



Digital Pedagogical Intelligence in Islamic Moral Education: A Multiple-Case Study of Elementary Schools in an Indonesian Industrial Community

Iman Hilmansyah^{1a*}, Wiwik Dyah Aryani^{2b}
^{1,2} Universitas Islam Nusantara, Bandung, Indonesia

^ahimenhilmansyah@gmail.com, ^bwiwikaryani10@gmail.com

Article History:

Received:

31-08-2026

Revised:

17-09-2026

Accepted:

05-10-2026

Keywords:

Digital moral education; Digital pedagogical intelligence;

Elementary education; Islamic Religious Education; School-family collaboration; Teacher strategies

*Correspondence Address:

himenhilmansyah@gmail.com

Abstract: Elementary school students increasingly face moral challenges related to smartphones, social media, and online content, particularly when digital engagement is not accompanied by adequate adult supervision. This study examined how Islamic Religious Education teachers in two public elementary schools within an industrial community in Karawang, Indonesia, guided students in responding to these challenges. Using a qualitative multiple-case design, data were collected through interviews, observations, and document analysis and examined through within-case and cross-case analysis. The findings show that moral guidance operated through an interconnected cycle of planning, shared responsibility, religious habituation, teacher role modelling, educational communication, responsible-technology guidance, and continuous monitoring. These practices were shaped by students' digital experiences, parents' rotating work schedules, and the need for stronger school-family coordination. The principal contribution of the study is the concept of **Digital Pedagogical Intelligence**, defined as teachers' capacity to integrate religious-moral competence, pedagogical judgment, digital awareness, contextual sensitivity, collaborative action, and reflective monitoring in responding to students' digital moral challenges. This concept extends Islamic Religious Education beyond conventional moral instruction by explaining how teachers translate religious values into context-sensitive educational responses within digitally mediated and industrial-community environments.

This is an open-access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Introduction (مقدمة)

Digital transformation has reshaped how elementary school students learn, communicate, establish relationships, and encounter behavioral models. Digital devices, social media, online games, and video-sharing platforms provide opportunities to expand students' knowledge and creativity. However, when used without adequate literacy and supervision, these technologies

may also contribute to problematic internet use, exposure to harmful content, reduced face-to-face interaction, and unethical communication. Elementary school students are still developing the capacity for self-control, consequence-based reasoning, and understanding social norms. Therefore, technology use among this age group should not be viewed merely in terms of screen time, but also as an issue related to moral development and responsible participation in digital environments (Mekonen et al., 2024; Almethen & Alomair, 2024; Kwan et al., 2020).

Students' moral development in the digital era is shaped by interactions among multiple environments, including the family, school, peer groups, community, and digital media. A social-ecological perspective explains that behavior in digital spaces does not result from a single factor but emerges from interactions among individual characteristics, parenting practices, school climate, peer relationships, and the characteristics of the technologies being used. Moral education should therefore be implemented through multilayered and continuous interventions rather than merely through classroom rules. From a regulatory perspective, Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System stipulates that national education should develop students who demonstrate faith, devotion to God, noble character, and responsible citizenship. This orientation was further reinforced by Presidential Regulation Number 87 of 2017 concerning Strengthening Character Education, which positions schools, families, and communities as jointly responsible for students' character development (Cross et al., 2015; Republic of Indonesia, 2003; Republic of Indonesia, 2017).

Within this context, Islamic Religious Education teachers hold a strategic position because Islamic Religious Education is oriented not only toward the acquisition of religious knowledge but also toward the internalization of values and the formation of moral conduct in students' daily lives. Teachers' strategies may include role modeling, religious habituation, moral advice, reflective dialogue, reinforcement of positive behavior, supervision, and the development of a consistent school culture. These strategies are essential because students' moral intelligence develops when they receive explanations about values, observe concrete examples, practice decision-making, and receive continuous reinforcement. Previous research has similarly demonstrated that addressing moral decline among elementary school students requires the integration of classroom instruction, habituation, school culture, and collaboration with families (Sobri, 2021; Wulandari et al., 2021; Erviana, 2021).

The role of Islamic Religious Education teachers becomes increasingly complex when religious values must be connected to students' digital experiences. Teachers should not merely prohibit students from using digital devices or social media. Instead, they should guide students in understanding moral reasoning, social consequences, personal safety, communication etiquette, information credibility, and responsibility for their digital footprints. The development of digitally based Islamic Religious Education modules for elementary schools indicates that technology can strengthen religious learning when it is designed according to students' developmental needs. At the same time, cooperation between teachers and parents is necessary to ensure that the religious and moral values taught at school are reinforced at home. Islamic education in the digital era should therefore integrate pedagogical competence, digital literacy, and ethical orientation so that students become not only technologically proficient but also morally responsible users of technology (Hamdi et al., 2024; Munastiwi, 2021; Sanzi et al., 2025).

The growing body of research on contemporary digital moral challenges identifies cyberbullying as an important problem among children and adolescents. School-based prevention programs can generally reduce students' involvement as either perpetrators or victims, particularly when these programs move beyond information provision to develop empathy, self-regulation, social skills, online safety awareness, and a supportive school climate. Research focusing specifically on primary education has found that preventive education should begin when children first interact with digital technologies and should involve both families and

educational institutions. Moreover, moral dilemmas and collaborative learning activities can improve students' ability to evaluate the ethical consequences of their actions in digital environments. These findings demonstrate that digital moral guidance should be preventive, dialogical, and experience-based rather than implemented only after misconduct has occurred (Gaffney et al., 2019; Chicote-Beato et al., 2024; Bautista et al., 2022).

