

Exploring the Impact of Digital Literacy on Critical Thinking Skills in English Language Learning of Grade 12 HUMSS

Charlene M. Fortu¹ and Simonette A. Castrence²

ABSTRACT

This study explored the impact of digital literacy on critical thinking skills in English language learning of Grade 12 Humanities and Social Sciences (HUMSS) students. Specifically, it examined the learners' level of digital literacy in terms of media literacy, data literacy, internet efficacy, and cyber security awareness, as well as their critical thinking skills in interpretation, analysis of arguments, creative problem solving, and communication skills. The study employed a quantitative-descriptive correlational research design involving 248 Grade 12 HUMSS students. Data were collected through a self-assessment survey questionnaire using a Likert scale. Results indicated that the learners generally demonstrated a proficient level of digital literacy and critical thinking skills, with a median score of 3 in most assessed areas. However, the participants showed intermediate proficiency in using spreadsheet software, evaluating and analyzing data, formulating counterarguments, and communicating ideas orally and in writing. Statistical analysis showed a significant relationship between digital literacy and critical thinking skills, with a Pearson Chi-Square value of 78.235 and a significance level of .000, indicating a significant association between digital literacy and critical thinking skills. The findings suggest that strengthening digital literacy competencies may contribute to the enhancement of learners' critical thinking abilities in English language learning. The study highlights the importance of integrating digital literacy activities into classroom instruction to support the development of essential 21st-century skills among Senior High School learners.

Keywords: *digital literacy, critical thinking skills, English language learning, Senior High School*

INTRODUCTION

The integration of technology in education has significantly transformed teaching and learning processes, particularly in language instruction where digital tools are increasingly used for accessing information, collaboration, and communication. Within this context, digital literacy is widely recognized as an essential competency that enables learners to effectively navigate, evaluate, and use information in digital environments. Rather than being limited to technical proficiency, digital literacy involves critical engagement with digital content, especially in online spaces where

information quality and credibility vary considerably (Pangrazio et al., 2020; UNESCO, 2023).

In language learning contexts, digital literacy plays an important role in supporting learners' access to information and participation in academic tasks. Alakrash and Abdul Razak (2021) emphasize that the integration of digital technologies in language education enhances communication processes and learning engagement, highlighting the importance of digital literacy in modern instructional settings. In the Philippine context, Cahulugan et al. (2024) found that digital literacy is associated with improved academic performance and the development of 21st-century skills such as communication, collaboration, and critical thinking among senior high school learners. These findings suggest that digital literacy contributes not only to academic success but also to the development of broader cognitive and interpersonal competencies.

However, despite the increasing integration of digital tools in education, learners do not demonstrate uniform levels of digital literacy. Delima et al. (2022)

✉: charlene.fortu@deped.gov.ph

¹Sta. Fe National High School, Poblacion, Santa Fe, Romblon 5509, MIMAROPA, Philippines;

²Schools Division Office of Manila – DepEd, Manila Education Center, Arroceros Forest Park, Antonio J. Villegas St., Ermita, Manila 1000, Metro Manila, Philippines

