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Audiovisual Media and Indonesian Language Learning Outcomes in an Islamic Elementary School

Hanna Wahyu Aruming Tyas^{1*}, Muhammad Fuad², Mulyanto Widodo³, Destiani⁴

¹hannawahyu05@gmail.com, ²muhammad.fuad@fkip.unila.ac.id,

³mulyanto.widodo@fkip.unila.ac.id, ⁴destiani@fkip.unila.ac.id

Universitas Lampung

*Corresponding Author: Hanna Wahyu Aruming Tyas

Email: hannawahyu05@gmail.com

ABSTRACT

This study examined the effect of audiovisual media on the Indonesian language learning outcomes of fourth-grade students at an Islamic integrated elementary school in Metro, Lampung, focusing on the listening-and-viewing competency under the Merdeka Curriculum. Low mastery of Indonesian language material had been observed among fourth-grade students, with most of the fifty students failing to reach the school's minimum mastery criterion. A quantitative approach was applied using a quasi-experimental method with a nonequivalent control group design. The fifty students were divided into an experimental class taught with audiovisual media and a control class taught conventionally, using a saturated sampling technique. Data were collected through a fifteen-item multiple-choice pretest and posttest and analyzed using chi-square normality testing, F-test homogeneity testing, and simple linear regression. The data met the assumptions of normality and homogeneity for both administrations. The regression analysis produced the equation $\hat{Y} = 58.66 + 0.333X$ with a significance value of 0.005, below the alpha level of 0.05, leading to rejection of the null hypothesis. The experimental group's mean score increased by 18.40 points, from 56.64 to 75.04, compared with a gain of only 5.22 points in the control group, despite starting from a lower baseline. These findings indicate that audiovisual media significantly improved Indonesian language learning outcomes, although the size of the effect appeared to depend on factors such as student attendance and teachers' readiness to use the medium.

Keywords: Audiovisual Media, Elementary Education, Indonesian Language, Learning Outcomes, Merdeka Curriculum

INTRODUCTION

Language competence is one of the central outcomes elementary education is expected to deliver, since the ability to listen, read, speak, and write underlies nearly every other subject a student encounters in school (Fenuku, 2024; Wolf et al., 2023). Within Indonesia's Merdeka Curriculum, Indonesian language instruction has been restructured around four integrated literacy elements, one of which, listening and viewing, requires students to process information conveyed through both auditory and visual channels rather than through text alone (Intiana et al., 2023; Kusuma & Rahmawati, 2024). Fiorella (2021) believed this element places particular demands on the way teachers select and present instructional material, since success depends as much on how information is delivered as on its content.

This curricular emphasis on listening and viewing reflects a broader concern about literacy achievement at the national level. The most recent Programme for International Student Assessment found that Indonesian fifteen-year-olds recorded a mean reading score of 359, a result well below the OECD average that signals literacy difficulties extending across the basic education system rather than being confined to a single grade (Avvisati & Ilizaliturri, 2023a, 2023b). For younger learners still building foundational comprehension skills, the consequences of this pattern are felt earlier and, in many classrooms, more acutely than the national figures alone suggest (Pellicer-Sánchez et al., 2020).

Instructional media is one of the few classroom-level variables teachers can adjust relatively quickly in response to this problem. The cognitive theory of multimedia learning explains why such media matters: when verbal and pictorial information are presented together, learners process them through separate but coordinated channels, easing the burden on working memory and supporting comprehension rather than rote memorization (Mayer, 2024). Audiovisual media, which combine moving images with synchronized sound, apply this principle directly, since a single instructional message can be received simultaneously through sight and hearing (Nicolaou, 2021; Noetel et al., 2022).

The wider shift toward digital instructional tools in basic education has been documented as a global trend that improves access, engagement, and the standardization of content delivery, although its benefits depend heavily on whether teachers are equipped and willing to use the available technology (Haleem et al., 2021). In the Indonesian elementary context specifically, recent development work has shown that digitally packaged Indonesian language materials, such as gamified learning media built around local cultural content, can be made acceptable to both teachers and students when designed with sufficient pedagogical care (Mar'atussolichah et al., 2024). These findings indicate that the barrier to adopting audiovisual media in Indonesian language classrooms is less a matter of feasibility than of design and institutional readiness.

