# Digital Literacy Competence and Student Character Building in Digital Educational Environments

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Article history: Received: Aug-31-2026 | Revised: Sept-10-2026 | Available Online: Sept-24-2026

## ABSTRACT

Digital literacy competence has become increasingly relevant to character education as students' learning, communication, and social interaction are progressively mediated by digital technologies. This systematic literature review examines the relationship between digital literacy competence and student character building and identifies the educational mechanisms shaping this relationship. Sixteen studies published between 2020 and 2026 were systematically mapped and synthesised, including quantitative, qualitative, developmental, case-study, literature-review, and previous systematic-review research. The findings indicate a consistent positive relationship between digital literacy and various character dimensions, including religious character, morality, media ethics, politeness, responsibility, discipline, independence, and civic virtue. The magnitude of relationships varied substantially across quantitative studies, indicating that digital literacy should not be treated as a single determinant of character. Its contribution is shaped by critical information evaluation, ethical awareness, self-control, teacher mediation, school culture, parental guidance, authentic learning activities, and value internalisation. The review concludes that character-oriented digital literacy needs to extend beyond technical proficiency by integrating critical, ethical, safe, responsible, and reflective use of technology within students' learning and social experiences.

**Keywords:** digital literacy competence; character building; character education; digital ethics; self-control; school culture; digital citizenship.

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## INTRODUCTION

The development of digital technology has brought fundamental changes to the educational process because students increasingly interact intensively with information, social media, learning platforms, and various forms of network-based communication. These changes require schools not to stop at technical mastery of technology, but to develop competencies that enable students to use technology critically, ethically, safely, and responsibly. Digital literacy in such a sense has a close relationship with character building because students' behavior in digital spaces is part of their social behavior. Digital literacy has become a basic necessity in a modern society that is increasingly dependent on technology (Khayru et al., 2024). Trisiana (2020) showed that digital literacy models integrated into learning can support the development of civic virtue, especially when students gain experience to evaluate information, determine attitudes, and act as responsible citizens. Digital literacy can therefore be understood as a competence containing cognitive, social, and moral dimensions. Digital literacy will also encourage independent learning (Rizal et al., 2024).

Character building in the digital era faces more complex challenges compared to character education that takes place solely through direct interaction. Students may show discipline and politeness at school, but face different interaction patterns when using social media or communicating through digital platforms. This condition necessitates that character education reach students' behavior in digital spaces. Yulia et al. (2022) explained that digital literacy can become a supporting medium for strengthening elementary school students' character if its use is balanced with teacher and parental supervision and integrated with character values in learning. These findings show that technology does not automatically produce character. Technology provides space and experience, while educational values are formed through mentoring, habituation, supervision, reflection, and students' ability to manage technology use responsibly.

The connection between digital literacy and character building has gained support from a number of empirical studies. Yudi and Maryam (2023) found a very strong relationship between students' digital literacy competence and the effectiveness of Islamic character education in vocational high school students. The correlation value obtained was 0.899 with a determination coefficient of 0.807. These results show that the variation in digital literacy competence has a major relationship with the effectiveness of character education in the studied population. At a different educational level, Cahyaningrum (2024) found that religious digital literacy significantly affects high school students' religious character with a contribution of 20.9 percent. This difference in magnitude shows that digital literacy has a tendency for a positive relationship with character, but the strength of the relationship is not always uniform. Variations in constructs, student characteristics, educational environments, measurement instruments, and the forms of character observed need to be taken into account when drawing syntheses from previous research.

Other research shows that teachers' digital competence is also related to students' character education. Akib et al. (2022) found a positive and significant effect of teachers' digital literacy skills on strengthening elementary school students' character education. Zebua et al. (2024) obtained the same direction of results in vocational high school students, although the contribution found was 9.9 percent. This variation indicates that teachers are one of the components in the character-building ecosystem, but not the sole determinant. Teachers' digital competence enables educators to select resources, develop activities, manage online interactions, and provide role models regarding responsible technology use. Nasution et al. (2025) reinforced this explanation by finding that Islamic Religious Education teachers can carry out functions as role models, motivators, and facilitators through e-learning, blended learning, and social media while internalizing values of tolerance, inclusiveness, and Islamic character.

