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Cognitive Development Through Cultural Narratives: The Effectiveness of the Children's Book with Bugis Value for Early Childhood Education in Makassar City, South Sulawesi, Indonesia

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Abstract

This study investigates the impact of picture storybooks containing Bugis values (Sipakatau, Sipakainge', and Sipakalebbi) on the cognitive development of early childhood at PGKG Nobel Kindergarten in Makassar. Conducted from April to May 2024, the research employs a quantitative quasi-experimental design. The population includes 54 children, with 32 selected through cluster random sampling and divided into experimental and control groups. The independent variable is the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi," and the dependent variable is children's cognitive development. Pre- and post-tests assessed visual literacy and values/attitudes. Data analysis involved frequency distribution, mean, standard deviation, and various statistical tests including Paired T-Test and Independent T-Test (a = 5%). Results show a significant improvement in cognitive aspects in the experimental group, with average scores increasing from 11.06 to 13.19 (p-value < .001). The control group also showed cognitive development, with scores rising from 10.38 to 11.13 (p-value = 0.035). There is a significant difference in cognitive abilities between the experimental and control groups (p-value < .001). These findings indicate that the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" effectively enhances children's cognitive development through Bugis cultural values in South Sulawesi, Indonesia.

Keywords: *Cognitive Development, Indonesian Culture, Bugis Value, Visual Communication Design, Visual Storybook*

INTRODUCTION

The process of early childhood growth and development is quite complex. Three main aspects must be considered; biological development processes, processes in the cognitive domain, and children's social-emotional processes (Santrock, 2004 as cited in Aniswita & Neviyarni, 2020). For several decades, the cognitive domain has become an important aspect of human psychology because it is related to understanding, consideration, receiving information, problem-solving, intentionality, and what a person believes (Patmodewo, 2003 as cited in Khadijah, 2016). The cognitive development process usually begins at the age of 0-6 years or the Golden Age phase, along with development in other aspects. The golden age phase is known as a critical period for all child development zones because personality development and formation, acquisition of basic knowledge and skills, and language acquisition occur in this period. (Haktanir, 2012 as cited in Gönen, 2014). At this age, children's brains begin to develop rapidly and begin to learn about moral and social values and develop behavior that will become the foundation of their character in the future. Entering the golden age phase also sharpens children's brains in the process of understanding the rules but in a simple way. They consider rules to be inflexible, unchangeable, and made by authority figures.

Many learning methods exist to maximize children's cognitive aspects, considering that humans have diverse thinking structures, of course, each child's learning process is different according to each student's experience, nature, and learning methods. Piaget, a psychologist, explained that every understanding that children receive through observing the environment or what they see tends to produce adaptive intelligence, in line with the concept of cognitive development which allows children to think, act, and solve problems. Learning in childhood is very important to foster quality and intelligent development in children as the foundation for their future lives (Bureekhampun et al., 2021).

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Every place inhabited by social communities has its own culture and moral values. Creating media for moral education can be used to understand character; Mainly a model based on local cultural qualities. If applied holistically and contextually, this media can help to understand and preserve local wisdom, cultural values, and values found in social and community contexts (Amiruddin et al., 2023 as cited in Syahbani, 2024). Indonesia, with its different cultural commodities in each tribe, presents a variety of entities as a form of diversity.

One of the cultures in Indonesia which has a population of more than one million people is the Bugis tribe. In his book, Palres (1996) explains that the 'Bugis' are one of various tribes in Southeast Asia which has a population of four million people and can be found in the southwest part of the island of Sulawesi. Compared to other Indonesian tribes, according to Palres, the Bugis tribe has for centuries been one of the least-known tribes in the archipelago. The Bugis tribe has various very interesting characteristics, starting from customs, clothing, marriage traditions, literature, also life principles.

The Bugis people are known as people who have a tough character but who highly value honor. In their daily activities, the Bugis tribe adheres to some principles and values that they uphold. Even though they continue to adapt to their surroundings, the Bugis are still able to maintain their "Bugis" identity (Salim et al., 2018). Several principles from the Bugis tribe relate to character education for children's cognitive development. The principles of the Bugis tribe are Sipakatau, Sipakainge', and Sipakalebbi. Sipakatau in Bugis philosophy is defined as an attitude of humanizing humans. Another life principle that learned from Bugis is Sipakainge'. Furthermore, the word Sipakainge' from the Bugis tribe means the act of reminding each other. Then, Sipakalebbi in Bugis culture is defined as an attitude of glorifying each other, loving each other, and an attitude of always helping others. The meaning of the values of the Bugis Sipakatau, Sipakainge', and Sipakalebbi tribes can have an impact on realizing behavior that is based on a conception of values such as the value of determination which provides motivation and outlook on life, the value of courage which helps maintain self-esteem, the value of solidarity and the value of politeness (Salim et al., 2018). The three values of the Bugis tribe have a good influence on the formation of each individual and are good for children's cognitive development. The values of the Bugis tribe are important for society to transform, especially in early childhood because the existence of cultural values can be the highest guide for human behavior and an effort to prevent deviant behavior. Transforming Bugis values as an aspect of character education that supports the cognitive domain can be carried out through visual literacy learning at an early age.