The case for audiovisual media is particularly strong for language-based subjects. Exposure to input made comprehensible through supportive context, repetition, and engaging delivery has been shown to lower learners' affective resistance to new material and to facilitate acquisition more effectively than input delivered through conventional, text-only instruction (Kartika & Afndoliah, 2025). Complementary evidence from digital peer-teaching media has further indicated that technology-supported instruction can strengthen learners' independence in managing their own study process, provided the media is matched to subject content and to learners' developmental stage (Fatmi & Fitriani, 2025).

Despite this evidence, the practical use of audiovisual media remains uneven at the school level, and SDIT Al-Muhsin Metro illustrates the gap clearly. Although the school's teaching staff are generally disciplined and punctual, classroom observation indicated limited interest among teachers in developing or applying audiovisual instructional media, compounded by inadequate supporting infrastructure such as a shortage of LCD projectors. Under these conditions, fourth-grade students were observed to participate passively and to pay limited attention during Indonesian language lessons. This pattern was confirmed quantitatively in the odd-semester Mid-Term Examination results, where, out of fifty fourth-grade students across two classes, thirty had not yet reached the school's minimum mastery criterion of 70, compared with only twenty who had.

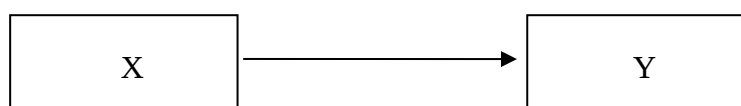
The existing literature on audiovisual and digital media in Indonesian elementary education has tended to concentrate either on the development of new media products, as in game-based or peer-mediated applications, or on subjects other than language, where experimental designs measuring learning outcomes are comparatively more common (Fatmi & Fitriani, 2025; Mar'atussolichah et al., 2024). Comparatively fewer studies have applied a controlled, quasi-experimental design to isolate the effect of audiovisual media specifically on Indonesian language outcomes among fourth-grade students within a faith-based integrated elementary school setting, where teacher attitudes toward technology and available infrastructure may differ from those of the public schools more commonly represented in prior research. The novelty of this study lies in situating the audiovisual media intervention within this underrepresented school context and in tying the measured outcome directly to the Merdeka Curriculum's listening-and-viewing competency rather than to a generic measure of achievement.

Accordingly, this study aims to determine whether the application of audiovisual media has a significant effect on the Indonesian language learning outcomes of fourth-grade students at SDIT Al-Muhsin Metro. The effect is examined through a nonequivalent control group design that compares pretest and posttest performance between an experimental class exposed to audiovisual instruction and a control class taught through conventional methods. The findings are intended to provide empirical evidence that can inform how integrated Islamic

elementary schools approach instructional media planning within the framework of the Merdeka Curriculum.

RESEARCH METHODOLOGY

This study employed a quantitative approach using a quasi-experimental method, specifically a nonequivalent control group design (Creswell & Creswell, 2022; Thyer, 2012). This design was selected because random assignment of students to entirely new groups was not feasible within the school's existing class structure, so the study instead worked with two intact fourth-grade classes that already existed at SDIT Al-Muhsin Metro. The design was intended to examine the effect of audiovisual learning media (X) on students' Indonesian language learning outcomes (Y), corresponding to the listening-and-viewing competency under the Merdeka Curriculum. The relationship between the two variables in this study is represented as follows:



Where X denotes the independent variable, namely audiovisual media, Y denotes the dependent variable, namely students' learning outcomes, and the arrow denotes the hypothesized direction of influence from the treatment to the outcome.

Research Subjects and Sampling Technique

The subjects of this study consisted of fifty fourth-grade students at SDIT Al-Muhsin Metro, distributed across two parallel classes, IV Maryam and IV Ruqqayah, with twenty-five students in each. A saturated sampling technique was applied, meaning that the entire population of fourth-grade students was included as the research sample rather than drawing a smaller subset (Sugiyono, 2022). One class was assigned as the experimental group and received instruction supported by audiovisual media, while the other class served as the control group and received instruction through the teacher's conventional method.