Received 2 April 2025; Revised 7 January 2026; Accepted 22 May 2026



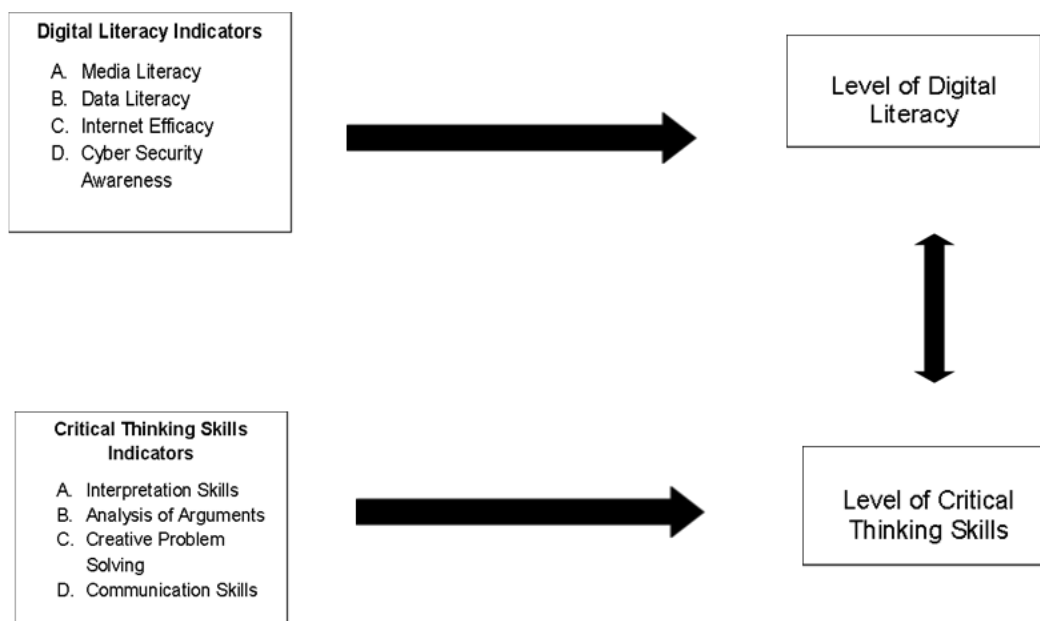


Figure 1. Conceptual framework showing the relationship between digital literacy and critical thinking skills.

reported that senior high school students show awareness of digital literacy skills; however, gaps remain in their full understanding and application of these competencies. This suggests that while learners recognize essential digital skills such as communication, critical thinking, and online safety, further development is still needed to strengthen their digital literacy practice in academic contexts.

International literature further reinforces the importance of digital literacy in education. Pangrazio et al. (2020) emphasize that digital literacy involves the critical evaluation and interpretation of digital information, while UNESCO (2023) highlights its growing importance in addressing challenges such as misinformation and unequal access to digital learning resources. Together, these studies suggest that digital literacy is both a technical and cognitive skill that is essential for navigating and processing information in modern learning environments.

A synthesis of related studies indicates that digital literacy is consistently associated with academic engagement and learning outcomes. However, Philippine-based studies such as Cahulugan et al. (2024) and Delima et al. (2022) generally focus on overall academic performance and skill awareness rather than specifically examining how digital literacy relates to critical thinking skills in English language learning. This suggests that while the connection between digital literacy and academic development has been established, there is still limited evidence on how these variables interact within specific subject areas such as English.

Moreover, strand-specific studies focusing on Humanities and Social Sciences (HUMSS) learners remain limited. This is significant because HUMSS learners are expected to engage extensively in reading, interpretation, analysis, and communication tasks in English language learning. However, existing literature does not clearly explain how digital literacy contributes to the development of critical thinking skills within this strand and subject context.

In response to this gap, the present study investigates the relationship between digital literacy and critical thinking skills in English language learning among Grade 12 HUMSS students in the Santa Fe–San Jose District. By focusing on a specific strand and localized context, this study aims to provide more targeted evidence on how digital competencies relate to higher-order thinking skills in English education.

The findings of this study may contribute to improving instructional practices by providing insights into how digital literacy can be effectively integrated into English language teaching to support the development of critical thinking skills. For learners, it emphasizes the importance of strengthening both technical and analytical competencies in digital environments. For teachers, it provides a basis for designing learning activities that integrate digital literacy and critical thinking. For school administrators and policymakers, it offers evidence that may inform curriculum enhancement, teacher training, and digital education initiatives aimed at strengthening 21st-century skills among Senior High School learners.

Conceptual Framework of the Study

This study outlined the core elements under investigation focusing on digital literacy and critical thinking skills in English language learning. Digital literacy is delineated into four components such as media literacy, data literacy, internet efficacy, and cyber security awareness while critical thinking skills were categorized specifically into interpretation skills, analysis of arguments, creative problem solving, and communication skills. A self-assessment survey questionnaire was administered to selected Grade 12 HUMSS learners to evaluate their level of digital literacy and critical thinking and to determine how students perceived their competencies and the relationship between these skills in the context of English language learning.

Synthesis of Review of Related Literature

Digital Literacy

In today's digital era, digital literacy is widely recognized as an essential competency that enables learners to access, evaluate, and use information effectively in digital environments. It encompasses a combination of technical and cognitive skills that allow individuals to locate, interpret, and communicate information through digital technologies. Contemporary literature emphasizes that digital literacy involves not only operational skills but also critical engagement with information in online spaces where content quality and credibility vary widely (Pangrazio et al., 2020; UNESCO, 2023).

Moreover, digital literacy is increasingly understood as a multidimensional skill set that supports learners in engaging with academic tasks such as information searching, collaboration, and content creation. Studies highlight that digital competence contributes to learners' ability to participate meaningfully in technology-supported learning environments and enhances engagement in educational processes (Alakrash & Abdul Razak, 2021; Tinmaz et al., 2022). In addition, the rapid development of digital technologies requires learners to continuously adapt and develop new competencies, reinforcing the importance of lifelong learning in digital contexts (Selwyn, 2020). Overall, digital literacy is considered a foundational skill that supports effective participation in modern education.

