

From Smartphone Control to Digital Ethics Education: A Multi-Case Conceptual Framework in Three Vocational Schools in Bantul, Indonesia

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Abstract

The use of smartphones in vocational secondary schools presents both educational benefits and ethical issues that cannot be resolved simply by banning the devices. This study aims to analyse how three state vocational secondary schools in Bantul Regency are shifting their focus from smartphone control towards fostering digital ethics, and to formulate a conceptual framework that explains this process. The study employs a naturalistic qualitative approach with a multi-case study design. Data were collected between July 2025 and June 2026 through interviews, limited participant observation and documentation. A focused analysis was conducted on 34 verified units of meaning directly related to smartphone use and digital behaviour. In-case and cross-case analyses yielded 16 preliminary codes, 7 categories, three dimensions of digital ethics and one supporting ecosystem. These three dimensions are self-regulation and digital wellbeing, ethical and relational communication, and responsibility for learning and information. All three are shaped through pedagogical guidance, the integration of values into the curriculum, leading by example and the cultivation of habits, spiritual guidance and counselling, and collaboration between schools, families and the community. The findings indicate that digital ethics is not merely compliance with mobile phone regulations, but rather an internalised moral capacity to regulate one's time, attention, body, language, information and relationships whilst using technology. The contribution of this research is a conceptual framework for fostering digital ethics in vocational education, rather than a universal theory. This framework still requires testing in more diverse school contexts and through longitudinal research.

Keywords: Digital Ethics; Smartphones; Multi-Case Study; Islamic Education; Vocational Secondary Schools

Abstrak

Penggunaan smartphone di sekolah menengah kejuruan menghadirkan manfaat belajar sekaligus persoalan moral yang tidak dapat diselesaikan hanya melalui larangan perangkat. Penelitian ini

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bertujuan menganalisis bagaimana tiga SMK negeri di Kabupaten Bantul menggeser kontrol smartphone menuju pembinaan akhlak digital dan merumuskan kerangka konseptual yang menjelaskan proses tersebut. Penelitian menggunakan pendekatan kualitatif naturalistik dengan rancangan studi multikasus. Data dikumpulkan pada Juli 2025–Juni 2026 melalui wawancara, observasi partisipan terbatas, dan dokumentasi. Analisis terfokus dilakukan terhadap 34 unit makna terverifikasi yang berkaitan langsung dengan penggunaan smartphone dan perilaku digital. Analisis dalam kasus dan lintas kasus menghasilkan 16 kode awal, 7 kategori, tiga dimensi akhlak digital, dan satu ekosistem pendukung. Tiga dimensi tersebut adalah kendali diri dan kesejahteraan digital, komunikasi etis-relasional, serta tanggung jawab belajar dan informasi. Ketiganya dibentuk melalui regulasi pedagogis, integrasi nilai dalam kurikulum, keteladanan dan pembiasaan, bimbingan rohani dan konseling, serta kesinambungan sekolah, keluarga, dan masyarakat. Temuan menunjukkan bahwa akhlak digital bukan sekadar kepatuhan terhadap tata tertib HP, melainkan kapasitas moral terinternalisasi untuk mengatur waktu, perhatian, tubuh, bahasa, informasi, dan relasi ketika menggunakan teknologi. Kontribusi penelitian ini adalah kerangka konseptual pembinaan akhlak digital bagi pendidikan vokasi, bukan teori universal. Kerangka tersebut masih memerlukan pengujian pada konteks sekolah yang lebih beragam dan melalui penelitian longitudinal.

Kata kunci : Akhlak Digital; Smartphone; Studi Multikasus; Pendidikan Islam; Sekolah Menengah Kejuruan

I. Introduction

Smartphones have become an integral part of everyday life in vocational education. These devices help students access learning materials, look up terms, communicate and complete assignments, but they also carry risks such as distraction, excessive use, sleep disruption, exposure to harmful content, and relational conflicts in the digital space (Nagata et al., 2024). A UNESCO report emphasises that educational technology must be assessed on the basis of its relevance, equity, evidence and sustainability, rather than being accepted as an end in itself (Team, 2023). The OECD also highlights that young people's digital experiences invariably involve both opportunities and risks and are influenced by family circumstances, school environments, and social relationships outside the digital sphere (OECD, 2025). Consequently, the issue of smartphones in schools cannot be adequately addressed if framed solely as a choice between permitting and banning the devices (Ho et al., 2025).