Visual literacy is the ability to understand and interpret visual messages, such as images, photos, and videos. This ability is important for children to learn about the world around them and to communicate effectively (Huri, 2023). As the power of colorful visual communication became widely appreciated, graphic design grew out of the need to provide visual communication to the consumer world and spread to various sectors of the economy, while continuing to take advantage of the technological developments brought about by progress (Ambrose, G., & Paul, H., 2009). Visual literacy can be applied in various mediums, one of which is picture storybooks. The concept of picture story books is an alternative for conveying messages through pictures which can play an important role in supporting children's abilities in developing imagination, and preserving culture, and can be a significant medium for children's cognitive development. Sidhartani (2016) explains that visual literacy can also help children improve their ability to be sensitive to their environment.

This visual concept can be explained by stimuli and seeing the effectiveness of the five senses after receiving stimulation as follows: the sense of sight is 83%, the sense of hearing is 11%, the sense of smell is 3.5%, the sense of touch is 1.5%, and sense of taste by 1% (Wirasti, Murti., & Sungkono., 2009, as cited in Hartini et al., 2022). The percentage of effectiveness of the sense of sight based on this information is quite significant, so understanding visual literacy has great potential to improve the quality of cognitive learning using symbols or visual symbols. Sipe (1998) as cited in Sun., et al (2019) also describes that when illustrations and narration complement each other in picture storybooks, nonverbal information can support the understanding of verbal information, and conversely, verbal information can support the interpretation of illustrations and other nonverbal information. As an effort to create a medium for the process of transforming cultural values, the picture book with the title "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" was designed as a visual communication medium that combines illustrations and stories about Bugis children named Onding and macaca maura; an endemic monkey typical of South Sulawesi named Upe which invites children on an adventure to get to know the three ancestral values of the Bugis

tribe: Sipakatau, Sipakainge', and Sipakalebbi. This book has been published by Unhas Press with International Standard Book Number (ISBN) 978-979-530-328-2.

The involvement of local culture allows children can learn in context because it is related to something close to their lives, so it can improve their reading competence (Woolley, 2011 as cited in Ratminingsih et al., 2020). Apart from helping children interpret pictures, picture storybooks stimulate cognitive skills such as sequencing, predicting, and being able to think critically. Early childhood children can learn to connect cause and effect, recognize patterns, and reach the stage of making conclusions (Niland, 2023). Picture storybooks can also help children develop three main values in life such as responsibility, learning about honesty, and having a sense of cooperation within themselves. Picture storybooks as a medium for visual communication design can also be a social and cultural representation of society and become a manifestation of culture in the form of products of moral values that apply at a certain time (Tinarbuko, 2009).

By providing cultural knowledge and maximizing children's cognitive development through literacy, the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" is designed to explore the understanding of cultural values to children without having to be patronizing. In general, the process of making this picture storybook uses the principle of imitation or iconicity. This form of imitation has an important role in drawing on children's creativity and imagination so that they behave like the characters in a story. To examine children's understanding of the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi", it is necessary to further analyze the extent to which children respond to the behavior of the characters in the book and prove the assumption of the modeling concept of Bandura's Social Learning Theory which states that humans automatically tend to empathize with other people's feelings. Bandura explains that the behavior of characters who have a high appeal message (appeal message) as well as a ground that captures children's cognitive aspect with certain indicators such as character modeling, understanding narrative, development of social skills, introduction to culture and values, and imagination child. "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi", was designed to see the effectiveness of children's understanding and visual literacy regarding the application of Bugis values for character development that supports aspects of cognitive development.

METHODOLOGY

The The phenomenon of the influence of the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" for the cognitive development of KG. PMKG Nobel Makassar children will be classified, observed, and measured using quantitative methods based on concrete data in the form of numbers which will be measured using statistics to produce research conclusions. Nobel PMKG Kindergarten Makassar was established in 2020 under the auspices of the Nobel Education Foundation Makassar based on the deed of Establishment of the School Operator Foundation with no. AHU 0012285.01.04.2015. Nobel KG. is part of the development of the world of STIE Nobel Indonesia campus education which focuses on early childhood education, namely 3-6 years, and uses the 'Kurikulum Merdeka' and combines educational methods from Finland, which is famous for the best education in the world.

