SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

DIGITAL LITERACY IN THE DIGITAL MEDIA ERA: A STUDY OF INFORMATION ACCESS, EVALUATION, AND VERIFICATION

Lea Christina Br Ginting[1*], Lea Christianna Br Ginting[2], Surya Setiadi Tarigan[3]
Universitas Pendidikan Indonesia, Kota Bandung, Indonesia[1]
SMP Negeri 1 Munte, Kota Kabanjahe, Indonesia[2]
Politeknik Negeri Kupang, Kota Kupang, Indonesia[3]
e-mail: leachristina@upi.edu[1], leaginting@guru.smp.belajar.id[2], tarigansurya120@gmail.com[3]
*Corresponding author: leachristina@upi.edu

Diterima: *23/10/2026*; Direvisi: *18/11/2026*; Diterbitkan: *26/11/2026*

ABSTRAK

Penelitian ini bertujuan mendeskripsikan praktik literasi digital siswa SMP pada era media digital berdasarkan persepsi diri siswa. Lima dimensi yang diukur, yaitu durasi penggunaan internet, pencarian informasi (*internet searching*), navigasi hiperteks (*hypertextual navigation*), evaluasi konten, dan perakitan pengetahuan (*knowledge assembly*), dipetakan ke dalam tiga kompetensi utama: akses informasi (durasi penggunaan, *internet searching*, dan *hypertextual navigation*), evaluasi informasi (evaluasi konten), dan verifikasi informasi (*knowledge assembly*). Penelitian kuantitatif deskriptif ini menggunakan metode survei terhadap 136 siswa SMP Negeri 1 Munte yang dipilih dengan teknik sampling total. Instrumen berupa angket 20 butir berskala Likert empat poin yang telah divalidasi isi oleh dua ahli; hasil uji validitas menunjukkan seluruh 20 butir valid dengan reliabilitas Cronbach's $\alpha = 0{,}72$. Data dianalisis menggunakan statistik deskriptif. Hasil menunjukkan bahwa evaluasi konten (rata-rata 2,83), *knowledge assembly* (2,80), dan *internet searching* (2,66) berada pada kategori baik, sedangkan durasi penggunaan dan *hypertextual navigation* (masing-masing 2,27) berada pada kategori cukup. Skor terendah secara konsisten muncul pada butir yang berkaitan dengan kredibilitas sumber, yaitu mengenali alamat https, membedakan jenis domain, mengakses situs resmi, dan memverifikasi melalui portal berita bereputasi (rata-rata gabungan 2,11), sedangkan skor tertinggi muncul pada konfirmasi kepada teman, orang tua, atau guru dan akses melalui *smartphone*. Karena diukur melalui angket persepsi, temuan ini menggambarkan kebiasaan dan persepsi siswa, bukan kemampuan aktual mereka. Temuan mengindikasikan adanya kesenjangan antara keterampilan operasional dalam mengakses informasi dan keterampilan literasi digital kritis dalam mengevaluasi kredibilitas serta memverifikasi informasi secara mandiri. Oleh karena itu, pembelajaran perlu diarahkan pada latihan memeriksa kredibilitas situs, membandingkan sumber informasi, dan mengidentifikasi berita palsu.

Kata Kunci: *Literasi Digital, Akses Informasi, Evaluasi, Verifikasi*

ABSTRACT

This study aimed to describe junior high school students' digital literacy practices in the digital media era based on their self-reports. The five dimensions measured, namely internet usage duration, internet searching, hypertextual navigation, content evaluation, and knowledge assembly, were mapped onto three core competencies: information access (usage duration, internet searching, and hypertextual navigation), information evaluation (content evaluation), and information verification (knowledge assembly). This descriptive quantitative study employed a survey of 136 students of SMP Negeri 1 Munte selected through total sampling. The instrument was a 20-item four-point Likert-scale questionnaire whose content validity was

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

reviewed by two experts; all 20 items were valid, and reliability was Cronbach's α = 0.72. The data were analyzed using descriptive statistics. Content evaluation (mean = 2.83), knowledge assembly (2.80), and internet searching (2.66) were in the good category, whereas usage duration and hypertextual navigation (2.27 each) were in the moderate category. The lowest scores consistently appeared on items related to source credibility, namely recognizing https addresses, distinguishing domain types, consulting official websites, and verifying through reputable news portals (combined mean = 2.11), while the highest scores appeared on confirming information with friends, parents, or teachers and on smartphone access. Because the data were obtained through a perception-based questionnaire, the findings describe students' reported habits and perceptions rather than their actual abilities. The findings indicate a gap between operational skills in accessing information and critical digital literacy skills in evaluating credibility and verifying information independently. Therefore, instruction should emphasize practice in checking website credibility, comparing information sources, and identifying fake news.
Keywords: *Digital Literacy, Information Access, Evaluation, Verification*

INTRODUCTION

The rapid advancement of digital technologies has transformed the way information is created, accessed, and shared in contemporary society. Social networking sites, search engines, online news portals, and digital learning resources have become primary sources of information, offering easier communication and wider access to knowledge. However, this expansion also brings challenges related to information credibility, misinformation, and information overload (Mujiono, 2024; Nygren & Efimova, 2025). Digital literacy, generally defined as the ability to access, understand, evaluate, and create information using digital technologies in a critical and responsible manner (Tinmaz et al., 2022), has therefore become a crucial competency. It extends beyond technical skills to include critical thinking, information evaluation, and responsible participation in digital environments (McGrew & Kohnen, 2024).