The literature on digital citizenship has mapped out respectful behaviour in online spaces, digital engagement, technical skills, critical awareness and information responsibility (L. L. Chen et al., 2021; Choi et al., 2017; Jones & Mitchell, 2016). Recent studies show that digital citizenship education can enhance pupils' knowledge and self-efficacy, but changes in privacy, civility and bullying do not automatically occur simply through the delivery of teaching materials (Jones & Mitchell, 2016). These findings indicate a gap between knowing digital rules and turning them into moral habits. Research on active mediation shows that conversations about digital activities and risks are associated with lower levels of problematic internet use through the strengthening of parent-child relationships and a reduced tendency for adolescents to conceal their online

behaviour (Liu et al., 2023). In the context of Islamic education, this distinction is important because akhlak does not stop at knowledge of right and wrong, but must become an inner inclination that enables a person to consistently do good.

Research on moral education in vocational secondary schools generally emphasises teachers' role modelling, religious practices, school rules, supervision, and parental involvement. Meanwhile, studies on digital citizenship more frequently focus on literacy, safety, rights, and participation. The literature on digital mediation distinguishes between restrictions, active mediation through dialogue, role modelling in device use, and shared media use. These distinctions indicate that the development of digital behaviour occurs not only through rules, but also through conversation, guidance, and the examples set by adults (Fam et al., 2025). These two strands do not sufficiently explain how mobile phone regulations, bodily experiences, conversational language, information verification, empathy towards peers, and the continuity of supervision between school and home are interrelated within a single process of moral development. It is this gap that leads to school practices being easily understood merely as control strategies, whilst field data reveals a broader process: schools are shaping the ways in which pupils manage themselves and treat others as technology becomes integrated into everyday life.

This study employs the concept of akhlak as a moral capacity shaped through self-purification and self-control, the practice of virtue, moral knowledge, moral reflection, moral action, and a supportive environment. A synthesis of the thought of al-Ghazali, Ibn Miskawaih, and Lickona is used as an interpretative lens, rather than as a theory to be tested. The literature on digital citizenship and digital well-being complements this lens by focusing on online respect, informational responsibility, autonomy, and the impact of technology on the good life (Burr et al., 2020; Harrison et al., 2024). This emphasis on internal processes is consistent with research showing that the relationship between adult mediation and problematic smartphone use involves psychological needs, autonomy and self-regulation mechanisms; active mediation is associated with lower levels of problematic use, whilst perceived restrictive measures may yield different outcomes (Y. Chen et al., 2025). Based on this perspective, digital ethics is understood as the internalisation of values that guide students in managing their time, attention, bodies, language, information and relationships when using technology.

This study aims to analyse how three state vocational schools in Bantul Regency regulate smartphone use as a process of fostering digital ethics and to formulate the relationship between students' moral capacity, school-based guidance mechanisms, and family-community support. The study's contribution is not a universal theory, but rather a conceptual framework based on a multi-case study that explains the shift from device control towards the development of digital responsibility. This framework also clarifies

the distinctive nature of vocational education: digital ethics not only supports school life, but forms part of students' socio-professional readiness for a world of work that is increasingly dependent on communication, information and digital footprints.

II. Research Methods

This study employs a naturalistic qualitative approach with a multi-case study design. The naturalistic approach is used to understand coaching practices in their natural context without manipulating the research situation (Lincoln & Guba, 1985). The multi-case study design allows each location to be analysed as a separate case, which are then compared to identify common patterns and contextual variations between cases (Stake, 2006; Yin, 2018b). The research was conducted at SMKN 1 Bantul, SMKN 1 Sewon, and SMKN 1 Pandak. These three schools were selected purposively as they represent urban and rural contexts, different fields of specialisation, and have established practices regarding character development and the use of technology in learning. Data collection took place from July 2025 to June 2026.

Data were collected through in-depth interviews, limited participant observation and a documentary study. The use of these various sources of evidence was intended to provide a more comprehensive understanding whilst allowing for cross-checking of data, as recommended in case study research (Yin, 2018a). For the purposes of this article, the analysis focused on a subcorpus of data explicitly related to smartphone use, pupils' digital behaviour, school governance, and the continuity of guidance outside school. This subcorpus comprises data from 17 informants: four pupils, five teachers (including a PAI teacher), three headteachers, two deputy headteachers for pupil affairs, and three parents. The interview data is supplemented by observations of lessons and school activities, observations of digital interactions, and documents such as school rules, the school's vision and mission, and character-building programmes.

