: Gramedia Pustaka Utama.
- Slentz, K. L. (2008). *A Guide to Assessment in Early Childhood*. Washington: Washington State.
- Suyadi, S. (2017). Perencanaan dan Asesmen Perkembangan Pada Anak Usia Dini. *Golden Age: Jurnal Ilmiah Tumbuh Kembang Anak Usia Dini*, 1(1), 65–74. Retrieved from <http://ejournal.uin-suka.ac.id/tarbiyah/index.php/goldenage/article/view/1251>
- Thomas, H. S. (2007). *Today's topics on creativity engineering system division*. Massachusetts.
- Thornton, S. (2008). *Understanding Human Development*. New York: Palgrave, Macmillan.
- Windura, S. (2013). *Mind Map Langkah Demi Langkah*. Jakarta: Elex Media Computindo.
- Wortham, S. C. (2005). *Assesment in Early Childhood Education*. New Jersey: Pearson.
- Wycoff, J. (1991). *Mindmapping: Your Personal Guide to Exploring Creativity and Problem-Solving*. Berkley; Reissue edition.
- Yunus, M. M., & Chien, C. H. (2016). The Use of Mind Mapping Strategy in Malaysian University English Test (MUET) Writing. *Creative Education*, 7(6), 619–662.



## The Implementation of Curriculum by Using Motion Pattern-Based Learning Media for Pre-school Children

Yusmawati<sup>1</sup>  
Johansyah Lubis<sup>2</sup>  
*Universitas Negeri Jakarta, Indonesia*

DOI: <https://doi.org/10.21009/10.21009/JPUD.131.14>

Accepted: 15<sup>th</sup> March 2019. Published: 30<sup>th</sup> April 2019

**ABSTRACT:** This study aims to determine the implementation of curriculum in learning activities of pre-school children and develop motion pattern-based learning media for pre-school children. This research was carried out in thirty kindergartens in East Jakarta. It was conducted in 4 months, from June to October 2018. This research is included in the development and evaluation research (mixed method). The scope of the research is the implementation of curriculum and the development of learning media for pre-school children by using customized tools. Data was collected by using questionnaires and analyzed by using Guttman scale and Likert scale. Percentage of the implementation of learning for preschoolers in Kindergarten in East Jakarta is very good. The goal dimension got 98.2%, the content dimension got 99.3%, the method dimension got 99.3% and the evaluation dimension got 98.3%. The product of this study is a learning media that is adjusted to the implementation of motion pattern-based learning activities for pre-school children.

**Keywords:** Early childhood education curriculum, Motion Pattern-Based Learning Media, Pre-school children

© 2019 Early Childhood Education Post Graduate Program UNJ, Jakarta  
**e-ISSN (Online Media): 2503-0566**  
**P-ISSN (Print Media): 1693-1602**

---

<sup>1</sup>Corresponding Author:  
Yusmawati  
Universitas Negeri Jakarta  
Jln Rawamangun Muka. Jakarta Timur, Indonesia  
Email: [yusmawati@unj.ac.id](mailto:yusmawati@unj.ac.id)

## 1 INTRODUCTION

Curriculum is the most important part of continuity of the education process. Education and curriculum cannot be separated because they are interrelated. Education can succeed if it is well implemented. The curriculum will be updated as the time is changing. Therefore, the curriculum is always dynamic. Static curriculum is not good because it does not adjust to the current situation. The applied curriculum continues to evolve in line with the development of educational theory and practice based on the theory of education which is the curriculum reference prepared. In the process of compiling the curriculum, there are three concepts about the curriculum, curriculum as substance, as a system, and as a field of study (Sukmadinata, 2000, p. 27).

The first concept is the curriculum as a substance. The curriculum is seen as a plan of learning activities for students at school, or as a set of goals to be achieved. A curriculum can also refer to a document that contains the formulation of goals, teaching materials, teaching-learning activities, schedules, and evaluations. A curriculum is also described as a written document as a result of mutual agreement between curriculum compilers and educational policyholders with the community. A curriculum can also cover a certain scope, a school, a district, a province or an entire country.

The second concept is the curriculum as a system. The curriculum system is part of the school system, the education system, and the community system. A curriculum system includes a personnel structure and work procedures on how to compile a curriculum, implement, evaluate, and perfect it. The result of a curriculum system is the arrangement of a curriculum and the function of the curriculum system is how to maintain the curriculum so that it is permanent and dynamic.

The third concept is the curriculum as a field of study. This is the field of study of curriculum experts and education and teaching experts. The aim of the curriculum as a field of study is to develop knowledge about curriculum and curriculum systems. Those who study the curriculum, learn basic concepts about the curriculum. Through library research and various research and experimental activities, they find new things that can enrich and strengthen the field of curriculum study (Sukmadinata, 2000).

