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Comparative Analysis of the Effectiveness of Lectures and Video-Assisted Learning in Improving Learning Outcomes of Students at TK Perjuangan in Bengkulu City

Intan Permata Sari[1*], Adamu Abubakar Muhammad[2], Johanes Sapri[3]

[1,3]Universitas Bengkulu, Indonesia
[2]Federal University of Kashere, Gombe State, Nigeria
✉ intanpermatasari2103@gmail.com*

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Abstract

Background of study: The main factor behind this research is the changing characteristics and learning style needs of Generation Alpha, today's kindergarten students. To create a fun, meaningful, and conscious learning environment, schools and teachers must incorporate digital technologies such as smart TVs or interactive large screen panels into their learning processes. Video-assisted learning (VAL) is considered attractive because it can make learning easier for kindergarten-aged children to understand and enjoy.

Aims: The purpose of this study was to evaluate the effectiveness of conventional lectures compared to video-assisted learning in improving student learning outcomes at Perjuangan Kindergarten in Bengkulu City.

Methods: This study used an experimental method with a sample of fifteen students from Class B1 and fifteen students from Class B2, each of whom received different treatments. Pre-tests and post-tests with pictures tailored to aspects of child development were used to assess learning outcomes. To conclude the effectiveness of the two methods, the data were tested with N-Gain scores using SPSS.

Result: Students in classes taught using the VAL method obtained an N-Gain score of 68.5%, indicating that this method is quite effective in improving their learning outcomes. Students in classes taught using the lecture method only obtained an N-Gain score of 26.9%, indicating that this method is not effective in improving student learning outcomes. This study shows a significant difference between the two methods.

Conclusion: This study concluded that the Video Assisted Learning method was more effective in improving student learning outcomes than the lecture method.

A. Introduction

Mayer's Cognitive Theory of Multimedia Learning (CTML) explains how individuals acquire information through words and images. In Richard Mayer's book Cognitive Theory of Multimedia Learning (CTML), he explains that humans have two separate channels for processing information, namely the visual and auditory channels. Visual information such as images, diagrams, animations, and text on the screen is processed through the visual channel. Meanwhile, verbal information such as narration or text that is read

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is processed through the auditory channel. Each channel has a limited capacity to process information at the same time. Humans are only able to process a small amount of information in each channel simultaneously. This is related to Cognitive Load Theory, which refers to the demands placed on working memory by various cognitive processes. These processes include comprehension, schema formation, schema automation, and problem solving. Cognitive Load Theory explains that when working memory is overloaded by the demands of cognitive processes, student learning will be disrupted (Ginns & Leppink, 2019). That is why Mayer developed a set of multimedia principles to optimize learning and reduce irrelevant cognitive load.

One traditional learning method that emphasizes the verbal delivery of information from educators to students is the lecture method. In the lecture method, educators, as the main source of information, have complete control over the learning process, while students passively receive information. Several studies show that the lecture method often fails to stimulate student motivation to learn (Ilyas et al., 2025). Mayer's Cognitive Theory of Multimedia Learning (CTML) explains that humans have limited working memory when processing visual and audio information simultaneously. Active processing involves selecting relevant material in working memory to create a coherent verbal and visual structure that is integrated with existing knowledge in a person's long-term memory (Mayer, 2024). This emphasizes that the lecture method can cause cognitive overload, which can affect students' focus, understanding, and learning outcomes because it involves both visual and auditory senses simultaneously, thereby reducing focus and leading to a failure to understand the information. In addition, monotonous lecture methods that focus on the teacher cause students to quickly become bored because they are monotonous and lack interactivity. Monotonous and uninteractive presentations of material tend to make students less active and enthusiastic during learning.

According to Hollingsworth & Lewis (2006), active learning is a state in which students are continuously engaged mentally and physically during learning. The characteristics of active learning are when students are enthusiastic, active, lively, continuous, strong, and effective. Another opinion states that student activity is demonstrated when students have the courage to ask and answer questions, and are able to collaborate with other students through discussion (Rikawati & Sitinjak, 2020). Meaningful learning from multimedia materials, which use words and images simultaneously, occurs when students actively process information through two separate sensory channels (visual and auditory) and then integrate the information with their existing knowledge. Effective learning materials must make optimal use of both channels by combining images and spoken narration. This aims to reduce irrelevant cognitive load during the learning process so that students can focus on the core information of the material being presented. In designing multimedia materials, it is necessary to select relevant words and images, organize the words into a verbal model and the images into a visual model, and integrate both models with prior knowledge. This aims to overcome students' learning barriers and reduce their cognitive load in order to provide more in-depth and meaningful information and understanding.

