OPEN
Islamic Moral Architecture in Primary Education
Vol. 1 No. 1. August 2026, pp. xx-xx
DOI. 10.701xx/ S.vxix.xxx
Research

Moral Awareness after Digital Video Learning in Fourth Grade

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Article Info
Received: December 21, 2026
Revised: February 19, 2026
Accepted: April 17, 2026
Online Version: August 01, 2026

Abstract

Digital media have increasingly been used to support value-based learning in elementary education, yet empirical evidence regarding their contribution to students' moral awareness remains limited. This study aimed to examine changes in fourth-grade students' moral awareness after the implementation of digital video-based instructional media. A pre-experimental one-group pretest-posttest design was employed involving 21 students from a public elementary school in Cikarang, Bekasi Regency, West Java, Indonesia. Data were collected using a 16-item Moral Awareness Questionnaire covering recognition of right and wrong, awareness of behavioral consequences, empathy, and responsible decision-making. The data were analyzed using descriptive statistics, the Shapiro-Wilk test, a paired-samples t-test, and Cohen's d_z. The mean score increased from 37.00 (SD = 3.24) in the pretest to 41.38 (SD = 5.28) in the posttest. The difference was statistically significant, $t(20) = 7.21$, $p < .001$, with a large effect size ($d_z = 1.57$). These findings indicate that digital video-based instruction can support students' moral awareness by presenting concrete moral situations and modeled behavior. However, the absence of a control group limits causal interpretation.

Keywords: Digital Video, Elementary Education, Instructional Media, Moral Awareness, Moral Learning

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Journal Homepage	https://research.erukasyah.com/index.php/imape
How to cite:	Lestari, H., Pikirang, C, J., & Nurfitriani, Nurfitriani. (2026). Moral Awareness after Digital Video Learning in Fourth Grade. *Islamic Moral Architecture in Primary Educationy, 1*(1), 27-35. https://doi.org/10.70190/imape.v1i1.1420
Published by:	Cv Erukasyah Lagaliora Publishing

INTRODUCTION

The use of video based digital media is growing in learning because it combines images, sound, narration, and movement to present material more concretely. Experimental research on elementary school students shows that digital storytelling can improve material mastery and foster more positive attitudes toward learning compared to conventional methods (Karimova et al., 2023). Research on childhood education also finds that digital storytelling can increase children's engagement in arts, science, and moral learning and encourage them to express their thoughts and experiences during learning activities (Rahiem, 2021). However, the benefits of video learning are determined not only by the presence of audiovisual elements but also by students' active involvement in paying attention to, understanding, and responding to the video content (Kuhlmann et al., 2024).

In the context of elementary education in West Java, visual and audiovisual media are beginning to be utilized to help students understand character values through concrete behavioral examples. The development of animated videos in the Cikarang region demonstrated that the combination of moving images, sound, and narration can capture students' attention and facilitate understanding of the character of environmental stewardship (Yuliyanto et al., 2025). Research in Bekasi also found that the use of illustrated stories influences the development of children's responsible character because the message is conveyed through visuals and an easy-to-understand storyline (Zega et al., 2024). These findings indicate that visual-based media has the potential to support moral learning in West Java, although the influence of video-based digital media on elementary school students' moral awareness still requires more targeted testing.

Learning media is a tool that helps students receive, process, and understand messages through more concrete learning experiences. Multimedia learning theory explains that the combination of images, sound, and narrative can help students build understanding when information is presented in a focused manner and does not overload their cognitive capacity (Mayer, 2003). Social learning theory states that children learn attitudes and behaviors through the process of observing, remembering, and imitating models and the consequences of their actions (Bandura, 1977). In moral learning, videos can present examples of honest, caring, responsible, and respectful behavior, making abstract values more easily understood by elementary school students. Research experiments have shown that exposure to prosocial cartoon characters can reduce children's aggressive cognitions and behaviors, making the content and behavioral models in videos important elements in developing students' moral awareness (Zhang et al., 2020).