The data were analysed through a process of multi-level coding as well as case and cross-case analysis. Coding is understood as the process of labelling data units to identify meanings, actions, experiences and patterns relevant to the research focus (Saldaña, 2021). In-case analysis was carried out to preserve the contextual integrity of each school, whilst cross-case analysis was used to compare similarities and differences in character-building patterns across schools (Miles et al., 2020; Stake, 2006).

The analysis process was carried out in five stages. Firstly, all transcripts, observation notes, documents and data displays were read repeatedly to gain a comprehensive understanding and to identify units of meaning relating to smartphone use and digital ethics. Secondly, each case was analysed separately by assigning initial codes that remained close to the informants' language and experiences. These codes included 'searching for assignments on Google', 'playing games until losing track of time', 'sending messages without proper manners', 'creating memes of friends', 'collecting mobile

phones', and 'parents not yet understanding remote monitoring'. Thirdly, codes with similar meanings were compared and grouped into second-level categories. Fourthly, the categories from each case were compared through cross-case analysis to identify recurring patterns as well as variations influenced by the school context. Fifth, these categories were integrated into dimensions of digital ethics and guidance mechanisms that form the conceptual framework. The process from initial codes to categories and aggregate dimensions was used to enhance the traceability of interpretations from empirical data to conceptual conclusions (Miles et al., 2014, 2020).

The audit of the analytical trail yielded 34 units of meaning traceable to the data sources, 16 initial codes, and seven second-order categories. These seven categories encompass digital use for learning; self-regulation and well-being; ethical communication and relational dignity; responsibility for information; moral governance in schools; family continuity; and community support. These categories were subsequently synthesised into three dimensions of digital ethics at the pupil level, namely self-regulation and digital wellbeing, ethical-relational communication, and learning and information responsibility. In addition, one supporting contextual domain was identified, namely a collaborative moral ecosystem. This analytical structure was used to demonstrate the transparency of the conceptualisation process and is not intended as a claim that this study fully applied grounded theory or Gioia's procedures.

The credibility of the findings was maintained through triangulation of sources, techniques and time; analysis within and across cases; and examination of the connections between empirical evidence, preliminary codes, categories, conceptual dimensions and conclusions. Triangulation helps to test the consistency of information obtained from informants, data collection methods and different observation time points, whilst the documentation of the analytical trail supports the reliability and confirmability of the findings (Korstjens & Moser, 2018). Interview transcripts, observation notes and school documents were also reviewed to ensure that every interpretation had a traceable empirical basis.

III. Result and Discussion

This section combines research findings with discussion to provide a coherent understanding of the development of the concept of Digital Ethics. The results of the analysis of individual cases and cross-case comparisons indicate that the use of smartphones has two sides. On the one hand, smartphones help pupils access information, support learning activities and facilitate communication. On the other hand, their use can also disrupt concentration, affect health, reduce courtesy in communication, encourage the spread of unverified information, and impact pupils' social relationships. Based on these findings, Digital Ethics has been formulated into three main dimensions

relating to the pupils themselves and one supporting dimension relating to the school environment, family and society.

A. The Analytical Process and the Formation of the Concept of Digital Ethics

The concept of Digital Ethics was not formed simply by assigning a name to a collection of interview excerpts. Data from interviews, observations and documents were first analysed on a case-by-case basis, then compared across cases. This process yielded 34 verified units of meaning, as detailed in Appendix 4. These units of meaning were condensed through open coding into 16 initial codes based on similarities in actions, experiences and digital issues. Focused comparisons between codes yielded seven second-order categories, namely digital use for learning; self-regulation and well-being; ethical communication and the protection of dignity; information responsibility; school moral governance; family continuity; and community support. This multi-stage procedure follows the logic of reduction, grouping, comparison and abstraction in qualitative data analysis (Miles et al., 2020).

