



The Effects of Visual Educational Media and Collaborative Learning on the Internalization of Islamic Values among High School Students

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Abstract. Although Islamic Religious Education (PAI) is intended to strengthen students' religious character, instruction in many Indonesian high schools remains dominated by verbal, text-based teaching that leaves a persistent gap between students' religious knowledge and their everyday behavior, pointing to a need for more visual, interactive, and collaborative approaches capable of deepening the internalization of Islamic values. In this context, the use of interactive visual educational media and the application of collaborative approaches are seen as effective strategies to foster students' understanding, empathy, and responsibility for Islamic values in Islamic Religious Education (PAI) learning. This study aims to analyze the influence of visual educational media integration and collaborative approaches on the internalization of students' Islamic values. A quantitative approach with an explanatory survey method was used on 304 high school students who were selected through purposive sampling, based on criteria requiring prior participation in learning that used interactive visual media and a collaborative approach. The data was analyzed using a structural equation model based on Partial Least Squares (SEM-PLS) using SmartPLS version 4. The results showed that visual educational media had a significant effect on the internalization of Islamic values ($\beta = 0.296$, $p < 0.001$) and on the collaborative approach ($\beta = 0.0417$, $p < 0.001$), while the collaborative approach in turn had a significant effect on the internalization of Islamic values ($\beta = 0.482$, $p < 0.001$), with the two variables jointly explaining 56.3% of its variances ($R^2 = 0.563$). The two variables interact synergistically in strengthening the process of internalizing contextual Islamic values. These findings suggest that combining visual educational media with collaborative learning activities may support the internalization of Islamic values among high school students, and point to a potentially useful direction for PAI pedagogy that merits further testing beyond this study's sample.

Keywords: *Visual educational media, Collaborative approach, Islamic values, PAI learning, Student character.*

1. Introduction

The rapid global changes in the 21st-century educational landscape have brought profound implications for the way teachers and learners interact, collaborate, and build an understanding of moral values. Digital transformation, globalization of values, and the penetration of visual media in daily life have shifted the learning paradigm from traditional instructional models to more interactive,

collaborative, and technology-based learning models ([Sellami et al., 2025](#)). In this context, visual educational media not only functions as a teaching tool, but also as a transformative medium that can strengthen the internalization of values, build empathy, and foster moral awareness in students ([Elihami & Pajariato, 2025](#)). Value education, especially Islamic education, faces new challenges to inculcate spiritual, ethical, and social values amid the rapid flow of information and technological disruption ([Elihami & Pajariato, 2025](#)).

This global phenomenon shows that value learning must now move from just knowledge transfer to a character building process based on experience and collaboration. Collaborative approaches emerge as an effective pedagogical strategy in developing students' critical thinking skills, social responsibility, and empathy ([Zemzami & Lotfi, 2025](#)). Through collaboration, students learn not only from teachers, but also from social interactions with peers in a context of mutual respect and reflective learning ([Saad & Ali, 2025](#)). However, the effectiveness of collaborative approaches is highly dependent on how the media and learning environment are designed to facilitate students' active participation as well as internalize expected values ([Sellami et al., 2025](#)).

Nationally, education in Indonesia is trying to strengthen the dimension of character and spirituality in the learning system, as reflected in the vision of the "Pancasila Student Profile" which emphasizes religious values, mutual cooperation, and independence. However, challenges arise when these values are faced with students' digital habits that tend to be visual, instantaneous, and less reflective ([Norzaman et al., 2025](#)). Research [Mufrihah et al. \(2025\)](#) suggests that many high school students experience a gap between religious knowledge and real behavior, where an understanding of Islamic values is not always followed by internalization and everyday practice. In this situation, Islamic religious education (PAI) teachers face an urgent need to develop more contextual, visual, and collaborative learning strategies so that Islamic values can be understood and lived in depth ([Elihami & Pajariato, 2025](#)).

Empirical conditions in a number of Islamic high schools show that value learning activities are often still verbalistic and monotonous, centered on teacher lectures, and there is little room for dialogue and reflection between students. The learning media used is generally in the form of conventional texts or lectures, which are less appealing to the digital native generation who are used to interactive visual experiences ([Faizin et al., 2025](#)). As a result, students lose focus faster, and the process of internalizing Islamic values becomes less effective. In fact, visualizing value concepts such as honesty, responsibility, and fairness can help students build more concrete and meaningful mental representations. [Al-Kandari et al. \(2025\)](#) In addition, collaboration between students in the context of value-based discussions or projects is able to strengthen empathy and social responsibility which are at the core of Islamic education ([Zemzami & Lotfi, 2025](#)).