Character dimensions related to digital literacy are also increasingly diverse. Agustina et al. (2023) found that digital literacy contributes 42.1 percent to students' social media ethics. Chotimah et al. (2026) found that digital literacy together with self-control contributes 52.5 percent to students' media ethics. Algifari and Adawiah (2026) obtained a coefficient of determination of 48 percent when testing the relationship between digital literacy and Generation Z's polite attitude. These findings broaden the understanding of character building from behavior visible in direct relationships to character manifested through online communication, information management, respect for others, awareness of digital consequences, and the ability to control oneself. Digital competence consequently holds educational relevance because it places students in situations that continuously demand ethical decisions.

Literature also shows that the relationship between technology and character is not unconditionally linear. Nasyiroh et al. (2025) found that social media is significantly related to the formation of students' morals. Its utilization can enhance insight and social awareness, but undirected use can be related to a decline in speaking ethics and respect for teachers and parents. Hodijah et al. (2026) instead demonstrated that pedagogical-designed digital strategies in scouting activities can support responsibility, discipline, and independence. These two directions of findings show the difference between technology use as exposure and digital literacy as competence. The intensity of using technology is not identical to the proficiency of using technology intelligently. Character building is more likely to emerge when digital interaction is followed by educational goals, mentoring, information evaluation, and the habituation of responsible behavior.

Studies linking digital literacy with environmental factors further clarify the complexity of this relationship. Faisal et al. (2026) found that school culture and digital literacy simultaneously contribute 62.7 percent to the character development of elementary school students. Putra et al. (2026), through a case study in an Islamic elementary school, showed that digital media can enhance moral value understanding, emotional engagement, and reflective moral reasoning. The study also demonstrated that teachers' competence to integrate technology is relatively strong, while parental participation still faces limitations due to digital capability and accessibility. These findings draw attention to the ecological nature of character building. Digital literacy works together with school culture, teacher capability, parental support, self-regulation, and the design of learning activities. These factors determine whether digital activities become educational character experiences or mere technology consumption.

Two previous systematic reviews show the need to synthesize these findings in a more directed manner. Utaminingsih et al. (2023a) reviewed 25 articles out of 472 identified publications and concluded that character-based digital literacy supports character reinforcement alongside critical thinking, communication, collaboration, and creativity skills. Utaminingsih et al. (2023b) reviewed 17 articles out of 512 publications and found that technological capabilities need to be balanced with digital literacy competence so that students remain able to maintain character when facing the developments of Society 5.0. Research from 2024 to 2026 subsequently added evidence regarding religious character, politeness, digital ethics, self-control, school culture, scouting activities, and teacher-parent collaboration. On the basis of these gaps, this study formulates three questions: (1) what is the trend of the relationship between digital literacy competence and student character building based on the synthesis of previous research?; (2) what are the mechanisms and educational factors that determine the relationship between digital literacy competence and student character building?; and (3) what is the importance of strengthening digital literacy competence to build strong student character in digital educational environments?

## RESEARCH METHOD

This study uses a Systematic Literature Review approach to identify pattern findings, compare results, and build a synthesis regarding the relationship between digital literacy competence and student character building. The review corpus has been provided in the research attachment and consists of sixteen publications from 2020 to 2026. Because the source documents do not contain the database search process that yielded these sixteen publications, this study does not create search keywords, initial finding counts, or exclusion figures that are not available in the materials. The systematic process begins from this curated corpus through the stages of inventory, relevance checking, data extraction, study characteristic grouping, finding comparison, and thematic synthesis. This approach follows the logic of identification, screening, and inclusion also used in two previous SLRs in the corpus, namely Utaminingsih et al. (2023a) and Utaminingsih et al. (2023b).

The unit of analysis includes research discussing students' digital literacy, teachers' digital literacy, digital media utilization, school culture and technology, media ethics, religious character, morals, politeness, discipline, responsibility, independence, self-control, and civic virtue. The extracted data include authors and year, research focus, research design, subjects or data sources, main constructs, statistical results when available, and their contribution to the synthesis. Quantitative studies were used to identify the direction and variation of relationships, while qualitative, developmental, literature review, and previous SLR research were used to explain the educational mechanisms behind these relationships. Meta-analysis was not conducted due to substantial heterogeneity in populations, instruments, variables, educational levels, and research designs. All sixteen publications were retained because each provides a relevant contribution to one of the three research questions.

## RESULTS AND DISCUSSION

Before the synthesis was conducted, all studies were mapped to show the evidence structure underlying the discussion. Such mapping was necessary because the corpus contained research with differing characteristics. Some studies tested relationships directly through regression or correlation, some included accompanying variables, while other research explained pedagogical and social processes that could not be represented through statistical coefficients. The following matrix was compiled directly from all sources in the appendix.

