

Application of Video Phonics Media Towards Pronunciation and Cognitive Development of English Learning Children of Preschool Age Saint Nicholas Kindergarten Pantai Indah Kapuk Jakarta

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Abstract: This study aims to obtain information regarding the evaluation of the effectiveness of audio video to improve the phonics abilities of Kindergarten B children. This research is a quasi-experimental study, with a Pre-Test Post-Test Control-Group Design. The population in this study were all children in group B at Saint Nicholas Kindergarten Jakarta. Sampling using random sampling technique with a total sample of 50 children. Data collection was done by interview, observation, pre-test and post-test. Determining the effectiveness of the media used is tested by the Independent Sample T-Test. quasi experiment with nonequivalent control group design. The sampling technique uses systematic sampling. Data collection techniques used in the form of tests, interviews, observation and documentation. The validity of the instrument uses construct validity and product moment pearson correlation. Instrument reliability using Cronbach's alpha. Data analysis techniques used prerequisite tests and t tests which were processed using SPSS. 15 for windows.

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Introduction

Early Childhood Education (ECE) encompasses a range of efforts to stimulate, guide, and nurture young learners, helping them develop their abilities and talents during the critical "golden age" of 0 to 5 years. Developmental psychology highlights this period as a time when children exhibit optimal growth potential if appropriately stimulated, laying the foundation for their subsequent educational journey. Within this context, ECE, particularly at the kindergarten level, plays a vital role in fostering the basic behavioral skills necessary for their holistic development. Kindergarten programs, aligned with the Standards for Development Achievement Levels and guided by regulations such as Minister of Education and Culture Regulation No. 137 of 2014, emphasize key developmental areas for children aged 5-6. Language development, in particular, is a critical focus and encompasses three interconnected aspects: receptive language (listening), expressive language (speaking), and literacy (writing). These aspects are fundamental for children to acquire skills such as understanding spoken language, expressing thoughts, and developing early literacy, which includes recognizing and associating letters with sounds.

Theoretical perspectives from experts like Dahlan (2004), Astuti (2013), and Bromley (1992) underline the significance of language as a structured system of symbols for communication. Early language stimulation—from a child's first babbles to their initial attempts at forming words—sets the stage for their linguistic and cognitive development. Suggate, Schaughency, & Reese (2013) further emphasize that this process begins at birth, highlighting the importance of consistent and age-appropriate language support during early childhood. Despite the recognized importance of language development in early education, observations at Saint Nicholas Kindergarten reveal gaps in phonemic awareness among children aged 5-6. While these children are expected to recognize and articulate letters, identify initial sounds, and engage in reading and writing activities, their ability to associate graphemes with phonemes often lags behind other developmental milestones. This underdevelopment suggests a need for targeted interventions and teaching strategies to enhance their literacy skills.

Research in early literacy has shown that phonics-based approaches significantly improve children's grapho-phonemic awareness, enabling them to connect letter shapes with their corresponding sounds. Studies by Suggate et al. (2013) and Bromley (1992) support the effectiveness of systematic phonics instruction in fostering early reading and writing skills. However, the implementation of such strategies in kindergartens, particularly in the Indonesian context, remains inconsistent. The existing literature highlights the need for structured and practical approaches to address the observed gaps in phonemic awareness and literacy development among young learners. This study contributes to the body of knowledge by examining the specific challenges faced by children in developing grapho-phonemic awareness at Saint Nicholas Kindergarten. By identifying the root causes of these challenges and exploring tailored phonics-based interventions, the study offers insights into enhancing early literacy practices in the Indonesian kindergarten context. This focus on grapho-phonemic awareness as a cornerstone of literacy development underscores the study's novelty and relevance.

Building upon this, the present study seeks to investigate two research questions: (1) Is there a significant difference in phonics pronunciation accuracy between classes taught using video media and those taught using flashcard media among Kindergarten B students at Saint Nicholas PIK Jakarta? and (2) Is there a significant difference in cognitive development between classes taught using video media and those taught using flashcard media among Kindergarten B students at Saint Nicholas PIK Jakarta? By addressing these questions, the study aims to provide insights into effective teaching methods for enhancing both phonics pronunciation and cognitive development in early childhood education.