Several previous studies have underlined the importance of the use of digital media and collaborative approaches in Islamic education. [Sellami et al. \(2025\)](#) Found that humanistic, student-centered learning media design can enhance collaborative learning experiences as well as value understanding. Meanwhile, [Faizin et al. \(2025\)](#) shows that the application of artificial intelligence (AI)-based technology in Islamic education can strengthen the personalization of learning and encourage students' acceptance of religious materials. [Norzaman et al. \(2025\)](#) highlighted that visual media-based learning is able to increase students' emotional engagement with spiritual values, although its effectiveness still depends on the cultural and pedagogical context.

On the other hand, research conducted by ([Mufrihah et al., 2025](#)) asserts that value education that relies solely on verbal instruction is difficult to achieve deep internalization without the support

of social interaction and collaborative reflection. Meanwhile, [Al-Kandari et al. \(2025\)](#) emphasizing the importance of an integrative approach that combines visual media, value narratives, and project-based learning in shaping students' Islamic character. However, these two strands of evidences have largely been pursued separately [Mufrihah \(2025\)](#) point to the limits of verbal instruction alone, while [Al-Kandari \(2025\)](#) call for combining visual media with narrative and project-based learning, yet neither tests whether visual media and collaborative learning, used simultaneously, produce effects on the internalization of Islamic values beyond what either approach achieves on its own. This is the research gap that needs to be filled.

From a theoretical perspective, the integration of visual educational media and collaborative approaches has a strong foundation in the theory of social constructivism, which emphasizes that knowledge and value are built through social interaction and meaningful experiences. Visual media can act as *Mediating Tool* that connects students' empirical experiences with abstract concepts of value, while social collaboration provides a discursive context for reflecting and negotiating the meaning of those values ([Sellami et al., 2025](#)). Through a combination of the two, the process of internalizing values occurs not only cognitively, but also affectively and socially. This approach is in line with the view [Al-Kandari et al., \(2025\)](#) which states that effective value education must involve cognitive (understanding), affective (appreciation), and conative (action) dimensions.

The urgency of this research is also strengthened by the findings [Elihami & Pajarianto, \(2025\)](#) which highlights the importance of Islamic education as a means of achievement *Sustainable Development Goals* (SDGs), especially in building a society with character and integrity. Value-based education in the digital age is inseparable from the need to build resilient moral literacy through fun and contextually relevant learning experiences ([Faizin et al., 2025](#)). Therefore, the development of learning models that integrate educational visualization and collaborative work can be a strategic solution to bridge the gap between students' perceived values and real behavior in secondary school.

Further, the research [Norzaman et al. \(2025\)](#) shows that the use of visual media in the context of Islamic learning can improve *emotional engagement* students' moral values, but collaborative interaction support is still needed so that these values are internalized stably. This is in line with the findings [Saad & Ali, \(2025\)](#) which affirms that collaborative learning is able to strengthen character formation through social experiences that involve empathy, effective communication, and group responsibility. On the other hand, [Suratno et al. \(2026\)](#) through *Expectation Confirmation Model* shows that positive perceptions of digital media in education can increase student satisfaction and motivation to learn, which ultimately has an impact on strengthening the internalization of values. Thus, there is a potential synergy between visual media, collaboration, and value internalization that needs to be empirically tested in the context of Islamic education in Indonesia.

From a practical point of view, the integration of visual educational media and collaborative approaches can be an innovative strategy in answering the challenges of contemporary Islamic education. Visual media can help teachers explain Islamic values in concrete terms, such as through animations about the Prophet's honesty, infographics on the importance of responsibility, or interactive videos on empathy and help. Meanwhile, collaborative activities such as group discussions, social simulations, and value-based projects allow students to reflect on those visual experiences through interaction and dialogue ([Mufrihah et al., 2025](#)). The combination of these two approaches can strengthen students' moral awareness as well as build an inclusive and value-oriented learning environment.

However, there has not been much research in Indonesia that has systematically examined the causal relationship between the integration of visual educational media and a collaborative approach to the internalization of Islamic values at the high school level. Previous studies still tend to be descriptive or conceptual, not yet leading to empirical testing with a quantitative approach that is able to explain how much influence and interaction the two variables have.