Table 1. Matrix of Previous Research as the Basis for Synthesis

| No. | Author | Focus | Method/Subjects | Main Findings | Function in Synthesis |
|---|---|---|---|---|---|
| 1 | Yudi & Maryam (2023) | Student digital literacy and Islamic character education | Quantitative-associative; 100 vocational high school students | $R = 0.899$; $R^2 = 0.807$; positive and very strong relationship | Direct evidence of relationship between student digital competence and character |
| 2 | Akib et al. (2022) | Teacher digital literacy and elementary character reinforcement | Quantitative survey; 85 teachers | Positive and significant effect | Role of teacher digital competence |
| 3 | Zebua et al. (2024) | Teacher digital literacy and vocational student character | Quantitative; 46 respondents | $r = 0.316$; contribution of 9.9%; significant | Showing variation in contribution strength |
| 4 | Cahyaningrum (2024) | Religious digital literacy and religious character | Quantitative; 110 high school students | $t = 5.339$; contribution of 20.9% | Evidence of relationship on the religious dimension |

| No. | Author | Focus | Method/Subjects | Main Findings | Function in Synthesis |
|---|---|---|---|---|---|
| 5 | Hodijah et al. (2026) | Digital strategy in scouting and character | Quantitative; 90 learners | Significant effect; $R^2 = 0.249$ | Digital-based authentic activities |
| 6 | Faisal et al. (2026) | School culture, digital literacy, and elementary character | Ex-post facto; 71 students | Simultaneous contribution of 62.7%; digital literacy is positive | Showing school culture function |
| 7 | Nasyiroh et al. (2025) | Social media and student morals | Quantitative; abstract mentions 82 students, method mentions 88 students | $R^2 = 0.660$; effect can be positive or negative | Explaining risks of media use without adequate management |
| 8 | Agustina et al. (2023) | Digital literacy and social media ethics | Quantitative; 88 students | $R^2 = 0.421$; positive effect | Character manifestation in digital ethics |
| 9 | Chotimah et al. (2026) | Digital literacy, self-control, and media ethics | Quantitative; 92 students | Simultaneous contribution of 52.5%; both are significant | Self-regulation as a companion factor |
| 10 | Algifari & Adawiah (2026) | Digital literacy and Generation Z politeness | Quantitative; 139 students | Regression coefficient 0.718; $R^2 = 0.480$ | Relationship with interpersonal character |
| 11 | Utaminingsih et al. (2023a) | Character-based digital literacy in 21st-century learning | SLR; 25 articles from 472 findings | Digital literacy supports character and 21st-century skills | Secondary-level evidence |
| 12 | Putra et al. (2026) | Digital literacy as a framework for Islamic elementary character education | Qualitative case study with supporting descriptive data | Digital media supports moral values, emotional engagement, and reflection | Value internalization mechanism |
| 13 | Utaminingsih et al. (2023b) | Digital literacy and character in Society 5.0 | SLR; 17 articles from 512 findings | Technological capability needs balance with literacy and character | Technology-character integration framework |
| 14 | Nasution et al. (2025) | Islamic Education teacher strategy through Islamic value-based digital literacy | Qualitative multi-site case study | Teachers function as role models, motivators, and facilitators | Teacher pedagogical mediation |
| 15 | Trisiana (2020) | Digital literacy model and civic virtue | Research and Development | Digital literacy integration supports civic virtue; social media brings benefits and risks | Dimensions of citizenship and responsibility |
| 16 | Yulia et al. (2022) | Digital literacy for strengthening elementary student character | Descriptive-qualitative, literature study | Digital literacy supports character if accompanied by teacher and parental supervision | Role of school-family mentoring |

Methodological notes need to be given regarding the matrix. The corpus cannot be treated as if all research yields equivalent effect sizes. Studies number 1 to 10 primarily provide

direct empirical or quantitative evidence regarding relationships between variables, whereas studies number 11 to 16 serve more to explain mechanisms, models, and secondary-level syntheses. The appendix also contains an inconsistency in the sample size in Nasyiroh et al. (2025), namely 82 students in the abstract and 88 students in the methods description. Both numbers were retained in the table because the source documents provide no information to determine which number should be considered correct. The spelling of the second author's name in the Algifari study also differs between the text description and the references list; this manuscript follows the form "Adawiah" as listed in the appendix references. This approach ensures that the synthesis does not perform bibliographic corrections not supported by the source materials.