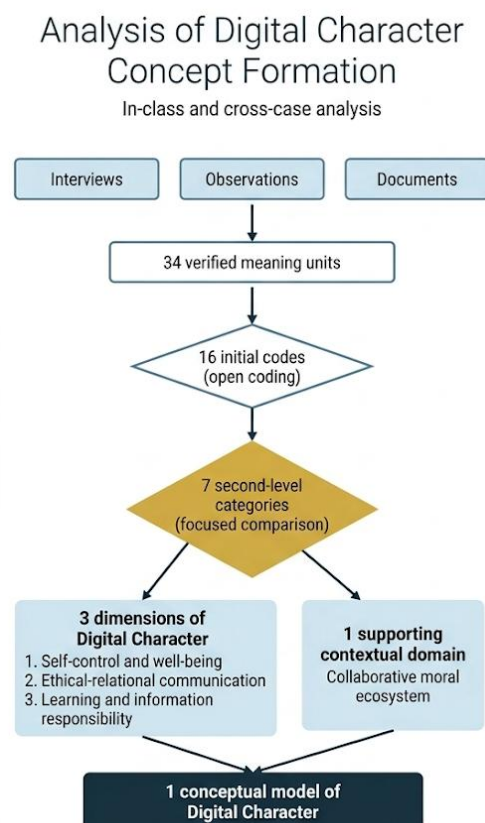


Figure 1. The process of forming the concept of Digital Ethics

Source: adapted by the researcher based on the results of case-specific and cross-case analyses.

As shown in Figure 1, the seven categories are not treated as standalone themes. The categories of ‘digital use for learning’ and ‘information responsibility’ are synthesised

into the dimension of 'learning and information responsibility'. The categories of 'self-regulation' and 'well-being' form the dimension of 'self-control and digital well-being'. The categories of 'ethical communication' and 'protection of dignity' form the dimension of 'ethical-relational communication'. Meanwhile, school moral governance, family continuity and community support are not treated as individual characteristics of pupils, but are unified as a contextual domain in the form of a collaborative moral ecosystem. The integration of these three dimensions and one supporting domain results in a single conceptual model of Digital Ethics.

This traceability is important because the research findings no longer stop at descriptively grouped quotations. Each level of abstraction serves an analytical function: units of meaning maintain proximity to participants' experiences; initial codes name actions or issues; second-level categories reveal patterns across cases; aggregate dimensions explain pupils' moral capacities; and the conceptual model elucidates the relationships between smartphone use, digital risks, pedagogical interventions, the internalisation of values, and digital moral practices.

B. The Ambivalence of Smartphones, Self-Control and Digital Wellbeing

Field data shows that smartphones have become an integral part of the lives of vocational school students in Bantul. These devices are used to look up assignments, translate terms, access learning materials, communicate, enjoy entertainment and maintain relationships with peers. One student described the smartphone as a means of obtaining school-related information without always having to rely on teachers.

"I can use Google on my mobile to find all sorts of information I want to access, such as looking up school assignments. I can use Google without constantly having to ask my teachers." (S1, interview, 2025)

This statement indicates that smartphones enhance students' independence in accessing information. Teachers are no longer the sole source of knowledge, but they continue to play a role in guiding pupils to ensure that the information obtained is relevant, reliable and used for learning purposes (OBS-1, 2025). This finding is consistent with the view that the value of educational technology is determined by the purpose, context and consequences of its use, not merely by the existence of the device (Team, 2023). The same devices, however, allow for a very rapid shift from learning activities to gaming, digital conversations and social media. One teacher explained that a common form of misuse involves pupils playing games or chatting on their phones on school premises to the point of losing track of time.

"Mobile phone misuse is also common. In most cases, students are found playing games or chatting on their mobile phones on school premises during their free time, to the point where they lose track of time." (G1, interview, 2025)

This pattern does not imply that all students misuse their mobile phones, but it does indicate that learning and entertainment functions coexist on the same screen. When

internal boundaries have not yet been established, attention can easily shift without the user realising it. This issue is particularly evident in the following student's experience.

“I often lose track of time when using my mobile phone, to the point where I even forget to eat. If I spend too long on my mobile, I can forget to fulfil my responsibilities, such as doing my homework, studying or other tasks.” (S4, interview, 2025).

A loss of control over time is followed by effects on the body and daily routines. Students reported eye strain, headaches, dry eyes, staying up late, and exposure to inappropriate content when using social media at night (S2, interview, 2025; S3, interview, 2025). In group work, smartphones help with researching material, but at the same time distract students when they switch to other apps or become more engrossed in their screens than in the discussion (S4, interview, 2025; OBS-1, 2025). Thus, digital wellbeing cannot be separated from the ability to manage one's attention, time, physical well-being, and exposure to content.