Critical Thinking Skills

Described as the capacity to analyze, evaluate, and synthesize information to make reasoned judgments or decisions, critical thinking is crucial for language learners to understand, interpret, and generate language with precision and fluency (Ennis, 2018). Studies have shown that the development of critical thinking skills in

English language learning is associated with improved reading comprehension and learners' ability to process and analyze texts more effectively (Moghadam et al., 2023). Instructional practices that encourage learners to engage with information in a reflective and analytical manner further support the development of critical thinking skills (Goodsett, 2020). Such approaches strengthen learners' ability to engage with content meaningfully, which is essential for academic success.

Furthermore, critical thinking in English language learning is connected with broader communicative competencies, including intercultural awareness and understanding of global communication contexts (Deardorff, 2020; UNESCO, 2023). In multilingual and multicultural environments, learners are expected to consider diverse perspectives and respond appropriately to cultural differences in communication. Developing intercultural competence enables learners to interact more effectively with people from different cultural backgrounds and to communicate with greater awareness of diversity and context (Deardorff, 2020). Moreover, integrating global and culturally responsive perspectives in language learning supports learners in understanding English as a tool for international communication in an increasingly interconnected world (UNESCO, 2023; Alakrash & Abdul Razak, 2021).

METHODOLOGY

Research Design

This study utilized a quantitative descriptive-correlational research design to investigate the relationship between digital literacy and critical thinking skills in English language learning. A self-assessment survey was used to gather necessary data from respondents, evaluating their perceived levels of digital literacy and critical thinking competencies.

Sampling Procedure

This study employed quota sampling and purposive sampling techniques. Quota sampling was used by getting 70% of the enrolled Grade 12 HUMSS students from each school, resulting in 158 respondents out of 225 students from Sta. Fe National High School and 90 out of 128 enrolled learners from San Jose Agricultural High School for the School Year 2023-2024 ensuring proportional representation. While all Senior High School strands offer Digital Literacy-related subjects like Media and Information Literacy and Empowerment and Technologies, only learners from Grade 12 HUMSS strand were purposely selected as it is the strand with the most English subjects relevant to the study.

Research Instrument

The research instrument used in this study was a researcher-made survey questionnaire consisting of two parts: level of digital literacy and level of critical thinking skills in English language learning. All items were rated using a 4-point Likert scale: 1 (Novice), 2 (Intermediate), 3 (Proficient), and 4 (Advanced).

A Likert scale was appropriate for this study because it is widely used in educational and social science research to measure self-reported competencies and perceptions in a structured and quantifiable manner, allowing responses to be analyzed statistically (Jebb et al., 2021). Likert-type scales are particularly useful in studies involving learner competencies because they efficiently capture subjective assessments across large groups of respondents in a standardized format (Bertram, 2006).

However, as a self-report instrument, Likert-scale data may be affected by response bias, including social desirability bias and the tendency of respondents to overestimate or underestimate their actual abilities, which may influence the accuracy of the findings (Kreitchmann et al., 2019).

Validation and Reliability of the Instrument

The researcher consulted three experts in the field of Education, particularly in Research, English, ICT, and Statistics, to establish the content validity of the research instrument. The validators examined the questionnaire in terms of clarity, relevance, organization, grammatical accuracy, and alignment with the objectives of the study to ensure that the items appropriately measured the intended variables. Comments, suggestions, and recommendations provided by the experts were carefully reviewed and incorporated for the improvement and refinement of the instrument before its final administration.

To determine the reliability of the instrument, pilot testing was conducted among 30 learners who were not included in the actual respondents of the study. The responses gathered from the pilot test were analyzed using Cronbach's alpha to measure the internal consistency of the questionnaire items. The digital literacy questionnaire obtained a Cronbach's alpha coefficient of 0.74, while the critical thinking skills in English language questionnaire obtained a coefficient of 0.71, indicating acceptable reliability of the instrument for the conduct of the study.

Data Gathering Procedure

The researcher sought approval from the Schools Division Superintendent and School Head and SHS Coordinator of two participating schools to allow the researcher to conduct the study. Consent from each participant was also obtained. The survey questionnaire

was administered both via Google Forms, allowing absent participants to respond at their convenience, and in person for those present during the administration. Respondents were oriented on the purpose of the study and were given clear instructions before the questionnaire was distributed.