Research Procedure

The study was carried out in three stages. In the preliminary stage, the researcher conducted initial observations to identify the school's general conditions, the number of available classes, the characteristics of the fourth-grade students, the teacher's existing instructional approach, and the underlying causes of low Indonesian language learning outcomes. In the implementation stage, the researcher administered a pretest to both classes before instruction began and a posttest after instruction concluded, using the same set of fifteen multiple-choice items in both

administrations. In the final stage, the researcher compared the pretest and posttest results between the experimental and control groups to determine whether the audiovisual media treatment produced a measurable difference in outcomes.

Data Analysis Technique

Data were analyzed using simple linear regression following two preliminary assumption tests, normality and homogeneity, to confirm that the data met the conditions required for regression analysis. The normality of the pretest and posttest data was tested using the chi-square formula, expressed as:

$$\chi^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

where χ^2 represents the calculated chi-square value, f_o represents the observed frequency, f_h represents the expected frequency, and the summation is taken across all interval classes (Sugiyono, 2023). Data were considered normally distributed if the calculated chi-square value was smaller than the critical value at a significance level of 0.05 with degrees of freedom equal to the number of class intervals minus one. Homogeneity of variance between the experimental and control groups was tested using the F-test, calculated as

$$F - test = \frac{\text{largest variance}}{\text{smallest variance}}$$

A decision rule was applied such that the population variances were considered homogeneous if the calculated F-value was smaller than the critical F-value at the same 0.05 significance level (Sugiyono, 2022). The research hypothesis was tested using simple linear regression analysis, expressed as:

$$\hat{Y} = \alpha + Bx$$

where $\hat{Y}$ represents the predicted value of the dependent variable, X represents the independent variable, a represents the constant value of Y when X equals zero, and b represents the regression coefficient indicating the direction and magnitude of change in Y associated with a one-unit change in X . A positive value of b indicates that the application of audiovisual media is associated with an increase in learning outcomes, while a negative value would indicate a decrease.

Instrument Validity and Reliability

The validity of the test items was assessed using the Pearson product-moment correlation formula, expressed as:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

where r_{xy} represents the correlation coefficient between item score (x) and total score (y), and n represents the number of students. An item was considered valid if its calculated coefficient exceeded the critical r-value at the 0.05 significance level. Instrument reliability was assessed using the Kuder-Richardson formula 20 (KR-20), expressed as:

$$r_{11} = \left(\frac{n}{n-1} \right) \left(\frac{S_t^2 - \sum p_i q_i}{S_t^2} \right)$$

where r_{11} represents the reliability coefficient, N represents the number of test items, p_i represents the proportion of students answering item i correctly, q_i represents the proportion answering incorrectly ($q_i = 1 - p_i$), and S_t^2 represents the total variance of test scores (Sugiyono, 2022). Both the validity and reliability tests were computed with the assistance of Microsoft Excel prior to the administration of the instrument in the main study.

RESULT AND DISCUSSION

Descriptive Statistics

Data for this study were drawn from the pretest and posttest scores of the experimental and control groups. Table 1 summarizes the number of students, the highest and lowest scores, the sum of scores, and the mean for each group and test administration.

Table 1 Descriptive Statistics of Pretest and Posttest Results

	Experimental: Pretest	Experimental: Posttest	Control: Pretest	Control: Posttest
Number of students	25	25	25	25
Highest score	80	93	80	87
Lowest score	20	53	33	40
Sum of scores	1,416	1,876	1,570	1,705
Mean	56.64	75.04	62.80	68.02

Source: Primary Data Processed by The Researcher (2025)

Before instruction began, the mean pretest score of the experimental group was lower than that of the control group, at 56.64 against 62.80. After instruction, the pattern reversed: the experimental group's mean posttest score rose to 75.04, surpassing the control group's mean of 68.02. This reversal is visible in the chart shown earlier, where the experimental group's bar overtakes the control group's bar

between the pretest and posttest measurements, while the control group's improvement over the same period is comparatively modest.