According to the previous perspective, the curriculum is a collection of subjects that must be delivered by the teacher or studied by students (Sukmadinata, 2000). In certain environments or relationships, this view is still used today, namely the curriculum as "... a racecourse of subject matters to be mastered." (Azia, 1976, p. 7). The curriculum is expressed as "a course, as a specific fixed course of study, as in school or college, as one field to a degree" (Webster, 1993, p. 648). Most parents, even educators, understand that the curriculum is a bigger part of the subject matter or subject matter.

Langgulong (1989, p. 145).stated that a curriculum is a number of educational, cultural, social, sports, and artistic experiences provided by schools for students inside and outside the school with the intention of helping them to develop thoroughly in all aspects and to change their behavior in accordance with their goals - educational goals. Meanwhile, according to Johnson, the experience will only appear if there is an interaction between students and their environment. Such interaction is not a curriculum, but teaching. The curriculum only describes or anticipates the results of teaching. Johnson distinguishes between the curriculum and teaching. Everything related to planning and implementation, such as content planning, teaching and learning activities, evaluation is teaching, while the curriculum is only concerned to the learning outcomes expected by students. The curriculum is a structured series of intended learning outcomes (Johnson, 1967, p. 130).

The education system consists of four subsystems, they are learning, teaching, teaching-learning process, and curriculum (MacDonald, 1965, p. 3). Learning is an activity or effort carried out by students in responding teaching activities provided by the teacher. Teaching is an activity or professional treatment provided by the teacher. The whole linking of activities that allow and regard to the occurrence of teaching-learning interactions is called teaching-learning process. Curriculum is a plan that provides guidance in the process of teaching and learning activities.

The curriculum is perceived as a plan or program for all experiences which the learner encounters under the direction of the school. In Practice, the curriculum consists of a number of plans, in writing from and varying scope that delineates the desired learning experiences. The curriculum, therefore, may be a course, a sequence, of the school's entire program of studies and may take place outside of class or school when directed by personnel of the school (Olivia, 1992).

Planning before implementing learning is outlined in the curriculum. The curriculum is conceptually an activity plan or written document that includes strategies to achieve goals (Ornstein, 2004). Therefore, the curriculum can be interpreted as plans that will be implemented in learning and written into a document.

The document, which is later called the curriculum, will be the direction of learning in an institution. Basically, the curriculum is a planning guide regarding a comprehensive learning program that contains all learning experiences, learning materials adapted to the stages of child development that will be given to children through the learning process inside or outside the school is still under the supervision of the school. Curriculum that has been designed aims to provide teaching, nurturing and education to foster children's personality, as well as the development of other fields (Ayob, A., et al., 2016). In order to be able to develop experience and master the basic skill, it is needed to reach a higher level of knowledge and acquisitions so that they will be able to enter the next school level.

The learning process in an institution will be directed if it has clear guidelines. Guidelines for directing the process of implementing learning are outlined in the curriculum. Teachers as implementers of learning must understand curriculum concepts because the curriculum concept understood by the teacher will affect the learning process. An important component in implementing a lesson is the curriculum. The learning curriculum as an important element in the implementation of learning plays an important role in providing direction, steps, and objectives for implementing education (Cholimah, 2012). Therefore, the curriculum is absolutely necessary for the ongoing process of good learning. Curriculum and learning are packages that are interrelated with each other. The curriculum which is planning is meaningless if it is not implemented in the learning process. Learning cannot be implemented properly without curriculum guidance. "Without a curriculum or plan, there can be no effective instruction and instruction in the curriculum has little meaning" (Saylor, J. G., & Alexander, 1981).

The process of making a curriculum has 6 steps; design, fostering, implementing, monitoring, evaluating and reviewing. After this process is implemented, a curriculum can be implemented thoroughly (Brady, 1995). John Dewey's progressive education theory has a strong influence in the 2013 early childhood education (ECD) curriculum. This matter is seen from Child-centered as a learning pattern policy. Dewey believes that the curriculum needs to be created by emphasizing children's interests and focusing on solving everyday children's problems (Morrison, 2012). The 2013 ECD curriculum is oriented towards the scientific approach. Preparation of curriculum

content is a unified or concentrated curriculum. The unified or concentrated curriculum is a pattern of the preparation of learning materials that are composed of learning themes and in the theme includes material in various disciplines (Prihatini, 2014).

Johnson (1967) distinguishes between curriculum and curriculum development processes. The curriculum is the result of a curriculum development system, but the development system is not a curriculum. According to Johnson, the curriculum is a set of structured learning goals. The curriculum deals with goals and not with activities. Based on the formulation of the curriculum, children's learning experiences become part of teaching. The curriculum is the entire experience, activities, and knowledge of students through guidance and responsibility school or teacher. Understanding this curriculum has implications for school programs that all activities carried out by students can provide learning experiences.