Although audiovisual media has the potential to support learning values, previous research has focused more on the use of stories and dramatizations in early childhood than in elementary school students (Rahiem et al., 2020). Experimental studies on prosocial media also tend to measure decreases in aggressive behavior, rather than direct changes in moral awareness (Zhang et al., 2020). Moral awareness, however, is not only evident in current behavior but also in students' ability to recognize right and wrong actions, understand the consequences of their actions, and determine their attitudes in everyday life. This difference in focus indicates the limited empirical evidence regarding changes in moral awareness in third-grade students after learning using digital videos. This research is needed to measurably examine changes in students' moral awareness before and after the use of instructional videos.

This study employed a quantitative approach with a single-group pretest-posttest experimental design. This design was chosen to compare students' moral awareness levels before and after learning using video-based digital media within the same group (Shadish et al., 2002). Data were collected through a moral awareness instrument administered at the pretest and posttest stages, then analyzed to determine the direction and magnitude of changes after treatment. This approach allowed researchers to obtain empirical evidence regarding the improvement in students' moral awareness, although the results need to be processed carefully because they did not involve a control group (Creswell & Creswell, 2018).

Based on this description, this research aims to analyze the use of video-based digital learning media in increasing the moral awareness of third grade elementary school students. Specifically, this research measures the level of students' moral awareness before and after the use of learning videos and determines the significance of changes that occur after treatment. It is hoped that the research results will provide empirical evidence regarding the potential of video media as a means of moral learning that is concrete, interesting, and in accordance with the developmental characteristics of elementary school students.

RESEARCH METHOD

Research Design

This study used a pre-experimental design with a one-group pretest-posttest pattern. This design involved one group of students who were measured before and after being given treatment in the form of using video-based digital learning media. The initial measurement (pretest) was carried out to determine the level of students' moral awareness before the treatment, while the final measurement (posttest) was carried out after the learning process was completed. The research design can be described by the pattern O_1-X-O_2, with O_1 as pretest, X as treatment, and O_2 as posttest. The difference in results between pretest and posttest was used to identify changes in students' moral awareness after the use of learning media. This design is suitable for research involving only one class, although the results cannot fully prove a cause-and-effect relationship because it does not use a control group.

Research Target/Subject

The participants in this study were 21 fourth-grade students enrolled in one public elementary school in the Cikarang area, Bekasi Regency, West Java, Indonesia. The study used an intact class because the students had already been organized into an existing classroom group. Intact classes are commonly used in educational research when individual random assignment is impractical and may disrupt established teaching and learning activities (Shadish et al., 2002).

The participating class was selected purposively based on its accessibility, relevance to the research objectives, and readiness to participate in video-based moral learning activities. All students in the selected class were included through total enumeration or census sampling of the accessible population. This procedure was appropriate because the accessible population was relatively small and all its members could be involved in the research process (Martínez-Mesa et al., 2014; Tyrer & Heyman, 2016). All 21 students completed the pretest, participated in the learning activities using digital video-based instructional media, and completed the posttest.

The respondents consisted of 10 male students and 11 female students. Male students represented 47.62% of the total respondents, while female students represented 52.38%. The relatively balanced gender distribution reduced substantial demographic imbalance within the participating class. However, because the participants came from only one intact class and were not randomly selected from a broader population, the findings should be interpreted within the context of the class and school studied.

Table 1. Respondent Profile Based on Gender

Gender	Frequency	Percentage
Male	10	47.62%
Female	11	52.38%
Total	**21**	**100.00%**

All respondents were fourth-grade elementary school students and received the same instructional treatment. The similarity in grade level helped maintain consistency in students' learning environment, instructional content, and developmental characteristics throughout the pretest, treatment, and posttest stages.

Instruments, and Data Collection Techniques

Data were collected using a Moral Awareness Questionnaire consisting of 16 items covering four indicators: recognition of right and wrong, awareness of behavioral consequences, empathy toward others, and responsible decision-making. The instrument was developed based on moral sensitivity and observational learning, which explain children's ability to identify moral situations and learn appropriate behavior through observed models (Bandura et al., 1961; Sjögren et al., 2024). Each item was rated on a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating a higher level of moral awareness.