Research Method

This study employs a quantitative approach with a quasi-experimental research design. The model used is the *Pre-Test Post-Test Control-Group Design*, where data is collected through initial observation to determine the children's pronunciation ability before the treatment, followed by the application of the Phonics video learning media as the treatment. The population of this study consists of all group B students at Saint Nicholas Kindergarten in Jakarta, with a total sample of 50 children divided into two groups: the experimental group using Phonics video media (25 children) and the control group using flash card media (25 children). The sampling technique is systematic sampling. The research instruments include a phoneme pronunciation ability measurement tool, which has been tested for validity and reliability, with a nominal scale (Guttman) for video media, and an interval scale (Likert) for

the pronunciation and cognitive variables. Data collection is conducted through interviews, observations, as well as pre-tests and post-tests. Data analysis techniques include prerequisite tests such as normality and homogeneity tests, as well as hypothesis testing using *Independent Sample T-Test*, processed using SPSS 15 for Windows. This study aims to measure significant differences in phonics pronunciation ability and cognitive development between the group using Phonics video media and the group using flash card media.

Result and Discussion

Saint Nicholas School was established in 2001, initially starting as Kidsland Preschool and Saint Nicholas Primary School, with the goal of preparing students for a brighter future. In 2006, the Saint Nicholas Foundation moved to a new five-story school building located in Pantai Indah Kapuk, one of the most affluent residential areas in Jakarta. The school is a bilingual institution, offering education in both English and Mandarin. It is committed to creating and maintaining a happy, healthy, and safe learning environment to achieve the best outcomes for its students. The head, instructors, and staff are dedicated to helping every child feel valued, make academic progress, and experience growth. Saint Nicholas School continues to move forward and make a positive difference in the lives of every student.

As mentioned earlier, the researcher aims to determine whether there is a difference in scores between students before and after the learning intervention. In this study, the researcher conducted a pre-experimental study on the effectiveness of using phonics video media in improving pronunciation and cognitive development in English lessons for children in early childhood education (PAUD) at Saint Nicholas Kindergarten, Pantai Indah Kapuk, Jakarta. The study involved a class of 25 students. Data collection was carried out through the administration of tests. The first test, a pretest, was conducted before the intervention was applied to the students. The purpose was to assess the students' pronunciation and cognitive abilities before the intervention. The results of the pretest indicated poor pronunciation and cognitive skills.

After administering the pretest, the researcher provided an intervention by using video-based phonics learning. During the intervention, the students were enthusiastic and engaged in the learning process. Once the intervention was completed, the researcher conducted a posttest to evaluate the students' abilities after being taught using this learning method. The results of the posttest showed a significant improvement in both pronunciation and cognitive development.

Table 1. Paired Samples Statistics of the Achievement of students' Pronunciation and Cognitive Abilities Before the Learning is Conducted (*Pre-test*)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pelafalan Pre-Test Pembelajaran	3.8470	25	.47263	.06684
	Pelafalan Post-Test Pembelajaran	4.1870	25	.53606	.07581
Pair 2	Kognitif Pre-Test Pembelajaran	4.2000	25	.44892	.06349
	Kognitif Post-Test Pembelajaran	4.4000	25	.38465	.05440

This study aims to analyze students' achievements in pronunciation (X1) and cognitive (X2) aspects before and after receiving learning interventions. Based on the recap of scores for the control group in the pronunciation variable (X1), 25 respondents were assessed on three indicators: alphabet sounds, vowels, and basic consonants. The average total score for this

variable indicates varied achievements, with an overall average of 4.55. The highest score of 5.00 was achieved by several students, while the lowest score was 3.00.

For the cognitive variable (X2), students were assessed on their ability to recognize symbols, listen and repeat, identify vowel sounds, and identify basic consonant sounds. The overall average score for this variable was 4.71, with the highest score being 5.00 and the lowest score being 4.00. These results indicate that most students demonstrated strong cognitive abilities in the control group. In the pre-test and post-test assessments, the average pronunciation score in the pre-test was 3.847, which increased to 4.187 in the post-test. For the cognitive variable, the pre-test average score was 4.2000, rising to 4.400 after the learning intervention. This increase shows that the learning intervention positively impacted students' pronunciation and cognitive skills.

Overall, this data highlights the effectiveness of the learning intervention in improving students' competencies, as indicated by the increased average scores in both variables. Further statistical tests, such as a paired sample t-test, are required to confirm the significance of the differences between the pre-test and post-test results. After the learning intervention, the students were given a post-test. The test was the same as the pre-test, consisting of fill-in-the-blank questions. A total of 25 students participated in the post-test. This test aimed to assess the students' achievements in pronunciation and cognitive abilities following the learning intervention.