The effectiveness of digital moral development is also closely associated with family circumstances. Parental warmth, communication, proportionate control, and involvement are associated with a lower tendency toward problematic internet use, although technical restrictions alone do not necessarily lead to behavioral change. This issue becomes increasingly complex in families whose members work nonstandard hours or rotating shifts. Longitudinal research has shown that nonstandard working hours may increase work-family conflict and reduce the psychological resources necessary for effective parenting. Other research has found that mothers' nonstandard work schedules may be associated with children's behavioral problems, although the effects vary according to parental education and family resources. Therefore, limited parental mediation of children's digital activities should not be understood solely as individual negligence; it should also be examined in relation to employment structures and the support systems available to families (Lukavská et al., 2022; Zhao et al., 2021; Wang, 2023).

These issues are relevant to the circumstances of Kutanagara I Public Elementary School and Kutanagara II Public Elementary School in Ciampel District, Karawang Regency. Geographically, Kutanagara II Public Elementary School is located near the Suryacipta Industrial Estate and other industrial areas in Ciampel District (Karawang Regency Government, 2018). The preliminary study indicated that students had extensive access to digital devices and the internet, which was not always accompanied by adequate supervision, while many parents worked in the industrial sector under rotating shift systems. Teachers also encountered indications of declining communication etiquette, students' tendency to imitate language and behavior from digital content, reduced face-to-face social interaction, difficulties in evaluating information, and behavior that could be categorized as cyberbullying. These conditions indicate a supervision gap between the home and school environments. Consequently, Islamic Religious Education teachers are required to address not only conventional violations of school rules but also digital behaviors that may occur outside school hours while continuing to affect relationships among students at school.

Although research on character education, moral-value internalization, digital literacy, and cyberbullying prevention has continued to develop, these areas have generally been examined separately. Studies of character education in elementary schools have predominantly focused on role modeling, habituation, and the integration of values into classroom instruction. In contrast, international studies of digital risks have primarily examined prevalence, risk factors, or cyberbullying-prevention programs. Limited research has investigated how Islamic Religious Education teachers plan, organize, implement, and monitor digital moral guidance in elementary schools situated within industrial communities. Furthermore, differences in teachers' strategies according to grade level and subject area indicate that digital citizenship education has not yet been implemented consistently, while interventions at the elementary school level still require stronger context-specific evidence (Almethen & Alomair, 2024; Chicote-Beato et al., 2024; Sobri, 2021).

The novelty of this study lies in the integration of three dimensions. First, it conceptualizes contemporary moral challenges as the result of interactions among digital technological development, children's moral development, and the social characteristics of industrial workers' families. Second, the strategies employed by Islamic Religious Education teachers are analyzed through the management functions of planning, organizing, actuating, and controlling. Consequently, moral development is examined not merely as a collection of religious activities

but as a systematic managerial process. Third, the study connects religious values with digital literacy and ethics through role modeling, religious habituation, moral reasoning, educational communication, supervision, and school-parent collaboration. This approach extends previous research that has identified character-development management, twenty-first-century skills, and digital media as important instruments for influencing students' attitudes and behavior (Maria et al., 2021; Angga et al., 2022; Oktaviana & Rusnilawati, 2022).

Based on this background, this study aims to analyze the strategies employed by Islamic Religious Education teachers to guide students in addressing contemporary moral challenges at Kutanagara I Public Elementary School and Kutanagara II Public Elementary School through the stages of planning, organizing, actuating, and controlling. Specifically, the study seeks to identify the digital moral problems experienced by students, examine the involvement of school principals, classroom teachers, parents, and other members of the school community, and analyze the contributions of these strategies to students' religiosity, discipline, courtesy, responsibility, self-control, and digital ethics. This study is important because schools require a moral-development model capable of connecting religious values with students' actual digital experiences. Theoretically, the study is expected to extend scholarship on Islamic Religious Education strategies and moral education within industrial communities. Practically, its findings may provide guidance for schools and families in developing structured, context-sensitive, and sustainable digital moral education programs (Munastiwi, 2021; Cross et al., 2015).



Method (منهج)

Research Design

This study employed a qualitative approach using a multiple-case study design. A qualitative design was selected because the study sought to understand how Islamic Religious Education teachers interpreted, planned, implemented, and evaluated moral guidance within the natural social context of elementary schools. Qualitative inquiry enables researchers to examine participants' experiences, meanings, and actions without manipulating the conditions in which the phenomenon occurs (Adrias & Ruswandi, 2025; Patton, 2015). The case study design was considered appropriate because the strategies used by the teachers were investigated as a contemporary phenomenon embedded within the institutional, familial, and sociocultural contexts of the schools (Khan, 2022; Yin, 2017).

The study involved two cases: Kutanagara I Public Elementary School and Kutanagara II Public Elementary School in Karawang Regency, Indonesia. Examining the two schools as separate but related cases allowed the researchers to identify similarities and contextual differences in the implementation of moral guidance. The study was naturalistic and interpretive; therefore, the researchers did not manipulate variables or introduce experimental interventions. Instead, the researchers served as the primary instruments for collecting, interpreting, and constructing meaning from the data obtained in the field.