The type of approach that will be used to analyze the objects and topics of this research is a quasi-experimental design approach or Quasi-Experimental Design in the form of a non-equivalent control group design. In the Non-Equivalent control group design approach, two groups are the object of research: the experimental and control group.

Population and Sampling

The population in this research were all students from KG. PGKG Nobel Makassar, South Sulawesi, Indonesia from classes A and B; considering the early age category and being able to read and pronounce letters well. Nobel Kindergarten has five class divisions, namely classes KG A1 and KG A2 with 10 children, class KG B1 with 15 children, class KG B2 consisting of 13 children, and class KG B3 with 6 children so the total population in this study is 54 children.

Sample determination was carried out using the cluster random sampling technique. Cluster random sampling was then used to divide the samples into experimental class and control class categories. The criteria used for this research sample were boys and girls aged 4-6 years, with good reading skills. Based on considerations using the cluster random sampling method, the number of samples who will participate in this research is 32 children from class KG B1 to class KG B3 at TK PGKG Nobel Makassar. Then the three classes were drawn randomly to determine the experimental class and control class as the main subjects in this research. Ethical approval for conducting research was obtained from the South

Sulawesi Provincial Government's Investment and One-Stop Integrated Services Service (with letter number 6557/S.01/PTSP/2024).

Research Tools

The research instrument for the independent variable (X) in this research is visual communication learning media. The experimental group will be treated using the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" with a collaborative learning model following cognitive development theory and social learning theory. Then, the control group will be treated with the usual conventional learning model and lecture method. The existence of differences between the two groups can influence the research results.

Figure 1: Pages from the illustrated storybook which contains Bugis cultural values

Data Collection and Analysis

To test the essence of the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" on children's cognitive development, a re-test session was conducted to determine the initial ability of children on March 2, 2024. The results of the pre-test were then analyzed to develop a learning curriculum for the experimental class that was given the intervention of the "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" book and the control class. After the learning process ended, a post-test was conducted on June 3, 2024, to obtain final data on children's cognitive abilities. The number of questions given each in the pre-test and post-test were 15 questions about visual literacy and children's understanding of attitudes/values. Scores from the children's pre-test and post-test were calculated with the qualification of giving a score (1) for each question answered correctly, and a score of zero (0) if incorrect. Good criteria are obtained if the score is in the range of 10-15, sufficient if the score range is 5-10, and if the score range is 0-5, it means that the child's knowledge is still lacking. The worksheet test was completed within 30-45 minutes per session. The number of children who participated in the entire series of pre-tests and post-tests was 32 children.

The quantitative data obtained was then tabulated using frequency percentage, mean, and standard deviation, as hypothesis testing; which calculated for pre-test and post-test scores of experimental and control classes was conducted with a paired sample t-test to see the effect of learning methods on children's cognitive development, and independent sample t-test to see significant differences between the treated and control classes; with the indicator that the data distribution is normal. Each test used a 95% confidence level ($\alpha = 0.05$) with the decision to accept H0 and HA is rejected if the significance value is greater than (0.05). On the other hand, if the significance value is smaller than (0.05) then H0 is rejected and HA will be accepted. To ensure the trustworthiness of the data/findings, the validity of the research instruments was reviewed by 5 experts who have been certified in their fields.

RESULT AND DISCUSSION

The results of the study are divided into three sections which include the effect of learning in the experimental class, the effect of learning in the control class, and a comparative analysis of the final scores between the experimental class and the control class after being given an intervention to see the effect of the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" and conventional learning on

children's cognitive development in KG. PMKG Nobel Makassar. Previously, the data on the distribution of value frequencies in the experimental class and the control class were presented in the following table:

Score	Experimental Class				Control Class			
	pre		*post*		*pre*		*post*	
	f	%	*f*	%	*f*	%	*f*	%
7	0	0.00%	0	0.00%	0	0.00%	1	6.30%
8	2	12.50%	0	0.00%	1	6.30	0	0.00%
9	0	0.00%	0	0.00%	4	25.00%	1	6.30%
10	3	18.80%	1	6.30%	4	25.00%	3	18.80%
11	5	31.30%	1	6.30%	3	18.80%	3	18.80%
12	3	18.80%	3	18.80%	3	18.80%	5	31.30%
13	2	12.50%	3	18.80%	1	6.30%	3	18.80%
14	1	6.30%	5	31.30%	0	0.00%	0	0.00%
15	0	0.00%	3	18.80	0	0.00%	0	0.00%
TOTAL	**16**	**100.00%**	**16**	**100.00%**	**16**	**100.00%**	**16**	**100.00%**

Tabel 1. Score distribution frequency result by experimental and control class

Distribution of data on the results of pre-test and post-test tests for children in the experimental and control classes starts from the range of 7 as the lowest value and 15 as the highest value. If the child gets a score of 15, it means that all the questions are answered correctly. There are some very contrasting differences in grades between the two classes.