Early childhood is a foundational period in human growth and development. During this period, children experience rapid growth and development. Early childhood education is a means of learning through fun and carefree play (Sihotang et al., 2020). Early childhood education is holistic and integrated, developing all aspects of a child's development, including cognitive, physical-motor, language, social-emotional, and artistic aspects. Cognitive refers to the process of thinking, a person's ability to connect, assess, and consider an event or incident. Cognitive skills relate to a child's intelligence in problem solving, numeracy skills, and understanding numbers (Hapsari, 2022). Children aged 2-7 years are in the pre-operational stage of cognitive ability (Handaryani & Pudjawan, 2019). Many studies explain that the use of video as a learning medium is very effective in the teaching and learning process in the classroom. In the study (Čepon, 2013) shows that the quantitative results of using instructional videos have a greater effect on mastery than verbal-based understanding in general. The use of multimedia tools in the form of video materials in the classroom provides an interesting, relevant, and useful learning experience and increases student motivation to learn (Kamelia, 2019). In addition, teachers can also help children with special needs by using video learning resources to improve the abilities of young children with limitations (Mohammad & Reda, 2023). Providing engaging learning media can increase students' interest in learning so that they do not get bored easily, make it easier for students to understand the material provided, and make it easier for teachers to deliver complex material (Wulandari et al., 2024). The use of videos in learning is very suitable for children because they will understand the material presented through educational videos more quickly (Anggriani et al., 2022).

The emergence of Generation Alpha marks a transformative era in education. Changes in the characteristics and learning needs of today's youth must be taken into consideration in learning planning. Students of this generation have a distinctive affinity for technology that shapes new learning styles. The era of the Fourth Industrial Revolution has led to the evolution of a new dimension of learning that demands innovative pedagogical approaches integrated with the technological expertise of Generation Alpha (Coolsaet, 2024). Generation Alpha are children born between 2010 and 2025 (Taufiqurrahman et al., 2025). Generation Z and Alpha grew up entirely in a digital environment. This fundamentally shapes their learning styles and preferences, which are vastly different from previous generations. Gen Z are digital integrators who have grown up alongside the evolution of technology and have integrated it into their daily lives. Meanwhile, Gen Alpha are digital natives who were born in the era of smartphones and AI. They have developed cognitive patterns that are inherently optimized for multimedia technology. Although they are digitally literate, intensive digital exposure from an early age creates challenges in their social and emotional development (Sarfraz et al., 2025). Entertainment and education for Generation Alpha are heavily dependent on digital screens. This has led to a dependence on screens and touchscreens. This generation is more accustomed to communicating visually through images and audio than text. They interact closely with online learning (Apaydin & Kaya, 2020). Generation Alpha finds it easy to use technology, which conflicts with traditional teaching methods. Therefore, it is important for educators to develop effective learning activities using technological tools to deliver material. Educators also need to ensure the quality of all information presented through digital media (Reis, 2018). Kindergarten teachers need to add special programs to the curriculum to provide information about the positive use of gadgets (Höfrová et al., 2024).

Generation Alpha, as digital natives, is triggering a paradigm shift in education, proving that the existence of digital technology is causing a shift towards personalized, interactive, and contextual learning experiences (Korobkova et al., 2025). Research shows that digital exposure in this generation affects their neurological development, attention patterns, information processing abilities, and social interaction preferences. This generation develops cognitive patterns that are inherently optimized for AI-integrated, interactive digital media (Sarfraz et al., 2025). This generation has multitasking abilities, meaning they are able to process a lot of information at once through audio-visual, interactive, and animated learning (Alit & Tejawati, 2023). Their focus is easily distracted by external disturbances during learning, so concise, segmented, and to-the-point material is needed in learning. Their tendency and dependence on smartphones and technological devices makes them more receptive to information in the form of videos and images than text. Therefore, educators are required to present teaching materials in an interactive and engaging audio-visual format through digital platforms (Putri et al., 2024). The lack of learning achievement among students of this generation is caused by many factors, one of which is the learning approach, including strategies and methods of delivering learning materials. Students often fail to process information from learning media due to many distractions and excessive cognitive load. This problem ultimately prompted researchers to conduct an experiment comparing the effectiveness of lecturing and Video Assisted Learning in improving student motivation and learning outcomes at TK Perjuangan in Bengkulu City.

