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The Effectiveness of Jolly Phonics and Multisensory Learning Methods in Improving Preschoolers Pre-Reading Skills

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This study aims to examine the effect of Jolly Phonics and multisensory learning methods, to improve pre-reading ability among preschool children. The research method used was an experiment with two experimental groups and one control group. The Jolly Phonics learning method was applied to the first experimental group. Multisensory learning method was applied to the second experimental group. The mean difference of the post-test between control group and the first experimental group (Jolly Phonics group) is 17,167 ($p < 0.05$). It is shown that there were significant pre-reading ability differences between the control group and Jolly Phonics experimental group. The mean difference of the post-test between control group and the second experimental group is 17,667 ($p < 0.05$). It is shown that there were significant pre-reading ability differences between the control group and the multisensory experimental group. These results indicate that the Jolly Phonics and multisensory learning methods are effective methods for improving pre-reading skills. The post-test score differences between the first experimental group and the second experimental group show a mean difference of 0.500 ($p > 0.05$). It indicated that there is no difference in pre-reading ability between Jolly Phonics and Multisensory learning group, which means that both learning methods are equally effective in increasing pre-reading skills.

Key words: *Multisensory learning method, Jolly Phonics learning method, ability, preschool children.*



Introduction

Pre-reading ability is a basic ability that should be mastered by every child in an early age. That is because pre-reading ability is a gateway to easily get a child to read. Adolf, Catts, and Lee in Jansson (2018) explained that in the process of pre-reading, children need a knowledge about letters, which refers to the ability to recognize alphabet. Reading ability requires decoding ability (Komarudin & Widyana, 2016). Byrne & Fielding-Barnsley (2000) revealed that knowledge about letters can combine visual and phonological modalities, and it requires understanding alphabetical principles. This pertains to how printed letters are mapped to phonemes of spoken words. Children between the ages of two and seven have good knowledge about letters and phonological awareness. Letter knowledge can influence phonological awareness and vice versa. The awareness is a predictor of the knowledge.

Kindergarten has its own targets regarding reading ability. At the least children have pre-reading skills. It is expected that when entering elementary school, they can pass a reading or writing test well. Moreover, presently, good reading skills have become the main requirement for entering elementary school. However, kindergarten learning targets are not in line with those requirements. There is no national education regulation that requires pre-schools to use pedagogy related to reading skills. Thus, pre-reading ability is one of the basic abilities that must be mastered by children carrying out activities. Osei, Liang, Natalia, & Stephan (2016) discussed the great necessity of pre-reading activity through games for children in their early years, for them to acquire critical reading skills.

The other problem at school is related to the ineffectiveness of learning activity. Schools tend to encounter children who either have good reading ability or who have not mastered it yet. Students at this age also tend to like the learning medium of singing, compared to markers and the blackboard. Educators have developed many methods in an effort to improve pre-reading skills of preschool students. However, not all of these methods have been researched.

Reading is a complex process that involves mind, perception, linguistics and psychology. The initial experience of reading literacy requires a meaningful and concrete approach that involves children actively (Walton, 2014). Jolly Phonics is so much fun and favoured by pupils, by means of being superior to any conventional method (Nasrawi, 2017). Jolly Phonics uses association between each letter sound and movement. It is an active learning in exploring and participating. This is in line with the research of Levy, Gong, Hessel, Evans, & Jared (2006) that found the easy-to-remember experience of active literacy will be a predictor of reading and writing abilities.

A multisensory approach is effective in improving pre-reading skills. Pangastuti and Hanum (2017) showed that using letter cards as the stimulus can develop the recognition of subject



letters. It is because children become more comfortable in playing letter cards, and can in addition explore knowledge through images, colours, and also shapes. Further, it is supported by Dewi (2015) who indicated that the multisensory method, in the form of writing on the blackboard, saying sounds, and touching letters from colourful Styrofoam in early elementary school children, can improve children's pre-reading abilities. The research by Tarsiyem and Hanita (2018) on 16 kindergarten children showed that learning through letter carpet media can improve the ability to recognize letter symbols.

Therefore, this study aims to measure the effect of implementing Jolly Phonics learning methods and multisensory learning methods, to increase pre-reading ability among pre-school children, and compares which methods are more effective in improving pre-reading skills.

Method

The Jolly Phonics learning method and the multisensory learning method are used in the treatment in this study. Before the learning method was implemented, the subjects were given a pre-test related to Pre-Reading Ability. There are three types of pre-tests, including: identifying letters, associating letters and picture, and selecting two simple syllables.

This research is experimental research using True Experimental Design. It means that the researcher can control all of the variables that can affect the experiment process (Sugiyono, 2012). The main characteristic of this design is that the sample of an experimental group, as well as the control group, were taken randomly from certain populations (Sugiyono, 2012). This True Experimental design used a Pre-Post-test Control Group Design. Sugiyono (2012) explained that three groups were selected randomly, then given a pre-test to determine the condition of the experimental group and the control group.