**Trend of the Relationship Between Digital Literacy Competence and Student Character Building**

The first pattern emerging from Table 1 is the consistency in the direction of the relationship. Quantitative studies that directly examine student digital literacy show a positive tendency toward different character dimensions. Yudi and Maryam (2023) obtained a correlation of 0.899 between student digital literacy competence and the effectiveness of Islamic character education. The coefficient of determination of 0.807 is the highest value in the corpus. These results indicate a very strong relationship in the research sample, but cannot be read as a statement that 80.7 percent of student character in general is caused by digital literacy. The simple regression model, type of instrument, vocational high school respondent characteristics, and the Islamic character construction used limit the scope of generalization. This value remains meaningful because it provides evidence that digital competence can have a substantial linkage with character education when both are measured within the same educational environment.

Cahyaningrum (2024) produced a similar pattern with a more moderate relationship strength. Religious digital literacy contributed 20.9 percent to the religious character of high school students. The measured characters include obedience, sincerity, self-confidence, creativity, responsibility, love of science, honesty, discipline, adherence to rules, tolerance, and respect for others. These results show two things. First, digital literacy can be directed toward specific value domains, including religion. Second, religious character is a multidimensional construct influenced by many factors so that the contribution of digital literacy is at a more limited level. The variation between this study and Yudi and Maryam (2023) reminds us that an SLR synthesis should read patterns across studies, rather than seeking a single number assumed to represent the entire relationship between digital literacy and character.

Agustina et al. (2023) provided more specific evidence regarding character in digital behavior. Digital literacy contributes 42.1 percent to students' social media ethics. This result shows a logical relationship between the ability to access, understand, and use digital information and the way students interact on social media. Media ethics can be viewed as a manifestation of character because it encompasses decisions regarding language, respect, information dissemination, and responsibility for communication. Students who are able to evaluate information and understand the consequences of digital activities have a stronger foundation to avoid behavior that harms others. Digital literacy at this point moves from cognitive capability toward decision-making proficiency imbued with moral values.

Chotimah et al. (2026) reinforced this explanation through a model that incorporates self-control. Digital literacy and self-regulation simultaneously contributed 52.5 percent to students' media ethics. Both variables have positive and significant partial effects. These findings show that knowing the rules of digital behavior is not always sufficient to produce appropriate actions. Students also need the ability to restrain impulses, consider consequences, and control reactions when facing provocation or social pressure. The relationship between digital literacy

and character therefore does not occur through knowledge alone. Knowledge needs to meet self-regulation in order to be realized into action. This finding is one of the clearest explanations in the corpus regarding the psychological mechanisms connecting digital competence and ethical behavior.

Algifari and Adawiah (2026) found that digital literacy contributes 48 percent to Generation Z students' polite attitude. The digital literacy construct includes information access, content evaluation, digital ethics, security, and digital responsibility, while politeness encompasses linguistic politeness, respect, social ethics, and social responsibility. The proximity of several indicators between variables needs to be noted when reading the highness of this relationship. Nevertheless, the results still show that digital literacy education incorporating ethics and responsibility has a strong linkage with interpersonal character. The digital space does not eliminate the demands of politeness. It actually broadens the locations of its application because speech, comments, images, and information distribution can affect others without direct encounters.

The relationship between digital literacy and character is also visible when digital variables are combined with school culture. Faisal et al. (2026) found that school culture and digital literacy simultaneously contribute 62.7 percent to elementary school students' character. This model shows that individual competence and institutional environments work together. Digital literacy provides students with the ability to act in the technological space, while school culture provides norms determining which actions are considered right, responsible, and aligned with educational values. Character building becomes stronger when the digital behavior taught is consistent with the discipline, cooperation, independence, creativity, and respect habituated in school life.

Hodijah et al. (2026) showed that the relationship between technology and character can be built through extracurricular activities. Innovative digital-based strategies in scouting activities significantly affected the development of responsibility, discipline, and independence in Islamic senior high school students. The contribution reflected in the research table is 24.9 percent. These findings imply that digital competence does not always have to be developed through specialized subjects. Organizational activities, scouting, projects, and group tasks can become digital learning spaces that simultaneously require responsibility and independence. Technology acquires character value when used to complete tasks, collaborate, document activities, communicate, and account for work.

The findings of Nasyiroh et al. (2025) provide a correction to this positive trend. Social media provides a significant influence on the formation of morals, with an $R^2$ of 0.660 in the research table, but the influence described is not entirely positive. Social media can increase insight and social awareness, while simultaneously being related to a decline in speaking ethics and respect for teachers and parents. This finding emphasizes the difference between digital literacy and digital media use. A student may have a high frequency of social media use yet lack the competence to evaluate information, manage language, limit consumption, and account for their behavior. Digital literacy precisely serves as the necessary competence so that technology exposure can be directed toward constructive character development.