One of the major challenges in the digital media era is the rapid spread of misinformation and disinformation. Social media allows information to circulate widely without strict verification mechanisms (Bustami & Sazali, 2025), and misinformation, including fake news and manipulated content, can influence public understanding and decision-making (Lan & Tung, 2024). Adolescents are among the most active users of digital media, and secondary school students use digital devices for learning as well as for non-learning purposes (Yun & Kim, 2025). However, many adolescents still lack the skills to critically evaluate digital information (Stauch et al., 2025). Younger adolescents tend to place more emphasis on the visual features of an online source than on the accuracy of its content when deciding which source to trust (Brown & Gummerum, 2025), and their learning from independent online searches can remain limited even when they consult relevant sources (De Simone et al., 2022).

Digital literacy encompasses three fundamental competencies: information access, information evaluation, and information verification. Information access refers to the ability to locate and retrieve relevant information using search engines, digital libraries, and online databases (Pan et al., 2025). Information evaluation refers to the ability to critically assess the credibility, reliability, and relevance of digital information sources (van Zyl et al., 2020), enabling students to identify trustworthy sources and recognize potential biases (Steinfeld et al., 2025). Information verification involves confirming the accuracy of information by comparing multiple sources and examining supporting evidence, a skill that is particularly important given the widespread presence of manipulated content (Oladokun et al., 2024) and

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

that helps individuals avoid spreading false information online (Kops et al., 2025). Together, these competencies support digital resilience, namely the capacity to recognize misinformation, evaluate digital content critically, and respond responsibly to digital challenges (Hassoun et al., 2025).

This study draws on two current digital literacy frameworks. The Digital Competence Framework for Citizens (DigComp 2.2) describes information and data literacy through three competences, namely browsing, searching, and filtering information and navigating between sources; evaluating the credibility and reliability of sources and content; and managing information, while its communication area includes sharing information with appropriate referencing and attribution (Vuorikari et al., 2022). A systematic review of digital competence research found that most studies drew on this European policy framework when defining digital competence (Zhao et al., 2021). Accordingly, internet searching and hypertextual navigation in this study correspond to browsing, searching, and navigating and represent information access; content evaluation corresponds to evaluating sources and represents information evaluation; and knowledge assembly, which involves checking information against credible sources and citing them before sharing, corresponds to managing and sharing information and represents information verification. Internet usage duration is included as a contextual dimension describing students' exposure to the internet. Hypertextual navigation also bridges access and evaluation, because recognizing secure addresses and domain types is a prerequisite for judging the credibility of a source.

Schools play an important role in developing these competencies. Integrating digital literacy into school curricula can help students search for reliable information, evaluate digital content critically, and verify information before sharing it (Haryaka et al., 2025). However, improving these skills is not straightforward. A scoping review of 151 studies found that young people often express high confidence in their judgments yet struggle to detect false information and tend to respond to it passively (Kops et al., 2025), and a classroom study with upper secondary students found that short misinformation interventions had no lasting effect on their ability to distinguish credible from misleading news (Nygren & Efimova, 2025).

Despite this growing body of work, several gaps remain. Much of the research on digital literacy and misinformation has involved upper secondary or university students (e.g., Lan & Tung, 2024; Nurdiyanti et al., 2025; Trixa & Kaspar, 2024), whereas junior high school students, who are in early adolescence and are only beginning to use the internet independently for learning, have received less attention, particularly in schools outside large urban centers in Indonesia. In addition, many studies describe digital literacy as a single overall level or emphasize technical skills (Pan et al., 2025), which may conceal differences between students' ability to access information and their ability to evaluate and verify it. This study addresses these gaps by examining junior high school students at SMP Negeri 1 Munte, North Sumatra, and by mapping its five dimensions onto the DigComp-based competencies of access, evaluation, and verification. Its novelty lies in analyzing the results at the indicator level to identify which specific practices, particularly those related to source credibility and independent verification, lag behind students' operational skills. Accordingly, this study aims to describe junior high school students' self-reported digital literacy practices across five dimensions: usage duration, internet searching, hypertextual navigation, content evaluation, and knowledge assembly. Specifically, it investigates how students obtain digital information, how they evaluate the credibility of online sources, and how they verify information before using or sharing it. The findings are expected to inform digital literacy instruction for junior high school students.

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

RESEARCH METHOD

This study used a descriptive quantitative survey design (Ghanad, 2023). Because the data were collected through a self-report questionnaire, the scores reflect students' perceptions of their own habits and abilities rather than their performance on digital tasks.