Figure 1. Pre-Post-test Control Group Design

Group	Pre-test	Treatment(X)	Post-test
KE1	O ₁	X ₁	O ₂
KE2	O ₁	X ₂	O ₂
KK	O ₁	-	O ₂

Note:

KE1 : Experiment Group 1

KE2 : Experiment Group 2



KK : Control Group
 O₁ : Pre-test
 O₂ : Post-test
 X₁ : Jolly Phonics Learning Method
 X₂ : Multisensory Learning Method

The data analysis method used in this study is ANOVA mixed design.

Results and Discussion

Shapiro-Wilk was used for the normality test in this research. That was because of the small number of subjects (less than 50). The normality test results showed the distribution of pre-test score data for all normal groups. The results can be seen in Table 1 as follows.

Table 1: Test results of normality

Group		the Shapiro-Wilk		
		Statistic	Df	Sig.
Standardized Residual for pretest	Jolly Phonics	.855	6	.172
	multisensory	.913	6	.459
	Controls	.990	6	.988

a. Lilliefors Significance Correction

*. This is a lower bound of true significance.

Homogeneity test results showed that the data distribution of the pre-test score is homogeneous ($p > 0.05$). The results can be seen in Table 2.

Table 2: Test results using Levene's Test of Equality of Error Variances^a

	F	Homogeneitydf1	df2	Sig.
Pretest	3,546	2	15	.055
Posttest	2,767	2	15	.095 Test

ANOVA mixed design was used for hypothesis testing, to see if there are differences among the three groups' scores. The results can be seen in Table 3 as follows.



Table 3: The results of the Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Test	Sphericity Assumed	367,361.014	1		7,686	367,361
	Greenhouse-Geisser	367,361.014	1,000		7,686	367,361
	Huynh-Feldt	367,361.014	1,000		7,686	367,361
	Lower-bound	367,361.014	1,000		7,686	367,361
Test * Group	Sphericity Assumed	222,111.027	2		4,647	444,222
	Greenhouse-Geisser	444 222	2,000	222 111	4,647	.027
	Huynh-Feldt	444 222	2,000	222 111	4,647	
	Lower-.027bound	444 222	2,000	222 111	4,647	.027
Error (Test)	Assumed Sphericity	716 917	15	47 794		
	Greenhouse-Geisser	716 917	15 000	47 794		
	Huynh-Feldt	716 917	15,000	47 794		
	Lower-bound	716 917	15,000	47,794		

In Table 3, the score of F is 4.647 ($p < 0.05$) in the row of test * group and the sub-row of Greenhouse-Geissers. It means that there is an interaction between the pre and post-test, and between the experiment and control group. The interactions showed that the difference in the pre-test and post-test scores in the two groups of experiment and control were significantly different.

Then, the researcher conducted the pairwise comparison test. The results can be seen in Table 4 as follows.



Table 4: Pairwise Comparison

Dependent Variable	(I) Group	(J) Group	Mean Difference (IJ)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^a	
						Lower Bound	Upper Bound
pretest	Jolly Phonics	multisensory	1,167	4,667	.806	-8781	11 114
		Control	3,167	4,667	.508	-6 781	13 114
	multisensory	JollyPhonics	-1 167	4667	.806	-11 114	8781
		Control	2000	4667	.674	-7948	11 948
	Control	JollyPhonics	.508 -13,114	4,667		-3,167	6,781
		multisensory	.674 -11,948 7,948	4,667			-2,000
posttest	JollyPhonics	multisensory	-.500	.926 - 11,744 10,744			5,275
		control	28,411*	5,275	.005	5,922	17,167
	multisensory	JollyPhonics	-10,744 11,744	.926	5,275		.500
		Control	17 667*	5275	.004	6422	28,911
	Control	JollyPhonics	-28,411 5,922*	- 5,275	.005		-17,167
		multisensory	-28,911 6,422*	- 5,275	.004		-17,667

Based on the estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Differences (equivalent to no adjustments).

* The mean difference is significant at the .05 level.

Table 5 shows that no significant difference was found ($p > 0.05$) in the pre-test measurement. It means that there was no difference between the pre-reading ability of the research subjects in all groups. The results of the T-Test for post-test between the control group and the first experimental group (Jolly Phonics) were MD of -17,167 ($p < 0.05$). It showed that there were significant differences in pre-reading ability between the control group and the Jolly Phonics experimental group. T test result of the post-test between the control group and the second experimental group (multisensory) were MD of -17,667 ($p < 0.05$). It showed that there were significant differences in pre-reading ability, between the control group and the multisensory



experimental group. These results indicated that the Jolly Phonics and multisensory learning methods are effective methods for improving pre-reading skills.