Methods of Data Analysis and Ethical Considerations

After ensuring that the survey questionnaire was completely answered, responses were encoded in SPSS version 25 for advanced statistical analysis, hypothesis testing, and interpretation of data. Although SPSS is capable of performing all necessary statistical analysis, MS Excel was also used to cross-check the results, specifically for calculating the median to verify the accuracy of the findings obtained from SPSS. Descriptive statistics such as median was used to identify the level of digital literacy and critical thinking skills while Pearson Chi-square was used to determine their relationship. According to Laerd Statistics (n.d.) and Penn State University (n.d.), the median is the most appropriate measure of central tendency for ranked data, also known as ordinal data, as it is less affected by skewed distributions and outliers compared to the mean. To protect the rights and well-being of the respondents, the collected data were handled with the utmost confidentiality.

RESULTS AND DISCUSSION

Table 1 revealed that Grade 12 HUMSS students generally demonstrated a proficient level of digital literacy, with an overall median score of 3 across the dimensions of media literacy, data literacy, internet efficacy, and cybersecurity awareness. This suggests that learners possess functional digital competencies necessary for navigating academic and online environments. The findings support the view of Tinmaz et al. (2022), who emphasized that digital literacy has become an essential competency in 21st-century learning due to the increasing dependence on digital technologies for communication, information access, and learning.

The results further revealed variations in students' strengths across the different indicators. Learners obtained proficient ratings in identifying fake news, recognizing media bias, evaluating online resources, and understanding ethical online behavior. These findings may be attributed to students' frequent exposure to digital media and social networking platforms, where evaluating the credibility of information has become increasingly necessary. As HUMSS students are regularly exposed to articles, opinion texts, and multimedia materials in their English subjects, they may

Table 1. Level of digital literacy of students in Santa Fe-San Jose District

Digital Literacy Indicators	Median	Descriptive Interpretation
Media Literacy		
1. I can distinguish between reliable news sources and fake news sources online.	3	Proficient
2. I am confident in my ability to analyze media messages for bias or manipulation.	3	Proficient
3. I understand the persuasive techniques used in advertising and media content.	3	Proficient
4. I can identify the intended audience of different types of media.	3	Proficient
5. I am aware of the ethical considerations involved in sharing media content online.	3	Proficient
Data Literacy		
1. I can interpret graphs and charts to extract meaningful information.	3	Proficient
2. I understand how to collect and organize data effectively for analysis.	3	Proficient
3. I am familiar with basic statistical concepts such as mean, median, and mode.	3	Proficient
4. I can critically evaluate data sets for accuracy and reliability.	3	Proficient
5. I feel comfortable using spreadsheet software to manipulate and analyze data	2	Intermediate
Internet Efficacy		
1. I am proficient in using search engines to find relevant information online.	3	Proficient
2. I know how to evaluate the credibility of websites and online resources.	3	Proficient
3. I can navigate privacy settings and manage my digital footprint effectively.	3	Proficient
4. I feel confident in my ability to troubleshoot common internet connectivity issues.	3	Proficient
5. I understand the importance of digital etiquette and respectful online considerations	3	Proficient
Cyber Security Awareness		
1. I am aware of common online threats such as phishing, scams and malware.	3	Proficient
2. I know how to create strong, unique passwords and protect my accounts from unauthorized access.	4	Proficient
3. I understand the risks associated with sharing personal information online.	3	Proficient
4. I can identify signs of potential cyberattacks or security breaches.	3	Proficient
5. I take proactive measures to secure my devices and data from cyber threats	3	Proficient
General Median	3	Proficient

Legend: 1 – Novice; 2 – Intermediate; 3 – Proficient; 4 – Advanced

Table 2. Level of critical thinking skills of students in Santa Fe-San Jose District

Critical Thinking Skills Indicators	Median	Descriptive Interpretation
Interpretation Skills		
1 I can understand the main ideas and key points of complex English texts.	3	Proficient
2. I am able to infer the meaning of unfamiliar words or phrases from context.	3	Proficient
3. I can identify implicit messages and underlying themes in English literature.	2	Intermediate
4. I feel confident in my ability to summarize and paraphrase English text accurately.	2	Intermediate
5. I can recognize different literary devices and techniques used by the authors in English writing	3	Proficient
Analysis of Arguments		
1. I am skilled at identifying the main claims and supporting evidence in English arguments.	3	Proficient
2. I can evaluate the credibility and validity of sources cited in English texts.	3	Proficient
3. I feel confident in my ability to detect logical fallacies and weaknesses in English arguments.	3	Proficient
4. I can analyze the underlying assumptions and biases in English persuasive writing.	2	Intermediate
5. I am able to construct well-reasoned counterarguments in response to English texts	2	Intermediate
Creative Problem Solving		
1. I can generate multiple solutions to English language learning challenges.	3	Proficient
2. I am comfortable thinking outside the box and exploring unconventional approaches to English language tasks.	2	Intermediate
3. I can adapt and modify English language learning strategies to suit different contexts and situations.	3	Proficient
4. I am skilled at brainstorming creative ideas for English language projects or assignments.	3	Proficient
5. I am confident in my ability to overcome obstacles and find innovative solutions to English language problems in response to English texts	2	Intermediate
Communication Skills		
1. I am able to express myself clearly and fluently in spoken English.	2	Intermediate
2. I can effectively convey my ideas and opinions in written English.	3	Proficient
3 I am skilled at tailoring my language to suit different audiences and purposes in English communication.	3	Proficient
4. I can engage in meaningful dialogue and discussion in English with peers and instructors.	2	Intermediate
5. I am proficient in using nonverbal cues and gestures to enhance my English communication	3	Proficient
General Median	3	Proficient