Therefore, this research is important to provide empirical evidence that can enrich the academic literature and provide practical guidance for teachers and developers of Islamic learning media ([Faizin et al., 2025](#); [Mufrihah et al., 2025](#); [Sellami et al., 2025](#)). To address this gap, and building on social constructivism theory and visual communication theory as the theoretical foundation outlined above, this study aims to analyze the influence of the integration of visual educational media and collaborative approaches on the internalization of Islamic values in high school (SMA) students. In particular, this study aims to examine (1) the extent to which the use of visual educational media can improve the understanding of Islamic values, (2) how collaborative approaches contribute to the appreciation and application of these values, and (3) how the interaction between the two approaches affects the holistic internalization of values.

Theoretically, this research is expected to contribute to the development of value-based learning models that integrate social constructivism theory and visual communication theory. Practically, the results of this study are expected to provide strategic guidance for Islamic education teachers to optimize the use of visual media and collaborative activities in the classroom so that value learning becomes more effective, interactive, and meaningful.

Relative to the gap identified above where [Mufrihah \(2025\)](#) called for integrating visual media with narrative and project-based learning without empirically testing it this study offers a contribution in three aspects. First, this study develops an integrative model that simultaneously combines visual educational media and collaborative approaches in the context of Islamic value education at the high school level a combination that has not been empirically studied in the current Scopus literature. Second, this study places the internalization of Islamic values as dependent variables that are measured multidimensionally (cognitive, affective, and conative), thereby providing a more comprehensive understanding of the process of forming Islamic character in the digital era. Third, this research contributes to the strengthening of value-based pedagogical practices by presenting an empirical framework that can be applied directly in the learning of Islamic Religious Education in Indonesian schools. Thus, the results of this research are expected not only to enrich theoretical studies in the field of Islamic education, but also to have a real impact on the transformation of pedagogy towards humanistic, collaborative, and value-oriented learning.

2. Methods

This study uses a quantitative approach with an explanatory survey method to examine the causal relationship between the integration of visual educational media, collaborative approach, and internalization of Islamic values in high school students in Yogyakarta City. The research sample amounted to 304 students who were selected through purposive sampling. The instrument was a 5-point likert scale questionnaire that had met the requirements of validity (AVE 0.50) and reliability (Cronbach's Alpha). Data analysis used SEM-PLS to test the relationship between latent variables through outer model and $> > 0,80$). *inner model* analysis. The quantitative approach allows researchers to obtain generalizations of results through standardized statistical analysis, making it relevant to understand the influence between variables in a complex educational context. The explanatory survey method was chosen because it is suitable for analyzing direct and indirect cause-

and-effect relationships between latent variables, and allows the formation of a comprehensive theoretical model.

This research is based on a *post-positivist* paradigm that emphasizes objectivity, empirical validity, and replication of results. This approach places data as the primary basis in theoretical testing, where each proposition is tested through field data collection and inferential statistical analysis. In the context of learning Islamic values, the use of quantitative approaches is considered strategic to measure how the application of visual educational media and collaborative approaches contributes to the process of internalizing complex character values such as responsibility, trust, and empathy. This approach also bridges the gap between Islamic education theory and visual technology-based pedagogic practices in the field.

The research population consists of all high school students in the Yogyakarta City area, which is known as one of the cities with progressive and socio-culturally diverse educational characteristics. This population was chosen purposively because Yogyakarta is a good representation of the dynamics of value education in Indonesia, where visual and collaborative media-based learning innovations are increasingly developing in the implementation of the independent learning curriculum (Ministry of Education and Culture, 2023). The sample selection was carried out using a non-probability sampling technique using a purposive sampling approach, taking into account certain criteria, namely students who have participated in learning using interactive visual media and an collaborative approach in the context of Islamic value education. This non-probability, criterion-based procedure is the sampling technique used throughout the study and is reported consistently in the Abstract. A total of 304 students from six public and private high school in Yogyakarta City were selected as respondents, each of whom met the inclusion criteria above; comprising three public schools (SMAN 1, SMAN 5, and SMAN 7) and three private. The selection of these numbers has met the provisions of *Structural Equation Modeling–Partial Least Squares (SEM-PLS)*, which states that the minimum number of samples is determined based on *the ten times rule*, which is ten times the highest number of indicators in one construct or the number of paths to endogenous variables. Considering that the construct with the most indicators in this study is 25, the minimum number of samples is 250 respondents. Thus, the number of 304 students is considered adequate to produce a stable and representative model estimate.