The difference scores among groups were strengthened from the pre-test and post-test score categories of each group which can be seen in Tables 5 and 6 as follows:

Table 5: Categorization of the pre-test score of the first experimental group, the second experimental group and control group

Jolly Phonics Group (the first experimental group)				
intervals	Category	Frequency	Percentage	Average
$36.67 \leq x \leq 55$	High	0	0%	
$18.34 \leq x < 36.67$	Medium	4	66.67%	26.50
$0 \leq x \leq 18.34$	Low	2	33.33%	
Min = 13 Max = 35 Standard Deviation = 8.871 Multisensory				
Group (the second experimental group)				
Interval	Category	Frequency	Percentage	Average
$36.67 \leq x \leq 55$	High	1	16.67%	
$18.34 < x < 36.67$	Medium	4	66.67%	25.33
$0 \leq x \leq 18.34$	Low	1	16.67%	
Min = 14 Max = 40 Standard Deviation = 10.172				
Control Group (control group)				
Interval	Category	Frequency	Percentage	Average
$36.67 \leq x \leq 55$	Height	0	0%	
$18.34 \leq x < 36.67$	Medium	5	83, 33%	23.33
$0 \leq x \leq 18.34$	Low	1	16.67%	
Min = 18 Max = 29 Standard Deviations = 3,724				

Based on Table 5, it is known that the pre-test score categories of all groups remain the same, which is in the medium category with almost similar means.



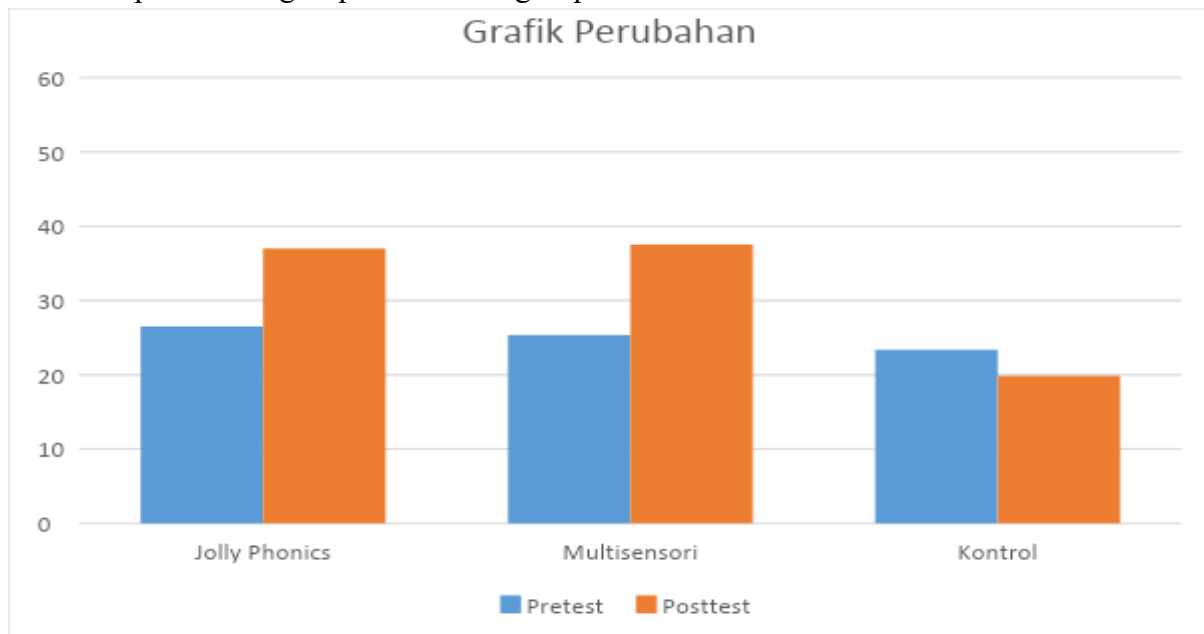
Table 6: Categorization of post-test scores of the first experiment group, the second experiment group and control group

<i>Jolly Phonics Group</i>				
Interval	Categories	Frequency	Percentage	Average
$36.67 \leq x \leq 55$	High	4	66.67%	37.00
$18.34 \leq x < 36.67$	Medium	2	33, 33%	
$0 \leq x \leq 18.34$	Low	0	0%	
Min = 28 Max = 48 Standard Deviation = 7,430 Multisensory				
<i>Group</i>				
Intervals	Categories	Frequency	Percentage	Average
$36.67 \leq x \leq 55$	High	4	66.67%	37.50
$18, 34 \leq x < 36.67$	Medium	2	33.33%	
$0 \leq x \leq 18.34$	Low	0	0%	
Min = 21 Max = 53 Standard Deviation = 12,708				
<i>Control Group</i>				
Intervals	Category	Frequency	Percentage	Average
$36.67 \leq x \leq 55$	High	0	0%	
$18.34 \leq x < 36.67$	Medium	3	50.00%	19.83
$0 \leq x \leq 18.34$	Low	3	50.00%	
Min = 13 Max = 27 Standard Deviation = 5.811				

In Table 6, it is noted that the post-test score of the first experimental group and the second experimental group has increased score category. However, the control group remained in the moderate level and low level. The increased scores on the first experimental group and the second experimental group are described in a graph as follows.