Table 3. Relationship between digital literacy and critical thinking skills in English language learning of students

Correlated Variables	Pearson Chi -square	Asymp. Sig (2-sided)	Result	Decision
Digital Literacy and Critical Thinking Skills	78.235	.000**	Very Significant	Rejected Null

Legend: .000 -.010** - Very Significant; 011 -.05* - Significant; Above.05 – Not Significant

have developed stronger awareness of information credibility and persuasive communication. This finding aligns with Polizzi (2020), who argued that regular engagement with digital information environments strengthens learners' evaluative and analytical abilities. Similarly, students demonstrated proficiency in internet efficacy and cybersecurity awareness, particularly in creating strong passwords and recognizing online threats. The advanced rating in password protection suggests that learners are increasingly aware of cybersecurity risks and the importance of protecting personal information online. This may be influenced by school discussions, media exposure, and the widespread dissemination of cyber safety reminders on digital platforms. Tomczyk (2020) emphasized that digital safety awareness has become a core component of digital literacy in modern education.

However, not all areas reflected the same level of competence. Learners only achieved an intermediate level in using spreadsheet software for data manipulation and analysis. This finding indicates that while students are comfortable accessing and evaluating information online, they are less confident in applying technical digital skills involving data processing. One possible explanation is that learners may have limited exposure to spreadsheet-based tasks and statistical applications in classroom activities. Unlike browsing or evaluating online content, spreadsheet manipulation requires procedural knowledge and technical familiarity that may not be consistently practiced in English-related tasks. Selwyn (2020) explained that access to technology alone does not automatically develop advanced digital competencies unless learners are provided with meaningful opportunities for application. The findings support the conceptual framework of the study, which presents digital literacy as a multidimensional competency involving both technical and analytical skills. Students performed strongly in areas related to information access and evaluation but showed weaker performance in technical data-processing tasks. This suggests that digital literacy develops unevenly depending on learners' exposure and experiences. The findings therefore imply that schools should strengthen opportunities for learners to engage in applied digital activities that involve analysis, organization, and interpretation of data.

Overall, the results suggest that learners possess adequate foundational digital literacy skills necessary for English language learning; however, they still require further enhancement in technical and analytical applications of digital tools, particularly in data analysis and spreadsheet utilization.

The findings showed that students generally demonstrated a proficient level of critical thinking skills, with a general median score of 3. This indicates that learners possess the ability to interpret, analyze, and communicate ideas in English at a functional level. The findings support Ennis (2018), who emphasized that critical thinking is essential in language learning because learners must analyze information, evaluate ideas, and communicate reasoned judgments effectively. A closer analysis of the findings revealed variations across the dimensions of critical thinking. Students demonstrated stronger performance in identifying main ideas, recognizing supporting evidence, evaluating source credibility, and adapting language for different audiences. These findings suggest that learners are more capable in comprehension-based and analytical tasks that involve direct interpretation of texts. Their proficiency may be attributed to regular exposure to reading comprehension activities, argumentative texts, and classroom discussions commonly integrated into English instruction. Goodsett (2020) emphasized that information evaluation tasks strengthen analytical reading and reasoning skills among learners.

However, learners only demonstrated intermediate proficiency in identifying implicit messages, summarizing and paraphrasing texts, analyzing assumptions and biases, constructing counterarguments, and expressing themselves fluently in spoken English. These findings suggest that students experience greater difficulty in higher-order thinking tasks requiring deeper interpretation, synthesis, and reflective reasoning. Unlike identifying explicit information, recognizing hidden meanings and constructing counterarguments require more advanced inferential thinking and cognitive processing.