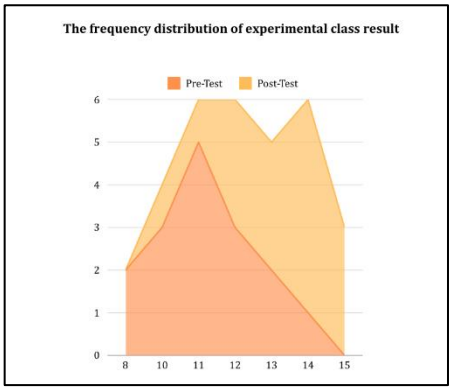

Figure 2: Graph of Experimental Class Results

In the experimental class, the frequency of 8 values was obtained by 2 children, 10 values by 4 children, scores of 11 and 12 each received by 6 children, score of 13 received by a total of 5 children, then 14 values were obtained by 6 children. The perfect score, 15, was received by 3 children.

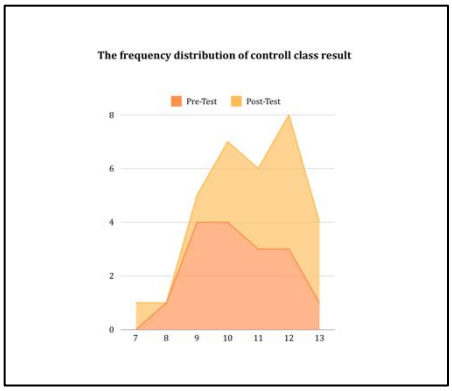

Figure 3: Graph of Control Class Results

Frequency in the control class started from 7 and was obtained by 1 child, 8 values by 1 child, a score of 9 by 5 children, and 10 values received by a total of 7 children. 11 scores were received by 6 children, then 12 were received by 8 children. Furthermore, a score of 13 was obtained from 4 children. To see children's knowledge holistically, it can be known through the percentage of answers to the question items during the pre-test and post-test in the experimental and control classes. In detail, the percentage per question item is presented in the following table:

Table 2. Draft blueprint pre-test and post-test for experimental class

Indicator	No	Experimental Class					
		Pre-Test			Post-Test		
		T (%)	F (%)	Means	T (%)	F (%)	Means
Visual Cognitive Knowledge							
Sticking stickers on the box according to the specified numbers	1	100,00%	0,00%	Very High	100,00%	0,00%	Very High
Select an image according to the existing shadow	2	100,00%	0,00%	Very High	100,00%	0,00%	Very High
	3	93,33%	6,66%	Very High	93,33%	6,66%	Very High
	4	100,00%	0,00%	Very High	100%	0,00%	Very High
Writing the name of the colors	5	53,33%	46,66%	Moderate	73,33%	26,66%	High
Cognitive Knowledge, Values, and Attitudes							
Writing down the letters of the missing Bugis value word spelling	6	33,33%	66,66%	Moderate	73,33%	26,66%	High
	7	13,33%	86,66%	Low	53,33%	46,66%	Moderate
	8	13,33%	86,66%	Low	66,66%	33,33%	High
Matching images according to Bugis values	9	0,00%	100,00%	Very Low	80,00%	20,00%	Very High
Choosing attitude visualization which is in accordance with the Bugis value	10	93,33%	6,66%	Very High	100,00%	0,00%	Very High
	11	86,66%	13,33%	Very High	93,33%	6,66%	Very High
	12	93,33%	6,66%	Very High	93,33%	6,66%	Very High
Choosing a good attitude according to the Bugis value	13	93,33%	6,66%	Very High	100,00%	0,00%	Very High
	14	86,66%	13,33%	Very High	86,66%	13,33%	Very High
	15	93,33%	6,66%	Very High	100,00%	0,00%	Very High

Based on the blueprint of the experimental class, the percentage of questions that are answered 100.00% correctly by children based on the table are question numbers (1), (2), (4), (10), and (15). All questions with indicators related to visual cognitive knowledge (numbers 1-5) answered correctly by children were at a percentage of >50%. Children's understanding of visual literacy is sufficient, so the process of providing interventions related to visual literacy is not significantly needed. Meanwhile, the lowest percentage of questions answered correctly by children is question number (9), which is 6.66%. Question numbers (7) and (8) are also in the percentage of <50%. Seeing this percentage, in providing intervention, children should read and understand the Bugis' values of sipakatau, sipakainge', and sipakalebbi from the picture storybook to evaluate children's knowledge of attitudes and values.