The participants were 136 students of SMP Negeri 1 Munte, North Sumatra, selected in two stages: five classes (four Grade VII classes and one Grade VIII class) were selected purposively based on their accessibility and the school's permission, and all students in these classes were then included through total sampling (Makwana et al., 2023). The respondents comprised 104 Grade VII students (76.5%) and 32 Grade VIII students (23.5%), aged 12–17 years, and there were no missing responses.

The 20-item questionnaire was developed from the information and data literacy competences of DigComp 2.2 (Vuorikari et al., 2022), with internet usage duration added as a contextual dimension (Table 1). The items were written in Indonesian, reviewed for relevance and clarity by two experts in education and digital literacy, and revised based on their feedback. Item validity, tested by correlating each item with the total score of its dimension using the Pearson product–moment correlation, showed that all 20 items exceeded the r table value of 0.168 (N = 136, $\alpha = 0.05$; r = 0.376–0.759). Reliability was acceptable (Cronbach's $\alpha = 0.72$). Each item was rated on a four-point Likert scale from 1 (never) to 4 (always), a format also used in previous digital literacy surveys (Savitri et al., 2025).

Table 1. Instrument Blueprint: Dimensions, Indicators, and Number of Items

Dimension	Indicators	Number of Items	Competence
Usage duration	Daily internet use of three hours, five hours, and more than five hours	3	Access (context)
Internet searching	Device used (smartphone, laptop/computer); searching for various information; use of the internet only for social media	4	Access
Hypertextual navigation	Recognizing secure addresses (https); distinguishing domain types; recognizing hyperlinks; understanding link destinations; returning to previous pages	5	Access (bridge to evaluation)
Content evaluation	Verifying information; confirming accuracy with others; in-depth searching; using official websites and news portals	4	Evaluation
Knowledge assembly	Verifying through reputable news portals; citing sources when sharing; clarity of wording; using images or videos	4	Verification
Total		**20**	

The questionnaire was completed individually in class during school hours in approximately five minutes. Item and dimension means were analyzed descriptively and categorized using equal intervals ((4 − 1) / 4 = 0.75) as low (1.00–1.75), moderate (1.76–2.50), good (2.51–3.25), or very good (3.26–4.00); these categories describe the reported frequency of practices rather than actual competence.

RESULTS AND DISCUSSION

Results

The results are presented for each of the five dimensions, namely usage duration, internet searching, hypertextual navigation, content evaluation, and knowledge assembly. For each dimension, the indicators with the highest and lowest mean scores are highlighted. The

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

item and dimension means are presented in Tables 2–6, and a comparison across dimensions is presented in Table 7. Because the scores are based on self-reports, they describe students' reported practices rather than their measured abilities.

Usage Duration

Internet usage duration describes students' exposure to digital technologies in the digital media era. This dimension was measured through statements on the amount of time students spend accessing the internet each day. The results are presented in Table 2.

Table 2. Results of the Usage Duration Component

No.	Statement	Mean
1.	I access the internet for three hours a day.	2.90
2.	I access the internet for five hours a day.	2.19
3.	I access the internet for more than five hours a day.	1.73
	Component mean	**2.27**

Table 2 shows that the indicator with the highest mean was *"I access the internet for three hours a day"*, whereas the lowest, in the low category, was *"I access the internet for more than five hours a day"*. The dimension as a whole falls into the moderate category. This dimension should be interpreted with caution because its items describe how long students use the internet rather than how skillfully they use it, so a higher score does not indicate better digital literacy. The pattern suggests that students most often reported using the internet for around three hours a day and that relatively few reported using it for more than five hours a day.

Internet Searching

Internet searching represents students' ability to access and obtain information from online sources using digital devices. The results are presented in Table 3.

Table 3. Results of the Internet Searching Component

No.	Statement	Mean
1.	I access information on the internet using a smartphone.	3.27
2.	I access information on the internet using a laptop or computer.	1.89
3.	I frequently use the internet to search for various types of information.	3.18
4.	I often use the internet only to access social media.	2.32
	Component mean	**2.66**

As shown in Table 3, the highest mean was obtained for *"I access information on the internet using a smartphone"*, which is in the very good category, followed by *"I frequently use the internet to search for various types of information"*, whereas the lowest was obtained for *"I access information on the internet using a laptop or computer"*. The dimension falls into the good category. However, two of the four items, namely the device used and the use of the internet only for social media, describe usage patterns rather than searching skills. The social media item also cannot be interpreted in the same direction as the other items, because a higher score indicates more frequent use of the internet solely for social media. The result is therefore best understood as showing that students reported actively searching for information online, mainly through smartphones, rather than as evidence of the quality of their search strategies.

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

Hypertextual Navigation

The hypertextual navigation dimension examined students' understanding of basic website structures, including recognizing secure website addresses, distinguishing domain types, identifying hyperlinks, and navigating between web pages. The results are presented in Table 4.