Table 2 Frequency Distribution of Pretest Scores

No.	Experimental group interval	Frequency	Control group interval	Frequency
1	20–29	2	33–40	6
2	30–39	2	41–48	0
3	40–49	6	49–56	2
4	50–59	3	57–64	2
5	60–69	3	65–72	2
6	70–79	9	73–80	13
	Total students	25		25
	Mean	56.64		62.80
	Below mastery criterion	16		12
	At or above mastery criterion	9		13

Source: Primary Data Processed by The Researcher (2025)

At the pretest stage, nine students in the experimental group and thirteen students in the control group had already reached the mastery criterion of 70, indicating that the control group held a numerical advantage in prior ability before either group received instruction.

Table 3 Frequency Distribution of Posttest Scores

No.	Experimental group interval	Frequency	Control group interval	Frequency
1	53–59	2	40–47	4
2	60–66	2	48–55	2
3	67–73	11	56–63	3
4	74–80	5	64–71	0
5	81–87	1	72–79	7
6	88–94	4	80–87	9
	Total students	25		25
	Mean	75.04		68.02
	Below mastery criterion	6		9
	At or above mastery criterion	19		16

Source: Primary Data Processed by The Researcher (2025)

After the treatment, nineteen of the twenty-five students in the experimental group reached the mastery criterion, compared with sixteen of the twenty-five

students in the control group. The experimental group therefore moved from holding the lower number of students at mastery in the pretest to holding the higher number at posttest, while the control group's count of students at mastery improved only marginally over the same period.

Table 4 Summary of Pretest and Posttest Scores by Group

Group	Pretest mean	Posttest mean	Pretest highest	Posttest highest	Pretest lowest	Posttest lowest
Experimental	56.64	75.04	80	93	20	53
Control	62.80	68.02	80	87	33	40

Source: Primary Data Processed by The Researcher (2025)

Results of Assumption Tests

A chi-square test was conducted to examine whether the pretest and posttest data were normally distributed, since simple linear regression assumes that the dependent variable is drawn from a normally distributed population. For the pretest data, the calculated chi-square value was 9.811, against a critical value of 11.070 at a significance level of 0.05 with five degrees of freedom, calculated from the six class intervals used in the frequency distribution. Because the calculated value fell comfortably below the critical threshold rather than only narrowly clearing it, the pretest scores of both groups can be considered normally distributed with reasonable confidence. The posttest data produced a calculated chi-square value of 9.799, slightly lower than the pretest value and likewise well below the same critical value. The closeness between the two calculated values suggests that the instructional treatment did not distort the underlying shape of the score distribution, which strengthens confidence that the change observed between pretest and posttest reflects a genuine shift in performance rather than a statistical artifact of an irregular distribution.

The homogeneity of variance between the experimental and control groups was then examined using the F-test, which compares the larger of the two group variances against the smaller. For the pretest data, the calculated F-value was 1.07, against a critical value of 1.98 at the same significance level, indicating that the two groups had statistically comparable variability in language ability before any treatment was introduced. For the posttest data, the calculated F-value decreased to 0.75, still well below the critical value and, notably, lower than the pretest F-value. This decrease indicates that the spread of scores within each group did not widen as a result of the treatment; if anything, the two groups became somewhat more similar in their internal variability even as the gap between their means grew. Taken together, the normality and homogeneity results confirm that the assumptions underlying simple linear regression were satisfied for both the pretest and posttest data, providing a sound statistical basis for the hypothesis test that followed.

Hypothesis Testing

The hypothesis was tested using simple linear regression analysis, producing the following equation:

$$\hat{Y} = 58.66 + 0.333X$$

In this equation, the constant value of 58.66 represents the predicted baseline level of students' Indonesian language learning outcomes in the absence of the audiovisual media treatment, while the regression coefficient of 0.333 indicates the extent to which learning outcomes were predicted to increase in association with the application of audiovisual media. Because the coefficient is positive, the direction of the relationship supports the research hypothesis: greater exposure to audiovisual instruction is associated with higher, rather than lower, learning outcomes.