Fragmented attention also reduces social presence. Teachers find that pupils do not respond when called because they are too focused on their mobile phones.

“These children really need to be made to understand that when they're on their mobiles, they mustn't ignore the people around them. Even when the teacher calls out, they don't hear it. Pupils lack sensitivity when communicating with friends or teachers whilst using their mobile phones.” (G2, interview, 2025).

Self-control in the digital space is demonstrated not only through adherence to a schedule, but also through pupils' ability to stop using their devices and refocus their attention on their tasks, responsibilities and the people around them. Autonomy and the ability to set limits on usage are key elements in maintaining digital wellbeing (Burr et al., 2020). Conversely, the use of digital platforms without supervision and self-control can increase the risk of ethical breaches (Meerangani et al., 2023). The findings of this study indicate that digital autonomy in Islamic education is reflected when pupils are able to limit their device use, maintain their health, fulfil their academic and religious obligations, and sustain social awareness even when external supervision is reduced. On this basis, the first dimension is defined as self-control and digital wellbeing, rather than merely administrative restrictions on screen time.

C. Ethical and Relational Communication

The second dimension encompasses courtesy, empathy, respect for dignity, and responsibility for the impact of digital communication. Teachers have found that some pupils do not always distinguish between how they communicate with their peers and how they communicate with teachers. Issues include failing to use greetings, excessive use of abbreviations, unclear meaning, and the use of symbols that are inappropriate to the context.

“When teaching in class, I tell the children that when sending messages or writing on WhatsApp, they should be clear, not use too many abbreviations, and avoid using too many emoticons. At the very least, they should include a ‘sorry’ at the start or say ‘good morning’ or ‘good afternoon’; if they are Muslim, they should say ‘Assalamu’alaikum’.” (G3, interview, 2025).

The data shows that the digital space does not eliminate social context or the demands of etiquette. Politeness is not merely a matter of word choice, but rather a recognition that a message has a recipient with a status, feelings and dignity that must be respected. In this context, teachers act as mediators of values, translating the etiquette of communication into greetings, clarity of message, timing, and the appropriate use of digital symbols.

The issue of digital communication goes beyond netiquette. In relationships between pupils, we find practices such as editing friends’ photos into memes, posting sarcastic status updates, and mocking one another in comments.

“We have a class group. There’s a friend who behaves in a nasty way. If someone doesn’t like something, they’ll usually post a status on Facebook or WhatsApp disparaging that person. Even though they don’t mention any names, we all know exactly who they’re referring to.” (Undergraduate student, interview, 2025).

Observations also revealed sarcastic posts, edited images, mocking comments and conversations leading to the humiliation of peers. These practices demonstrate that digital harm does not always manifest as an explicit threat. Bullying can be disguised as jokes or innuendo without naming names, but the target can still be identified and humiliated within a social group. These findings align with those of Meerangani, who identified cyberbullying and the decline in digital civility as threats to social harmony. Field data from Bantul reveals its micro-forms in the form of ambiguous insinuations, memes and taunts that are normalised as jokes. Consequently, these findings not only reinforce online respect as an element of digital citizenship (Jones & Mitchell, 2016), but also expand upon it through an orientation towards compassion and the protection of dignity (Choi et al., 2017).

The ethical-relational dimension of communication, therefore, assesses actions not only on the basis of whether or not rules have been breached, but also on their impact on the feelings, reputation, psychological security and social relationships of others. Knowledge of communication rules does not automatically lead to ethical behaviour. Evaluations of digital citizenship education show that increased knowledge and self-efficacy are not always accompanied by changes in civility, privacy and online bullying (Jones et al., 2024). Guidance needs to be provided through repeated practice, teachers setting a good example, reflection on the impact of actions, and mechanisms for

resolution when conflicts arise. Digital ethics becomes evident when pupils are able to see the person behind the account, photo, telephone number and screen.

D. Responsibility for Learning and Information

The third dimension relates to the use of technology for productive purposes, the verification of information, academic integrity, the protection of privacy and respect for digital works. The use of Google to search for assignments and translate material demonstrates that smartphones can broaden access to learning. However, the ease of obtaining information does not in itself guarantee the accuracy of sources or the integrity of their use. Pupils still need the ability to assess credibility, compare information, cite sources, avoid copying without acknowledgement, and safeguard personal data.

Teachers link responsibility for information to the duty to watch one's words and practise *tabayyun*.