Table 4. Results of the Hypertextual Navigation Component

No.	Statement	Mean
1.	I know that website addresses beginning with https:// are more secure than those beginning with http://.	1.96
2.	I can distinguish between website domains such as .com, .sch.id, and .gov.	1.82
3.	I can recognize hyperlinks on web pages.	2.61
4.	I understand that clicking a link can direct me to a different website.	2.65
5.	I can return to the previous page when opening multiple links.	2.30
	Component mean	**2.27**

Table 4 shows that hypertextual navigation falls into the moderate category and, together with usage duration, obtained the lowest dimension mean. The two lowest items concern website credibility and security: distinguishing between domains such as .com, .sch.id, and .gov, which is close to the boundary of the low category, and knowing that addresses beginning with https:// are more secure than those beginning with http://. Both are in the moderate category, indicating that many students rarely or only sometimes attend to these features. In contrast, the operational items, namely *"I understand that clicking a link can direct me to a different website"* and *"I can recognize hyperlinks on web pages"*, obtained the highest means. Thus, within the same dimension, students reported being more familiar with how to move between pages than with how to judge whether a page is secure or credible.

Content Evaluation

The content evaluation dimension measured information verification, confirmation of information accuracy through social interaction, in-depth searching, and the use of official websites as information sources. The results are presented in Table 5.

Table 5. Results of the Content Evaluation Component

No.	Statement	Mean
1.	I always verify the information I obtain from the internet to avoid hoaxes or misinformation.	2.84
2.	I ask my friends, parents, or teachers about the accuracy of the information I obtain.	3.40
3.	I often spend time searching for information on the internet to obtain more in-depth information.	2.95
4.	I frequently look for information from official websites (.com, .net, etc.) and online news portals.	2.15
	Component mean	**2.83**

Table 5 shows that content evaluation falls into the good category and obtained the highest dimension mean. The highest item was *"I ask my friends, parents, or teachers about the accuracy of the information I obtain"*, the only item in this dimension in the very good category, followed by *"I often spend time searching for information on the internet to obtain more in-depth information"*. Verifying information to avoid hoaxes or misinformation was in the good category, whereas the lowest item, in the moderate category, was looking for

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

information from official websites and online news portals. The examples given in this item (.com and .net) are commercial or general domains rather than indicators of official sources, so students may have interpreted it as visiting well-known websites in general. Overall, students reported relying more on other people to confirm information than on credible online sources.

Knowledge Assembly

The knowledge assembly dimension measured searching for information through reputable online news portals, including sources when sharing information, ensuring that the wording is easily understood, and using images or videos to make shared information more convincing. The results are presented in Table 6.

Table 6. Results of the Knowledge Assembly Component

No.	Statement	Mean
1.	I always search for information through reputable online news portals to verify the accuracy of information.	2.51
2.	When sharing information with friends or family, I always include the source of the information.	2.79
3.	Before sharing information, I ensure that the sentence structure and wording are easily understood by others.	3.08
4.	I sometimes include images or videos when sharing information with friends, parents, or relatives so that the information is more convincing.	2.80
	Component mean	**2.80**

Table 6 shows that knowledge assembly falls into the good category. The highest mean was obtained for *"Before sharing information, I ensure that the sentence structure and wording are easily understood by others"*, followed by adding images or videos to make information more convincing and including the source when sharing information. The lowest mean was obtained for *"I always search for information through reputable online news portals to verify the accuracy of information"*, which lies at the lower boundary of the good category. Thus, students reported paying more attention to how information is presented to others than to checking it against credible sources before sharing it.

Comparison Across Dimensions

To identify the strengths and weaknesses of students' digital literacy practices, the five dimensions were compared (Table 7). Content evaluation ranked highest, followed by knowledge assembly and internet searching, all in the good category, while usage duration and hypertextual navigation shared the lowest mean in the moderate category. Because usage duration describes the amount of internet use rather than a skill, the mean of the four skill-related dimensions was also calculated, yielding 2.64 (good).

Table 7. Comparison of the Five Dimensions

Dimension	Mean	Category	Highest indicator (mean)	Lowest indicator (mean)
Content evaluation	2.83	Good	Asking friends, parents, or teachers about accuracy (3.40)	Using official websites and news portals (2.15)
Knowledge assembly	2.80	Good	Ensuring wording is easily understood (3.08)	Verifying through reputable news portals (2.51)
Internet searching	2.66	Good	Using a smartphone (3.27)	Using a laptop or computer (1.89)

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

Usage duration	2.27	Moderate	Three hours a day (2.90)	More than five hours a day (1.73)
Hypertextual navigation	2.27	Moderate	Understanding link destinations (2.65)	Distinguishing domain types (1.82)
Mean of five dimensions	**2.57**	**Good**		

At the item level, a consistent pattern emerges across dimensions. The four items related to source credibility and security, namely distinguishing domain types, recognizing https addresses, using official websites and news portals, and verifying through reputable news portals, obtained a combined mean of 2.11 (moderate). By contrast, items reflecting operational access and social or presentational practices, namely using a smartphone, searching for various types of information, asking others about accuracy, and ensuring clear wording when sharing, obtained a combined mean of 3.23 (good). This grouping is descriptive and was made after the analysis, but it suggests that students' main strengths lie in accessing information and relying on their social networks, whereas their main weakness lies in independently judging the credibility of online sources.