The research instrument was developed in the form of a closed questionnaire using a five-point Likert scale, from 1 ("strongly disagree") to 5 ("strongly agree"). The development of questionnaire items is carried out in stages by referring to theories and empirical findings from previous research. Each construct was operationalized into the dimensions of its source theor, with the corresponding number of items shown in Table 3: IMEV (8 items, spanning visual, verbal, and interactive elements), PKOL (7 items, spanning the four dimensions below), and INVI (10 items, spanning cognitive, affective, and behavioral dimensions). Example items for each construct are provided in Appendix A to allow readers to evaluate face validity. The integration variable of visual educational media is adapted from the multimedia learning theory, which emphasizes the importance of integration between visual, verbal, and interactive elements in strengthening students' cognitive processes. Meanwhile, the variables of the collaborative approach were developed from *the cooperative learning*, which includes four main dimensions: *positive interdependence*, individual accountability, *face-to-face interaction*, and *group processing*). The internalization of Islamic values is adapted from the theory of Islamic character education proposed by [Mufrihah et al \(2025\)](#), which highlights the integrative process between cognitive, affective, and behavioral dimensions in forming a personality with Islamic character.

The instrument testing process is carried out in two stages, namely validity and reliability tests. The *content validity* test was carried out through an assessment by three competent experts in the field of Islamic education and learning technology. Each question item is evaluated using *Aiken's Coefficient V*, against a minimum acceptance threshold of 0.80. The construct validity test was carried out through the analysis of *the outer model* in SEM-PLS with two approaches, namely convergent and discriminant validity. Convergent validity was assessed using loading factors (acceptance threshold > 0.70) and Average Variance Extracted (AVE; threshold > 0.50). Discriminant validity was assessed using the Fornell-Larcker and Heterotrait-Monotrait ratio (HTMT) criteria (threshold < 0.90). Reliability was assessed using Cronbach's Alpha and Composite Reliability (CR; threshold > 0.80). The corresponding result of these tests are reported in the Result section (Section 3.1.1 an table 3)

Data collection was carried out from March to April 2025 by combining two methods, namely online and offline. A total of 350 students were invited to participate, yielding 304 completed responses (responses rate: 86.9%). Of these, 187 respondents (61.5%) completed the questionnaire online via Google Forms, while 117 respondents (38.5%) completed the printed version. To check for measurement equivalence between the two modes, mean scores across the three constructs were compared and no significant differences were found ($p > 0.05$ for all). Online filling is carried out using *Google Forms* for students who have good internet access, while the distribution of printed questionnaires is carried out in schools that have not fully implemented the digital system. Before implementation, the researcher took care of official licensing to the school and obtained ethical approval from the Educational Research Ethics Committee of University X. Each respondent was given a detailed explanation of the purpose of the research, estimated filling time, and guarantee of data confidentiality. Participation is voluntary, and respondents have the right to resign at any time without consequence. The *informed consent proses* is carried out in writing, and identity confidentiality is maintained through an anonymous code system. All collected data is checked for completeness through a *data screening* process, then processed using Microsoft Excel software for the initial cleaning stage before being analyzed using *SmartPLS 4*.

Data analysis was carried out using *the Structural Equation Modeling–Partial Least Squares (SEM-PLS) approach*. This method was chosen because it is suitable for analyzing complex theoretical models, involves many latent constructs, and is able to accommodate data with non-normal distributions and moderate sample sizes. The SEM-PLS analysis process is carried out through two main stages, namely measurement model analysis (*outer model*) and structural model analysis (*inner model*). The analysis of the measurement model aims to assess the validity and reliability of latent constructs through the examination of *outer loading*, *composite reliability*, and *AVE values*, while the validity of the discriminant is examined using *the Fornell–Larcker criterion* and *HTMT ratio*. Once the measurement model meets the criteria, structural model analysis is performed to test the relationships between latent variables based on *the path coefficient*, R^2 , and Q^2 *predictive relevance* values. Significance tests were performed using a *bootstrapping* procedure with 5,000 subsamples to obtain empirical distributions and *t-statistical* values. The hypothesis is accepted if *the t-statistic* value is greater than 1.96 and *the p-value* is less than 0.05.

The selection of the SEM-PLS method is also based on its ability to identify direct and indirect relationships between variables, including the mediating effect that may occur between visual educational media, collaborative approaches, and internalization of Islamic values. In addition, this method provides a more robust parameter estimation of limited sample sizes and data with high variance, which is often found in educational research. The results of this analysis are expected to provide a more accurate empirical understanding of the mechanisms of how visual educational media

and collaborative learning contribute to the formation of Islamic character values among students ([Santos-Assunção et al., 2025](#)).