21st century education needs to develop student skills that are in line with the learning outcomes of the Merdeka Curriculum, which include critical thinking, communication, collaboration, creativity, character, and citizenship. The Merdeka Curriculum requires schools to design their own curricula, taking into account the needs of students and providing education that is relevant to the local and global context (Vioreza et al., 2025). Digital literacy has become an essential skill for students to access, evaluate, and utilize information technology effectively. Innovative approaches that need to be integrated into learning include digital libraries, learning applications, and interactive platforms to enhance the learning experience of students (Nisa et al., 2025). Learning media are categorized into three types, namely visual media, audio media, and audio-visual media (Nadeak & Naibaho, 2020). Video-Based Learning (VBL), also known as Video-Based Learning, is a method of delivering information, knowledge, or skills that uses video as the primary medium in the learning process. Meanwhile, Video-Assisted Learning (VAL) is part of VBL, which is an educational approach that uses video recordings as the main or supporting component to facilitate the learning process. VAL utilizes the power of video and auditory stimuli to convey information. The use of video in learning has been proven to increase student motivation and learning outcomes. Various studies show that the use of asynchronous and structured videos can effectively improve student learning outcomes. Videos can be accessed repeatedly at any time, enabling independent learning (Jamil & Thohir, 2023). Videos can visualize ideas, processes, skills, or phenomena that are abstract, complex, or impossible to witness directly. The use of videos has proven to be effective for material that is difficult to understand (Ananda et al., 2023). In addition, video-based learning such as VAL can integrate Artificial Intelligence

(AI) technology to complement effective instructional video design in order to improve the effectiveness of VBL (Navarrete et al., 2025).

In the Deep Learning approach, which is currently the benchmark for education in Indonesia, technology and artificial intelligence (AI) are integrated to create learning that is enjoyable, meaningful, and conscious (Feri et al., 2025). The implementation of Deep Learning is expected to meet the needs and characteristics of today's children, who tend to prefer digital media such as short videos and AI (Nafi & Faruq, 2025). Although Deep Learning offers many benefits in today's learning environment, its implementation is hampered by rigid curriculum constraints and limited resources (Hasanah et al., 2025). However, the government is now beginning to make efforts to meet the infrastructure needs of each school. With the provision of Smart TV or Interactive Flat Panels (IFP) at TK Perjuangan in Bengkulu City, schools and educators are faced with the challenge of making the best possible use of this technology in the learning process. The author hypothesized that students taught using the Video Assisted Learning method would have higher learning outcomes than students taught using the lecture method. This study aimed to compare the effectiveness of two methods, namely the lecture method and the Video Assisted Learning method, in improving student learning outcomes at TK Perjuangan in Bengkulu City.

B. Research Methods

This study used a two-group experimental method to compare student learning outcomes using different learning methods, namely the lecture method (control class) and the VAL method (experimental class). The population involved in this study consisted of all students at TK Perjuangan in Bengkulu City. Meanwhile, the sample in this study involved 15 students from Class B1 (control class) and 15 students from Class B2 (experimental class).

The research methodology used the same learning material, namely about the topic of Getting to Know God's Creatures, but with different media. The control class used the lecture method and traditional media in the form of text and images. Meanwhile, the experimental class used the VAL method with video as the main learning medium. The evaluation in this study used a diagnostic assessment method (pre-test) to assess the students' initial abilities and a summative assessment (post-test) to assess the final learning outcomes of the students during the learning process. The instrument used was a picture quiz in the form of multiple choice questions tailored to the learning topic and the cognitive development stage of early childhood. Students were given a pre-test before learning began to assess their initial abilities. The learning process was carried out during one meeting with the topic of Getting to Know God's Creatures. At the end of the study, students were given a post-test to assess their learning outcomes. Data analysis in this study will use SPSS version 26. The data obtained from both classes will be tested for normality, homogeneity, and Independent Samples Test to see the difference in learning outcomes between classes, and normalized gain score (N-Gain) to measure the effectiveness of the two learning methods or improvement in learning outcomes. The following is the N-Gain formula:

$$\text{N-Gain} = \frac{Skor\ Posttest - Skor\ Pretest}{Skor\ Maks - Skor\ Pretest}$$

$$\text{N-Gain (\%)} = \text{N-Gain} \times 100\%$$

The N-Gain assessment categories and percentages are as follows:

Table 1. N-Gain Score Category

N-Gain	**Category**
≥ 0,7	High
0,3 – 0,7	Medium
< 0,3	Low
N-Gain (%)	**Effectiveness Category**
≥ 76%	Effective
56% - 75%	Fairly Effective
40% - 55%	Less Effective
< 40%	Not Effective

C. Results and Discussion

1. Results

1.1 Learning Outcomes for Class B1 (Control Class)

The learning procedure was conducted during one meeting with the topic of Getting to Know God's Creatures. Each meeting was allocated two hours of learning time. Before the learning began, a pre-test was conducted in Class B1 (control class) to assess the students' initial abilities. Then, at the end of the learning topic, a post-test was given to measure the students' understanding over the course of one week. The following is the data on the learning outcomes of the control class students:

Table 2. Learning Outcomes for Class B1 (Control Class)

No	Student Name	Control Class			
		Pretest	Postest	N-Gain	Percentage
1	DAR	60	70	0,25	0,25%
2	IPS	58	65	0,17	0,17%
3	GWR	65	77	0,34	0,34%
4	AHH	70	87	0,57	0,57%
5	NKW	62	65	0,08	0,08%
6	SIY	68	85	0,53	0,53%
7	GNA	55	62	0,16	0,16%
8	SRS	72	87	0,54	0,54%
9	LZM	60	65	0,13	0,13%
10	SEP	66	77	0,32	0,32%
11	GPK	63	67	0,11	0,11%
12	DAP	57	61	0,09	0,09%
13	FAP	71	84	0,45	0,45%
14	RFZ	64	72	0,22	0,22%
15	FAF	59	63	0,10	0,10%

The following is the N-Gain data from the pre-test and post-test results for Class B1 (control class). In the table above, the N-Gain score is shown in the NGain_Score row, Mean column = 0.2697, which is classified as low. Meanwhile, the N-Gain percentage is shown in the NGain_Persen row, Mean column = 26.96%, which is classified as poor. Therefore, it can be concluded that the lecture method used in the control class was ineffective.

Table 3. B1 Class N-Gain Value (Control Class)

	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	15	.08	.57	.2697	.17689
NGain_Persen	15	7.89	56.67	26.9692	17.68919
Valid N (listwise)	15				

1.2 Learning Outcomes for Class B2 (Experimental Class)

The learning procedure was conducted during one meeting with the topic of Getting to Know God's Creatures. Each meeting was allocated two hours of learning time. Before the learning began, a pre-test was conducted in Class B2 (experimental class) to assess the students' initial abilities. Then, at the end of the learning topic, a post-test was given to measure the students' understanding over the course of one week. The following is the data on the learning outcomes of the control class students:

Table 4. Learning Outcomes for Class B2 (Experimental Class)

No	Student Name	Experimental Class			
		Pretest	Postest	N-Gain	Percentage
1	GNM	62	85	0,61	61%
2	AUD	60	82	0,55	55%
3	SHN	65	90	0,71	71%
4	DZW	68	95	0,84	84%
5	DAP	63	85	0,59	59%
6	MSP	67	95	0,85	85%
7	WRM	58	80	0,52	52%
8	DIR	70	100	1,00	100%
9	MIA	61	80	0,49	49%
10	MJF	66	95	0,85	85%
11	HML	64	82	0,50	50%
12	BFR	59	80	0,51	51%
13	RAJ	71	100	1,00	100%
14	GMH	65	90	0,71	71%
15	MHM	57	80	0,53	53%

The following is the N-Gain data from the pre-test and post-test results for Class B2 (experimental class). In the table above, the N-Gain score is shown in the N-Gain Score row, Mean column = 0.6854, which is in the moderate category. Meanwhile, the N-Gain percentage is shown in the N-Gain_Persen row, Mean column = 68.54%, which is in the sufficient category. Therefore, it can be concluded that the application of the VAL method in the experimental class proved to be quite effective.