One possible explanation is that classroom activities may still focus more heavily on comprehension and recall rather than on interpretive and argumentative discourse. Learners may also have fewer opportunities to participate in debates, reflective

discussions, and oral communication tasks that develop analytical reasoning. Karapetian (2020) highlighted that students need sustained exposure to analytical and inferential activities in order to strengthen deeper literary interpretation and critical engagement with texts.

The intermediate rating in oral communication skills is also significant. While learners demonstrated proficiency in written communication, they appeared less confident in spoken interaction and meaningful dialogue. This difference may reflect students' greater familiarity with text-based digital communication than with spontaneous academic discussions. The increasing use of online communication platforms may enhance written expression while limiting opportunities for face-to-face verbal interaction. Alt and Raichel (2020) similarly observed that digital learning environments do not always equally support oral communicative competence.

Likewise, learners demonstrated intermediate performance in creative problem-solving tasks involving unconventional thinking and overcoming obstacles through innovative solutions. This suggests that students may be more comfortable following structured academic tasks than engaging in intellectual risk-taking or exploratory thinking. Beghetto et al. (2020) explained that creative confidence develops when learners are encouraged to experiment, take risks, and engage in open-ended learning experiences. The findings therefore indicate the need for instructional activities that encourage exploration, creativity, and reflective reasoning rather than purely structured responses.

The results further support the study's conceptual framework, which proposes that critical thinking in English language learning involves interconnected skills in interpretation, analysis, creativity, and communication. Students' stronger performance in comprehension-based tasks and weaker performance in inferential and communicative tasks suggest that critical thinking develops progressively and requires continuous opportunities for application and reflection.

Collectively, the findings imply that learners possess adequate foundational critical thinking skills but still require further enhancement in advanced analytical reasoning, inferential interpretation, creative problem-solving, and oral communication.

The findings revealed a statistically significant relationship between digital literacy and critical thinking skills in English language learning, with a Pearson Chi-Square value of 78.235 and a significance level of .000, leading to the rejection of the null hypothesis. This indicates a statistically significant association between digital literacy and critical thinking skills among Grade 12 HUMSS students.

The significant relationship between the variables supports the conceptual framework of the study, which assumes that competencies in accessing, evaluating, and utilizing digital information contribute to the development of interpretation, reasoning, and communication skills in English language learning. The findings suggest that digital literacy and the capacity for analytical and reflective thinking are significantly associated among the respondents.

One possible explanation for this relationship is that digital literacy requires learners to evaluate online information, distinguish credible from unreliable sources, analyze media messages, and communicate ideas effectively through digital platforms. These processes involve the same cognitive skills associated with critical thinking, particularly analysis, evaluation, and interpretation. Al-Zou'bi (2021) explained that digital literacy promotes higher-order thinking because learners must actively engage with information rather than passively consume content.

The findings also align with previous studies suggesting that digital literacy and critical thinking are closely connected in learning environments. Al-Zou'bi (2021) emphasized that media and information literacy supports the development of critical thinking skills by encouraging learners to critically evaluate and engage with information. Similarly, Moghadam et al. (2023) found that critical thinking interventions improved English language learners' reading comprehension and analytical processing of texts. In the present study, students who demonstrated proficiency in evaluating online sources and understanding digital content also tended to perform better in argument analysis and interpretation tasks, suggesting that these competencies reinforce one another. Despite the statistically significant relationship, the findings should not be interpreted to mean that digital literacy alone automatically develops critical thinking skills. Although learners demonstrated overall proficiency in digital literacy, they still showed weaker performance in creative problem-solving, oral communication, and technical data analysis. This indicates that exposure to digital tools may only contribute to critical thinking when learners are actively engaged in reflective, analytical, and meaningful learning experiences. Selwyn (2020) emphasized that technology becomes educationally valuable only when supported by purposeful pedagogical practices.

Furthermore, while the study established statistical significance through the Pearson Chi-Square test, future researchers may further strengthen the analysis by including measures such as effect sizes or confidence intervals to determine the magnitude and practical significance of the relationship between the variables. Including these measures may provide a clearer

understanding of how strongly digital literacy influences critical thinking skills in English language learning.

Overall, the findings suggest that digital literacy and critical thinking are interconnected competencies that reinforce one another in English language learning. Strengthening learners' digital literacy through analytical and reflective classroom activities may therefore contribute to the enhancement of higher-order thinking skills essential for academic success and responsible participation in the digital world.