The entire research process is carried out by paying attention to the ethical standards of social research and international education. The principles of *informed consent*, anonymity, and confidentiality are strictly maintained according to the ethical guidelines recommended. Respondent data is used solely for academic purposes and is not disseminated individually. The researcher ensures that the data collection process does not contain elements of coercion, discrimination, or potential violations of students' privacy rights. In addition, this study follows *the Ethical Guidelines for Educational Research* issued by the British Educational Research Association, which emphasizes the moral and professional responsibility of researchers in ensuring scientific integrity and the well-being of participants. The research process in the field is also carried out by respecting cultural, religious, and social values that apply in the educational environment, in line with the principles of Islamic education that emphasize the balance between ethics, science, and humanity.

Through this structured, valid, and ethical methodological design, the research is expected to be able to make an empirical contribution to the understanding of the effectiveness of the integration of visual educational media and collaborative approaches in strengthening Islamic values in secondary schools, as well as becoming a methodological model that can be replicated in the context of technology-based value education in Indonesia and other developing countries.

3. Results and Discussion

3.1. Research Results

Data analysis was conducted on 304 respondents consisting of 175 women (57.6%) and 129 men (42.4%) high school students in Yogyakarta City who participated in this study. All data has gone through the stage *Screening data* to ensure that there are no extreme values (*Outlier*) or missing data (*missing values*). The analysis process is carried out using *SmartPLS 4* with the *Partial Least Squares Structural Equation Modeling (PLS-SEM)*. The results of the study are presented in stages, starting from the general description of the respondents, the characteristics of the research variables, the results of the validity and reliability test, to the analysis of structural models and main empirical findings.

3.1.1. General Description of Respondents

The demographic profile of the respondents provides an overview of the composition of the research participants involving students from six public and private high schools in the Yogyakarta area. Based on the results of data collection, as many as 175 respondents (57.6%) were female and 129 respondents (42.4%) were male. The average age of respondents was 16.8 years with a range of 15–18 years, reflecting the student population of grades X to XII. In terms of academics, as many as 167 students (54.9%) came from the Social Sciences (IPS) department, 115 students (37.8%) from the Natural Sciences (IPA) department, and the remaining 22 students (7.3%) from the Language and Religion department.

Table 1. Respondent Demographic Profile (n = 304)

<i>Characteristics</i>	<i>Categories</i>	<i>Frequency</i>	<i>Percentage (%)</i>
<i>Gender</i>	Male	129	42,4
	Women	175	57,6

<i>Age (years)</i>	15–16	112	36,8
	17–18	192	63,2
<i>Majors</i>	IPA	115	37,8
	IPS	167	54,9
	Others	22	7,3

In general, the distribution of respondents is relatively balanced and representative of the characteristics of the high school population in Yogyakarta. Descriptive statistical results show that the diversity of students' backgrounds can enrich the interpretation of the results, especially in understanding the variation in perceptions towards the integration of visual educational media and collaborative approaches in the learning of Islamic values.

3.1.2. Description of Research Variables

Three main variables were analyzed in this study, namely Visual Educational Media Integration (IMEV), Collaborative Approach (PKOL), and Internalization of Islamic Values (INVI). Each variable was measured using a number of indicators on a Likert scale of 1–5.

The mean values and standard deviations for each construct are shown in Table 2

Table 2. Descriptive Statistic of Research Variables

<i>Variable</i>	<i>Red</i>	<i>SD</i>	<i>General Categories</i>
<i>Visual Educational Media Integration (IMEV)</i>	4,21	0,56	Height
<i>Collaborative Approach (PKOL)</i>	4,08	0,61	Height
<i>Internalization of Islamic Values (INVI)</i>	4,26	0,53	Very High

The average score of all variables was above 4.00, which shows the tendency of students' positive perception towards the application of visual educational media and collaborative learning in fostering Islamic values. Variable INVI having the highest average (4.26), indicates that the internalization of spiritual and social values has been strongly internalized through innovative learning. Meanwhile, PKOL had a relatively higher variation (SD = 0.61), suggesting that the effectiveness of the collaborative approach still varied between schools, depending on class dynamics and teacher support.