The next pattern emerges from research on teachers' digital literacy. Akib et al. (2022) obtained a positive and significant effect of teachers' digital literacy skills on the reinforcement of elementary student character education. Teachers who possess the ability to use and evaluate digital media have a better capacity to design relevant learning experiences, guide students in using information, and provide examples of responsible technology use. These findings show that character building through digital literacy does not depend solely on students' abilities. The quality of educators' mediation becomes part of the process.

Zebua et al. (2024) obtained a correlation of 0.316 and a contribution of 9.9 percent between teachers' digital literacy proficiency and the reinforcement of vocational student character education. This value is much lower than several other studies, but remains significant. This difference actually has analytical value because it indicates that teachers' digital competence operates as one factor within a complex educational system. Student character can be shaped by family, peer groups, school culture, social conditions, personal experience, media, habituation, and psychological characteristics. Digital literature cannot be positioned as a single factor. A more precise synthesis is that this competence provides one educational pathway supporting character development, while the strength of its contribution depends on the environment where the competence is utilized.

Two SLRs by Utaminingsih et al. reinforce the trends obtained from individual studies. Utaminingsih et al. (2023a) concluded from 25 articles that character-based digital literacy holds an important position in strengthening student character while supporting 21st-century skills in the form of critical thinking, communication, collaboration, and creativity. Utaminingsih et al. (2023b), through the synthesis of 17 articles, emphasized the balance between technological capability and digital literacy competence so that students are able to use technology without losing politeness and character. Both reviews show that digital competence relevant to education does not stop at operational ability. Critical, ethical, and social elements are components that make digital proficiency valuable for character building.

Trisiana (2020) expanded character toward the dimension of citizenship through the concept of civic virtue. The digital literacy model integrated into Civic Education learning uses social media as a space to build literacy habits and responsibility. The research results also noted the positive and negative impacts of social media. These findings indicate that digital character education needs to develop students' ability to make accountable choices, rather than merely avoiding technology. Digital literacy provides opportunities for learners to practice evaluating information, communicating, making decisions, and understanding the social consequences of their actions.

Digital literacy competence has a positive and significant tendency of relationship with student character building, but the magnitude of the relationship varies substantially. The identified characters include Islamic character, religiosity, morals, media ethics, politeness, discipline, responsibility, independence, and citizenship values. The variation in contributions from 9.9 percent to 80.7 percent should not be averaged due to differences in constructs, populations, designs, and research instruments. Digital literacy is an educational competence that can strengthen character when technical proficiency is combined with critical, ethical, social, and reflective capabilities.

**Mechanisms and Educational Factors Determining the Relationship Between Digital Literacy and Character Building**

The first mechanism connecting digital literacy and character building is the ability to evaluate information. Learners equipped with digital literacy do not stop at the ability to find information, but are expected to be able to assess credibility, compare sources, understand the purpose of messages, and consider consequences when information is shared. Agustina et al. (2023) demonstrated the linkage between this capability and media ethics. The activity of verifying information before sharing it is a practice of responsibility. The ability to reject content that degrades others relates to respect. The habit of citing sources touches upon academic integrity. This means that digital literacy activities provide real-life situations for students to actualize character values.

The second mechanism is self-regulation. Chotimah et al.'s (2026) findings regarding self-control indicate that digital literacy has stronger educational power when students are able

to control impulses. The digital space provides communication speed, relative anonymity, and the ease of disseminating information. Character is tested when students must choose whether to respond to messages immediately, restrain anger, verify information, or avoid communication that hurts others. Self-control serves as the bridge between knowing and doing. Character-oriented digital literacy education needs to provide experiences to consider consequences, delay responses, manage emotions, and evaluate decisions.

The third mechanism lies in the internalization of values through digital learning experiences. Putra et al. (2026) found that the use of digital media in Islamic elementary schools can enhance the understanding of moral values, emotional engagement, and reflective moral reasoning. These findings indicate that character building requires activities that lead students from knowledge toward reflection. Digital content can serve as material for discussions regarding behavior, responsibility, moral choices, and the consequences of actions. Teachers then guide learners to connect digital information with real-life experiences. Digital literacy functions as a value learning space when students are given the opportunity to interpret, discuss, and apply moral messages.