These activities can include activities in the classroom. For example, activities in participating in the teaching-learning process (face-to-face), practice skills, and the like, or activities outside the classroom, such as scout activities, tourism works, visits to tourist attractions/history, the commemoration of national and religious holidays, and the like. In fact, all activities related to relationships between students and teachers, students with students, students with school officers, and students' own life experiences. The understanding of this curriculum contains broad coverage because it covers all student activities, student experience, and all influences, both physical and non-physical on the growth and development of students.

The curriculum is in the sense of meaningful learning plans with teaching. That is, the curriculum is a lot related to the plans and ideas to be achieved while teaching lies in the realization or implementation of the plan in teaching and learning activities. That is why curriculum development means the development of teaching. The difference between curriculum and teaching lies not in its implementation, but in the breadth of its scope. The curriculum is concerned to broader goals, content, and methods, while the narrower one is teaching. In other words, the curriculum relates to what you want to achieve (goals), while teaching is related to how to achieve that goal (procedure).

Ralph W. Tylor in Sukmadinata, (2000) suggests four main questions that are the core of curriculum studies: 1) which educational goals do you want to reach the school? 2) What educational experience should be provided to achieve this goal? 3) How to organize the educational experience effectively? 4) How to determine the goal that has been achieved? The existence of six curriculum components as a field of study; curriculum foundation, curriculum content, curriculum design, curriculum engineering, evaluation and research, and theory development (George A. Beauchamp, 1981).

Faix used structural-functional analysis derived from biology, sociology, and anthropology to explain curriculum concepts. The function of the curriculum is described as a process of how to maintain and develop its structure (Sukmadinata, 2000). There are a number of questions raised in this structural-functional analysis. The topics and subtopics of this question indicate the phenomenon of the curriculum. The questions concern about (1) general questions about the phenomenon of curriculum, (2) the curriculum system, (3) the unit of analysis and its elements, (4) the structure of the curriculum system, (5) the function of the curriculum system, (6) the curriculum process, and (7) structural-functional analysis procedures. There are four curriculum theories; they are (1) curriculum theory, (2) formal curriculum theory, (3) evaluation curriculum theory, and (4) phraseology curriculum theory.

The curriculum has a central position in the entire educational process. The curriculum directs all forms of educational activities to achieve educational goals. The curriculum at every level of education must have been adapted to the character of students in general, especially in a kindergarten. But, how is the implementation of Learning Activities for Pre-School Children in Kindergarten - East Jakarta? How is the implementation of the Basic Motion Pattern Based Learning Model for Pre-Schools Children in Kindergarten in East Jakarta? Based on those reason, research and evaluation is needed. Evaluation or assessment is a systematic analysis to see the effectiveness of the program provided and the influence of the program on children (Rahelly, 2018). In order to accommodate the goals and needs of the physical and sports education movement, it is important to adapt to the level of education of pre-school children. Implementation of the Media Model in learning at pre-school requires creativity as an effort to achieve the objectives of the learning activities program.

## 2 METHODS

The study used a survey method. Survey research is a useful tool for discovering the facts of education (Kerlinger, 1990, p. 677). The study was conducted in the Kindergarten in East Jakarta. The target of this research was physical education teachers from each school, totaling 30 schools randomly. The data collection technique used a questionnaire with the instrument validated by the expert. The steps taken start setting the target of the survey, namely the physical education teacher recording each step of the research and making a final report. Data from four main components in the curriculum, namely objectives, contents, methods, and evaluations will be processed using the Guttman scale / dichotomy and using a Likert scale and percentage formula (Arikunto, 2010). A goal oriented is measuring the level of achievement of objectives in the implementation of physical education learning or activities.

## 3 RESULT AND DISCUSSION

### *Result*

Children's activities in pre-school are evaluated on the curriculum dimensions or pre-school childhood education activities carried out. Evaluation is a systematic process for determining values based on data collected through measurements (Winarno, 2011). Arikunto (2014) defines evaluation as an activity to gather information about the workings of something which is then used to determine the right alternative in deciding. Furthermore, evaluation is a process or activity of selecting, collecting, analyzing and presenting information that can be used as a basis for decision making and subsequent programming (Widoyoko, 2012). The opinion above concluded that evaluation is data obtained from the results of measurements in order to provide information to be conveyed to decision-making about the effectiveness of program activities or curricula that are being or have been implemented.