CONCLUSION

The study concluded that Grade 12 HUMSS students in the Santa Fe–San Jose District generally demonstrated a proficient level of digital literacy and critical thinking skills in English language learning. Learners showed strengths in evaluating online information, recognizing media bias, identifying credible sources, and adapting written communication for different audiences. However, the findings also revealed specific areas requiring improvement, particularly in spreadsheet and data analysis skills, inferential interpretation, construction of counterarguments, creative problem-solving, and oral communication.

Furthermore, the study established a statistically significant relationship between digital literacy and critical thinking skills, indicating a statistically significant association between digital literacy and critical thinking abilities in English language learning. This finding supports the study's conceptual framework, which emphasizes the interconnected nature of digital literacy and higher-order thinking skills. The results also contribute to existing literature by providing localized and strand-specific evidence within the Philippine Senior High School context, particularly among HUMSS learners, where limited studies have explored the relationship between these variables in English language learning.

The findings imply that strengthening digital literacy instruction may also support the development of learners' analytical reasoning, communication, and evaluative thinking skills. For pedagogy, the study highlights the importance of integrating authentic digital learning activities such as multimedia analysis, online source evaluation, collaborative digital projects, virtual discussions, and spreadsheet-based research tasks into English instruction. For educational policy and school practice, the findings suggest the need for continuous teacher training and curriculum enhancement programs that integrate digital literacy and critical thinking competencies across learning areas.

Despite the significant findings of the study, several limitations should be acknowledged. The study relied on self-assessment survey questionnaires, which

may be affected by response bias, including overestimation or underestimation of learners' actual competencies. Additionally, the digital literacy ($\alpha = .74$) and critical thinking ($\alpha = .71$) questionnaires demonstrated acceptable but modest internal consistency, suggesting some measurement variability that may have influenced the precision of the findings. In addition, the study focused only on Grade 12 HUMSS students in selected schools within the Santa Fe–San Jose District, limiting the generalizability of the findings to other strands, grade levels, or educational settings. The use of a descriptive-correlational design also limits the ability to establish direct causal relationships between digital literacy and critical thinking skills.

Based on the findings and conclusions of the study, it is recommended that teachers integrate more hands-on and analytical digital activities into classroom instruction, particularly in English, Practical Research, and Statistics and Probability subjects. Activities involving spreadsheet applications, data interpretation, multimedia analysis, digital storytelling, online debates, podcasting, and collaborative research projects may help strengthen learners' technical digital skills, critical thinking, creativity, and communication abilities. Schools and educational leaders may also provide professional development programs that equip teachers with strategies for integrating digital literacy and higher-order thinking skills into instruction. Curriculum planners and policymakers may consider strengthening the integration of digital literacy competencies across subjects to better prepare learners for academic and real-world digital environments.

Parents and the wider community may likewise play an important role in strengthening learners' digital literacy. Schools may organize community-based digital literacy programs, seminars, or workshops that guide parents and learners on responsible digital engagement, cybersecurity awareness, information evaluation, and ethical online behavior. Strengthening collaboration among schools, families, and communities may help create a more supportive digital learning environment for learners.

Lastly, future researchers are encouraged to use standardized assessment tools and include effect size measures or confidence intervals to provide more objective and comprehensive analysis of the relationship between digital literacy and critical thinking skills. Future studies may also include learners from other strands, schools, or regions and explore additional variables that may influence the development of digital literacy and critical thinking in English language learning.

AUTHORS' CONTRIBUTIONS

C. M. Fortu developed the methodology, prepared the research instrument, and coordinated with experts for validation, incorporating their feedback for improvement. She conducted data collection, organized the dataset, and consulted a statistician for the statistical analysis and interpretation of results. She drafted the manuscript and revised it based on feedback and recommendations.

S. A. Castrence provided continuous critical feedback and suggestions throughout the research process. She advised on the revision of the thesis title and guided the narrowing of the research scope to ensure specificity and focus. She handled proofreading and copyediting, focusing on grammar, clarity, coherence, and academic quality. She assisted in refining the structure and presentation of ideas, and reviewed and approved the final manuscript for submission.

Both authors conceptualized the study and contributed to the design and development of the research framework.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