Research Setting and Participants

The research was conducted in 2026 at Kutanagara I Public Elementary School and Kutanagara II Public Elementary School, both located near the Suryacipta industrial area in Ciampel District, Karawang Regency. The sites were selected purposively because they represented elementary schools situated within an industrial community in which many parents worked rotating shifts. This social context was relevant to the study because parental working arrangements could limit the supervision of children's digital activities outside school hours. The

schools also differed in size: Kutanagara I Public Elementary School had 179 students, whereas Kutanagara II Public Elementary School had 408 students. These differences provided an opportunity to examine moral-guidance strategies across two school environments with distinct organizational characteristics.

Participants were selected through purposive sampling based on their knowledge of, experience with, and involvement in students' moral development. They included school principals, Islamic Religious Education teachers, classroom teachers, students, and parents. School principals were selected because of their involvement in school policies and character-education programs. Islamic Religious Education teachers served as the principal participants because their strategies constituted the main focus of the study. Classroom teachers were involved because they observed students' behavior across subjects and daily school activities, while students and parents provided information about moral behavior, digital practices, and the continuity of guidance between school and home. Purposive selection enabled the researchers to obtain information-rich accounts from participants directly associated with the phenomenon under investigation (Patton, 2015).

Data Collection

Data were collected through in-depth interviews, participant observations, and document analysis. The use of multiple methods enabled the researchers to examine both participants' perspectives and the actual implementation of moral-guidance practices. Data collection was conducted in the natural school setting so that the strategies employed by Islamic Religious Education teachers could be understood in relation to everyday interactions, institutional routines, and the sociocultural characteristics of the industrial community.

Semi-structured, in-depth interviews were conducted to explore participants' experiences and perspectives regarding contemporary moral challenges among students. The interviews focused on students' digital behavior, communication ethics, cyberbullying, religious habituation, parental supervision, school-family collaboration, and the stages of planning, organizing, implementing, and controlling moral-guidance programs. The semi-structured format allowed the researchers to use predetermined topics while remaining open to issues emerging from participants' accounts.

Participant observations were undertaken during classroom instruction, religious habituation programs, and daily interactions among students, teachers, and other members of the school community. The observations focused on teachers' role modeling, moral advice, educational communication, student discipline, religious participation, social interaction, communication etiquette, and responses to problematic digital behavior. Prolonged engagement in the research settings was used to establish rapport with participants and obtain a more contextualized understanding of school practices (Shenton, 2004).

Document analysis was used to complement the interview and observational data. The documents examined included school policies, program records, activity schedules, records of religious-habitation activities, and other materials relevant to moral and character development. Documentary evidence was used to examine the consistency between formally planned programs, participants' explanations, and the practices observed in the two schools. The combination of interviews, observations, and documents provided complementary forms of evidence and strengthened the contextual interpretation of each case (Khan, 2022; Yin, 2017).

Data Analysis

Data analysis was conducted concurrently with data collection using the interactive model proposed by Miles et al. (2014), which consists of data condensation, data display, and conclusion drawing and verification. First, interview transcripts, field notes, and relevant documents were

organized according to their sources and research sites. The researchers then reviewed the data repeatedly, selected information relevant to the research questions, and assigned initial codes to meaningful segments. Related codes were grouped into categories and subsequently developed into broader themes concerning the planning, organization, implementation, and evaluation of moral guidance.

The analysis also followed the principles of thematic analysis. Themes were not derived solely from the frequency of participants' statements but from their relevance to the research questions and their ability to explain patterns across the dataset. The researchers reviewed and refined the themes by comparing interview accounts with observational records and documentary evidence. An audit trail connecting the raw data, initial codes, categories, and final themes was maintained to improve the transparency of the analytical process (Nowell et al., 2017).

The Input-Process-Output-Outcome framework was employed as an analytical lens to organize the findings. Students' initial moral and digital conditions were positioned as the raw input; school policies and teachers' competencies as the instrumental input; and family, peer, industrial-community, and digital-media conditions as the environmental input. The process dimension was examined through the management functions of planning, organizing, actuating, and controlling. The output referred to observable changes in students' religious, disciplinary, social, and digital behavior, whereas the outcome concerned the development of longer-term moral awareness, self-control, responsibility, and ethical engagement with digital technology. This framework was used to organize the interpretation rather than to convert the qualitative evidence into quantitative measurements.

A within-case analysis was first conducted for each school to retain the distinct context of each case. This stage was followed by a cross-case analysis to identify similarities and differences in the strategies employed by Islamic Religious Education teachers. Interpretations were continuously compared with the original data, and conclusions were refined when conflicting or contradictory evidence emerged. This iterative procedure ensured that the findings remained grounded in participants' accounts and observed practices rather than being based solely on the researchers' initial assumptions (Miles et al., 2014; Yin, 2017).

Trustworthiness

The trustworthiness of the study was established through credibility, transferability, dependability, and confirmability. Credibility was supported by prolonged engagement, triangulation, peer debriefing, and member checking. Source triangulation was undertaken by comparing information obtained from school principals, Islamic Religious Education teachers, classroom teachers, students, and parents. Method triangulation involved comparing interview, observational, and documentary evidence, while time triangulation was conducted by collecting and comparing information at different points during fieldwork (Alexander, 2019; Shenton, 2004).