The significance value obtained from the regression analysis was 0.005, smaller than the conventional alpha level of 0.05 by a considerable margin rather than only marginally so, which provides strong rather than borderline evidence against the null hypothesis. On this basis, the null hypothesis was rejected, and it is concluded that the application of audiovisual media had a statistically significant effect on the Indonesian language learning outcomes of fourth-grade students at SDIT Al-Muhsin Metro.

The size of this effect becomes clearer when the pretest-to-posttest gain is compared directly between the two groups rather than relying on the posttest means alone. The experimental group's mean score rose from 56.64 to 75.04, a gain of 18.40 points, while the control group's mean score rose from 62.80 to 68.02, a gain of only 5.22 points. The experimental group therefore gained more than three times as many points as the control group over the same instructional period, despite starting from a lower baseline. This gap in improvement, rather than the regression coefficient or significance value in isolation, offers the clearest evidence that the audiovisual treatment, rather than the simple passage of time or repeated exposure to the test format, accounts for the significant result produced by the regression analysis.

This gap in improvement, larger than what the regression coefficient alone conveys, is best understood in light of the cognitive theory of multimedia learning, which holds that presenting verbal and pictorial information together eases the cognitive demands of comprehension and supports retention more effectively than text-only instruction (Mayer, 2024). Because the experimental group started from a lower pretest baseline and still finished with a higher posttest mean than the control group, the most plausible explanation for the threefold difference in gain is the instructional treatment itself rather than any pre-existing advantage in ability between the two groups.

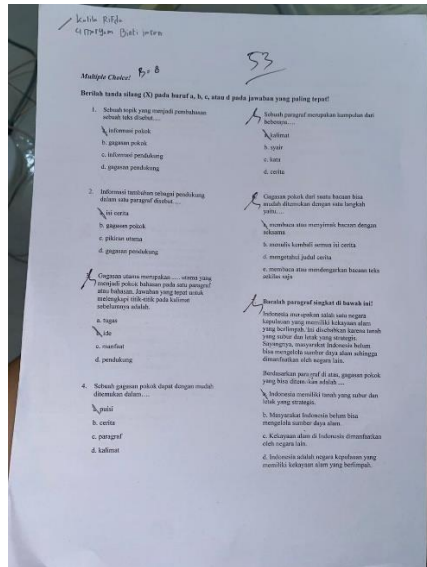


Figure 1 The Result of Pretest

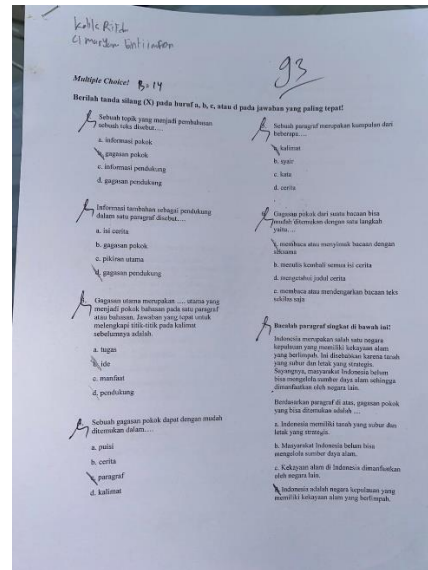


Figure 2 The Result of Posttest

A closer look at individual cases illustrates this aggregate pattern. One student in the experimental group, for instance, scored 53 on the pretest, well below the mastery criterion of 70, but reached 93 on the posttest after the lesson on main and supporting ideas was delivered using audiovisual media, a gain of 40 points within a single instructional cycle, well above even the experimental group's already strong average gain of 18.40 points. This single case should not be generalized beyond the aggregate findings reported above, but it offers a concrete illustration of how a student with weak baseline comprehension can progress substantially once the same material is presented through combined visual and auditory channels rather than through verbal explanation alone.

This outcome is consistent with prior development work on digital Indonesian language materials at the elementary level, which has shown that well-designed digital media can be readily accepted by both teachers and students and can support engagement with language content (Mar'atussolichah et al., 2024). It is also consistent with evidence that language input delivered through engaging, multisensory channels lowers learners' resistance to new material and facilitates acquisition more effectively than input delivered through conventional means (Kartika & Afndoliah, 2025). The combination of sound and moving image in the audiovisual treatment used in this study appears to have served a similar function for the listening-and-viewing material tested here.