- Alakrash, H. M., & Abdul Razak, N. (2021). Technology-based language learning: Investigation of digital technology and digital literacy. *Sustainability*, 13(21), 12304. <https://doi.org/10.3390/su132112304>
- Alt, D., & Raichel, N. (2020). Enhancing perceived digital literacy skills and creative self-concept through gamified learning environments: Insights from a longitudinal study. *International Journal of Educational Research*, 101, 101561. <https://doi.org/10.1016/j.ijer.2020.101561>
- Al-Zou'bi, R. (2021). The impact of media and information literacy on acquiring critical thinking skills by educational faculty students. *Thinking Skills and Creativity*, 39, 100782. <https://doi.org/10.1016/j.tsc.2020.100782>
- Beghetto, R. A., Karwowski, M., & Reiter-Palmon, R. (2020). Intellectual risk taking: A moderating link between creative confidence and creative behavior. *Psychology of Aesthetics, Creativity, and the Arts*, 15(4), 637–644. <https://doi.org/10.1037/aca0000345>
- Bertram, D. (2006). *Likert scales: Are the meaning of life* [Unpublished topic report]. CPSC 681, University of Belgrade.
- <http://poincare.matf.bg.ac.rs/~kristina/topic-dane-likert.pdf>
- Cahulugan, E., Bucar, J., & Bongato, G. (2024). Preparing for the future: The link between 21st century skills and academic performance in senior high school. *Psychology and Education: A Multidisciplinary Journal*, 22(7), 854–862. <https://doi.org/10.5281/zenodo.13118502>
- Deardorff, D. K. (2020). *Manual for developing intercultural competencies*. Routledge.
- Delima, D. A., Mamaril, R. J., Javier, D. R. C., Dela Peña, M. O., Soriano, R. F., & Ladjammah, K. S. J. (2022). Awareness of senior high school students on digital literacy skills: A qualitative study. *Sinaya: A Philippine Journal for Senior High School Teachers and Students*, 1(3), 22–48. <https://doi.org/10.59588/3027-9283.1048>
- Ennis, R. H. (2018). Critical thinking across the curriculum: A vision. *Topoi*, 37(1), 165–184. <https://doi.org/10.1007/s11245-016-9401-4>
- Goodsett, M. (2020). Best practices for teaching and assessing critical thinking in information literacy online learning objects. *The Journal of Academic Librarianship*, 46(5), 102163. <https://doi.org/10.1016/j.acalib.2020.102163>
- Jebb, A. T., Ng, V., & Tay, L. (2021). A review of key Likert scale development advances: 1995–2019. *Frontiers in Psychology*, 12, 637547. <https://doi.org/10.3389/fpsyg.2021.637547>
- Karapetian, A. O. (2020). Creating ESP-based language learning environment to foster critical thinking capabilities in students' papers. *European Journal of Educational Research*, 9(2), 717–728. <https://doi.org/10.12973/eu-jer.9.2.717>
- Kreitchmann, R. S., Abad, F. J., Ponsoda, V., Nieto, M. D., & Morillo, D. (2019). Controlling for response biases in self-report scales: Forced-choice vs. Likert items. *Frontiers in Psychology*, 10, 2309. <https://doi.org/10.3389/fpsyg.2019.02309>
- Laerd Statistics. (n.d.). *Measures of central tendency*. <https://statistics.laerd.com/statistical-guides/measures-central-tendency-mean-mode-median.php>
- Moghadam, Z. B., Narafshan, M. H., & Tajadini, M. (2023). The effect of implementing a critical thinking intervention program on English language learners' critical thinking, reading comprehension, and classroom climate. *Asian-Pacific Journal of Second and Foreign Language Education*, 8(1), 15. <https://doi.org/10.1186/s40862-023-00188-3>
- Pangrazio, L., Godhe, A.-L., & González López Ledesma, A. (2020). What is digital literacy? A comparative review of publications across three language contexts. *E-Learning and Digital Media*, 17(6), 442–459. <https://doi.org/10.1177/2042753020946291>

- Penn State University. (n.d.). 2.2.4.1 – *Skewness & central tendency*.
<https://online.stat.psu.edu/stat200/lesson/2/2.2/2.2.4/2.2.4.1>
- Polizzi, G. (2020). Digital literacy and the national curriculum for England: Learning from how experts engage with and evaluate online content. *Computers & Education*, 152, 103859. <https://doi.org/10.1016/j.compedu.2020.103859>
- Selwyn, N. (2020). *Education and technology: Key issues and debates (3rd ed.)*. Bloomsbury Academic.
- Tinmaz, H., Lee, Y.-T., Fanea-Ivanovici, M., & Baber, H. (2022). A systematic review on digital literacy. *Smart Learning Environments*, 9(1), 21. <https://doi.org/10.1186/s40561-022-00204-y>
- Tomczyk, Ł. (2020). Skills in the area of digital safety as a key component of digital literacy among teachers. *Education and Information Technologies*, 25(1), 471–486. <https://doi.org/10.1007/s10639-019-09980-6>
- UNESCO. (2023). *Global education monitoring report 2023: Technology in education – A tool on whose terms?* UNESCO Publishing.
<https://www.unesco.org/gem-report>