The results obtained from the sub-dimensions of the objectives based on the instrument is 98.2% of the average value for the goal, while the results of the average value for the dimension of content is 99.3%, while the results of the average value for the method dimensions are 95.6%, while the average value for the evaluation dimension is 98.3%, as stated in the following figure:

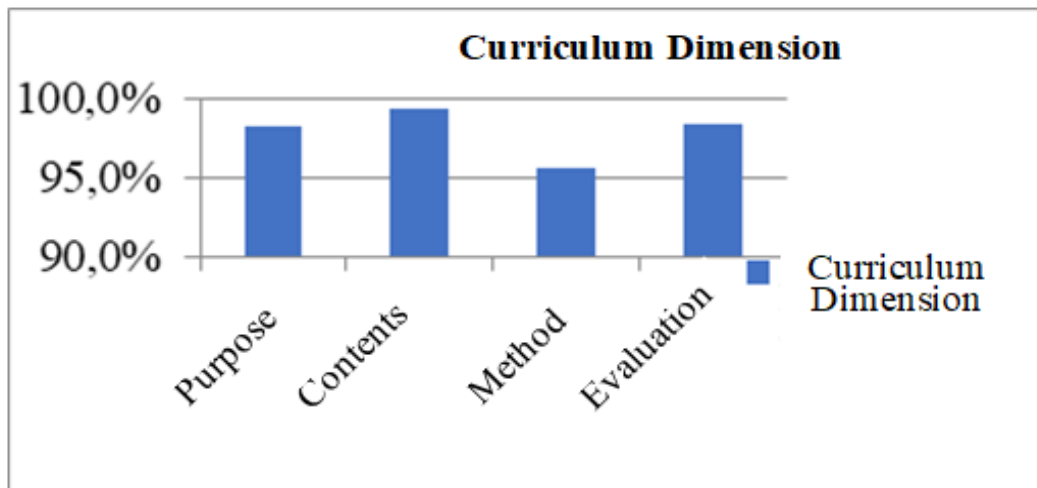


Figure 1. Curriculum Dimension

### 3.1 Learning Media

Media is one component of communication. It is a messenger from communicators to communication (Criticos, 1996). Based on these definitions, learning media is a supporting tool in the learning process to make it maximal. In the learning process, the media has a function as a carrier of information from the source (teacher) to the recipient (student). The method is a procedure to help students receive and process information to achieve learning goals (Rohmansyah, 2017). Thus, media functions in the learning process can be shown through pictures, as follows:

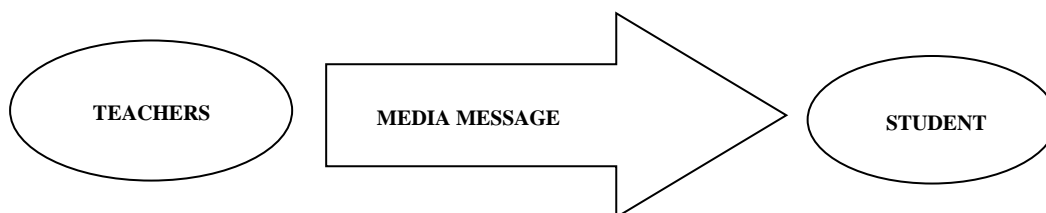


Figure 2. Media in Learning Process

Furthermore, as the media products produced are as follows: (1) Media Name: Moving, Playing, Exciting (2) Purpose: learn to do movements that use body parts to develop gross motoric through play (3) Form of Field:



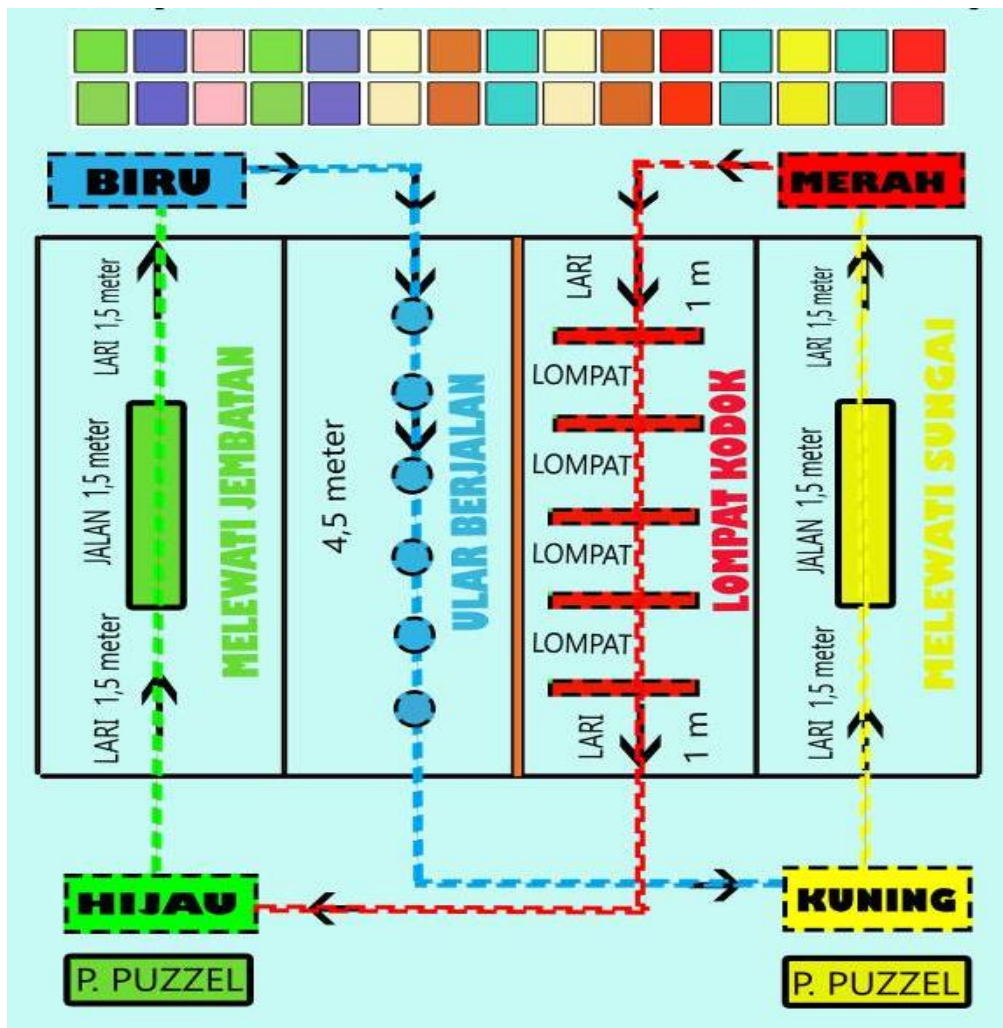


Figure 3. Learning Media

Figure color Information:

Green Line : Passing the bridge

Blue Line : Slithering snake

Red Line : Jumping frog

Yellow Line : Crossing the river

The Foundation for the Use of Learning Media which are:

#### *Philosophical Foundation*

With the existence of various learning media, students can have many choices for using media that are more suited to their choices. Students are given the freedom to choose both ways and learning tools according to their abilities.

#### *Psychological Foundation*

By paying attention to the diversity and uniqueness of the learning process, the accuracy of media selection and learning methods will greatly influence learning outcomes. In addition, student perceptions also greatly influence learning outcomes. Therefore, in addition to pay attention to the diversity and uniqueness of the learning process, understanding the meaning of perceptions of the factors that influence the presentation should be pursued optimally so that the learning process can take place effectively. For this purpose, it should be noted the following (a) The selection of

the right media is held so that it can attract attention and give clarity to each object it observes.  
(b) Learning materials that will be applied are adjusted to experience.

#### *Technological Foundation*

Technological learning is the theory and practice of designing, developing, implementing, managing, and evaluating learning processes and sources. In learning technology, problem solving is done in the form of: the unity of the components of the learning system that has been compiled in the functions of design or selection and in utilization and combined so that it becomes a complete learning system.

#### *Empirical foundation*

Based on the empirical rational basis, the selection of learning media should not be based on the preferences of the teacher. However, it must consider the suitability between student characteristics, and the media itself.

### *3.2 Characteristics of pre-school children*

Comprehensive understanding of pre-school children is needed to achieve the objectives of the research to be conducted. UNESCO defines Early childhood as the period from birth to 8 years old. A time of remarkable brain development, these years of funding for subsequent learning. From this definition, pre-school age is a period from birth to eight years when it is an important time span in brain development. In these years the next foundation of learning was built. Ki Hajar Dewantara said that children's education is important since early year. Personal formation of children is based on talent and environment.

Kindergarten is one of education units for pre-school children on formal education pathways that provide educational programs for children aged 4-6 years. Age 4-5 years is a sensitive period for children, where children begin to be sensitive to accepting various efforts to develop the full potential of children. Sensitive period is the occurrence of maturation of physical and psychological functions that are ready to respond to stimulation given (Jamaris, 2006). Children will learn well and meaningfully if children feel psychologically comfortable and their physical needs are met. Children construct their knowledge, learn through social interaction with other adults and children, exploration, searching, the use of learning through play, elements of differences in children's attention.

#### *Cognitive development*

In the concrete operational phase, the child's ability to think logically has developed, provided that the object that is the source of logical thinking is present in a concrete manner. This ability to think logically is manifested in the ability to classify objects according to their classification, sort objects according to their order, the ability to understand the views of others, and the ability to think deductively.