The distribution of responses reinforces this pattern. About half of the students reported never distinguishing between domain types (52.2%) or never paying attention to https addresses (47.1%), and only 24.3% and 31.6%, respectively, reported doing so often or always. Similarly, only 29.4% often or always looked for information from official websites and news portals, and 46.3% often or always verified information through reputable news portals. In contrast, 85.3% often or always asked friends, parents, or teachers about the accuracy of information, 84.6% often or always accessed information through a smartphone, and 83.8% often or always used the internet to search for various types of information.

A descriptive comparison by grade level shows a similar contrast. Grade VIII students (n = 32) obtained a higher mean than Grade VII students (n = 104) on the four source-credibility items (2.59 vs. 1.96) and on hypertextual navigation (2.65 vs. 2.15), whereas the two groups were almost identical on the operational and social items (3.26 vs. 3.23). Because the Grade VIII group was considerably smaller and no inferential test was conducted, this difference should be treated as an indication rather than as evidence of a grade-level effect.

Discussion

Access and Usage Patterns

The results indicate that students' access to digital information is mainly mobile and moderate in duration. The dominance of smartphones over laptops or computers is likely related to the affordability and portability of smartphones and to the limited availability of personal computers for junior high school students, so their digital literacy develops largely in mobile environments. This has implications for the other dimensions: on small screens and within apps, full website addresses and domain names are often shortened or hidden, which may partly explain why students reported limited attention to https indicators and domain types. The finding that students most often reported using the internet for around three hours a day differs from Nurdiyanti et al. (2025), who reported that senior high school students spent more than six hours a day on digital devices, mostly for entertainment. This difference may be explained by the younger age of the respondents, school or family rules on device use, and differences in school context and internet access, as well as by the fact that the present study asked about internet use rather than all device use.

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

Moderate exposure is not necessarily a weakness. Meta-analyses have found small negative associations between heavy smartphone or social media use and academic performance (Hsieh, 2025; Kuş, 2025), although the effects of intensive social media use are not uniformly negative: among Chinese undergraduates, social media overload was positively associated with learning engagement, with this relationship shaped by ego depletion, willpower beliefs, and time pressure (Duan et al., 2025). At the same time, access to technology alone does not guarantee educational gains (Forsström et al., 2025). Although digital literacy has been identified as a predictor of online information searching strategies among academics (Kose & Kocak, 2024), the present results show that frequent searching does not by itself ensure that students evaluate what they find. The relatively frequent use of the internet only for social media also suggests that part of students' online time is spent in environments where information is encountered through feeds rather than deliberately searched for, which places greater demands on evaluation skills (Hassoun et al., 2025).

The Gap Between Operational Navigation and Credibility Judgment

The clearest weakness was found in hypertextual navigation, particularly in recognizing https addresses and distinguishing domain types. Several factors may explain why these indicators lagged behind operational skills such as recognizing hyperlinks. Operational skills are acquired through repeated everyday use, because clicking links and moving between pages are necessary to use the internet at all. In contrast, understanding what https or .gov signifies requires explicit conceptual knowledge that is rarely needed to complete everyday tasks and is unlikely to be learned without instruction. Mobile browsing, which often hides full addresses, further reduces opportunities to notice these cues. This interpretation is consistent with the view that digital literacy involves more than technical skills (McGrew & Kohnen, 2024; Reddy et al., 2023) and with a study of 483 Swedish teenagers, many of whom failed to judge the credibility of false, biased, and vetted news, while those who rated themselves as good at searching online performed poorly (Nygren & Guath, 2019). It is also consistent with Stauch et al. (2025), who found that children and adolescents in Germany particularly needed support in navigation and in evaluating the reliability of online information. The higher credibility scores among Grade VIII students, alongside similar operational scores across grades, are consistent with the interpretation that credibility judgment depends on conceptual knowledge acquired gradually through schooling and experience, whereas operational skills are acquired early through everyday use. This also echoes the finding that younger adolescents rely more on visual cues when judging credibility (Brown & Gummerum, 2025), although, given the relatively small Grade VIII group, this interpretation requires confirmation in larger samples.

Linking Navigation, Evaluation, and Knowledge Assembly

Hypertextual navigation, content evaluation, and knowledge assembly form a sequence in which students locate a source, judge its credibility, and then decide how to use or share the information. The weakest link in this sequence is the same across the three dimensions: indicators that require students to judge a source independently, such as recognizing domain types, using official websites, and verifying through reputable news portals, consistently obtained the lowest scores (combined mean 2.11). Limited understanding of domains and security indicators at the navigation stage may therefore carry over into the evaluation stage, where students reported rarely consulting official websites, and into the verification stage, where they reported less frequent checking through reputable news portals. Instead, students compensated by relying on other people: asking friends, parents, or teachers obtained the

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

highest score of all items. This social confirmation is valuable, because teachers' digital literacy has been shown to influence students' ability to identify hoaxes (Simamora et al., 2024), and young people commonly interpret online information collaboratively through peer validation (Hassoun et al., 2025). However, it is only as reliable as the people consulted and does not replace the ability to check sources independently.