Table 2. Paired Samples Statistics of the Achievement of students' Pronunciation and Cognitive Abilities After the Learning is Conducted (*Post-test*)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pelafalan Pre-Test Pembelajaran	3.8470	50	.47263	.06684
	Pelafalan Post-test Pembelajaran	4.1870	50	.53606	.07581
Pair 2	Kognitif Pre-Test Pembelajaran	4.2000	50	.44892	.06349
	Kognitif Post-Test Pembelajaran	4.4000	50	.38465	.05440

The analysis of the pre-test and post-test scores for the experimental group on both pronunciation (Pelafalan) and cognitive abilities (Kognitif) reveals notable changes following the learning intervention. In the pronunciation test, which included evaluating alphabet sounds, vowels, and basic consonants, the pre-test mean was 3.847, with a standard deviation of 0.472. After the intervention, the post-test mean increased to 4.187, with a standard deviation of 0.53606, showing an improvement in pronunciation skills among the students. The standard error for the pre-test was 0.066, while for the post-test, it was 0.075, indicating a slight increase in variability after the intervention.

For the cognitive abilities test, which assessed skills like recognizing symbols, auditory repetition, and identifying vowel and consonant sounds, the pre-test mean was 4.2000, with a standard deviation of 0.448. The post-test mean increased to 4.4000, with a lower standard deviation of 0.384, indicating not only an improvement in cognitive skills but also more consistency in the students' post-test performance. The standard error for the pre-test was 0.063, while for the post-test, it was 0.054, showing reduced variability after the learning process.

These results suggest that the students in the experimental group showed significant improvement in both pronunciation and cognitive abilities after receiving the treatment, with more consistent results in cognitive abilities post-test.

Table 3. Pre-test and Post-test Results of One Experimental Group

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pelafalan Sebelum Pembelajaran - Pelafalan Setelah Pembelajaran	-.34000	.54537	.07713	-.49499	-.18501	-4.408	49	.000
Pair 2	Kognitif Sebelum Pembelajaran - Kognitif Setelah Pembelajaran	-.20000	.54398	.07693	-.35460	-.04540	-2.600	49	.012

Table 3 presents the results of a paired samples t-test for two variables measured before and after the learning process in the experimental group. For Pronunciation Before Learning - Pronunciation After Learning, the mean difference is -0.340, with a standard deviation of 0.545 and a standard error mean of 0.077. The 95% confidence interval for the difference ranges from -0.494 to -0.185. The t-value is -4.408 with 49 degrees of freedom (df), and the significance level (p-value) is 0.000, indicating a highly significant difference in pronunciation before and after the learning process. For Cognitive Before Learning - Cognitive After Learning, the mean difference is -0.200, with a standard deviation of 0.54398 and a standard error mean of 0.076. The 95% confidence interval for the difference ranges from -0.354 to -0.045. The t-value is -2.600 with 49 degrees of freedom, and the p-value is 0.012, showing a statistically significant change in cognitive performance before and after learning. Both pronunciation and cognitive performance show significant improvement after the learning process. The effect on pronunciation is particularly strong, while cognitive improvement is also significant but to a lesser extent.

This Independent Sample t-test is used to determine whether there is a significant difference between the means of two unpaired samples. The researcher conducts this test as a comparison to examine if there is a difference in the effectiveness of audio-visual media and the Phonics method on the learning motivation of children at the PAUD level in TK Saint Nicholas Pantai Indah Kapuk, Jakarta. The Independent Sample t-test is conducted on the post-test data from the experimental class and the post-test data from the control class.

To determine whether two unpaired samples have different mean values, the Independent Sample t-test is used. To see if flash card media and Phonics video media have different effects on the pronunciation and cognitive development of PAUD-aged children at TK Saint Nicholas Pantai Indah Kapuk, Jakarta, this test is conducted as a comparison. The post-test data from the experimental class and the post-test data from the control class serve as the basis for this Independent Sample t-test.

Table 4. The Results of the Independent Sample t-test for the Experimental and Control Class

	Metode Pembelajaran	N	Mean	Std. Deviation	Std. Error Mean
Pelafalan	Media Video	25	4.5076	.42158	.08432
	Flash Card	25	3.8664	.44141	.08828
Kognitif	Media Video	25	4.6200	.28976	.05795
	Flash Card	25	4.1800	.34248	.06850

Based on the table, if the p-value is > 0.05 , then the null hypothesis (H_0) is accepted and the alternative hypothesis (H_a) is rejected. The statistical difference between the experimental and control groups is explained in the output. There are 25 students in the control group and 25 in the experimental group. The experimental group has a mean test score of 4.507 and 4.620, while the control group has a mean test score of 3.866 and 4.180. The standard deviation of the scores for the experimental group is 0.42158 and 0.28976, and for the control group, it is 0.441 and 0.342. The standard error for the mean test scores of the experimental and control groups is 0.084 and 0.057, respectively.