Member checking was conducted by returning interview summaries or preliminary interpretations to relevant participants to confirm whether the researchers had accurately represented their experiences and views. Peer debriefing was used to discuss the coding process, thematic development, and alternative interpretations. Transferability was supported through a detailed description of the research sites, participant groups, industrial-community context, and implementation of the moral-guidance programs. These contextual descriptions allow readers to assess whether the findings may be applicable to other educational settings with similar characteristics.

Dependability was strengthened by maintaining records of the research procedures, interview and observation processes, coding decisions, thematic development, and revisions made during analysis. Confirmability was supported by comparing interpretations across multiple data sources and maintaining an audit trail from the raw data to the final conclusions. These procedures were intended to demonstrate that the findings were derived from the empirical evidence rather than from the researchers' personal preferences or assumptions (Nowell et al., 2017; Shenton, 2004).

Result (نتائج)

Planning Value-Based Moral Guidance in the Digital Context

The findings indicated that moral-guidance planning in both schools began with an assessment of students' behavioral conditions and digital activities. School principals and Islamic Education teachers identified students' broad access to smartphones and the internet as an important contextual factor. This access was not always accompanied by consistent parental supervision because many parents worked rotating shifts in the surrounding industrial area. Planning was therefore directed toward both conventional disciplinary concerns and moral problems emerging through students' engagement with digital media.

Teachers identified several concerns, including declining communication etiquette, reduced face-to-face interaction, individualistic behavior, exposure to inappropriate digital content, and limited ability to evaluate information obtained through social media. These conditions were mapped as the initial situation that required educational intervention. Rather than waiting until misconduct occurred, the schools used the identified problems to determine the focus of preventive moral guidance.

Based on these needs, the schools planned programs that combined religious habituation, teacher role modeling, moral advice, behavioral supervision, and communication with parents. Planned activities included Qur'anic reading before lessons, congregational prayer, religious advice, and the reinforcement of a religious school culture. The programs were intended to strengthen students' religiosity, discipline, courtesy, responsibility, and self-control.

The planning process incorporated theological and logical-rational values. The theological dimension emphasized faith, religious awareness, and personal accountability before God. The logical-rational dimension encouraged students to understand the reasons behind moral rules and consider the consequences of their actions. Teachers therefore planned to discuss both the advantages and risks of digital technology instead of relying solely on prohibitions.

Across the two schools, planning was contextual, preventive, and directed toward long-term character development. The programs were designed in response to students' digital experiences and the limited supervision associated with parents' working conditions. However, the identification of students' needs was mainly based on teachers' observations, experiences, and informal communication. The findings did not show the use of a standardized instrument for assessing students' digital-moral behavior.

Table 1. Planning of Moral Guidance in the Two Schools

Planning component	Empirical finding	Program implication
Initial assessment	Students had broad access to smartphones and the internet	Digital behavior became part of moral guidance
Identified moral	Communication problems, individualism,	Preventive intervention was

problems	inappropriate content, and limited information evaluation	considered necessary	
Program objectives	Religiosity, discipline, courtesy, responsibility, and self-control	Guidance multiple dimensions	addressed character
Theological orientation	Faith and accountability before God	Development of internal moral control	
Logical-rational orientation	Consideration of reasons and behavioral consequences	Development of reflective moral judgment	
Planning limitation	Needs were identified mainly through informal observation	A systematic assessment instrument was needed	

Organizing School-Family Collaboration for Moral Guidance

The organization of moral guidance involved the distribution of responsibilities among school principals, Islamic Education teachers, classroom teachers, parents, and other members of the school community. School principals provided policy direction and coordinated character-development programs. Islamic Education teachers assumed a central role in religious instruction and moral guidance, while classroom teachers monitored students' behavior during learning and other daily activities.

A total of 26 teachers across the two schools were involved in activities related to students' moral development. Their participation included integrating moral values into instruction, reinforcing discipline, supporting religious activities, encouraging respectful communication, and monitoring students inside and outside the classroom. The involvement of the teaching staff positioned moral development as a collective school responsibility rather than the exclusive responsibility of Islamic Education teachers.

The organization of the programs also involved efforts to create an orderly, clean, harmonious, and religious school environment. Religious facilities, school cleanliness, organized routines, and respectful relationships among school members supported the implementation of moral guidance. The physical and social environment consequently became part of the process through which students experienced discipline, responsibility, cooperation, and respect.

Parents were positioned as school partners because students' behavior and digital activities continued outside school hours. Teachers communicated with parents regarding students' conduct, religious habits, and use of digital devices. Nevertheless, rotating work schedules limited the time available to some parents for supervision and communication. The schools therefore attempted to maintain flexible coordination so that relevant information about students could still be exchanged.

The organizational pattern in both schools was characterized by shared responsibility and coordination among school members and families. The participation of teachers strengthened the consistency of moral guidance within the school, while parental involvement extended the process into the home environment. However, the findings showed that coordination remained dependent on interpersonal communication and parents' availability. A more formal division of responsibilities and a documented communication mechanism had not yet become a consistent feature of the programs.

