

## Experiment on the Effectiveness of Audio-Visual TV Media as a Tool for Language Development in Early Childhood

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### ABSTRACT

*Language development in early childhood is influenced by interactions with parents, teachers, and the surrounding environment. The use of audio-visual media, such as animated films, has the potential to enhance young children's language abilities in early childhood education settings. This study aims to evaluate the effect of audio-visual media on the development of early childhood language skills through interaction with animated films. The research employed a One-Group Pretest-Posttest experimental design with direct observation and inferential statistical analysis (validity and normality tests, and a t-test). Based on the t-test results, the pretest had a significant effect on the posttest ( $p = 0.024$ ), which is less than 0.05. This indicates a significant difference in children's language abilities before and after the use of audio-visual TV media at Raudhatul Athfal Al-Quraniyah, South Bengkulu. Therefore, it can be concluded that children's engagement in watching animated films positively impacts the development of early childhood language skills, demonstrating the effectiveness of audio-visual media in supporting early language development.*

**Keywords:** Audio-Visual Media, Language Development, Early Childhood.

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### A. INTRODUCTION

Early childhood language development is influenced by various interacting factors, particularly within the context of relationships among children, parents, and teachers. Responsive interactions between parents and children have been shown to provide a crucial foundation for early language acquisition (Levickis et al., 2023; Gilkerson et al., 2018). Children exposed to meaningful conversations at home demonstrate better language and cognitive outcomes later in life. Furthermore, the use of technology, such as language development monitoring applications, supports sustained linguistic stimulation (Amato et al., 2021). Engaging with interactive electronic media can serve as an effective tool for expanding vocabulary and communication skills (Veronica & Gupita, 2020). Additionally, educational robots and IoT devices in simulated learning environments can enrich children's learning experiences (Chen & Yeh, 2025).

In formal educational settings, the quality of teachers' language practices plays a critical role in supporting children's language development. Teachers who employ interactive and conceptual approaches achieve more significant outcomes compared to those who merely increase speaking frequency (Jiang et al., 2025; Yang et al., 2021). Eco-behavioural model-based approaches emphasise the importance of collaboration among caregivers, the environment, and educational policies to achieve optimal results (Ford et al., 2020). Teacher training through positive intervention strategies, such as PBIS, has been shown to enhance classroom language support (Cunningham et al., 2020). However, many early childhood education institutions have not fully established language-rich environments appropriate for developmental stages (Khuong, 2025). Therefore, ongoing professional development for teachers, coupled with family support, is necessary to prevent gaps in children's language development (Justice et al., 2018).

Language learning in early childhood education institutions employs various strategies to support children's linguistic development. Interactions between teachers and children during transitional activities, such as dressing or cleaning, provide opportunities for situational language learning, where teachers instruct and model linguistic patterns in two languages using both verbal and non-verbal strategies (Anatoli, 2025). Additionally, process drama has proven effective in enhancing communication skills, as teachers and children improvise in various scenarios (Míguez-Álvarez, 2025). The integration of digital technology, such as digital games, also positively impacts second language learning, as technology facilitates easier language acquisition for children (Rulyansah et al., 2023; Van Der Westhuizen & Hannaway, 2021). Digital kinetic storytelling, which combines narrative with movement and visuals, increases children's motivation and active engagement while promoting comprehensive language comprehension (Kanaan et al., 2025).

Bilingual programs in early childhood education, such as those implemented in Sweden and Germany, demonstrate that children can learn languages effectively through active participation in daily activities and routine interactions (Ofner, 2018). Close collaboration among teachers, families, and other professionals is also crucial in supporting children's language development. For example, intervention programs in London have shown that such collaboration can significantly enhance children's language skills (Harju-Luukkainen, 2023). High-quality family caregiving further enhances language development, as positive parent-child interactions can mitigate the adverse effects of excessive screen time (Shen & Shao, 2022; Bal et al., 2024). Learning materials tailored to children's interests, prior knowledge, and multicultural contexts can also increase engagement and accelerate language development (Savić, 2024).