“There is no difference between communicating face-to-face or via mobile phone; pupils must still uphold noble moral values by watching their words and respecting others when interacting and communicating, refraining from gossip, slander and using abusive language on social media. Equally important is that pupils apply the concept of *tabayyun* before sharing information.” (G2, interview, 2025)

In these findings, ‘*tabayyun*’ goes beyond being merely a normative teaching. It becomes an operational principle that requires students to examine sources, context, evidence and potential impacts before passing on information. The value of ‘*shidq*’ is embodied in honesty when using sources and conveying information, whilst ‘*amanah*’ is evident in the use of devices in accordance with learning objectives, as well as in the protection of data and privacy. (Choi et al., 2017) The digital citizenship framework emphasises literacy, critical awareness, informational responsibility, and digital participation (L. L. Chen et al., 2021). Digital Ethics adds a moral dimension: the ability to seek information is insufficient if sources are not verified, work is copied without acknowledgement, or personal information is shared without consent. These findings indicate that adolescents’ digital competence is not only related to their ability to use technology, but also to etiquette, integrity, respect for human dignity, the protection of personal boundaries, and accountability for every action taken in the digital space (Gorian & Osman, 2024). In a school context, these values are embodied through the practice of verifying the accuracy of information, citing sources, using devices in accordance with learning objectives, and safeguarding personal data (Ahmad et al., 2025).

This dimension is particularly relevant to vocational education. Vocational school students are prepared to enter a working environment that relies on digital communication, information management, data protection and online footprints. The ability to write messages, meet deadlines, respect others’ work, safeguard institutional information, and verify the accuracy of data are all part of professional integrity. Thus,

responsibility for learning and information not only supports success whilst at school but also shapes students' socio-professional readiness.

E. Mechanisms for Development and a Collaborative Moral Ecosystem

The three dimensions of Digital Ethics do not develop through a single programme. Schools foster them through pedagogical regulations, the integration of values into learning, leading by example, habit formation, religious activities, supervision, educational consequences, and guidance and counselling services. Smartphones are not banned outright, as they are necessary for learning, but their use is subject to certain limits. The headteacher explained that ethics and character have been integrated into lesson planning.

"Our lesson planning is indeed based on ethics and character, so when drawing up our lesson plans, we include those key points. We cannot deny that all teachers allow pupils to use mobile phones to make learning more effective." (KS1, interview, 2025).

School documents outline time limits, silent periods, the collection of devices, emergency communication via form tutors, learning contracts, and consequences for breaches (DOC-1, 2025). Rules provide an external framework that safeguards the learning process, but they only function as moral education when pupils understand the reasons behind the restrictions. Confiscation or punishment on its own tends to result in only temporary compliance. School rules are better understood as a means of moral education when accompanied by explanations, role modelling, practice, and opportunities to correct behaviour (Ismail, 2022).

Teachers' exemplary behaviour links abstract values to observable actions. The way teachers write messages, select sources, use learning media, cite references, and refrain from disseminating unverified information serves as a model for students' use of technology (OBS-2, 2025). Habit formation through lessons, brief religious talks after the Zuhr prayer, school briefings, and daily interactions ensures that moral messages are repeatedly reinforced. These findings extend strategies for character development—through setting a good example, giving advice, habit formation, supervision, and educational consequences—into everyday digital practices (Ultra et al., 2020). This empirical basis also reinforces learning strategies through the use of digital media case studies, the interpretation of ethical verses, and project-based simulations (Muksin & Afandi, 2025). The research findings indicate that the implementation of these strategies must be accompanied by teachers setting a good example and repeated practice, so that ethical values do not remain merely as learning material, but develop into moral considerations that are ingrained in pupils' behaviour.

When breaches occur, the school imposes consequences and involves parents. One deputy headteacher explained that pupils caught playing games during lessons may be

given an educational penalty, discussed at a coordination meeting, and reported to their parents.

“When a pupil is caught using a mobile phone during a lesson that does not require a mobile phone, or playing games, there are steps we take to deter the pupil. For example, a teacher reported at a coordination meeting that a Year 10 pupil had been caught playing an online game whilst lessons were in progress; we therefore took steps to impose a disciplinary measure and subsequently informed the pupil’s parents.” (WK2, interview, 2025).