#### *Affective development*

Affective domain is the domain that deals with attitudes and values. This affective development includes the nature of behaviors such as feelings, interests, attitudes, emotions, and values. Some experts say that each person's attitude can be predicted if someone has a high level of cognitive

power. The characteristics of affective learning outcomes will be seen in students in various behaviors, such as: attention in learning, discipline in following learning, high motivation to know more about things, and respect for others.

### *Psychomotor Development*

Psychomotor development is related to skills or the ability to act after someone receives a certain learning experience. Psychomotor domains are domains that are related to physical activity, for example: Running, jumping, throwing, hitting, etc. These psychomotor learning outcomes are actually a continuation of the results of cognitive learning / understanding something and affective learning outcomes in the form of behavioral tendencies (Sutapa, 2014).

### *3.3 The Concept of Motion Patterns for Pre-School Children*

The development of basic motion is a process of obtaining motion that is constantly evolving based on: The process of developing nerves and muscles which are also influenced by offspring, a result of previous motion experience, current motion experience, and motion described in relation to certain motion patterns.

Motion pattern is a simple movements that can be divided into three forms of motion as follows; (a) Locomotor motion, where certain part of body move in a particular direction. (b) Non-locomotor motion, where some part of body is moving up and down but the body does not move. (c) Manipulative motion is a skill movement to act for moving part of body.

#### *Locomotor Pattern*

Locomotor is a movement where certain part of body move in a particular direction. Locomotor movements such as: walking, running, jumping and throwing.

#### *Walk*

Walking is a movement to step up in all directions that carried out by someone. However, a movement that has not been noticed since an early year might cause abnormalities in walking in the future. Therefore, exercise in walking must be socialized by playing, both in small and large groups.

The development pattern of mastering walking is, (1) Children can move fast and in control with a slow or fast rhythm. (2) The shape of movement when two legs stepping up. (3) Not straddling when approaching a straight line, the two soles of the feet narrows. (4) Increasingly automatic footstep makes children can walk like adults. Children can walk with well footstep swing and turn right or left easily.

There are several things we can consider technically as follow:

#### a. Strike

When moving forward, there is a tendency to lean forward or backward. Therefore, keep the body upright. Shoulders do not lift when the hand swings to avoid quickly tiring the upper limbs.

#### b. Head

When walking, the head position is looking forward. Occasionally, it is permitted to shake the head to the left or right because such movements do not interfere with the speed of the walking motion.

c. Feet

The footsteps straight forward one line with an imaginary line from the body of the walker / imaginary line between the two ends of the foot in line, not outward or inward. When it rests, the heel must touch the ground first and continue to move forward regularly.

d. Arms and shoulders

The arm motion swings from face to back and the elbow is bent not less than 90 degrees. This condition must be maintained and added by swinging relaxly without disturbing the balance.

*Run*

Running can be used by the teacher as a basis for giving exercise to students regularly. Teachers can take advantage of movement factors, such as place, time, and strength to create variations of running. Variations can also be created using bodily functions and part of body.

Running is not much different from walking; it is just going to be faster until the destination and movement one day floating in the air or rather jumping. Running movements can be driven by various combinations, for example:

- a. Running by kicking your buttocks with your heels behind.
- b. Running by raising your thighs high with a hand swing.
- c. Running with steps hanging in the air.
- d. Running with long steps and so on.

Various running activities, including:

- 1. Challenged running.
- 2. Reaction exercise by running.
- 3. Playing with running / chasing.

*Jump*

Jumping is a movement that lifts the body from one point to another that is farther or taller with a runner run fast or slow by laying on one leg and landing with the foot or other limbs in good balance.

*Throw*

Throwing is a movement to direct an object held by swinging your hand in a certain direction. This movement is done by using the strength of the hands and arms and requires coordination of several elements of movement, such as the arm with the finger that must release the object held at the right time.

*Non-locomotor Motion Patterns*

Non-locomotor motion does not move all the body. Only some part of body moved. The activities like: pushing, pulling, bending and twisting, twisting, shaking the hips and shoulders, and pulling.

*Manipulative Motion Pattern*

Manipulative skills involve the act of controlling an object especially by hands or feet. There are two classifications of manipulative skills, namely receptive and propulsive. Receptive skills are accepting an object such as capturing and propulsive skills having the characteristic of exerting force or force on an object, such as hitting, throwing, bouncing or kicking. Some movements

included in manipulative movements are rolling balls or the like, throwing and catching, holding, reflecting and hitting.

### *Discussion*

Implementation of the curriculum using motion patterns-based learning media, in general, has the same stages as other schools. However, the stages of learning in the implementation of this curriculum run a little different. Learning activities are dominated by providing optimal space for children in various types of activities carried out. The teacher gives children the freedom to move such as running, jumping, throwing, and the like.