A similar gap appears between awareness and practice. The item on verifying information to avoid hoaxes was in the good category, yet the concrete practices that verification requires, such as consulting official websites and reputable news portals, were reported less often. This suggests that students recognize the importance of verification but have not yet developed specific strategies to carry it out, a pattern resembling the overconfidence of young people who trust their own judgments but struggle to detect false information (Kops et al., 2025). In knowledge assembly, students reported paying more attention to presenting information clearly and making it convincing with images or videos than to checking it before sharing, which suggests that their attention when sharing is directed more at the audience than at the accuracy of the content. Because images and videos can make inaccurate information appear more convincing, this practice underscores the importance of fact-checking skills before sharing (Oladokun et al., 2024).

Interpreting the Findings Through the DigComp Framework

Viewed through DigComp 2.2, the students' profile is uneven across the competences of information and data literacy. Their reported practices are strongest in browsing and searching, which DigComp describes as articulating information needs, searching for information, and navigating between sources, and in the presentational side of sharing information. They are weakest in evaluating, which DigComp defines as analyzing, comparing, and critically evaluating the credibility and reliability of sources (Vuorikari et al., 2022). In other words, students appear to have acquired the competences that everyday device use requires, but not yet the competence that protects them from misinformation. Because DigComp is widely used as a reference for defining and assessing digital competence (Zhao et al., 2021), the indicator-level profile reported here can serve as a school-level baseline for planning and monitoring instruction in evaluation and verification. Such monitoring would allow schools to check whether instruction narrows the gap between access and evaluation over time.

Comparison with Previous Studies

Overall, the findings are consistent with previous studies showing that students' general or technical digital skills tend to exceed their critical evaluation skills. Haryaka et al. (2025) found that most high school and university students reported high digital literacy and collaborative engagement, whereas their critical thinking was comparatively less developed, and Brown and Gummerum (2025) found that younger adolescents relied on the visual features of webpages when judging credibility. The present study extends these findings to junior high school students and shows, at the indicator level, that the weakness lies specifically in judging sources rather than in accessing them. The findings differ, however, from Stauch et al. (2025), who identified problematic digital health literacy in about three in ten children and adolescents, whereas most dimensions in this study were in the good category. This difference may be related to how results were reported: Stauch et al. classified individual respondents into literacy levels, whereas the present study reported group mean scores, which may mask the proportion of students with low scores. In addition, self-report measures capture perceived habits rather than performance, which is why performance-based assessments of digital literacy have been

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

developed (Pan et al., 2025). Consistent with Kops et al. (2025), students' self-reported verification may therefore overestimate their actual verification ability. The finding that short interventions have limited lasting effects (Nygren & Efimova, 2025) also suggests that the weaknesses identified here are unlikely to be resolved by one-off lessons.

Practical Implications

These findings have several practical implications for junior high school teachers. First, digital literacy instruction should move beyond operating devices to explicit teaching of credibility cues, for example through exercises in which students examine website addresses, compare https and http sites, and identify who owns .go.id, .sch.id, .ac.id, and .com domains. Second, students should practice comparing information sources, such as checking a claim found on social media against official websites and reputable news portals and explaining which source is more trustworthy and why. Third, teachers can use current hoaxes as learning materials, asking students to identify the characteristics of fake news, trace the original source of an image or video, and decide whether the information should be shared. Fourth, students' existing habit of asking others can be developed into structured collaborative verification, in which teachers model how to check information rather than simply confirm it, given that teachers' digital literacy influences students' ability to identify hoaxes (Simamora et al., 2024). Because pre-service teachers themselves report limited formal learning opportunities on information evaluation (Trixa & Kaspar, 2024), teacher training should prepare teachers to deliver these activities, and the activities should be integrated across subjects and repeated over time rather than delivered as single sessions (Nygren & Efimova, 2025). Such integration is also relevant to other learning outcomes, as students perceive digital literacy as supporting reading comprehension when it is accompanied by critical thinking and proper guidance (Amaliah et al., 2026).

CONCLUSION

This study concludes that junior high school students at SMP Negeri 1 Munte reported active engagement with digital information but uneven digital literacy practices across dimensions. The main finding is a gap between operational skills in accessing information and critical digital literacy skills. Students reported accessing information actively, mainly through smartphones, and relying on friends, parents, and teachers to confirm information, but reported less frequent attention to website security, domain types, official websites, and reputable news portals when evaluating and verifying information. Because the data were obtained through a self-report questionnaire, these results describe students' perceived practices and should not be interpreted as evidence that the students have good digital literacy overall.