The research gap lies in the limited understanding of the influence of TV-based audiovisual media on early childhood language skills in Indonesia, particularly at Raudhatul Athfal Al-Quraniyah in South Bengkulu. While bilingual programs in early childhood education in countries such as Sweden and Germany have proven adequate, studies on the impact of audio-visual media on children's language in Indonesia remain limited. The novelty of this study lies in the use of TV-based audiovisual media, specifically animated films, as a tool to enhance early childhood language skills, making a new contribution to the development of learning methods in Indonesia. The main objective of this research is to evaluate the effect of

audio-visual media use on children's language development, with a focus on children's interactions with animated films. The findings are expected to enrich early childhood education approaches by leveraging audio-visual media as an effective tool for language skill development. This study also offers educators insights in selecting more appropriate and relevant teaching methods that meet the needs of children in the digital era.

## B. RESEARCH METHOD

This study on the effectiveness of audio-visual media as a tool for developing early childhood language skills was conducted at *Raudhatul Athfal Al-Quraniyah* in South Bengkulu using an experimental design, namely the One-Group Pretest-Posttest Design. This approach enables measurement of changes in children's language abilities before and after the use of audiovisual media. The population in this study consisted of 45 students, and the sample was selected using quota sampling, with 15 children from class A1. The quota sample was selected based on specific criteria such as the children's readiness and availability to participate in the experiment. Data collection was carried out through direct observation of the children during learning activities that used audiovisual media in specifically a television showing animated films. The observation sheet used in this study is presented as follows:

Table 1. Observation Sheet on the Use of Audio-Visual Media in Early Childhood

Indicator	Very Good (5)	Good (4)	Fair (3)	Poor (2)	Very Poor (1)
The child attentively watches the animated film presented					
The child is able to remain engaged with the animated film for a considerable duration					
The child demonstrates high concentration while watching the animated film					
The child is not distracted by other stimuli while the animated film is playing					
The child shows interest and enthusiasm while watching or listening to the animated film					
The child asks questions or gives responses based on what has been watched or listened to					

Table 2. Indicators of Children's Language Ability (*Adapted from Kurniawan & Kasmiati, 2020; Ministry of Education and Culture Regulation No. 146 of 2014*)

Variable	Indicator	Very Good (5)	Good (4)	Fair (3)	Poor (2)	Very Poor (1)
Children's Language Ability	The child speaks in structured sentences					
	The child pronounces words clearly and correctly					
	The child understands questions and provides appropriate responses					
	The child uses short sentences to interact					
	The child speaks according to communicative needs					
	The child asks questions using more than two question words					
	The child expresses simple desires and feelings					
	The child selects appropriate words when speaking					
	The child expresses ideas in simple sentences					
	The child retells the content of a story clearly					

The collected data were analyzed using inferential statistical techniques, including validity and normality testing, and a *t-test* to determine the significance of the difference between pretest and posttest scores. This analysis aimed to identify whether there was an improvement in children's language abilities after the use of audio-visual media

## C. RESULTS AND DISCUSSION

### 1. Pretest of Children's Language Ability

Table 3. Pretest Results of Children's Language Ability

No.	Indicator	Total Pretest Score	Average Pretest Score
1	The child speaks in structured sentences	80	4.0
2	The child pronounces words clearly and correctly	75	3.75
3	The child understands questions and provides responses	72	3.6
4	The child uses short sentences for interaction	76	3.8
5	The child speaks according to communicative needs	78	3.9
6	The child asks questions using more than two question words	70	3.5
7	The child expresses simple desires and feelings	74	3.7
8	The child chooses appropriate words when speaking	77	3.85
9	The child expresses ideas in simple sentences	73	3.65
10	The child retells the content of a story clearly	80	4.0

Table 3 presents the pretest results of early childhood language ability at *Raudhatul Athfal Al-Quraniyah* in South Bengkulu, based on ten observed indicators. Each indicator was assigned a score, and the average was calculated to measure the children's speaking ability. The average pretest scores ranged from 3.5 to 4.0, indicating that most children had fairly good speaking abilities, particularly in speaking with structured sentences and retelling story content. The lowest score was found in the indicator "the child asks questions using more than two question words" (3.5), suggesting an area that still requires development.