The fourth mechanism is teacher mediation. Nasution et al. (2025) found that Islamic Religious Education teachers perform functions as role models, motivators, and facilitators through the use of digital platforms. Technology is utilized alongside the internalization of values of tolerance, inclusiveness, and Islamic character, while assessment is conducted through portfolios, projects, and self-assessments. This pattern explains the results of Akib et al. (2022) and Zebua et al. (2024). Teachers' digital competence influences the quality of the digital learning environment received by students. Teachers who are able to utilize technology responsibly can demonstrate examples of how technology is used to learn, collaborate, and solve problems without abandoning ethics.

The fifth mechanism is school culture. Faisal et al. (2026) showed that digital literacy and school culture work together in character building. School culture provides rules, habits, symbols, relations, and behavioral expectations that help learners understand moral standards. Digital literacy brings these standards into the technological space. A school that habituates respect yet allows harsh digital communication will produce inconsistent value messages. Character reinforcement requires continuity between behavior in the classroom, the school yard, learning platforms, and communication media. The digital culture of the school needs to be viewed as part of the overall institutional culture.

The sixth mechanism relates to authentic activities. Hodijah et al. (2026) showed that the digitalization of scouting activities supports discipline, responsibility, and independence. Character values emerge because students use technology to perform activities that have purpose and consequences, rather than merely receiving information. Project tasks, documentation management, group communication, information retrieval, and activity reporting make students accountable for their work results. Digital character education can therefore be strengthened by providing learners with activities that require them to use digital competence while practicing discipline and responsibility.

The seventh mechanism is family mentoring. Yulia et al. (2022) emphasized the supervision of parents and teachers in the use of digital literacy by elementary school students. Putra et al. (2026) also found that parental involvement remains at a moderate level due to limitations in digital literacy and access. Both studies show that digital character education cannot be entirely burdened upon the school. Students use devices and social media within family life, so norms applied at home influence the continuity of habituation. Parents do not need to possess high-level technical competence, but require the ability to discuss media use, set limits, and provide examples regarding responsible communication.

The eighth mechanism is the management of social media use risks. Nasyiroh et al. (2025) showed that social media can yield both benefits and risks to morals. These results distinguish digital literacy education from approaches that merely involve prohibition. Shielding students completely from technology can limit their opportunity to develop independent judgment, whereas freedom without guidance can magnify the risk of inappropriate behavior. Education needs to build capacity so that students are able to recognize risks, assess impacts, determine usage limits, and take responsibility for their digital interactions. Such competence is a direct part of character because it involves discipline, caution, and respect for others.

The ninth mechanism emerges through the integration of religious values. Yudi and Maryam (2023) and Cahyaningrum (2024) demonstrated the relationship between digital literacy and Islamic and religious characters. The digital space provides broad access to religious information, yet this breadth simultaneously requires the ability to select sources and understand messages critically. Religious digital literacy gives students the capability to use technology as a source of knowledge without accepting all content unselectively. Religious character is then related not only to the mastery of religious information, but to how values of honesty, discipline, tolerance, respect, responsibility, and love of science are applied within digital activities.

The tenth mechanism is the integration of digital literacy with 21st-century skills. Utaminingsih et al. (2023a) connect character-based digital literacy with critical thinking, communication, collaboration, and creativity. All four of these proficiencies possess strong character dimensions. Critical thinking requires intellectual honesty, communication requires ethics, collaboration requires respect for others, and creativity in digital space requires awareness regarding the use of works and responsibility. This literature shows that 21st-century competencies and character do not need to be treated as two separate educational targets. Competence acquires educational value when used through a responsible manner.

Utaminingsih et al. (2023b) reinforce the need for a balance between technological capability and digital literacy. Students who are proficient in using devices are not necessarily able to evaluate information or consider the moral consequences of their actions. This difference has implications for schools. Digitalization programs that only teach the use of devices, applications, and learning platforms do not automatically become character-based digital literacy education. Elements of ethics, security, criticism, responsibility, politeness, and reflection need to be explicitly present in learning objectives.

Trisiana (2020) adds the dimension of citizenship within this mechanism. Digital literacy can become a medium for forming civic virtue when learners are trained to consider their actions as members of society. Digital activities such as sharing information, expressing opinions, giving comments, and participating in discussions carry public consequences. Digital character education needs to develop the awareness that freedom of communication is always related to responsibility toward others. This perspective expands character building from personal traits toward the ability to live as a responsible citizen in a digital society.