This study has several limitations. The questionnaire measured self-reported practices, which may be influenced by social desirability and overconfidence; some items, such as those on usage duration, device use, and social media use, describe internet habits rather than skills; and the item on official websites used examples that do not clearly represent official sources. In addition, the study involved purposively selected classes in a single school, with most respondents in Grade VII, and descriptive analysis only, so the findings cannot be generalized. Future research should use performance-based instruments, such as tasks in which students evaluate real websites, compare sources, and identify fake news, combined with observation or interviews and involving several schools. Educators are encouraged to provide repeated practice in checking website credibility, comparing sources, and identifying fake news so that students' operational familiarity with digital tools develops into independent verification habits.

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

SECONDARY: Jurnal Inovasi Pendidikan Menengah
Vol. 7, No. 1, November 2026-Januari 2027
e-ISSN : 2774-5791 | p-ISSN : 2774-8022
Online Journal System : https://jurnalp4i.com/index.php/secondary

REFERENCES

Amaliah, I., Usman, S., Lebagi, D., & Maf'ulah, M. (2026). Student's perception on the impact of digital literacy on reading comprehension. *Journal of English Language and Education*, *11*(1), 312–328. https://doi.org/10.31004/jele.v11i1.1944

Brown, P., & Gummerum, M. (2025). Trust issues: Adolescents' epistemic vigilance towards online sources. *British Journal of Developmental Psychology*, *43*(3), 578–594. https://doi.org/10.1111/bjdp.12559

Bustami, B., & Sazali, H. (2025). Social media regulation in the post-truth era: Analysis of dezinformation handling policies in Indonesia. *Al Qalam: Jurnal Ilmiah Keagamaan dan Kemasyarakatan*, *19*(4), 2119. https://doi.org/10.35931/aq.v19i4.5246

De Simone, C., Battisti, A., & Ruggeri, A. (2022). Differential impact of web habits and active navigation on adolescents' online learning. *Computers in Human Behavior Reports*, *8*, 100246. https://doi.org/10.1016/j.chbr.2022.100246

Duan, N., Li, L., Kanchanapoom, K., Qi, Z., & Xu, T. (2025). The impact of social media overload on learning engagement: A moderated mediation model. *BMC Psychology*, *13*(1), 1322. https://doi.org/10.1186/s40359-025-03557-4

Forsström, S., Njå, M., Munthe, E., Álvarez-Galván, J.-L., & Houldsworth, L. (2025). *The impact of digital technologies on students' learning: Results from a literature review* (OECD Education Working Papers No. 335). OECD Publishing. https://www.oecd.org/en/publications/the-impact-of-digital-technologies-on-students-learning_9997e7b3-en.html

Ghanad, A. (2023). An overview of quantitative research methods. *International Journal of Multidisciplinary Research and Analysis*, *6*(8), 3794–3803. https://doi.org/10.47191/ijmra/v6-i8-52

Haryaka, U., Razak, N. K., Rachman, F., Tung, K. Y., & Judijanto, L. (2025). Integrating digital literacy, critical thinking, and collaborative learning: Addressing contemporary challenges in 21st century education. *Journal of Hunan University Natural Sciences*, *52*(3). https://doi.org/10.55463/issn.1674-2974.52.3.9

Hassoun, A., Beacock, I., Carmody, T., Kelley, P. G., Goldberg, B., Kumar, D., Murray, L., Park, R. S., Sarmadi, B., & Consolvo, S. (2025). Beyond digital literacy: Building youth digital resilience through existing "information sensibility" practices. *Social Sciences*, *14*(4), 230. https://doi.org/10.3390/socsci14040230

Hsieh, C. Y. (2025). The impact of smartphone usage frequency on university students' academic performance: A meta-analysis of moderating factors. *Acta Psychologica*, *259*, 105374. https://doi.org/10.1016/j.actpsy.2025.105374

Kops, M., Schittenhelm, C., & Wachs, S. (2025). Young people and false information: A scoping review of responses, influential factors, consequences, and prevention programs. *Computers in Human Behavior*, *169*, 108650. https://doi.org/10.1016/j.chb.2025.108650

Kose, B. T., & Kocak, O. (2024). The predictors of academics' online information searching strategies: A structural model integrating cognitive absorption and digital literacy. *Library & Information Science Research*, *46*(2), 101299. https://doi.org/10.1016/j.lisr.2024.101299

Kuş, M. (2025). A meta-analysis of the impact of technology related factors on students' academic performance. *Frontiers in Psychology*, *16*, 1524645. https://doi.org/10.3389/fpsyg.2025.1524645

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

Lan, D. H., & Tung, T. M. (2024). Exploring fake news awareness and trust in the age of social media among university student TikTok users. *Cogent Social Sciences*, *10*(1), 2302216. https://doi.org/10.1080/23311886.2024.2302216

Makwana, D., Engineer, P., Dabhi, A., & Chudasama, H. (2023). Sampling methods in research: A review. *International Journal of Trend in Scientific Research and Development*, *7*(3), 762–768. https://www.ijtsrd.com/papers/ijtsrd57470.pdf

McGrew, S., & Kohnen, A. M. (2024). Tackling misinformation through online information literacy: Structural and contextual considerations. *Journal of Research on Technology in Education*, *56*(1), 1–6. https://doi.org/10.1080/15391523.2023.2280385