### 2. Posttest of Children's Language Ability

Table 4. Posttest Results of Children's Language Ability

No.	Indicator	Total Posttest Score	Average Posttest Score
1	The child speaks in structured sentences	85	4.25
2	The child pronounces words clearly and correctly	82	4.1
3	The child understands questions and provides responses	80	4.0
4	The child uses short sentences for interaction	83	4.15
5	The child speaks according to communicative needs	84	4.2
6	The child asks questions using more than two question words	72	3.6
7	The child expresses simple desires and feelings	77	3.85
8	The child chooses appropriate words when speaking	78	3.9
9	The child expresses ideas in simple sentences	76	3.8
10	The child retells the content of a story clearly	79	3.95

Table 4 presents the posttest results of children's language ability at *Raudhatul Athfal Al-Quraniyah* in South Bengkulu, which measured the development of the children's speaking abilities after a period of instruction using audio-visual media. The posttest results indicate a significant improvement compared to the pretest. For instance, the indicator "the child speaks in structured sentences" increased to 4.25, and "the child pronounces words clearly and correctly" rose to 4.1. Although most indicators showed improvement, the ability to ask questions using more than two question words had the lowest average score (3.6), despite some progress. Overall, the posttest results demonstrate positive advancement in the children's language abilities following the use of audio-visual media.

### 3. Observation on the Use of Audio-Visual Television

Table 5. Observation Results of the Use of Audio-Visual TV

Indicator	Total Score	Average
The child attentively watches the animated film presented	22	4.4
The child remains engaged in watching the animated film for a considerable duration	18	3.6
The child shows high concentration while watching the animated film	19	3.8
The child is not distracted by other stimuli while the animated film is playing	15	3.0
The child shows interest and enthusiasm while watching or listening to the animated film	17	3.4
The child asks questions or gives responses based on what has been watched	18	3.6
Total Average		3.65

Table 5 presents the results of the observation regarding the use of television-based audiovisual media in enhance children's attention and concentration during animated films. The findings indicate that the children performed exceptionally well in paying attention to the animated film, with the first indicator, "the child attentively watches the animated film presented", achieving the highest average score (4.4). However, some indicators, such as "the child is not distracted by other stimuli while the animated film is playing", recorded a lower average score (3.0), suggesting the presence of external distractions that affected the children's focus. The overall mean score of 3.65 indicates that the children demonstrated a reasonably good level of engagement while watching animated films, although certain aspects still require improvement.

#### 4. Data Validity

Table 6. Results of Data Validity Test

		Pre	Post
Pre	Pearson Correlation	1	.504*
	Sig. (2-tailed)		.024
	N	20	20
Post	Pearson Correlation	.504*	1
	Sig. (2-tailed)	.024	
	N	20	20

\*. Correlation is significant at the 0.05 level (2-tailed).

The relationship between the pretest and posttest is statistically significant, with a positive correlation of 0.504, indicating that the pretest results have a moderate influence on the posttest results. With a significance value (Sig.) of 0.024, which is lower than 0.05, this correlation can be considered valid. This suggests a sufficiently strong relationship between the two variables. In other words, the pretest can serve as one indicator of posttest achievement.

#### 5. Data Normality

Table 7. Results of the Data Normality Test

		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Post	Statistic	df	Sig.	Statistic	df	Sig.
Pre	Pretst	.146	10	.200*	.948	10	.646
	Post	.129	10	.200*	.967	10	.865

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Since the significance values (Sig.) in both the Kolmogorov-Smirnov and Shapiro-Wilk tests for the pretest and posttest are greater than 0.05, it can be concluded that the pretest and posttest data are typically distributed. This indicates that the obtained data



follow a normal distribution, allowing for further parametric statistical analysis.

## 6. T-Test

Table 8. Results of the T-Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.204	1.905		-1.682	.110
	Pre	.121	.049	.504	2.473	.024

a. Dependent Variable: Post

Based on the t-test results, the pretest has a significant effect on the posttest (p-value = 0.024), which is less than 0.05. This finding indicates a positive relationship between children's language ability before and after using audiovisual TV media at Raudhatul Athfal Al-Quraniyah, South Bengkulu. This means that the better a child's pretest performance, the greater their improvement in language ability after watching animated films. Children's engagement in watching animated films directly contributes to enhancing their language skills, demonstrating the effectiveness of audiovisual TV media in supporting early childhood language development by 25.4% (R-Square).