Figure 2. The comparison of pre-test and post-test score of the first experimental group, the second experimental group and control group



Based on the Graph in Figure 2, it can be concluded that the average score of the first experimental group (the mean of the pre-test is 26.50, and the mean of the post-test 37.00) and the second experimental group (mean pre-test is 25.33, and mean post-test 37.50) is increasing, while the control group tended to be decreased (the mean of the pre-test is 23.33, the mean of the post-test is 19.83). Thus, it can be concluded that both Jolly Phonics and multisensory learning improve pre-reading skills.

The results of this study are in line with Komalasari (2016), who mentioned that the multisensory method improves reading skills in dyslexic learners among elementary schools. In this study, candles were used in applying the multisensory learning method. Students were asked to observe the letters provided by the teacher on the blackboard (visual stimulation). Students were then asked to make a variety of letters using candles (tactile and kinesthetic stimulation) and pronounce the letter sounds repeatedly (auditory stimulation). By utilizing various learning modalities, the information learned will be easier to remember, so there is an increase in the pre-test and post-test. This study modifies the Gillingham method which focuses on the relationship between sound and letters. Students are introduced to letters by recognizing their shape and then repeating the sounds over and over.

A multisensory approach is a learning approach that utilizes visual, auditory, kinesthetic, and tactile abilities. Multisensory means activating of all sensory senses (the senses of capture) in obtaining impressions through tactile, visual, feeling, kinesthetic, and hearing stimuli. By developing various observational abilities possessed by children, the teacher provides stimuli



through a variety of their sensory modalities; likewise in preparing pre-reading among pre-school children.

Active learning methods that stimulate all sense organs are more effective for preschoolers, because such methods are in accordance with the child's needs and psychological characteristics (Ruhaena, 2015). Through multisensory learning, teachers can involve students actively in the learning process and facilitate all students with different learning styles. Multisensory learning can be used in all lessons integrated with the curriculum, and has significant implications in real-life learning (Suryaratri, RD, Prayitno, EH, & Wuryani, 2019). This multisensory approach creates an atmosphere of learning, while playing by optimizing all of children's senses (audio, visual, and kinesthetic). The children are taught to relate the sound of letters to symbols or written forms; to touch and write the shape of the letters. Learning with a multisensory approach can also activate the visual, auditory, kinesthetic and tactile elements (Willis, 2008). In addition to using sensory modality, multisensory learning in practice is implemented by utilizing aids as a learning media that represents the function of each of the sensory modalities used. Therefore, it is expected to be able to assist the learning process. Likewise in the pre-reading process, the multisensory method becomes effective for pre-school children to recognize letters, form words, read and create good sentences in the next stages.

According to Walton (2014), kindergarten classrooms were randomly assigned either to a song group (n = 44) that used choral singing and movement to teach phonological skills, letter-sounds, and word reading, or to a control group (n = 49). Children received their regular language and literacy programs for equal times. The song group teaching involved choral singing and movements created for the project to teach phonological skills, letter-sounds, and word reading.

Further, the research results showed that the Jolly Phonics method also improved pre-reading skills in preschoolers. The results of Ariati, Padmadewi, & Suarnajaya (2018) likewise showed that the teacher had successfully implemented the five skills in Jolly Phonics, namely (1) learning the letter sounds, (2) learning letter formation, (3) blending-for reading, (4) identifying sounds in words-for writing and (5) tricky words, through a variety of enjoyable techniques involving children's sight, sound and kinesthetics. Thus, implementing Jolly Phonics will improve children's overall English literacy skills. A similar study was also conducted by Dwiastuti (2014) about Jolly Phonics, as an alternative for early childhood reading readiness stimulation. The aim of the study is that the Jolly Phonics method is used to stimulate the ability to read in early childhood. The method used in the study was an experimental study with 28 students as the subjects, using paired sample t-test analysis.



Conclusions and Recommendations

The study showed significant differences of post-test scores for both groups of the Jolly Phonics and multisensory learning methods with a control group. There was no difference in the average of post-test scores between those receiving Jolly Phonics and multisensory learning methods. This shows that both methods can increase the ability of pre-readers, so that teachers can use both as methods to stimulate the pre-reading of preschoolers.



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