After an intervention, based on the post-test result, all indicators about children's cognitive knowledge, values, and attitudes, namely question numbers (6) to (15) that were answered correctly by children, were at a percentage of >50%. In addition, the lowest percentage in the previous Pre-Test, namely question number (9), was 6.66%. After being given treatment, the total score became 80.00%, increasing to 73.34%.

Table 3. Draft blueprint pre-test and post-test for control class

Indicator	No	Experimental Class					
		Pre-Test			Post-Test		
		T (%)	F (%)	Means	T (%)	F (%)	Means
Visual Cognitive Knowledge							
Sticking stickers on the box according to the specified numbers	1	100,00%	0,00%	Very High	100,00%	0,00%	Very High
Select an image according to the existing shadow	2	100,00%	0,00%	Very High	100,00%	0,00%	Very High
	3	80,00%	20,00%	Very High	93,33%	6,66%	Very High
	4	100,00%	0,00%	Very High	100%	0,00%	Very High
Writing the name of the colors	5	40,00%	60,00%	Low	73,33%	26,66%	High
Cognitive Knowledge, Values, and Attitudes							
Writing down the letters of the missing Bugis value word spelling	6	33,33%	66,66%	Low	46,66%	53,33%	High
	7	13,33%	86,66%	Very Low	26,66%	73,33%	Very Low
	8	13,33%	86,66%	Very Low	6,66%	93,33%	Very Low
Matching images according to Bugis values	9	0,00%	100,00%	Very Low	0,00%	100,00%	Very Low
Choosing attitude visualization which is in accordance with the Bugis value	10	93,33%	6,66%	Very High	93,33%	6,66%	Very High
	11	86,66%	13,33%	Very High	86,66%	13,33%	Very High
	12	93,33%	6,66%	Very High	100,00%	0,00%	Very High
Choosing a good attitude according to the Bugis value	13	93,33%	6,66%	Very High	93,33%	6,66%	Very High
	14	86,66%	13,33%	Very High	93,33%	6,66%	Very High
	15	93,33%	6,66%	Very High	93,33%	6,66%	Very High

The percentage of questions that are answered 100.00% correctly by children based on the table are question items number (1), (2), and (4). Questions with indicators related to visual cognitive knowledge answered correctly by children are at a percentage of >50%, except for question number (5) which only reaches 40%. Meanwhile, the lowest percentage of questions answered correctly by children is question number (9), where all children do not answer correctly. The percentage of questions (6), (7), and (8) is also quite low and <50%, so children in the control class need to learn Bugis values to evaluate children's knowledge related to attitude indicators and their values. After the learning process and post-test, all indicators of visual literacy are at a

percentage of >50%, which means there is an increase from the previous test. The percentage of children's cognitive knowledge, scores, and attitudes in question items (6), (7), and (8) also increased in the Post-Test when compared to the previous Pre-Test, although the increase was not significant enough.

Children's Cognitive Ability in Experimental Class

The learning process in the experimental class using the visual communication medium of picture storybooks "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" was conducted six times a meeting, with a storytelling schedule of five meetings, and one meeting with worksheet exercise. The results of the descriptive statistics about the test on experimental class children with the SPPS ver. 29.00 are presented in the following table:

Table 4. Descriptive Statistics of Pre-Test and Post-Test Data Experimental Class

Testing Type	Total Sample (n)	Mean	Std. Deviation	Paired Sample Correlation	*p*-value
Pre-Test	16	11.06	1.652	0.900	<.001
Post-Test		13.19	1.471		

Descriptively, there is a difference before and after children are given treatment. Furthermore, based on the output of the test results related to the relationship and correlation between the two variables (Pre-Test and Post-Test), the correlation coefficient value is 0.900 with a significance value of <.001, which means it is equal to zero (0). To see how significant the effect of the book "The Adventure of Onding" is on the cognitive development of experimental class children at PGKG Nobel Kindergarten Makassar, a paired T-test was conducted and the results of the test are described in the following table:

Table 5: Paired T-Test Results for Experimental Class

Experimental Class Test	Mean	Std. Deviation	Significance (Confidence Level = 95%)		$t_{statistics}$	*p*-value
			Lower	Upper		
	-2.125	719	-2.508	-1.742	-11.825	<.001