The use of media motion patterns in the implementation of this curriculum aims to optimize all aspects of child development; cognitive, affective and psychomotor aspects. All aspects of development are trained using media based on motion patterns. Media based on the motion pattern of the child can be done indoors or outdoors.

Before the implementation of learning is carried out, the teacher will make a lesson plan that contains tomorrow's learning activities that content of using motion patterns. The teacher designs the types of activities, media, and tools that will be used. This is in accordance with the opinion of Sujiono (2009) that the curriculum is a very planned application so that the planning of the implementation of the curriculum based on motion patterns is an important part before the implementation of learning by the teacher. All aspects are considered by the teacher so that the activities carried out can optimize all aspects of development. For example, in the theme of plants, the pattern of motion that is carried out is the movement of hoeing, planting, watering, and so on. In addition, there are also trees, trees that are blown by gentle wind and trees that are blown by the strong wind. Cognitive aspects can be developed while children doing the motion patterns before the teacher introduce the word cards about the movements that will be carried out.

From the stages of learning that have been carried out, the teacher uses strategies in learning activities that are in accordance with the specific theme using motion patterns. The theme of learning implemented is always in accordance with the pattern of motion. The teacher gives children more freedom in movement which is designed through play-based learning (Kawaitouw, Widiastuti, & Kurniawan, 2018). Although many children are given the freedom to play, teachers are required to be involved in a game of motion patterns, for example giving examples of motion patterns at the beginning of the activity.

Through the design of learning activities carried out by playing, children can build interest and foster feelings of pleasure before participating in class activities. Motion play activities can help children practice socialization with peers, make children creative by making new patterns of motion to be played, and develop language skills to communicate with their peers.

During outdoor activities, during the game, the teachers also participate in it. For example, when a child plays a pattern of crawling like a goat, jumping like a frog and throwing a ball into a container, the teachers also actively play with the children and follow the rules of the game such as waiting in line for their turn. So that the implementation of the curriculum based on the pattern of movement is not only done by children, but also by teachers. This implementation is also useful for teachers to move and exercise lightly which is often rarely done every day.

Implementation of the curriculum uses learning media based on the pattern of movement for pre-school age held in kindergartens in East Jakarta. As the implementation of the curriculum, in general, begins with the preparation of Semester Program, Weekly Learning Lesson Plan, Daily

Learning Implementation Plan, and Planning Evaluation. The process of implementing the curriculum that is carried out is using media motion patterns because pre-school children have more movement activity compared to the age above it.

The implementation of the curriculum using motion media is very dependent on the teacher. The curriculum can be implemented properly if the teacher is committed to implementing the curriculum (Rahelly, 2018). In addition, the competence and creativity of the teacher also determine the success of the implementation of the specific curriculum in the preparation of curriculum documents. Teachers who succeed in implementing the curriculum are able to choose and create a learning atmosphere that makes students excited, able to choose and implement teaching methods that are in accordance with students' abilities, able to learning the material and actively involve students. In addition, the teacher is able to choose, compile, and carry out evaluations, both to evaluate the development or student learning outcomes to assess the efficiency of the implementation itself (Winarso, 2017). It can be concluded that the implementation of the curriculum based on motion patterns can be implemented properly and optimize all aspects of child development.

The teacher is one of the important elements in the successful implementation of the curriculum. Teachers must be dynamic, relevant, and authentically connected with the profession they are engaged in (Boyle & Phelps, 2010). The education curriculum must be designed by teachers to provide educational services for all students. Curriculum innovation based on motion patterns provides an example of a curriculum that can be achieved, giving opportunities to students to develop well. By expanding learning and learning environments that are designed collaboratively, are fun and involve active students

The curriculum implementation seeks to provide innovation approaches and methods in an effort to improve education (Ozturk, 2011). In the 2013 curriculum, it is possible and encourages teachers to take a greater role in the development of the learning process. The implementation of a curriculum based on motion patterns is one of the efforts made to make an innovation in the learning process. So that the 2013 curriculum objectives can be achieved in accordance with the expected targets. The implementation of a curriculum based on motion patterns introduces a new teaching method that focuses on the needs, interests, and demands of pre-school age children who are still very active and consider the diversity of children. This is done so that the relationship between teachers and students in the implementation of the curriculum can take place in two directions and involve students actively in learning.

#### 4 CONCLUSION

The results of this study indicate the implementation of overall physical education learning showed a high percentage result. If all these dimensions are accumulated, they show very well. Thus, the implementation of educational learning is very effective in pre-school children in kindergarten. It has followed the 2013 curriculum for Kindergarten in East Jakarta. Obtaining data from research provides information that can be used in addressing the current schools for pre-school age children and for teachers who will teach. Media provides a varied form of movement for students in physical learning.