Excessive smartphone use, however, cannot always be interpreted as mere misbehaviour. Such behaviour may be linked to boredom, loneliness, social pressure, family problems, or the need to avoid certain situations. The Guidance and Counselling Service broadens the school’s response from punishment to support. Guidance and Counselling teachers gather information, adopt a personalised approach, coordinate with form tutors and subject teachers, involve parents, provide counselling, and monitor changes in pupils (OBS-2, 2025). This form of support is consistent with the functions of individual and group counselling, emotional support, and collaboration with parents in the moral upbringing of adolescents (Sukmawati, 2024). Regulations set boundaries, role modelling provides examples, habit formation offers practice, whilst counselling aids reflection and internalisation (Fazira et al., 2025).

Schools are the most organised actors, but pupils’ digital lives do not end at the school gates. After returning home, smartphones continue to be used within the family, amongst friends, in class groups, on social media, and within communities. Some parents recognise the need for time limits and religious guidance, but lack the time, knowledge or technical skills to carry out digital monitoring (OBS-2, 2025). The gap between school and home is evident in the following statement.

“The key factor in the implementation of moral education in schools is, of course, the children themselves—as the recipients of the guidance we wish to impart. The main factor is whether the pupils are willing to accept this guidance. Then there is the issue of children’s inherent moral values, which may be far from the school’s expectations. For example, diligence in religious practice. In fact, at home and within their families, discipline in practising religious worship has not been instilled, so there is no continuity in instilling the values of religious worship between the two. Thus, whilst some families are supportive, others present obstacles.” (WK1, interview, 2025)

Families cannot be categorised uniformly as either supporters or obstacles. Some families continue the habits established at school, whilst others have not yet established a consistent rhythm of supervision and communication. This finding reinforces research on the lack of synchronisation between school and family cooperation in character development (Purwandari et al., 2024), and is consistent with evidence that adolescents’

digital experiences are influenced by school, family, peers, and pre-existing vulnerabilities outside the digital sphere (OECD, 2025).

The wider community is represented through religious leaders, community figures, cultural values and child-friendly programmes. One parent explained the nature of this collaboration.

“The village administration collaborates with traditional leaders, community leaders, religious leaders and the entire village community with the aim of creating an environment that supports the maximum possible growth and development of children. This is particularly important given that Bantul is a region with very strong ties to religion and culture.” (OT1, interview, 2025)

Community support can broaden the scope of child protection, although its implementation is not always integrated with schools’ digital governance. Therefore, schools, families and the community are not positioned as individual dimensions of Digital Ethics, but rather as a collaborative moral ecosystem that can either strengthen or weaken the development of pupils’ moral capacities. This ecosystem requires consistency in messaging, communication between schools and parents, improved family digital literacy, case support, and community involvement in protecting children in the digital space. Collaboration between parents and the community is a key element in Islamic digital ethics education (Muksin & Afandi, 2025). However, this study views such collaboration as a contextual condition that supports the process of internalising values, rather than as an attribute inherent to individual pupils.

F. Definition and Conceptual Model of Digital Ethics

Based on the integration of empirical categories, Digital Ethics is defined as an internalised moral capacity that guides pupils, consciously and with relative consistency, to regulate their use of technology, safeguard their own well-being, communicate politely and empathetically, and handle information and digital works honestly, critically, safely and responsibly. This definition positions Digital Ethics at the level of moral capacity, rather than merely knowledge of rules or the skill of operating devices.

A cross-category synthesis yields a conceptual model that explains the process of developing this capacity. The model begins with the use of smartphones, which presents both learning opportunities and digital risks. These conditions prompt moral-pedagogical interventions by schools through regulation, role modelling, habit formation, reflection, spiritual guidance and counselling. These interventions are directed towards the internalisation of *adab*, *rahmah*, *shidq*, *amanah* and *tabayyun*. The internalisation of values forms the three dimensions of Digital Ethics, which are then reflected in the use of technology in a proportionate, courteous, honest, critical, safe and responsible manner. The entire process takes place within a collaborative moral ecosystem that harmonises the guidance provided by schools, families and the community.