Table 2. Moral Awareness Questionnaire Grid

No.	Indicator	Description	Item Numbers	Number of Items
1	Recognition of right and wrong	Ability to distinguish appropriate and inappropriate behavior	1-4	4
2	Awareness of behavioral consequences	Understanding the effects of actions on oneself and others	5-8	4
3	Empathy toward others	Sensitivity to the feelings, difficulties, and needs of others	9-12	4
4	Responsible decision-making	Ability to select appropriate actions in everyday moral situations	13-16	4
	Total			**16**

Table 3. Questionnaire Scoring Criteria

Response Category	Positive Statement	Negative Statement
Strongly Agree	4	1
Agree	3	2
Disagree	2	3
Strongly Disagree	1	4

The questionnaire was administered as a pretest before the use of digital video-based instructional media and as a posttest after the intervention. A classroom observation checklist was also used to record students' attention, participation, and responses during the learning activities. The same instructions, assessment procedures, and classroom conditions were maintained during the pretest and posttest to ensure consistency in data collection.

Data Analysis Technique

The data were analyzed using descriptive statistics, the Shapiro Wilk normality test, and a paired-samples difference test. Mean, standard deviation, minimum, and maximum scores were used to summarize the pretest and posttest results. The difference scores were considered normally distributed when the Shapiro-Wilk test produced $p > .05$ (Shapiro & Wilk, 1965).

Normally distributed data were analyzed using a paired-samples t-test, whereas non-normal data were analyzed using the Wilcoxon signed-rank test (Wilcoxon, 1945). A difference was considered statistically significant when $p < .05$. Effect size was interpreted using Cohen's, with values of .20, .50, and .80 indicating small, moderate, and large effects, respectively (Lakens, 2013).

Table 4. Data Analysis and Decision Criteria

Analysis	Technique	Decision Criterion
Descriptive analysis	Mean, standard deviation, minimum, and maximum	Describes pretest and posttest scores
Normality test	Shapiro-Wilk test	$p > .05$: normal; $p \leq .05$: non-normal
Difference test	Paired-samples *t*-test	Used for normally distributed data
Alternative test	Wilcoxon signed-rank test	Used for non-normal data
Statistical significance	*p*-value	$p < .05$: significant
Effect size	Cohen's *d*_z	.20: small; .50: moderate; .80: large

RESULTS AND DISCUSSION

The descriptive analysis showed an increase in students' moral awareness scores after the implementation of digital video-based instructional media. The mean pretest score was 37.00 (SD = 3.24), while the mean posttest score increased to 41.38 (SD = 5.28). The average score difference between the two measurements was 4.38 points.

Table 5. Descriptive Statistics of Pretest and Posttest Scores

Measurement	*N*	Minimum	Maximum	Mean	Standard Deviation
Pretest	21	31	43	37.00	3.24
Posttest	21	30	51	41.38	5.28
Score difference	21	−1	9	4.38	2.78

At the individual level, 19 students (90.48%) obtained higher posttest scores, one student (4.76%) showed no change, and one student (4.76%) obtained a lower score. These results indicate that most students experienced a positive score change after participating in video-based learning.

Table 6. Distribution of Individual Score Changes

Score Change	Frequency	Percentage
Increased	19	90.48%
Unchanged	1	4.76%
Decreased	1	4.76%
Total	**21**	**100.00%**

The Shapiro-Wilk test was conducted on the differences between the posttest and pretest scores. The analysis produced a statistic of .971 and a significance value of .748. Because the significance value was greater than .05, the difference scores met the normality assumption. Therefore, the pretest and posttest scores were compared using a paired-samples *t*-test.

Table 7. Shapiro-Wilk Normality Test

Variable	Statistic	*df*	*p*-value	Decision
Posttest-pretest difference	.971	21	.748	Normally distributed

The paired-samples *t*-test revealed a statistically significant difference between the pretest and posttest scores, $t(20) = 7.21$, $p < .001$. The mean increase was 4.38 points, with a 95% confidence interval ranging from 3.11 to 5.65. Therefore, the null hypothesis stating that there was no difference between students' pretest and posttest moral awareness scores was rejected.

Table 8. Paired-Samples *t*-Test Results

Comparison	Mean Difference	Standard Deviation	95% Confidence Interval	*t*	*df*	*p*-value
Posttest-pretest	4.38	2.78	3.11-5.65	7.21	20	< .001

The effect-size analysis produced a Cohen's value of 1.57. This value exceeded the threshold of .80 and was therefore classified as a large effect. Overall, the statistical results showed a significant increase in students' moral awareness scores following the use of digital video-based instructional media.