## 5 REFERENCES

- Arikunto, S. (2010). *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Asdi Mahasatya.
- Arikunto, S. (2014). *Prosedur Penelitian*. Jakarta: Rineka Cipta.
- Ayob, A., Badzis, M., & Nordin, A. L. Abdullah, R. (2016). *Kurikulum Permata Negara*. Tanjung Malim: NCDRC, UPSI.
- Azia, R. S. (1976). *Curriculum Principles and Foundation*. New York: Harper and Row Publisher.
- Boyle, T., & Phelps, R. (2010). Curriculum To Acknowledge Diversity. *The International Journal of Learning*, 17(2), 357–370.
- Brady, L. (1995). *Curriculum development* (5th ed.). Sydney: Prentice-Hall.
- Cholimah, N. (2012). *Pengembangan Kurikulum PAUD Berdasarkan Permen 58 Tahun 2009*.
- Criticos. (1996). *Media*. Amazon.
- George A. Beauchamp. (1981). *Curriculum Theory*. F.E. Peacock Publisher.
- Jamaris, M. (2006). *Perkembangan dan Pengembangan Anak Usia Dini Taman Kanak-kanak*. Jakarta: Gramedia Widiasarana.
- Johnson, M. (1967). *Intentionality in Education*. New York: Center for Curriculum Research and Services.
- Kawaitouw, Y. I., Widiastuti, A. A., & Kurniawan, M. (2018). Unit Studies Curriculum: Strategi Guru Dalam Implementasi Kurikulum di Jungle School Sidomukti. *Jurnal Pendidikan Usia Dini*, 12(November), 371–380.
- Kerlinger, F. N. (1990). *Asas-asas Penelitian Behavioral* (3th ed.). Yogyakarta: Gajah Mada University Press.
- Langgulong, H. (1989). *Manusia dan Pendidikan: Suatu Analisa Psikologik dan Pendidikan*. Jakarta: Pustaka al-Husna.
- MacDonald, J. B. (1965). *Educational Models for Instruction*. Washington DC: The Association for Supervision and Curriculum Development.
- Morrison, G. S. (2012). *Dasar-dasar Pendidikan Anak Usia Dini*. Jakarta: Indeks.
- Olivia, P. F. (1992). *Developing the Curriculum* (Third Edit). New York: Harper Collins Publishers Inc.
- Ornstein, A. C. (2004). *Curriculum: Foundation, Principles, and Issues*. Boston: Pearson Education, Inc.
- Ozturk, I. H. (2011). Curriculum Reform and Teacher Autonomy in Turkey: the case of the History Teaching". *International Journal of Instruction*, 4 (2)(2), 113–127.
- Prihatini, P. (2014). Kajian Ide Kurikulum 2012 PAUD dan Implikasinya dalam Pengembangan KTSP. *Cakrawala: Jurnal Pendidikan Anak USia Dini*.
- Rahelly, Y. (2018). Implementasi Kurikulum 2013 Pendidikan Anak Usia Dini di Sumatera Selatan. *Jurnal Pendidikan Usia Dini*, 12(November), 381–390. <https://doi.org/https://doi.org/10.21009/JPUD.122.19>
- Rohmansyah, N. A. (2017). Pengaruh Model Pembelajaran Problem Based Learning Terhadap Kemampuan Pemahaman Konsep Pendidikan Jasmani Pada Pembelajaran Tematik Terintegrasi Siswa Kelas IV. *JURNAL PENJAKORA*, 4(28–35).
- Saylor, J. G., & Alexander, W. M. (1981). *Curriculum Planning for Better Teaching and*

*Learning*. Holt-Rinehart and Winston.

Sujiono, Y. N. (2009). *Konsep Dasar Pendidikan Anak Usia Dini*. Jakarta: Indeks.

Sukmadinata, N. S. (2000). *Pengembangan Kurikulum Teori dan Praktek*. Bandung: Remaja Rosdakarya.

Sutapa, P. (2014). *Pengembangan Model Pembelajaran Pendidikan Jasmani Berbasis Kinestetik Untuk Anak Usia Pra Sekolah*. Yogyakarta.

Webster. (1993). *Webster's New International Dictionary*. GC Company.

Widoyoko, E. P. (2012). *Evaluasi Program Pembelajaran*. Yogyakarta: Pustaka Pelajar.

Winarno. (2011). *Winarno. Metodologi dalam Penelitian Pendidikan Jasmani*. Malang: Media Cakrawala Press.

Winarso, W. (2017). *Dasar Pengembangan Kurikulum Sekolah*, (January 2015).