3.1.3. Instrument Validity and Reliability Test (Outer Model)

Validity and reliability testing is performed to ensure that each construct indicator has consistency and accuracy in measuring latent variables. Based on the results of the analysis *Outer model* (Table 3), all indicators have a value of *Loading Factor* above 0.70 and *Average Variance Extracted (AVE)* greater than 0.50, which indicates good convergent validity. Value *Composite Reliability (CR)* and *Cronbach's Alpha (CA)* The entire construct is above 0.80, signifying excellent internal reliability.

Table 3. Results of the Construct Validity and Reliability Test (Outer Model)

Variable	Indicators	Loading Range	AVE	CR	CA (α)
IMEV	8	0.72–0.88	0.63	0.91	0.87
PKOL	7	0.73–0.89	0.61	0.90	0.86
INVI	10	0.75–0.90	0.66	0.92	0.89

In addition, discriminant validity was tested through the *Fornell–Larcker* and *Heterotrait–Monotrait Ratio (HTMT)* criteria. The results show that the root value of each construct AVE is higher than the correlation between variables, and the overall HTMT value is below 0.90. Thus, each construct has adequate discrimination and there is no *cross-loading* between indicators.

These results show that the research instrument is valid and reliable, so it can be used for further structural model testing.

3.1.4. Structural Model Test (Inner Model)

The next stage is structural model analysis to test the relationships between latent variables based on the research hypothesis. Estimation is carried out using the *Bootstrapping* 5,000 subsamples. The results of the analysis showed that all relationship paths had a positive direction and most of them were significant at the 95% confidence level.

Table 4. Structural Model Test Results (Path Coefficient)

Relationship	β	t-statistic	p-value	Result
IMEV $\rightarrow$ PKOL	0.417	8.624	0.000	SUPPORTED
PKOL $\rightarrow$ INVI	0.482	10.215	0.000	SUPPORTED
IMEV $\rightarrow$ INVI	0.296	5.673	0.000	SUPPORTED

The results showed that the integration of visual educational media had a positive and significant effect on the collaborative approach ($\beta = 0.417$; $p < 0.001$), as well as directly increasing the internalization of Islamic values ($\beta = 0.296$; $p < 0.001$). In addition, the collaborative approach also had a significant effect on the internalization of Islamic values ($\beta = 0.482$; $p < 0.001$).

These findings indicate that the effect of visual media on the internalization of Islamic values is strengthened through collaborative learning mechanisms, which act as partial mediation variables.

Next, the strength of the model was evaluated using R^2 , f^2 , and Q^2 values.

Table 5. Summary of Model Strength Evaluation (R^2 , f^2 , Q^2)

Endogenous Variable	R ²	Categories	F ²	Q ²	Remarks
PKOL	0.174	Weak–Medium	0.21	0.12	Good Predictive Models
INVI	0.563	Strong	0.34	0.41	Excellent Predictive Models

The R^2 value for the INVI construct is 0.563, indicating that the combination of IMEV and PKOL is able to explain 56.3% of the variation in the internalization of Islamic values in high school students. A positive Q^2 value (0.41) indicates that the model has strong predictive relevance, while an f^2 value shows moderate to large substantive influences between variables.

3.1.5. Key Research Findings

Empirical results show that the use of visual educational media in learning Islamic values has proven to be effective in increasing student engagement and strengthening the process of internalizing spiritual and social values. The use of visual media, such as interactive videos, value infographics, and contextual simulations, allows students to relate Islamic values to the reality of daily life in a more concrete and interesting way. The direct influence of IMEV on PKOL indicates that visual media not only functions as a learning tool, but also as a trigger for collaboration and discussion between students.

In addition, the significant influence of the collaborative approach to the internalization of Islamic values emphasizes the importance of social interaction in the process of character building. Collaborative learning encourages students to respect each other, listen, and internalize moral values in the context of real practice, in line with the theory of *social constructivism* put forward by Vygotsky (1978) as well as the *cooperative learning model*.

These findings reinforce the results of previous research by [Norzaman et al. \(2025\)](#) and [Faizin et al. \(2025\)](#) which shows that the combination of visual educational media and collaborative activities significantly improves students' understanding of Islamic values and social skills. Overall, the resulting structural models demonstrate high theoretical and empirical suitability, with excellent predictive power as well as model validity that meets international standards.