Table 2. Organization of Moral Guidance

Stakeholder component	or	Organized role	Contribution
School principal		Policy direction and program coordination	Institutional support for moral guidance
Islamic Education		Religious instruction, guidance, and role	Connection between religious

teacher	modeling	values and behavior
Classroom teacher	Daily behavioral supervision	Consistent reinforcement across school activities
Teaching staff	Participation of 26 teachers across both schools	Collective responsibility for character development
Parents	Supervision and reinforcement at home	Continuity between school and family
School environment	Cleanliness, order, religious facilities, and respectful culture	Indirect reinforcement of moral values
Organizational constraint	Parents' rotating work schedules and informal coordination	Inconsistent continuity of home supervision

Implementing Moral Guidance through Religious Habituation and Teacher Role Modeling

The implementation of moral guidance translated the planned programs into routine school practices. The principal strategies used in both schools were *uswah hasanah*, or teacher role modeling, and continuous religious habituation. Teachers did not limit moral guidance to explaining appropriate conduct. Students were given repeated opportunities to observe and practice expected values through structured activities and daily interactions.

Religious habituation included congregational *duha* prayer, Qur'anic recitation before lessons, collective prayer, the habitual use of Islamic greetings, and other character-development activities. These practices were integrated into the school routine rather than conducted only during special religious events. Their repetition was intended to develop students' religious awareness, discipline, responsibility, and familiarity with positive behavior.

Teacher role modeling reinforced the religious routines. Islamic Education teachers and other educators demonstrated discipline, respectful communication, responsibility, and consistency in religious activities. Students therefore received moral messages through teachers' actions as well as their verbal instruction. The teachers' behavior functioned as a direct example of how religious and social values should be practiced in everyday school life.

Moral guidance was also connected with students' digital experiences. Teachers explained the potential benefits and risks of smartphones, social media, and internet content. Students were encouraged to consider the consequences of sharing information, using inappropriate language, accessing harmful content, and engaging in negative online interactions. The guidance emphasized responsible use rather than complete rejection of digital technology.

Implementation in the two schools combined religious practice, observable examples, educational communication, and guidance concerning technology use. These strategies were intended to move moral learning from knowledge to repeated behavior. However, the existing documentation recorded the forms of activities more clearly than individual students' responses to each strategy. Differences in participation, behavioral change, and resistance among students had not been systematically recorded.

Table 3. Implementation of Moral-Guidance Strategies

Strategy	Form of implementation	Intended outcome	behavioral
Teacher modeling	role Discipline, respectful communication, responsibility, and religious consistency	Integrity and behavioral imitation	
Religious	<i>Duha</i> prayer, Qur'anic recitation, collective	Religiosity and self-discipline	

habituation	prayer, and Islamic greetings	
Moral advice	Explanation of appropriate conduct and its consequences	Moral awareness
Direct moral practice	Participation in repeated school routines	Formation of positive habits
Digital-moral guidance	Discussion of digital risks, information, and communication ethics	Responsible technology use
School-wide reinforcement	Involvement of Islamic Education and classroom teachers	Consistent moral expectations
Implementation limitation	Individual responses were not systematically documented	More detailed behavioral records were required

Monitoring and Evaluating Students' Moral and Digital Behavior

Monitoring was conducted to determine whether moral-guidance activities were implemented and whether students demonstrated behavioral development. Teachers observed students during lessons, religious activities, breaks, and informal interactions. The monitored aspects included discipline, compliance with school rules, responsibility for assigned tasks, courtesy in communication, religious participation, and interaction with teachers and peers.

Evaluation was also conducted through coordination meetings involving teachers and school leaders. These meetings provided opportunities to exchange observations, discuss students requiring additional guidance, and review the implementation of religious-habituation programs. Information from different teachers enabled the schools to develop a broader understanding of students' behavior across subjects and school situations.

Parents provided additional information about students' habits outside the school environment. Communication between teachers and parents addressed religious behavior, social interaction, smartphone use, and changes in students' conduct at home. This information helped teachers compare school observations with students' behavior in the family setting. However, the continuity of communication varied according to parents' working hours and availability.

Teachers observed positive developments in students' participation in religious activities, discipline, communication etiquette, responsibility, and awareness of appropriate digital behavior. Students appeared more careful in interacting through digital media and more aware of the distinction between beneficial and harmful content. These developments were identified through teachers' observations and participants' accounts rather than through standardized behavioral measurements.

The evaluation process functioned as a continuing cycle of observation, discussion, guidance, and follow-up. When teachers identified behavioral problems, they provided advice, reinforcement, additional supervision, or communication with parents. Monitoring was therefore not limited to measuring compliance but was used to determine subsequent guidance. Nevertheless, the schools had not yet developed a common instrument for documenting changes in students' moral and digital behavior over time.

Table 4. Monitoring and Evaluation of Moral Development

Monitored aspect	Evaluation mechanism	Observed development	Follow-up
Religious participation	Observation during school religious activities	Greater engagement in religious routines	Continued habituation
Discipline	Daily teacher observation	Better compliance with routines and rules	Consistent reinforcement

Communication etiquette	Observation of student interactions	More respectful communication	Modeling and corrective advice
Responsibility	Observation of tasks and school activities	Greater awareness of personal duties	Positive reinforcement
Digital behavior	Teacher observation and parent communication	Increased caution in digital-media use	Continued digital-moral guidance
Program implementation	Coordination meetings	Identification of progress and constraints	Adjustment of guidance
Evaluation limitation	Qualitative and informal documentation	No standardized measure of behavioral change	Development of a shared monitoring record

Cross-Case Findings on Digital Pedagogical Intelligence

The cross-case findings revealed a shared management pattern in the two schools. Moral guidance began with identifying students' social and digital conditions, continued through the distribution of responsibilities, was implemented through habituation and role modeling, and was maintained through monitoring and follow-up. These activities formed an interconnected process rather than a series of isolated school programs.