The relationship between digital literacy competence and character building works through a series of interconnected educational mechanisms. The ability to evaluate information provides a cognitive foundation; ethical awareness gives value direction; self-control transforms knowledge into action; teachers and parents provide mediation and role modeling; school culture shapes norm consistency; authentic activities provide practice opportunities; while religious and civic values give a broader moral framework. Digital literacy will contribute most meaningfully to character building when developed as a critical, ethical, social, and reflective competence, rather than as a technical ability to use devices.

**The Importance of Digital Literacy Competence in Building Strong Student Character**

Digital literacy competence needs to receive attention in education because learners' ability to interact with technology is increasingly related to how they learn, evaluate information, and make decisions. Adequately developed digital literacy can support learning motivation when students are able to utilize learning sources and media in a directed manner, as seen in the relationship between digital literacy, media utilization, and learning motivation (Kholid & Darmawan, 2023). In increasingly digitalized education, this competence is also related to academic engagement and learners' success because the ability to manage digital information determines the quality of participation in the learning process (Zahid & Darmawan, 2025). Khayru et al. (2024) place digital literacy as one of the pillars for improving the quality of modern education. From the perspective of character building, the ability to utilize technology consciously can be directed to foster curiosity, learning responsibility, perseverance, and the habit of using information wisely.

Attention to digital literacy is also necessary because academic success is not determined solely by device availability, but by students' ability to use digital sources appropriately. Pamungkas et al. (2026) associate digital literacy with the learning outcomes of middle school students, while Aliyah and Darmawan (2024) position digital literacy alongside the utilization of learning media and the family environment in relation to student learning motivation. Both views indicate that digital capability needs to meet a supportive educational environment in order to function productively. The culture of literacy also holds relevance to the development of student learning achievement (Azizah & Darmawan, 2024). For character education, this pattern shows that digital literacy needs to be developed as a learning habit that shapes discipline, thoroughness, academic honesty, and responsibility. Students who are accustomed to selecting information carefully have a greater opportunity to build the habit of thinking before acting.

Digital literacy competence also has strategic importance in developing critical thinking skills. Digital learning provides a vast amount of information, but the abundance of information does not always produce good knowledge quality. Darmawan et al. (2024) position blended learning as a space for developing students' critical thinking skills in the digital era. In elementary school learning, cooperative methods supported by interactive digital media can also enhance learning engagement when designed appropriately (Darmawan et al., 2026a). The role of educators remains decisive because teachers' professional and pedagogical competence is related to students' motivation and learning achievements (Darmawan & Adi, 2026). In character building, critical thinking is necessary so that students do not easily accept information, follow digital pressures, or disseminate messages without consideration. The habit of examining, questioning, and providing reasons can develop into careful, rational, responsible, and intellectually honest character.

The moral dimension becomes increasingly relevant when technology is used in value education and religious education. Fajar et al. (2025) show that changing digital landscapes bring consequences for pedagogical innovation in Islamic Religious Education. Technology can expand religious learning sources, yet learners still need competence to distinguish appropriate information, understand messages critically, and use media in accordance with educational values. Khayru et al. (2025) connect Islamic digital literacy with students' lives through psychological aspects and socio-religious behavior. At the school and madrasah levels, the alignment between moral education and digital creative expression is an issue that needs to be directed pedagogically (Darmawan & Sagita, 2026). Digital literacy developed alongside value education can help students express creativity without abandoning politeness, responsibility, respect for others, and the awareness that freedom of expression still has moral limits.

The social media space becomes another realm that clarifies why digital literacy competence needs attention in character building. Social media has become a channel for

distributing educational information and opens opportunities for expanded access to knowledge (Darmawan & Fajar, 2024). In the younger generation, patterns of information consumption and production through social media shape their digital literacy habits (Kurniawan et al., 2021). At the same time, social interaction in digital society experiences changes in communication patterns and virtual community dynamics (Darmawan, 2021). This situation demands education to teach students that digital competence has an ethical dimension. The ability to upload, comment, share information, or build networks needs to be accompanied by awareness of social consequences. Strong character in the digital space is reflected through communicative politeness, respect for differences, resilience against provocation, the ability to verify information, and the willingness to be responsible for the digital footprint produced.