The influence of audiovisual media on early childhood language acquisition has received considerable attention in various studies. The use of audiovisual media such as educational videos, songs, and interactive games has been shown to enhance vocabulary acquisition and retention in English among four-year-old children. However, there are still limitations in material design and interactivity that need further optimization (Pretell Mendez et al., 2025). The integration of audiovisual media in education, for instance, the "Aprende en casa" program in Mexico, demonstrates that active participation and the use of new media formats, such as TikTok videos, can significantly increase student engagement and motivation (Serrano-Arenas, 2023). Furthermore, audiovisual media containing both static and dynamic images have been proven to improve children's comprehension and memory, even though no significant difference was found regarding text representation (Seger et al., 2019). The use of audio media, such as children's songs, also enhances students' creativity and interpretive skills (Hadi et al., 2021). It is also important to ensure accessibility of audiovisual content for all children, including those with disabilities, by adding features such as audio descriptions, subtitles, and sign language interpretation (de Souza et al., 2025). Nevertheless, excessive exposure to electronic media may negatively affect children's emotional and behavioural development, making it necessary to use digital media wisely and in moderation (Paulus et al., 2021).

Learning media play a crucial role in early childhood education (ECE) by supporting comprehensive cognitive, motor, and social development. Effective management of learning media includes providing teaching materials and learning aids, as well as integrating technology (Baidowi, 2020). For example, puzzle games can stimulate children's thinking and problem-solving abilities (Aliyudin & Alvionita, 2025), while guided use of gadgets can foster digital literacy and cognitive skills (Tabrani et al., 2024). Educational play tools (Alat Permainan Edukatif, APE), such as bead-stringing activities, train hand-eye coordination as well as fine motor and sensory skills (Anggraeni et al., 2024), and hand puppets are effective in improving children's speaking and

communication skills (Alhan & Munawaroh, 2023). Thus, the appropriate use of learning media is key to creating interactive, enjoyable, and developmentally supportive learning experiences in early childhood education settings.

Audiovisual media play an essential role in early childhood education (ECE) by enhancing children's retention, comprehension, and language skills. The use of educational videos, songs, and interactive games helps children remember vocabulary and understand information through visualization and interaction (Pretell Mendez et al., 2025). Moreover, audiovisual media have proven effective in language learning, enabling children to acquire vocabulary in engaging and interactive ways. Animated videos also facilitate basic mathematics learning in a fun manner, thereby increasing motivation and participation (Putri et al., 2025). The role of this media in educommunication merges educational and communicative aspects to create an interactive learning experience, especially during the COVID-19 pandemic (Carrion-Salinas et al., 2023). Technologies such as voice recognition make it easier for children to interact with media without the need for a cursor or keyboard (Taurusta et al., 2019). In addition, audiovisual media enhance media literacy, helping children understand editing techniques and different types of camera shots in videos (Canelhas & Vicentle, 2024).

#### **D. CONCLUSION**

The influence of television-based audiovisual media on the language ability of early childhood students at Raudhatul Athfal Al-Quraniyah, South Bengkulu, indicates that the use of audiovisual media, particularly animated films, has a positive impact on children's language development. Data analysis revealed a significant improvement in children's language ability after exposure to audiovisual media. The pretest and posttest results demonstrated a significant difference, with the posttest mean score being higher than the pretest score. The t-test results showed that the pretest had a significant effect on the posttest, with a p-value of 0.024, which is less than 0.05, indicating an improvement in children's language ability after the use of audiovisual media. Furthermore, observational data revealed that children exhibited good engagement during the animated film activities, with an average score of 3.65. However, some indicators, such as "the child is not distracted by other things when the animated film is being played," showed lower scores, suggesting that although children were generally focused, external distractions still influenced their concentration. Overall, this study confirms that audiovisual media can serve as an effective tool for enhancing early childhood language skills. These findings are significant for the development of technology-based learning approaches in early childhood education, providing insights for educators and parents to make better use of educational audiovisual media as a means of improving children's language proficiency.

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cognitive, motor, and language development of early childhood learners. It is hoped that the findings of this research will serve as a valuable reference for educators, parents, and early childhood practitioners to optimize the use of learning media, making the learning process more effective, engaging, and enjoyable for children.

## AUTHOR CONTRIBUTIONS

- Author 1 : Designed the quantitative-descriptive research framework and defined clear objectives focusing on the impact of instructional media on early childhood development.
- Author 2 : Determined the population and sample using purposive sampling to ensure that research subjects were representative for evaluating cognitive, motor, and language aspects.
- Author 3 : Developed research instruments, including questionnaires, observation sheets, and interview guides, tailored to the characteristics of early childhood learners.
- Author 4 : Collected data directly and conducted initial validation through pilot testing of instruments to ensure reliability and accuracy of the information.
- Author 5 : Analyzed the data using descriptive and inferential statistics and performed data triangulation to enhance the validity and interpretation of the research findings.

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