Table 5. B2 Class N-Gain Value (Experimental Class)

	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	15	.49	1.00	.6854	.18221
NGain_Persen	15	48.72	100.00	68.5445	18.22064
Valid N (listwise)	15				

1.3 Normality and Homogeneity Tests

Table 6. Normality Test Results

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	df	Sig.
Hasil	Pretest B1 (Kontrol)	.136	15	.200*	.962	15	.734
	Postest B1 (Kontrol)	.182	15	.193	.877	15	.043
	Pretest B2 (Eksperimen)	.083	15	.200*	.975	15	.923
	Postest B2 (Eksperimen)	.185	15	.176	.867	15	.031

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

The table above shows the normality test results for the pre-test and post-test of each class. The data above shows a P Value (Sig) Liliefors = 0.20 for the pre-test value of Class B1. The research alpha is 5% or 0.05, meaning that 0.20 > 0.05, so based on the Lilliefors test, the pre-test value data for Class B1 (control) is normally distributed. Meanwhile, the (Sig) value in the post-test results for Class B1 (control) = 0.193, meaning that 0.193 > 0.05, so the post-test data for Class B1 (control) is normally distributed. For the pre-test results of Class B2 (experimental), 0.20 > 0.05, meaning that the data is normally distributed. Meanwhile, the post-test results of Class B2 (experimental) = 0.176 < 0.05, meaning that the data is normally distributed.

Table 7. Homogeneity Test Results

		Levene Statistic	df1	df2	Sig.
Hasil_ Belajar	Based on Mean	1.542	1	28	.225
	Based on Median	.826	1	28	.371
	Based on Median and with adjusted df	.826	1	27.457	.371
	Based on trimmed mean	1.461	1	28	.237

The homogeneity test was only conducted on the post-test values. The table above shows the results of the homogeneity test using Lavene's Test. Lavene's value is shown in the row Based on Mean = 1.542 with P Value (Sig) = 0.225. The research alpha = 5% or 0.05. Therefore, 0.225 > 0.05, which means that there is similarity in variance between groups or that they are homogeneous.

1.4 Comparison of Learning Outcomes between Class B1 and Class B2

a. Pre-Test Mean and Standard Deviation

Table 8. Average Score & Standard Deviation of Pre-Test

	Kelas	N	Mean	Std. Deviation	Std. Error Mean
Hasil Belajar	Kelas Kontrol	15	63.33	5.287	1.365
	Kelas Eksperimen	15	63.73	4.267	1.102

The following is a comparison of the pre-test results between Class B1 and Class B2. The table above shows that Class B1 has 15 data points with a mean of 63.33, a standard deviation of 5.287, and a standard error of the mean of 1.365. Meanwhile, Class B2 has 15 data points with a mean of 63.73, a standard deviation of 4.267, and a standard error of the mean of 1.102.

b. Post-Test Mean and Standard Deviation

Table 9. Post-Test Average Score & Standard Deviation

	Kelas	N	Mean	Std. Deviation	Std. Error Mean
Hasil Belajar	Kelas Kontrol	15	72.47	9.591	2.476
	Kelas Eksperimen	15	87.93	7.507	1.938

The following is a comparison of post-test results between Class B1 and Class B2. The table above shows that Class B1 has 15 data points with a mean of 72.47, a standard deviation of 9.591, and a standard error of the mean of 2.476. Meanwhile, Class B2 has 15 data points with a mean of 87.93, a standard deviation of 7.507, and a standard error of the mean of 1.938.

c. Independent Samples Post-Test

Table 10. Independent Sample Test Results

		Levene's Test		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
Hasil_ Belajar	Equal variances assumed	1.542	.225	-4.918	28	.000	-15.467	3.145	-21.908	-9.025
	Equal variances not assumed			-4.918	26.473	.000	-15.467	3.145	-21.925	-9.008

The table above shows that the Sig (2-tailed) value = 0.000. Meanwhile, the research alpha = 5% or 0.05. This means that 0.000 < 0.05, so it can be concluded that this result accepts Ha and rejects H0. In other words, there is a significant difference between the post-test results of students in Class B1 and Class B2.

Based on the analysis of student learning outcomes in the control class and experimental class above, it is evident that students taught using the VAL method have higher learning outcomes compared to students

taught using the lecture method. In addition, the analysis of the data above also concludes that learning applied using the VAL method is quite effective in improving student learning outcomes, as can be seen from the N-Gain score of 68.5%. Meanwhile, learning with the lecture method in the control class proved to be ineffective in improving student learning outcomes. This could be due to various factors, one of which is the change in the characteristics and needs of students, which are currently dominated by Generation Z and Generation Alpha.