Learners' identity formation is also increasingly influenced by digital interactions. Darmawan and de Jesus Isaac (2022) position social media as a space that can relate to self-identity formation and individual social perception. This condition carries educational significance because students are at a developmental stage where self-assessment, social acceptance, and peer relationships shape their behavior. Competent teacher guidance is necessary so that independent learning in the digital era develops alongside the ability to manage personal choices and responsibilities (Darmawan & Musonawawi, 2026). Teacher professionalism in virtual class management also requires the development of digital competence so that learning remains directed and carries educational value (Darmawan et al., 2026b). Digital literacy further functions as a self-regulation tool. Students need to be able to control technology use, maintain communication boundaries, manage time, respect privacy, and maintain personal integrity when interacting in a virtual environment.

The importance of digital literacy in education must also be read from the issue of equity of opportunity. Technology access without digital proficiency can maintain educational gaps, while competence without adequate access is also difficult to develop. Arifin and Darmawan (2021) connect technology access and digital skills with efforts to bridge educational gaps and opportunities in the Industry 4.0 era. Amsyari et al. (2026) demonstrate the relevance of EdTech-based educational management in remote regions to the issue of social justice for rural communities. Issues of digital readiness can also arise across generations, as discussed by Darmawan (2024) in a study on digital capability gaps and adaptation. In character education, the equity of digital competence carries social meaning because students need to learn to use technology with a spirit of inclusiveness, care, collaboration, and respect for differences in capability. Fair digital education can become a space for habituating solidarity and social responsibility.

The reinforcement of digital literacy competence needs to be positioned as a long-term educational investment connecting character building with readiness to face academic, social, and professional life. Darmawan (2025) shows the relevance of digital skills to work readiness and the ability to enter the workforce among university students. Before reaching that stage, schools have the task of building learning habits, discipline, perseverance, and adaptability. Azizah and Darmawan (2025) connect literacy culture, the role of family, and learning discipline with learner achievements, while Darmawan et al. (2026c) position teacher innovation as part of the development of learning practices. This synthesis shows that attention to digital literacy competence holds a meaning that transcends the enhancement of technology skills. This competence needs to be directed to shape students who are critical, disciplined, independent, integral, capable of cooperating, adaptive, and responsible when using technology in educational and social life.

Attention to digital literacy competence has fundamental importance for building strong student character because technology has become part of the learning process, communication, self-expression, and identity formation. Digital literacy provides the ability to select information,

think critically, control behavior, maintain communication ethics, and utilize technology for productive learning purposes. Its influence will be more meaningful when supported by teacher competence, literacy culture, family, access equity, and learning design that provides room for reflection and responsibility. Strong character in digital education is therefore not sufficiently marked by the ability to operate technology, but by students' ability to use technology wisely, disciplined, ethically, independently, creatively, and responsibly. Attention to digital literacy competence should be an integral part of character education at every educational level.

## CONCLUSION

The results of the Systematic Literature Review indicate that digital literacy competence has a tendency toward a positive relationship with student character building, encompassing Islamic character, religiosity, morals, media ethics, politeness, responsibility, discipline, independence, and citizenship values. The variation in the magnitude of contributions in quantitative studies confirms that digital literacy is not the sole factor shaping character, but works alongside self-control, teacher mediation, school culture, family mentoring, learning activities, and value internalization. Digital literacy competence becomes increasingly important because students live and learn in an environment that demands the ability to select information, think critically, communicate ethically, control behavior, and take responsibility for digital activities. Strong character in the digital era therefore requires a combination of technical proficiency with critical, ethical, safe, independent, reflective, and responsible capabilities.

Theoretically, the research findings broaden digital literacy as an educational competence encompassing cognitive, social, moral, and regulatory dimensions. Academically, the relationship between digital literacy and character building needs to be understood through more specific dimensions, such as information evaluation, digital ethics, security, responsibility, self-control, and adaptability. Practically, the reinforcement of digital literacy competence needs to be positioned as part of character education because students' behavior in seeking information, communicating, creating content, and using social media is part of their personality development. Schools need to connect digital literacy with learning, school culture, teacher modeling, extracurricular activities, and family involvement so that students develop into individuals who are critical, disciplined, independent, integral, and responsible in the use of technology.

Future research needs to use more comparable digital literacy and character instruments across educational levels and expand the use of longitudinal, experimental, or quasi-experimental designs to obtain stronger explanations regarding character development. Schools are advised to develop character-based digital literacy programs that integrate information evaluation, communication ethics, digital security, self-control, responsibility, creativity, and moral reflection. The reinforcement of teacher competence and parental mentoring also needs to receive attention so that students' use of technology takes place within a consistent value environment. Through this approach, digital literacy can be directed as a means to build strong character and students' readiness to face an increasingly digitalized educational, social, and professional life.

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