3.1.6. Visualization and Interpretation of Structural Models

Conceptually, the structural model of the analysis can be visualized as the relationship path between IMEV, PKOL, and INVI, where the positive directional arrow indicates a significant and strong relationship. The *largest path coefficient* value (0.482) was found in the PKOL → INVI pathway, indicating that the collaborative aspect is the most dominant determinant in the process of internalizing Islamic values.

Visually, the model shows three significant interconnected pathways, forming a causal chain link from the use of visual media to collaborative learning and leading to the strengthening of Islamic values. This relationship illustrates that value transformation does not occur directly through the media, but rather is mediated by social interaction and active group work.

3.2. Discussion

These findings show that the integration of visual media and collaboration creates a transformative learning ecosystem. The use of visual educational media (IMEV) has been proven to significantly trigger a collaborative approach (PKOL). This indicates that visual media is not only a tool, but a stimulus for discussion between students. This is also in line with the finding that interaction through digital media allows students to actively engage in pro-social behaviors, where empathy acts as a key bridge that facilitates the transformation of information from media into positive social responses ([Shodiq et al., 2024](#)).

Furthermore, The collaborative approach (PKOL) is the most dominant determinant of the internalization of Islamic values (INVI). Moral values such as honesty are more effectively internalized in real social experiences through group interactions. The synergy of the two was able to explain 56.3% of the variation in internalization of values, proving that character education in the digital era requires a combination of technology and active social pedagogy. These findings also confirm that technology-based learning does not limit interaction between students, but rather provides space for collaboration, joint projects, and knowledge acquisition from different perspectives and cultures ([Nurunisa & Shodiq, 2024](#)).

These findings also reinforce the perspective of social constructivism, which places social interaction at the core of the value learning process. A positive learning environment allows students to negotiate meaning, reflect values, and cooperate in understanding responsibilities as part of life experiences ([Yuksel-Elgin & Elgin, 2025](#)). In this situation, the collaborative approach (PKOL) examined in this study functions as a key supportive mechanism, helping students translate social interaction into adaptive learning behavior, supported by teachers and peers in collaborative activities that foster awareness of shared responsibility. This confirms that character is formed through a contextual relationship between cognition and the social environment, not merely the result of one-way moral instruction ([Zemzami & Lotfi, 2025](#)).

In the context of the use of visual educational media, these findings have significant theoretical implications. Visual media, when effectively integrated in Islamic learning, corresponds to the IMEV construct examined in this study, which showed a significant effect on the internalization of Islamic values ($\beta = 0.296, p < 0.0001$), consistent with its potential to strengthen students' cognitive and emotional engagement with content that competes for students' ([Rho et al., 2025](#)). Previous research has shown that electronic and visual media can increase motivation to learn Islamic values when supported by a good learning environment ([Sellami et al., 2025](#)). Thus, the integration of visual educational media not only serves as a teaching aid, but also as a means of cognitive load management that facilitates the internalization of the value of responsibility through a more interactive and reflective learning experience ([Escanez-Exposito et al., 2025](#)).

The relevance of these findings can also be seen through the results of the research [Faizin et al. \(2025\)](#), which similarly points to the importance of how readily students engage with technology-supported Islamic learning, a point directly relevant to the IMEV construct examined in this study. In this study's own model, this supportive role is captured by the collaborative approach (PKOL) and reinforced by the direct effect of IMEV, together indicating that the effectiveness of value learning is not determined by the material or technology alone, but by the social and instructional conditions that allow for optimal reflective and collaborative processes ([Heidari et al., 2025](#)).

The success of electronic media optimization in Islamic studies learning in Nigeria is highly dependent on the readiness of infrastructure and the quality of classroom interactions. The same is true in the Indonesian context: a well-designed visual educational media will not function effectively

without the support of a calm, communicative, and value-oriented learning environment. Thus, the learning environment can be understood as a bridge that connects students' cognitive capacity and affective outcomes in the form of character responsibility ([Elihami & Pajariato, 2025](#)).

When compared to previous studies, this study offers a different conceptual contribution. Most previous research has focused on the direct relationship between learning media and learning outcomes of grades, examining the effects of visual media or collaborative learning approaches in isolation, rather than testing their joint, simultaneous contribution ([Wang et al., 2025](#)). By examining visual educational media (IMEV) and the collaborative approach (PKOL) simultaneously as predictors of the internalization of Islamic values (INVI), this study expands the theoretical understanding in the domain of Islamic education. This affirms that value learning is the result of a dynamic interaction between cognitive engagement with visual material, the social context of collaborative learning, and the resulting internalization of values an integration that is rarely empirically discussed in the contemporary Islamic educational literature indexed by Scopus ([Faizin et al., 2025](#)).