Teachers' strategies were influenced by the characteristics of the surrounding industrial community. Students' access to digital technology, parents' rotating work schedules, and limited supervision outside school created moral issues that could not be addressed solely through classroom instruction. The strategies consequently extended from religious teaching to communication with families and guidance concerning students' digital interactions.

The findings indicated that Islamic Education teachers combined several forms of competence in performing their roles. They used religious knowledge to explain moral expectations, pedagogical skills to communicate with elementary school students, digital awareness to recognize emerging behavioral risks, and social sensitivity to understand students' family circumstances. They also coordinated with other teachers and parents when students required continued guidance.

This combination of capabilities was identified as **Digital Pedagogical Intelligence**. In the context of this study, the concept refers to the teacher's ability to connect religious-moral knowledge, pedagogical judgment, digital awareness, contextual understanding, collaborative action, and reflective monitoring. It was manifested through the ways teachers interpreted digital problems and transformed them into value-based educational responses.

Digital Pedagogical Intelligence was not found as a formally established competency framework in either school. Rather, it emerged from the recurring pattern observed across planning, organizing, implementation, and monitoring. The concept therefore represents a cross-case synthesis of the strategies practiced by the teachers. Its dimensions and relationships require further examination in different schools before they can be developed into a standardized professional-competency model.

Table 5. Empirical Dimensions of Digital Pedagogical Intelligence

Dimension	Empirical manifestation	Related management function
Religious-moral competence	Connecting Islamic values with students' physical and digital behavior	Planning and implementation
Digital awareness	Recognizing risks related to online content and	Planning

	communication	
Contextual sensitivity	Understanding parental shift work and limited supervision	Planning
Collaborative competence	Coordinating principals, teachers, and parents	Organizing
Exemplary communication	Combining explanation, advice, and teacher role modeling	Implementation
Reflective monitoring	Observing behavior and using information for follow-up	Controlling
Moral-resilience orientation	Guiding students toward responsible and self-controlled conduct	All management functions



Discussion (مناقشة)

The findings demonstrate that the strategies employed by Islamic Education teachers formed a continuous management cycle consisting of planning, organizing, actuating, and controlling. Planning identified students' moral and digital needs; organizing distributed responsibilities among school and family stakeholders; actuating translated values into habituation and role modeling; and controlling provided information for subsequent guidance. This pattern reflects Terry's conception of management functions as interrelated activities directed toward organizational objectives. In this study, however, POAC was applied not merely to program administration but to the transformation of students' moral behavior. Its integration with theological, logical-rational, ethical, aesthetic, physical-physiological, and teleological values also supports Sanusi's argument that education should connect systems of value, learning, and human intelligence (Sanusi, 2017; Terry, 1977).

The planning findings suggest that digital moral education should combine internal religious orientation with reflective moral reasoning. The theological dimension gave students a religious basis for self-control, while the logical-rational dimension encouraged them to consider the consequences of online and offline conduct. This combination is important because digital-moral problems cannot be addressed effectively through prohibition alone. Research on cyberbullying has shown that educational activities designed to develop moral reasoning can strengthen students' capacity to assess the consequences of digital interactions. Similarly, digital Islamic Education materials can connect religious practices with students' contemporary learning environments when they are developmentally appropriate and pedagogically structured (Bautista et al., 2022; Hamdi et al., 2024).

The organizational findings show that moral guidance operates through an educational ecosystem rather than through the isolated work of Islamic Education teachers. The involvement of school principals, Islamic Education teachers, classroom teachers, parents, and the broader school environment created multiple sources of behavioral reinforcement. This finding is consistent with Munastiwi's conclusion that cooperation between teachers and parents strengthens the internalization of children's religious and moral values. The industrial context adds an important qualification: parental participation is affected by working conditions. Nonstandard working hours may increase work-family conflict and reduce psychological resources available for parenting, while supportive parenting is negatively associated with problematic internet use. Consequently, school-family collaboration should be flexible and supportive rather than based on assumptions that limited supervision simply reflects parental indifference (Lukavská et al., 2022; Munastiwi, 2021; Zhao et al., 2021).

The implementation findings confirm that moral values are more likely to become meaningful when students encounter them through repeated practices and observable examples. Religious habituation provided structured opportunities to practice discipline, responsibility,

worship, and respectful interaction, whereas teacher role modeling demonstrated how those values should appear in daily conduct. This finding extends previous research showing that teachers contribute to elementary students' moral intelligence by integrating values into learning and positioning themselves as moral agents. It also supports Sobri's finding that the internalization of moral values in Islamic Education is developed through curricular and extracurricular activities. In the present study, these established strategies were expanded by connecting religious values with communication ethics, information selection, and responsible digital conduct (Sobri, 2021; Wulandari et al., 2021).

Monitoring and evaluation functioned as formative guidance rather than as a final judgment of students' compliance. Daily observation, coordination meetings, and communication with parents enabled teachers to identify behavioral concerns and determine appropriate follow-up. Nevertheless, the absence of a common monitoring instrument limited the schools' capacity to demonstrate patterns of change systematically. The reported improvements should therefore be understood as qualitative indications rather than measured effects. This distinction is important because parental restrictions and technical supervision alone have only limited associations with problematic internet use; evaluation should also consider communication quality, parental warmth, students' moral reasoning, and the context in which digital behavior occurs (Bautista et al., 2022; Lukavská et al., 2022).