The findings showed that students' moral awareness scores increased from 37.00 to 41.38 after participating in digital video-based instruction. The statistically significant difference, $t(20) = 7.21$, $p < .001$, and the large effect size indicate a substantial within-group change. This result is consistent with Rahiem's finding that digital storytelling makes moral education more engaging and encourages children to express their thoughts, experiences, and interpretations during learning activities (Rahiem, 2021). It also corresponds with experimental evidence showing that exposure to prosocial cartoon models can reduce children's aggressive cognition, motivation, and behavior (Zhang et al., 2020; Zhang et al., 2021).

The improvement can be interpreted as more than a consequence of students' attraction to moving images. Video provided observable moral situations in which students could identify actions, examine their consequences, recognize the feelings of others, and consider responsible responses. Earlier experiments found that children's judgments and behavior were influenced by the moral content and actions represented by cartoon characters, particularly when prosocial messages were presented clearly (Liss et al., 1983). Therefore, digital video may function as a form of structured moral simulation that allows children to examine situations that resemble everyday social experiences without directly encountering their risks or consequences.

A more important interpretation is that the improvement was probably produced by the combination of video exposure and guided moral reflection rather than by passive viewing alone. Research on socio-emotional narratives found that fully interactive viewing involving questions, responses, feedback, and learner control improved children's understanding of emotions and moral messages, whereas non-interactive or partially interactive presentation did not produce comparable learning gains (Peebles et al., 2018). Experimental research also demonstrated that children's moral judgments became more sensitive to a character's intentions when visual scenarios were accompanied by metacognitive guidance that encouraged them to examine more than the visible consequences of an action (Gvozdic et al., 2016). These comparisons suggest that the pedagogically effective unit is not the video itself, but the sequence of watching, questioning, interpreting, evaluating, and articulating a moral response.

Nevertheless, the individual results were not entirely uniform. Although 19 students improved, one student showed no change and one student obtained a lower posttest score, while the posttest scores were more dispersed than the pretest scores. This variation indicates that the same moral narrative may not be interpreted identically by all children because moral judgment also depends on attention, prior experience, emotional sensitivity, language comprehension, and the ability to distinguish intentions from outcomes. Children of elementary-school age can recognize characters' intentions, but they may still prioritize visible consequences when evaluating morally complex actions (Gvozdic et al., 2016). Consequently, video-based moral instruction should include teacher mediation, age-appropriate language, contextual examples, and opportunities for students to explain the reasons behind their judgments.

The findings provide preliminary evidence that digital video-based instruction can support the development of moral awareness among fourth-grade students. However, the one-group pretest-posttest design does not establish that video instruction was the sole cause of the improvement because testing effects, teacher guidance, classroom interaction, and other uncontrolled factors may also have contributed to the score change. The result should therefore

be interpreted as a significant improvement following the intervention rather than definitive causal proof of its effectiveness. Future controlled studies should compare video-based instruction with conventional moral teaching, examine the retention of moral awareness over time, and determine whether improved questionnaire scores are transferred into observable behavior in school and everyday life.

CONCLUSION

Digital video-based instructional media was associated with a significant increase in the moral awareness of fourth-grade students. The higher posttest scores and large effect size indicate that video-supported learning can help students recognize appropriate behavior, understand behavioral consequences, develop empathy, and make responsible moral decisions. However, because the study involved only one class without a control group, the findings should be interpreted as preliminary evidence rather than definitive causal proof. Future studies should involve larger samples, comparison groups, and behavioral observations to confirm the effectiveness and long-term impact of video-based moral instruction.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this manuscript, the authors used ChatGPT, developed by OpenAI, to support language refinement, improve manuscript structure, and enhance the clarity of academic expression. The tool was not used to collect, generate, analyse, or interpret the empirical data. All AI assisted outputs were critically reviewed, verified, and revised by the authors to ensure their accuracy, relevance, and consistency with the actual research findings and cited sources.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the support of their colleagues and participating teachers. Appreciation is also extended to fellow researchers, participating schools, and all contributors whose collaboration contributed to the successful completion of this study.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; Investigation.

Author 3: Data curation; Investigation; Methodology.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could be construed as influencing the work reported in this paper.

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