The paired t-test table contains an average difference between the pre-test and post-test of -2.125. This means that the average difference is at the lower limit of -2.508 and the upper limit of -1.742 (with a 95% confidence level) with tstatistics of -11.825. Based on the output table of paired t-test results, the value (p) or significance from testing the Pre-Test and Post-Test scores of experimental class children were <0.001 or equal to zero (0). Apart from there being a difference in the average Pre-Test and Post-Test scores, because the results of Sig. 2 tailed has a value of (0) < 0.05 it can be concluded that H0 is rejected and HA is accepted, which means there is a significant influence from the use of the picture story book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" on the cognitive abilities of children at the KG. PGKG Nobel.

Children's Cognitive Ability in Control Class

The conventional learning process using the lecture method is carried out after testing children's knowledge from the Pre-Test. After that, the knowledge of children in the control class was tested again with a Post-Test. Descriptively, the results of the comparison of the mean and standard deviation of the control class are fully described in the following table:

Table 6. Descriptive Statistics of Pre-Test and Post-Test Data Control Class

Testing Type	Total Sample (n)	Mean	Std. Deviation	Paired Sample Correlation	*p*-value
Pre-Test	16	10.38	1.408	0.647	0.007

Post-Test	11.13	1.628

Based on the table of Pre-Test and Post-Test results for control class children, it is known that the average Pre-Test score for control class children is 10.38 with a standard deviation of 1.408. After being given treatment, the average result of the children in the Post-Test was 11.13, which means there was an increase from the previous Pre-Test with a difference of 0.75, and the standard deviation of the Post-Test for children in the control class was 1.471. Descriptively, there is a difference before and after the child is given treatment, although it is not significant (the difference is below 1). Furthermore, based on the output of test results related to the relationship and correlation between the two variables (Pre-Test and Post-Test), a correlation coefficient value of 0.647 was obtained with a significance value of 0.007. To see how significant the influence of the conventional learning process is on the cognitive development of control class children at the PGKG Nobel Makassar Kindergarten, a paired T-test was carried out and the results of this test are described in the following table:

Table 7.Paired T-Test Results for Control Class

Experimental Class Test	Mean	Std. Deviation	Significance (Confidence Level = 95%)		$t_{statistics}$	*p*-value
			Lower	Upper		
	-750	1.291	-1.48	-602	-2.324	0.035

The paired T-test table for the control class contains the value of the difference between the average Pre-Test and Post-Test of -750. This means that the average difference is at the lower limit of -1.348 and the upper limit of -602 (with a 95% confidence level) with a tstatistics of -2.324. Based on the output table of paired T-test results, it is known that the p-value of the pre-test and post-test for experimental class children was 0.035. Apart from there being a difference in the average Pre-Test and Post-Test scores because of the results of the value of 0.035 < 0.05, it can be concluded that H0 is rejected and HA is accepted, which means there is a significant influence of the conventional learning process on children's cognitive abilities at the PGKG Nobel Makassar Kindergarten.

Analysis of the Differences in Cognitive Development between Children Used the Picture Book Containing Bugis Values and Children with Conventional Learning

Based on the paired sample t-test in the control and experimental classes, the test results show a standard deviation for the pre-test period of 11.06 with a standard deviation of 1.652. The pre-test period is controlled by a standard deviation of 10.38 with a standard deviation of 1.408. There is a difference in the average Pre-Test score between the experimental class and the control class. Next, an independent sample t-test was carried out on the pre-test scores between the two classes to prove that the difference in pre-test and post-test scores was significant. In detail the test results are presented in the following table:

Table 8. Independent Sample T-Test for Pre-Test between Experimental and Control Class

Result for pre-test	$F_{statistics}$	Signifcance	Sig. (Convidence Level= 95%)		$t_{statistics}$	Mean Difference	*p*-value
			Lower	Upper			
	0.009	0.924	-0.421	1.796	1.267	0.688	0.215

Data on the output shows a Fstatistics value of 0.009 with a significance of 0.924 > 0.05. This means that the variance in the pre-test data for the experimental class and control class is homogeneous. Meanwhile, the average difference between the pre-test data for the experimental and control classes is 0.688 with a lower limit of -0.421 and an upper limit of 1.796 (95% confidence level with a significance of 0.05). The p-value for the independent sample t-test on the pre-test data for the experimental and control classes is 0.215. As the basis for decision-making for the independent sample t-test, because the p-value is 0.215 > 0.05, H0 is accepted and HA is rejected. This means that in the initial test of children's knowledge before being given treatment, there were no significant differences between children in the experimental class and those in the control class.