Mujiono, M. (2024). Digital literacy: Fundamental competence for modern society. *DIDAKTIKA: Jurnal Pemikiran Pendidikan*, *30*(1), 15–27. https://doi.org/10.30587/didaktika.v30i1.6906

Nurdiyanti, N., Anisa, A., & Ananthakkarasu, V. (2025). Digital literacy of senior high school science students: A case study of technology use in daily academic life. *JPPS (Jurnal Penelitian Pendidikan Sains)*, *14*(2), 173–184. https://doi.org/10.26740/jpps.v14n2.p173-184

Nygren, T., & Efimova, E. (2025). Investigating the long-term impact of misinformation interventions in upper secondary education. *PLOS ONE*, *20*(7), e0326928. https://doi.org/10.1371/journal.pone.0326928

Nygren, T., & Guath, M. (2019). Swedish teenagers' difficulties and abilities to determine digital news credibility. *Nordicom Review*, *40*(1), 23–42. https://doi.org/10.2478/nor-2019-0002

Oladokun, B. D., Aruwa, J. E., Ottah, G. A., & Ajani, Y. A. (2024). Misinformation and disinformation in the era of social media: The need for fact-checking skills. *Journal of Information and Knowledge*, *61*(1), 1–7. https://doi.org/10.17821/srels/2024/v61i1/171266

Pan, Q., Reichert, F., Liang, Q., de la Torre, J., & Law, N. (2025). Measuring digital literacy across ages and over time: Development and validation of a performance-based assessment. *Education and Information Technologies*, *30*(15), 22065–22100. https://doi.org/10.1007/s10639-025-13592-8

Reddy, P., Chaudhary, K., & Hussein, S. (2023). A digital literacy model to narrow the digital literacy skills gap. *Heliyon*, *9*(4), e14878. https://doi.org/10.1016/j.heliyon.2023.e14878

Savitri, E. N., Sudarmin, S., Nuswowati, M., Saptono, S., & Billah, A. (2025). Analysis of digital literacy needs as the main foundation in education for sustainable development (ESD). *Jurnal Pemberdayaan Masyarakat*, *4*(2), 379–389. https://doi.org/10.46843/jpm.v4i2.450

Simamora, N. N., Alrefay, K. A., Qasem, A. A., Lorenzo, A., & Kara, M. (2024). The influence of teachers' digital literacy and the use of technology media on students' ability to identify hoaxes in the digital era. *Journal of Educational Technology and Learning Creativity*, *2*(2), 223–234. https://doi.org/10.37251/jetlc.v2i2.1412

Stauch, L., Renninger, D., Rangnow, P., Hartmann, A., Fischer, L., Dadaczynski, K., & Okan, O. (2025). Digital health literacy of children and adolescents and its association with sociodemographic factors: Representative study findings from Germany. *Journal of Medical Internet Research*, *27*, e69170. https://doi.org/10.2196/69170

Steinfeld, N., Berenblum, T., Miletzky, Y., & Kornfeld, E. (2025). Misinformation identification as a digital literacy skill in an ultra-orthodox community: An eye tracking

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669

study. *Humanities and Social Sciences Communications*, *12*(1). https://doi.org/10.1057/s41599-025-04938-1

Tinmaz, H., Lee, Y.-T., Fanea-Ivanovici, M., & Baber, H. (2022). A systematic review on digital literacy. *Smart Learning Environments*, *9*(1), Article 21. https://doi.org/10.1186/s40561-022-00204-y

Trixa, J., & Kaspar, K. (2024). Information literacy in the digital age: Information sources, evaluation strategies, and perceived teaching competences of pre-service teachers. *Frontiers in Psychology*, *15*, 1336436. https://doi.org/10.3389/fpsyg.2024.1336436

van Zyl, A., Turpin, M., & Matthee, M. (2020). How can critical thinking be used to assess the credibility of online information? In M. Hattingh, M. Matthee, H. Smuts, I. Pappas, Y. K. Dwivedi, & M. Mäntymäki (Eds.), *Responsible design, implementation and use of information and communication technology* (Lecture Notes in Computer Science, Vol. 12067). Springer. https://doi.org/10.1007/978-3-030-45002-1_17

Vuorikari, R., Kluzer, S., & Punie, Y. (2022). *DigComp 2.2: The digital competence framework for citizens—With new examples of knowledge, skills and attitudes* (EUR 31006 EN). Publications Office of the European Union. https://doi.org/10.2760/115376

Yun, G.-Y., & Kim, S. (2025). Analysis of high school students' use of digital devices: Focus on learning and instruction elements. *Cogent Education*, *12*(1), 2468008. https://doi.org/10.1080/2331186X.2025.2468008

Zhao, Y., Pinto Llorente, A. M., & Sánchez Gómez, M. C. (2021). Digital competence in higher education research: A systematic literature review. *Computers & Education*, *168*, Article 104212. https://doi.org/10.1016/j.compedu.2021.104212

Copyright (c) 2026 SECONDARY: Jurnal Inovasi Pendidikan Menengah
https://doi.org/10.51878/secondary.v7i1.16669