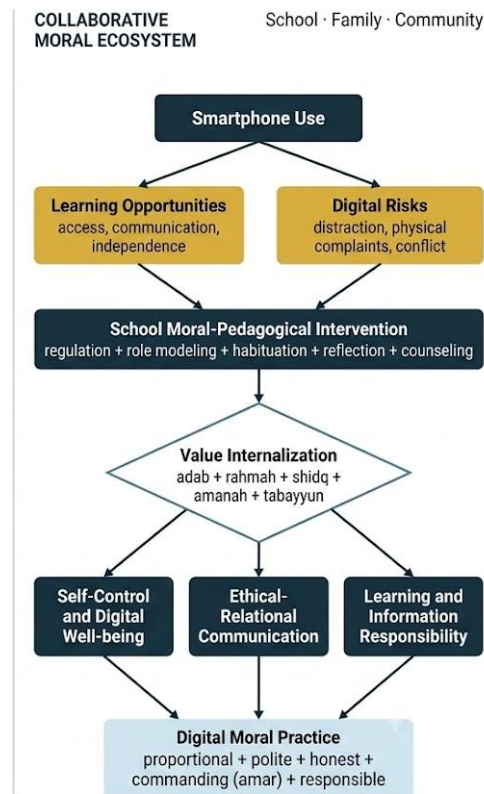


Figure 2. Conceptual model for fostering digital ethics amongst vocational school pupils

Source: adapted by the researcher based on a synthesis of findings across cases.

Figure 2 emphasises that Digital Ethics is not merely about compliance with rules governing smartphone use. Regulations set behavioural boundaries; role modelling provides concrete examples; habituation provides repeated experience; whilst reflection and counselling help students understand the moral consequences of their actions. The development programme is deemed successful when external control shifts towards internal regulation, that is, when students remain capable of determining the purpose of their usage, ceasing activities, upholding the dignity of others, and taking responsibility for information even when teachers or parents are not supervising.

This framework expands the concept of digital citizenship by positioning digital life as a domain for the formation of moral dispositions, rather than merely technical competence, security, rights, or participation. Digital citizenship encompasses digital literacy, online respect, responsibility for information, and critical awareness (L. L. Chen et al., 2021; Choi et al., 2017; Jones & Mitchell, 2016). The literature on Islamic digital ethics has emphasised the need for a philosophical framework capable of analysing the nature and consequences of digital technology (Chaudhary, 2020). Adolescents' digital competencies have been formulated through the integration of the values of adab, amanah, ihsan, niat and maqasid al-shariah. However, previous studies have predominantly remained at a philosophical and conceptual level. This study builds upon

these ideas empirically by examining smartphone usage patterns and the emergence of digital risks, leading to moral-pedagogical interventions, the internalisation of values, and the development of three dimensions of moral capacity within a collaborative ecosystem (Ahmad et al., 2025). Thus, the novelty of the concept of Digital Ethics does not lie in the creation of new Islamic values, but in the empirical reconstruction of the relationship between values, nurturing mechanisms, students' capacities, and the context of vocational education, particularly when external supervision is not available.

This model is not claimed to be a universal theory or a causally validated model. The findings originate from three state vocational schools in Bantul Regency; they are cross-case and cross-sectional in nature and have not yet measured changes in student behaviour longitudinally. The research has also not yet compared the effectiveness of each guidance mechanism. Therefore, the research output is positioned as a contextual conceptual model based on a multi-case study. Future research should examine these three dimensions across different types of schools and regions, conduct longitudinal studies, broaden the involvement of parents and peers, and develop instruments to measure the internalisation of Digital Ethics more systematically.

IV. Conclusion

This study found that the use of smartphones by vocational school students presents both benefits and ethical issues. Smartphones help students access information, complete assignments and communicate, but their use can also disrupt concentration, health, decorum, privacy, academic integrity and social relationships. Based on findings from three state vocational schools in Bantul Regency, Digital Ethics has been formulated into three main dimensions: self-control and digital wellbeing; ethical and relational communication; and responsibility for learning and information. The development of these three dimensions requires regulation, role modelling, habit formation, reflection, religious guidance and counselling, supported by cooperation between schools, families and the community.

The contribution of this research lies in the development of a conceptual model linking smartphone use, digital risks, moral-pedagogical guidance, the internalisation of the values of *adab*, *rahmah*, *shidq*, *amanah* and *tabayyun*, and students' digital practices. The novelty of this research does not lie in the creation of new Islamic values, but rather in an empirical explanation of how these values are applied in the digital lives of vocational school students. This model remains contextual in nature and has not yet established a causal relationship, as it was developed through a multi-case study within a single region. Further research should test this model in different regions and school types, conduct longitudinal observations, and develop instruments to measure Digital Ethics more systematically.

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