After testing the differences between the two classes on the pre-test data, the post-test data was then tested to see whether there were differences in the data between the experimental class which was given picture storybook intervention containing Bugis values , and the control class which was given conventional learning. It is known that the average post-test score for experimental class children is 13.19 with a standard deviation of 1.471. Furthermore, the post-test results of control class children obtained an average of 11.13 with a standard deviation of 1.628. Based on these statistics, there are differences in the post-test between the experimental class and the control class; where the score in the experimental class that was given intervention was slightly higher than the control class that was given conventional learning. To find out whether the difference is significant, an independent t-test was carried out on the post-test value data. Detailed test results are shown in the following table:

Table 9. Independent Sample T-Test for Post-Test between Experimental and Control Class

Result for pre-test	$F_{statistics}$	Signifcance	Sig. (Convidence Level= 95%)		$t_{statistics}$	Mean Difference	*p*-value
			Lower	Upper			
	0.038	0,847	0.942	3.183	3.761	2.063	<.001

The results of the independent sample t-test in the table show that the Fstatistics value for post-test data is 0.038 with a significance of 0.847 > 0.05. This means that the variance in the post-test data for the experimental class and control class is homogeneous. Meanwhile, the average difference between the post-test data for the experimental class and the control class is 2.063 with a lower limit of 0.942 and an upper limit of 3.183 using a confidence level of 95%. Meanwhile, the p-value in the Independent t-test output of the experimental and control class post-test data is <.001, which means it is equal to zero (0). Following the basis for decision-making for the Independent T-Test, because the significance is zero (0) > 0.05, H0 is rejected and HA is accepted. So, based on the results of the Post-Test score data, there is a significant difference in cognitive development between children who were treated with the picture story book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" and children who received conventional learning.

DISCUSSION

The results of research based on data analysis describe varied results regarding children's cognitive development before being given treatment. Data is tabulated regarding children's knowledge after being tested with the pre-test, then accumulating the post-test scores which is the final test after the learning process is carried out in the experimental and control classes. The results of testing normality, homogeneity, and hypothesis testing on the data produced several statements that require further discussion.

The Effect of Learning with the Picture Story Book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" on the Cognitive Development of Children KG. PGKG Nobel Makassar

The pre-test results from the experimental class children had a data distribution of 8-12, which means that the children's understanding of the questions was sufficient and good. If we look at the questions and analyze them one by one based on the score criteria, the child's understanding of visual literacy in numbers (1), (2), (3), and (4) is already at good criteria. However, in question number (5), the number of children who answered correctly in the pre-test was only 8 people, so it was still within the sufficient criteria, and learning was needed regarding the indicator for question number (5), namely children's understanding of color.

For indicator questions that discuss values and attitudes, children's understanding of the values of Bugis sipakatau, sipakainge', and sipakalebbi based on the percentage of items in numbers (6), (7), (8), and (9) is overall in the lacking criteria. Moreover, in question number (9), the error percentage was 93.33%, which means that almost all children could not answer the question correctly. However, if we look at questions number (11) to (15), the percentage of correct answers by all children is above 50% and has good criteria. In fact, questions number (11) to (15) ask what good behavior is by Bugis values. So, it can be concluded that before being given treatment, children already understand good behavior following Bugis values but do not yet know and understand the meaning of these Bugis values. After the pre-test was carried out, then the children in the

experimental class were given treatment by reading the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" which contained visuals and stories about the importance of Bugis values.

This learning method is provided and implemented following Bandura's social learning theory which explains that learning from indirect modeling can also be done by observing characters, both real and fictional, who display behavior. If applied to this research, Onding and Upe are the main fictional characters for children to observe in their social learning process. Learning in the experimental class with picture storybooks received a good response from children. During five meetings, the children always felt enthusiastic when discussing the characters of Onding and Upe, the endemic monkeys, which the children found funny. So, in carrying out the transformation and understanding of Bugis values that are perceived by the public, children can slowly remember them through the five senses of sight and then understand them after carrying out an analysis process in their thoughts and themselves.