2. Discussion

The results showed that video-assisted learning (VAL) was significantly better than lectures in improving student learning outcomes at Perjuangan Kindergarten. Audio-visual stimuli outperformed verbal explanations, which tend to be passive in the information processing process, as indicated by an N-Gain score of 68.5% in the experimental class. These results support Mayer's Cognitive Theory of Multimedia Learning (CTML), which argues that young children will find it easier to understand and remember material because the integration of visual and auditory channels can reduce cognitive load. Conversely, 26.9% of students believe that conventional, monotonous learning methods are no longer able to motivate Generation Alpha, who have an optimal digital mindset, to learn.

2.1 Implications

In practical terms, the findings of this study indicate that teaching in early childhood education/kindergarten must undergo a paradigm shift. This shift must move from a teacher-centered approach to a more interactive and technology-based approach. Teachers must be more proficient in managing multimedia media so that they can create a fun and meaningful learning environment that is appropriate for today's students. In addition, there are management reasons for educational institutions to start investing in technological infrastructure such as Smart TVs or Interactive Flat Panels (IFP) to support the implementation of a curriculum that is in line with the times.

2.2 Research contribution

This study provides a tangible contribution to the effectiveness of using VAL in early childhood education, particularly in Bengkulu City. It adds to previous research on the difficulties and prospects of educating Generation Alpha by capitalizing on their affinity for visual media. Furthermore, the experimental methodology used in this study can be utilized by instructional designers to create more appropriate and useful teaching materials to improve student learning outcomes at the kindergarten level.

2.3 Limitations

Although the results were positive, this study had several limitations. First, the sample was limited to thirty students at a specific school. Therefore, the findings should be generalized with caution to cover a wider area. Second, because the intervention only included one session on a specific topic and was conducted in a relatively short period of time, the VAL method could not be monitored comprehensively in the long term. Third, the evaluation tools used still focus on cognitive aspects through picture quizzes, but do not study the impact on the development of other elements comprehensively.

2.4 Suggestions

The results show that, in order to maintain student enthusiasm and support the learning process, kindergarten teachers must begin to use structured and engaging educational videos as the main supporting medium. In order for the findings to be more relevant and valid across the board, researchers must continue their research with a larger sample size and a longer duration. Future research could also examine how the use of new technologies such as interactive platforms or Artificial Intelligence (AI) impacts various aspects of child development beyond cognitive development.

D. Conclusion

Based on the results of research comparing the effectiveness of the lecture method with the Video Assisted Learning (VAL) method in learning at Perjuangan Kindergarten in Bengkulu City, it can be concluded that the application of learning technology in the form of VAL is proven to be more effective than the lecture method in improving student learning achievement. This can be seen from the higher average post-test scores of students in the experimental class compared to the control class. This is further reinforced by the results of the Independent Sample Test, which shows that the post-test scores of students in the experimental class and the control class have a significant difference. The N-Gain score in the experimental group

reached 68.5%, which is classified as quite effective. Meanwhile, the control class only scored 26.9%, which is classified as less effective in improving learning outcomes. This shows a significant increase in material comprehension among students taught using the VAL method compared to students taught using the lecture method.

In addition, student interest and motivation in the learning process using the VAL method also increased significantly in the experimental class. This was because the application of the VAL method made students more enthusiastic, active, and enjoy the interactive learning process with the use of interesting animated video media. Technology-integrated learning can create a more engaging and interactive learning environment, proving the validity of the CTML theory, which explains that the use of audio-visual media makes it easier for students to understand the material and remember it longer because it reduces their cognitive load. This digital media-based approach can also meet the characteristics and needs of today's Generation Z and Generation Alpha. Utilizing digital technology in the form of VAL as the main or supporting media can be an innovative solution for educators and instructional designers in overcoming the limitations of lecture methods, which are now less effective and relevant for the current generation. Therefore, learning today, especially at the kindergarten level, needs to integrate interactive technology into the learning process in order to increase students' interest, motivation, and learning outcomes.

This research can be further developed and strengthened by conducting follow-up studies. The author suggests that further research should be conducted over a longer period of time so that the results obtained are more valid and relevant. This study can be used as a consideration for educators, especially instructional designers, in developing instructional designs, particularly at the kindergarten level, to integrate VAL multimedia technology into the learning process in order to increase student motivation and learning outcomes.

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F. Author Contribution Statement

The author prepared for the study by preparing conventional teaching materials for the control class and video teaching materials for the experimental class. The author also prepared a written assessment instrument in the form of illustrated multiple-choice questions. The author also conducted direct practice as a teacher during the study in two different classes.

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