In the context of secondary education in Indonesia, especially in high school, these results also have a strong interpretation contextually. High school students face various forms of cognitive impairment such as social media distractions, academic multitasking, and emotional distress due to high learning demands. However, schools with collaborative learning environments—which emphasize open communication between teachers and students, reflective activities, and value-based group projects show greater ability to sustain character learning ([Suratno et al., 2026](#)). This kind of environment serves as a safe space for students to manage their mental burden and strengthen their social responsibilities through real-life experiences, such as group work, discussions of Islamic values, and community-based activities.

This research thus expands the theory of character education by integrating cognitive and ecological dimensions. The character of responsibility cannot be understood only as a moral attribute taught verbally, but rather as the result of a process of internalization of values that takes place in the context of a dynamic learning environment. From the perspective of Islamic education, this is also in line with the concept of *Adab al-Ta'allum* that learning is not only an intellectual process, but also the formation of personality through social interaction and reflective experiences in a supportive classroom setting ([Faizin et al., 2025](#)).

The practical implications of these findings underscore the importance of strategic learning environment design. Teachers need to strike a balance between the use of engaging visual media and the creation of a classroom atmosphere conducive to focus and responsibility ([Tian et al., 2025](#)). Classroom settings, digital distraction control, and collaborative project-based activities can strengthen the character of responsibility by utilizing the social potential of the learning process. Schools, on the other hand, need to develop policies that support a distraction-free academic climate for example, regulating the use of gadgets, classroom management training, and providing physical facilities that support reflective learning ([Zheng et al., 2025](#)).

In terms of policy, the results of this study suggest that character education based on Islamic values must consider cognitive and environmental factors as a unit of character formation systems. Learning regulations should not only emphasize the content of grades, but also pedagogical design and classroom conditions that minimize distractions and strengthen collaborative participation ([Li et al., 2025](#)).

Although it makes significant theoretical and practical contributions, this research also has limitations. Geographical coverage is limited to schools in Yogyakarta, so generalizations to other contexts need to be done with caution ([Fathi et al., 2025](#)). In addition, the quantitative survey approach does not fully capture students' internal psychological processes in dealing with cognitive impairment. Advanced studies using qualitative or experimental approaches can deepen understanding of the mechanisms by which the learning environment transforms the effects of distractions into a character-building process. Cross-regional or longitudinal research is also important to test the stability of the relationship between variables over a longer period of time ([Sun et al., 2025](#)).

Overall, the result of this study reinforce the understanding that the internalization of Islamic values (INVI) is not just a matter of individual morality, but the result of a complex interaction between the visual media (IMEV) students engage with and the collaborative learning context (PKOL) they experience. With teacher support, a collaborative classroom atmosphere, and a well-designed visual educational medium, these conditions can function as a reflective stimulus that strengthens students' internalization of Islamic values, including but not limited to their sense of responsibility towards themselves and their environment ([Ye et al., 2025](#)).

4. Conclusion and Implications

This study concludes that visual educational media the collaborative approach each significantly predict the internalization of Islamic values among high school students in Yogyakarta, and together account for a substantial share of its variance, demonstrating a strong combined influence. Visual media proved effective in providing concrete representations of abstract spiritual values, while the collaborative approach played a central role in strengthening students' internalization of these values through social interaction and group work. These findings suggest that Islamic Religious Education teachers and schools need to design curricula that integrate both media technology and intensive collaborative activities, rather than relying on either alone. However, this study has limitations, particularly its geographical scope and reliance on self-report measures, meaning whether these effects extend to students' actual behavior remains a question for future research employing mixed-method approaches across broader regions and diverse Islamic educational settings such as *madrassas* and *pesantren*. Overall, this research affirms that strengthening students' Islamic character in the digital age requires a learning environment that is humanistic, reflective, and responsive to both cognitive and emotional needs consistent with the spirit of Sustainable Development Goal 4 in producing not only intellectually capable individuals, but also those with integrity and high social responsibility.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Author Contributions

The authors were responsible for all aspects of the research presented in this paper, including conceptualization, methodology, analysis, writing, and review. The authors have read and agreed to the published version of the manuscript.

Ethics Statement

The data supporting this study were collected and analysed by the authors.

AI Use Declaration

The authors declare that no generative AI tools were used in the writing or analysis of this manuscript. The author takes full responsibility for the content of the publication.

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