The principal academic contribution of this study is the formulation of **Digital Pedagogical Intelligence** as a contextually grounded extension of Islamic Education teachers' pedagogical roles. Previous studies have discussed moral internalization, teacher-parent collaboration, teachers as moral models, digital learning materials, and moral reasoning in digital environments as largely separate concerns. This study connects those concerns within a value-based POAC cycle and demonstrates how they operate in elementary schools situated in an industrial community. Digital Pedagogical Intelligence therefore contributes an analytical concept that explains how Islamic Education teachers integrate religious-moral competence, pedagogical judgment, digital awareness, contextual sensitivity, collaboration, and reflective monitoring. Rather than treating digital competence as technical proficiency alone, the concept positions it as the capacity to translate religious values into educational responses to students' changing digital realities (Hamdi et al., 2024; Munastiwi, 2021; Sobri, 2021).



Conclusion (خاتمة)

This study concludes that the strategies employed by Islamic Education teachers at Kutanagara I Public Elementary School and Kutanagara II Public Elementary School were implemented through an interconnected cycle of planning, organizing, actuating, and controlling. Planning was based on students' moral and digital conditions; organizing involved collaboration among school principals, Islamic Education teachers, classroom teachers, parents, and other school members; implementation emphasized religious habituation, teacher role modeling, educational communication, and responsible technology use; and monitoring was conducted through daily observation, teacher coordination, and communication with parents. These strategies supported students' religiosity, discipline, courtesy, responsibility, and awareness of digital ethics. The findings also generated the concept of **Digital Pedagogical Intelligence**, which describes teachers' capacity to integrate religious-moral competence, pedagogical judgment, digital awareness, contextual sensitivity, collaborative action, and reflective monitoring when responding to students' moral challenges in digital environments.

This study is limited by its focus on two elementary schools within the same industrial community, meaning that the findings provide contextual understanding rather than statistical generalization. The data also relied mainly on interviews, observations, and school documents,

while changes in students' moral and digital behavior were not measured using standardized instruments or examined longitudinally. In addition, the available evidence did not fully distinguish the experiences of students according to grade level, gender, intensity of digital use, or family supervision. Schools are therefore encouraged to develop systematic digital-moral assessment and monitoring instruments, strengthen flexible communication with parents working rotating shifts, and provide continuing digital-pedagogy training for Islamic Education teachers. Future research should examine Digital Pedagogical Intelligence in more diverse educational settings, develop and validate its dimensions, and employ longitudinal or mixed-methods designs to investigate its relationship with students' moral resilience, self-control, and responsible digital behavior.

Acknowledgment (شكر وتقدير)

Acknowledgment is addressed to a person and/or groups and also the institution that helps research both in a direct and indirect way.



Bibliography (مراجع)

- Adrias, & Ruswandi, A. (2025). *Desain penelitian kuantitatif, kualitatif, dan mix method*. Rajawali Pers.
- Alexander, A. P. (2019). Lincoln and Guba's quality criteria for trustworthiness. *IDC International Journal*, 6(4), 1–6.
- Almethen, A. A., & Alomair, M. A. (2024). The role of age, grade level, and subject area in determining the inclusion of digital citizenship elements in elementary school curricula: Perspectives of teachers in the Kingdom of Saudi Arabia. *Heliyon*, 10(14), Article e34597. <https://doi.org/10.1016/j.heliyon.2024.e34597>
- Angga, A., Abidin, Y., & Iskandar, S. (2022). Penerapan pendidikan karakter dengan model pembelajaran berbasis keterampilan abad ke-21. *Jurnal Basicedu*, 6(1), 1046–1054. <https://doi.org/10.31004/basicedu.v6i1.2084>
- Bautista, P., Cano-Escoriaza, J., Vicente-Sánchez, E., Cebollero-Salinas, A., & Orejudo, S. (2022). Improving adolescent moral reasoning versus cyberbullying: An online big group experiment by means of collective intelligence. *Computers & Education*, 189, Article 104594. <https://doi.org/10.1016/j.compedu.2022.104594>
- Chicote-Beato, M., González-Villora, S., Bodoque-Osma, A. R., & Navarro, R. (2024). Cyberbullying intervention and prevention programmes in primary education (6 to 12 years): A systematic review. *Aggression and Violent Behavior*, 77, Article 101938. <https://doi.org/10.1016/j.avb.2024.101938>
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- Cross, D., Barnes, A., Papageorgiou, A., Hadwen, K., Hearn, L., & Lester, L. (2015). A social–ecological framework for understanding and reducing cyberbullying behaviours. *Aggression and Violent Behavior*, 23, 109–117. <https://doi.org/10.1016/j.avb.2015.05.016>
- Erviana, V. Y. (2021). Penanganan dekadensi moral melalui penerapan karakter cinta damai dan nasionalisme. *Jurnal Penelitian Ilmu Pendidikan*, 14(1), 1–9. <https://doi.org/10.21831/jpipfip.v14i1.27149>
- Gaffney, H., Farrington, D. P., Espelage, D. L., & Ttofi, M. M. (2019). Are cyberbullying intervention and prevention programs effective? A systematic and meta-analytical review. *Aggression and Violent Behavior*, 45, 134–153. <https://doi.org/10.1016/j.avb.2018.07.002>
- Hamdi, Rizal, S. U., Hikmah, N., Syabrina, M., Sulistyowati, & Mualimin. (2024). Developing digital-based Islamic religious education teaching modules on the subject matter of Duha prayer in elementary schools. *Jurnal Pendidikan Agama Islam*, 21(1), 131–146. <https://doi.org/10.14421/jpai.v21i1.7520>