This was proven by significant changes during the post-test, where after the intervention was given the test was carried out again to see how far the child's cognitive development had improved after learning with picture storybooks. As a result, on the questions discussing Bugis values, namely numbers (6) to (9), the percentage of correct answers increased, and all were above 50%. This statement is supported by the distribution of data on post-test scores for experimental class children which are in the numbers 10-15—as measured based on score criteria, overall, the children's knowledge and cognitive development are good. Based on Piaget's theory of cognitive development, KG children. PGKG Nobel has an age range of 2-7 years and is in the pre-operational phase which allows children to use language and symbols such as words and pictures used to represent objects that are not present. Children also believe that inanimate objects have feelings and intentions because their thinking is based on intuition and perception rather than logic. If it is related to the research process that occurs in the field, the children in the experimental class fully consider the presence of Onding and Upe as objects that have feelings and become their "good friends" in interpreting everything that is visualized in the storybook to try to understand Bugis values. The two-way significance result shows that the influence of the storybook "Onding Adventure" is <.001 or equal to (0). Because the significance value is below 0.05, it is concluded that the picture storybook "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" can have a significant influence on children's cognitive abilities. In general, the learning process at KG. PGKG Nobel pays attention to children's growth and development from all aspects—biological, social-emotional, and children's cognitive development. However, as an Indonesian child with a rich cultural heritage, it would be a shame if the learning of cultural values is not applied and transformed from an early age. As a result, children will continue to drag themselves into the flow of globalization without ignoring the culture of their ancestors.

It is deemed necessary to choose appropriate learning media to teach young children about the importance of understanding cultural values, especially those of the Bugis tribe. It is hoped that the picture storybook "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" can become a learning medium for children's cognitive development based on understanding the values of local cultural wisdom in South Sulawesi, not only for children in KG. PGKG Nobel but also for all young children who are still unfamiliar with their culture.

The Effect of Conventional Learning on the Cognitive Development of Children KG. PGKG Nobel Makassar

The control class in this study was a class that was not given special treatment and the learning process was carried out using conventional learning methods as usual in the form of lectures. The position of the control class here is as a comparison class to see whether there are differences in cognitive knowledge between Class B KG children. PGKG Nobel was given intervention or vice versa. Like the experimental class, the number of children in the control class was 16 children who, before being taught, still felt unfamiliar with the values of Bugis, South Sulawesi. This is proven by the percentage of questions that discuss Bugis values (numbers (6) to (9), all of which are below 50%. Holistically, the knowledge of children in the control and experimental classes based on pre-test scores and before both learnings were not much different, considering that the hypothesis test with an independent t-test concluded that the p-value was 0.215 > 0.05, which means there is no significant

difference regarding children's knowledge in both classes. This statement supports the explanation that children in both classes (experimental and control) have a good understanding of basic visual literacy. It turns out that the PGKG Nobel Makassar Kindergarten learning curriculum contains learning material that uses the Finnish education model, where all learning material (including discussions about numbers, shapes, and the like) is not only done using the lecture method but also by learning by doing, learning by storytelling. , as well as learning by trial. This is a supporting factor why children's knowledge regarding basic visual literacy, both in the experimental and control classes, is quite adequate.

After the pre-test, children in the control class were then given conventional learning which contained the Bugis values of sipakatau, sipakainge', and sipakalebbi. During the teaching and learning process in the control class, children were given material about the meaning of the three Bugis values, examples of relevant behavior, and examples of behavior that was not by Bugis values. However, because learning is conventional, the teacher only explains the material using the story-telling method (lecture and telling stories) without supporting media. Learning is carried out over five meetings and then the children are tested again with a post-test. Even though there was an increase from the average of the previous pre-test results, the increase did not feel significant when compared to the experimental class, because the difference between the average pre-test and post-test of the control class was only 0.75.

Another important thing to pay attention to is the pre-test and post-test scores of control class children on question item number (9), which did not change, and remained static at a percentage of 0.00%. If you look at the draft questions given, the visualization/picture on question item number (9) that the children want to match with which they have never seen before and limited understanding of the Bugis values of sipakatau, sipakainge', and sipakalebbi in questions that do not have a translation may be an obstacle. child to answer question number (9) correctly. When compared with the experimental class, the correct percentage of children's scores on item number (9) is inversely proportional, reaching 80.00%. This is because these images can be seen in the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi", thus enabling children to carry out retention (remembering) which is one aspect of social learning theory.

CONCLUSION

(1) There is a significant difference in the cognitive aspects of children after reading picture storybooks. The average score increased from 11.06 to 13.19, with a p-value < .001. (2) Cognitive development in the control class also showed improvement. The average score increased from 10.38 to 11.13, with a p-value = 0.035. (3) There is a significant difference in cognitive abilities between children who used the books and those who did not, as indicated by a p-value < .001. The results indicate that the book "The Adventure of Onding: Introducing Sipakatau, Sipakainge', and Sipakalebbi" can positively influence children's cognitive development through learning Bugis cultural values in South Sulawesi, Indonesia.

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