The advantages observed in this study align with the broader literature on classroom technology, including the standardization of content delivery, increased learner engagement, and a more interactive learning process (Haleem et al., 2021). Beyond the statistical outcome, classroom observation pointed to three practical advantages of using audiovisual media in this setting: it made the material easier

for students to understand, it increased students' activeness during lessons, and it clarified the presentation of content delivered in both oral and written form. The most notable limitation observed was that effective use of audiovisual media requires a degree of technical skill on the teacher's part, consistent with the broader pattern in which teachers' confidence and competence with digital tools shape how consistently those tools are adopted in the classroom (Xie et al., 2023). This limitation is not insurmountable; it can reasonably be addressed through structured professional development or through teachers' own self-directed efforts to build relevant skills using freely available online training resources.

Two specific posttest patterns warrant closer attention, since both involve students whose results ran against the overall group trend. First, several students in the experimental group did not reach the mastery criterion despite receiving the audiovisual treatment; classroom records indicated that these students had irregular attendance and limited engagement during the lessons concerned, consistent with the general expectation that the benefit of any instructional medium depends on a minimum level of exposure to it. Second, several students in the control group exceeded the mastery criterion despite receiving only conventional instruction; these students were reported to be participating in supplementary tutoring outside school hours. This finding should be interpreted cautiously, since the relationship between supplementary tutoring and academic achievement has been shown in larger studies to vary by the form that the tutoring takes, with some forms associated with improved performance and others showing little or even a negative association, often because tutoring is sought out specifically by students who are already struggling (Karakus et al., 2024). The presence of unmeasured supplementary tutoring among control group students should therefore be considered a limitation of the present design, since it represents a source of outcome variation that was not controlled for and that may have narrowed the gap between the experimental and control groups beyond what the audiovisual treatment alone would have produced.

Taken together, the results support the conclusion that audiovisual media can produce a meaningful improvement in Indonesian language learning outcomes among fourth-grade students, while also indicating that the size of this effect in a real classroom setting is shaped by factors outside the treatment itself, including student attendance, teacher readiness to use the medium, and students' access to supplementary support outside school.

CONCLUSION

This study set out to determine whether the application of audiovisual media had a significant effect on the Indonesian language learning outcomes of fourth-grade students at SDIT Al-Muhsin Metro, using a nonequivalent control group design with fifty students divided into an experimental and a control class. The

results showed that the experimental group's mean score rose from 56.64 at pretest to 75.04 at posttest, a gain of 18.40 points, compared with a gain of only 5.22 points in the control group over the same period, despite the experimental group having started from a lower baseline. The simple linear regression analysis produced the equation $\hat{Y} = 58.66 + 0.333X$ with a significance value of 0.005, well below the alpha level of 0.05, leading to rejection of the null hypothesis and confirming that the application of audiovisual media had a statistically significant effect on students' learning outcomes for the listening-and-viewing material tested.

These findings indicate that audiovisual media can meaningfully strengthen Indonesian language comprehension among elementary students when applied consistently in the classroom, but the magnitude of this benefit in practice appears to depend on conditions beyond the media itself. Students with irregular attendance in the experimental group did not show the same improvement as their peers, teachers' technical readiness to design and deliver audiovisual content shaped how effectively the medium could be used, and the presence of unmeasured supplementary tutoring among some control group students introduced a source of outcome variation that the present design could not fully isolate. These conditions should be read as boundaries on the finding rather than as challenges to it, and they point to where future replication would need to exercise tighter control.

Future research conducted in similar Islamic integrated elementary school settings would benefit from tracking student attendance and any outside academic support as covariates rather than as post hoc explanations, and from extending the design to additional Merdeka Curriculum competencies beyond listening and viewing to determine whether the effect observed here generalizes across language skills. At the practical level, schools considering similar interventions should pair the introduction of audiovisual media with structured support for teachers in developing and operating it, since the instructional benefit demonstrated in this study is unlikely to be realized fully without that institutional investment.

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