- Khan, N. I. (2022). Case study as a method of qualitative research. In *Research anthology on innovative research methodologies and utilization across multiple disciplines* (pp. 452–472). IGI Global. <https://doi.org/10.4018/978-1-6684-3881-7.ch023>
- Kwan, I., Dickson, K., Richardson, M., MacDowall, W., Burchett, H., Stansfield, C., Brunton, G., Sutcliffe, K., & Thomas, J. (2020). Cyberbullying and children and young people's mental health: A systematic map of systematic reviews. *Cyberpsychology, Behavior, and Social Networking*, 23(2), 72–82. <https://doi.org/10.1089/cyber.2019.0370>
- Lukavská, K., Hrabec, O., Lukavský, J., Demetrovics, Z., & Király, O. (2022). The associations of adolescent problematic internet use with parenting: A meta-analysis. *Addictive Behaviors*, 135, Article 107423. <https://doi.org/10.1016/j.addbeh.2022.107423>
- Maria, R., Rifma, R., & Syahril, S. (2021). Efektivitas pembelajaran dan pembinaan karakter di masa pandemi COVID-19. *Edukatif: Jurnal Ilmu Pendidikan*, 3(4), 1503–1512. <https://doi.org/10.31004/edukatif.v3i4.566>
- Mekonen, L. D., Kumsa, D. M., & Adamu Amanu, A. (2024). Social media use, effects, and parental mediation among school adolescents in a developing country. *Heliyon*, 10(6), Article e27855. <https://doi.org/10.1016/j.heliyon.2024.e27855>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications.
- Munastiwi, E. (2021). Synergy of parents and teachers in students learning to instill religious and moral values in the pandemic period. *Jurnal Pendidikan Agama Islam*, 18(1), 21–36. <https://doi.org/10.14421/jpai.2021.181-02>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1–13. <https://doi.org/10.1177/1609406917733847>
- Oktaviana, D. L., & Rusnilawati. (2022). Role playing with digital comics in preventing bullying and cyberbullying behavior in elementary school. *Jurnal Ilmiah Sekolah Dasar*, 6(4), 603–609. <https://doi.org/10.23887/jisd.v6i4.53685>
- Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). SAGE Publications.
- Pemerintah Kabupaten Karawang. (2018, November 5). *SDN Kutanagara II roboh*. <https://karawangkab.go.id/berita/sdn-kutanagara-ii-roboh-0>
- Republik Indonesia. (2003). *Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional*. <https://peraturan.bpk.go.id/Details/43920/uu-no-20-tahun-2003>
- Republik Indonesia. (2017). *Peraturan Presiden Republik Indonesia Nomor 87 Tahun 2017 tentang Penguatan Pendidikan Karakter*. <https://peraturan.bpk.go.id/Details/73167/perpres-no-87-tahun-2017>
- Sanusi, A. (2017). *Pendidikan untuk kearifan: Mempertimbangkan kembali sistem nilai, belajar, dan kecerdasan*. Nuansa Cendekia.
- Sanzi, V., Rahman, A., Alharbi, A., & Awan, N. (2025). Islamic Education 4.0: Rethinking moral and religious learning for a socially conscious generation. *TARBIYA: Journal of Education in Muslim Society*, 12(1), 40–62. <https://doi.org/10.15408/tjems.v12i1.46161>
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63–75. <https://doi.org/10.3233/EFI-2004-22201>
- Sobri. (2021). Strategi guru Pendidikan Agama Islam (PAI) dalam internalisasi nilai-nilai moral di sekolah dasar. *Edukatif: Jurnal Ilmu Pendidikan*, 3(4), 2313–2320. <https://doi.org/10.31004/edukatif.v3i4.900>
- Terry, G. R. (1977). *Principles of management* (7th ed.). Richard D. Irwin.
- Wang, J. (2023). Mothers' nonstandard work schedules and children's behavior problems: Divergent patterns by maternal education. *Research in Social Stratification and Mobility*, 84, Article 100784. <https://doi.org/10.1016/j.rssm.2023.100784>
- Wulandari, A. D., Suargana, L., Dewi, D. A., & Furnamasari, Y. F. (2021). Upaya guru untuk mengembangkan kecerdasan moral pada anak sekolah dasar melalui pembelajaran PKn. *Jurnal Basicedu*, 5(6), 5462–5471. <https://doi.org/10.31004/basicedu.v5i6.1638>

- Yin, R. K. (2017). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.
- Zhao, Y., Cooklin, A., Butterworth, P., Strazdins, L., & Leach, L. S. (2021). How does working nonstandard hours impact psychological resources important for parental functioning? Evidence from an Australian longitudinal cohort study. *SSM–Population Health*, 16, Article 100931. <https://doi.org/10.1016/j.ssmph.2021.100931>