Table 5. Independent Samples t-test results

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pelafalan	Equal variances assumed	.947	.335	5.252	48	.000	.64120	.12208	.39575	.88665
	Equal variances not assumed			5.252	47.899	.000	.64120	.12208	.39573	.88667
Kognitif	Equal variances assumed	.466	.498	4.904	48	.000	.44000	.08972	.25960	.62040
	Equal variances not assumed			4.904	46.718	.000	.44000	.08972	.25947	.62053

Based on the results of the Independent Samples t-test, it can be concluded that there are significant differences between the Phonics video media and Flash card media in their effects on both pronunciation and cognitive development in children at PAUD level in TK Saint Nicholas Pantai Indah Kapuk Jakarta. For pronunciation, the F value was 0.947 with a probability of 0.335, indicating that the variances of the two groups are equal. The calculated t-value with equal variances assumed was 5.252, with a p-value of 0.000 (less than 0.05), leading to the rejection of the null hypothesis (H_0) and confirming a significant difference between the two media types. Similarly, for cognitive development, the F value was 0.466 with a probability of 0.498, indicating equal variances. The t-value for cognitive development was 4.904, with a p-value of 0.000 (less than 0.05), leading to the rejection of H_0 and confirming a

significant difference between the two media types. Thus, the results demonstrate that both media types have a significant impact on children's pronunciation and cognitive development.

Table 6. Results of Descriptive Analysis of Control Class and Experimental Class Data

	N	Minimum	Maximum	Mean Std.	Deviation
Pre- Test Kelas Kontrol	25	3.00	4.67	3.8676	0.39650
Post- Test Kelas Kontrol	25	3.33	5.00	4.1200	0.38270
Pre- Test Kelas Eksperimen	25	3.25	4.75	4.5076	0.42158
Post- Test Kelas Eksperimen	25	3.75	5.00	4.6200	0.28976
Valid N (listwise)	25				

Based on the descriptive analysis results in the table above, it can be concluded that:

1. Pre-test Control Group
 The lowest score is 3.00, and the highest score is 4.67. The average pre-test score for the control group is 3.867, with a standard deviation of 0.396.
2. Post-test Control Group
 The lowest score is 3.33, and the highest score is 5.00. The average post-test score for the control group is 4.120, with a standard deviation of 0.382.
3. Pre-test Experimental Group
 The lowest score is 3.25, and the highest score is 4.75. The average pre-test score for the experimental group is 4.507, with a standard deviation of 0.421.
4. Post-test Experimental Group
 The lowest score is 3.75, and the highest score is 5.00. The average post-test score for the experimental group is 4.620, with a standard deviation of 0.289.

From these results, it is evident that the experimental group has higher average scores compared to the control group in both the pre-test and post-test. The experimental group also shows lower score variability in the post-test, indicating better consistency in learning outcomes compared to the control group.

Conclusion

Based on the research and discussion on "The Application of Phonics Media on Pronunciation and Cognitive Development in English Lessons for PAUD Children at TK Saint Nicholas Pantai Indah Kapuk Jakarta," it can be concluded that:

1. For the Pronunciation variable, the calculated F value is 0.947, with a probability of 0.335 ($0.335 > 0.05$), indicating that the null hypothesis (H_0) is accepted and the variances of the two groups can be considered equal. Since the differences are very similar, the t-test with the assumption of equal variances is more appropriate. The calculated t-value for Pronunciation with equal variances assumed is 5.252, with a probability of 0.000. Since $0.000 < 0.05$, the null hypothesis is rejected, indicating a significant difference between Phonics video media and Flash card media in English lessons for PAUD children at TK Saint Nicholas Pantai Indah Kapuk Jakarta, as measured by pronunciation.
2. For Cognitive Development, the calculated F value is 0.466, with a probability of 0.498 (greater than 0.05), indicating that the null hypothesis (H_0) is accepted and the variances are equal. Since the variances are equal, the t-test with the assumption of equal variances is appropriate. The calculated t-value for Cognitive Development with equal variances

assumed is 4.904, with a probability of 0.000. Since $0.000 < 0.05$, the null hypothesis is rejected, indicating a significant difference between Phonics video media and Flash card media in English lessons for PAUD children at TK Saint Nicholas Pantai Indah Kapuk Jakarta, as measured by cognitive development.

Therefore, it can be stated that to improve the ability to pronounce Phonics letter sounds, PAUD children can be taught through learning using educational media, particularly video media.

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