
Digital Literacy and Teaching Performance: Evidence from Basic Education Teachers

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Abstract — This study examined the relationship between digital literacy and teaching performance among basic education teachers in two selected secondary schools in the Division of Cagayan. A descriptive–correlational research design was utilized, involving 137 teachers selected through total enumeration. Data on digital literacy were collected using a researcher-made questionnaire covering three dimensions: technical skills, cognitive skills, and socio-emotional skills, while teaching performance was measured using the teachers’ Individual Performance Commitment and Review Form (IPCRF) ratings. Descriptive statistics, including mean and percentage, were used to determine the levels of the variables, while the Pearson Product-Moment Correlation Coefficient (r) was employed to test the relationship between them. The findings revealed that teachers demonstrated a high level of digital literacy ($M = 3.12$), with technical and socio-emotional skills rated high and cognitive skills rated moderate. In terms of teaching performance, the majority of respondents obtained an Outstanding rating (98.54%), with a mean score of 4.58. Furthermore, the results showed a significant positive relationship between digital literacy and teaching performance ($r = 0.621$, $p = 0.000$), indicating that higher digital literacy is associated with better teaching performance. The study concludes that digital literacy is a critical factor in enhancing teachers’ professional effectiveness. It recommends the implementation of continuous professional development programs focusing on improving teachers’ digital competence, particularly in cognitive skills, to further strengthen teaching quality.

Keywords: digital literacy, teaching performance, basic education, teachers

I. INTRODUCTION

The rapid integration of digital technologies in education has transformed the roles and responsibilities of teachers in the 21st century. Digital literacy, broadly defined as the ability to access, evaluate, and effectively use digital tools and information, has become a fundamental competence for educators. In basic education, teachers are expected not only to possess subject matter expertise but also to integrate technology meaningfully into their pedagogical practices. This shift has emphasized the importance of examining how digital literacy influences teaching performance, particularly in an era where digital tools mediate instruction, communication, and assessment.

Despite the growing emphasis on digital transformation in education, many teachers still struggle to develop adequate digital competencies. Research indicates that while digital technologies are widely available, their effective use in teaching remains inconsistent due to varying levels of teacher preparedness and confidence. Basilotta-Gómez-Pablos et al. (2022) highlighted that teachers often report low to moderate levels of digital competence, suggesting a gap between technological availability and actual instructional integration. This gap poses a significant challenge to achieving high-quality teaching performance and underscores the need for continued investigation into teachers' digital literacy.

Moreover, digital literacy has been found to directly and indirectly influence teaching effectiveness and overall professional performance. Zhang and Miao (2025) cited that teachers' ability to utilize digital tools significantly enhances instructional quality, student engagement, and learning outcomes. Similarly, Zhang (2023) emphasized that teachers' digital literacy plays a crucial role in shaping their teaching practices, particularly in online learning environments, where insufficient digital skills can negatively affect instructional delivery. These findings suggest that digital literacy is not merely an auxiliary skill but a critical determinant of teaching performance in contemporary classrooms.

In addition, the importance of digital literacy extends beyond instructional delivery to include broader aspects of professional competence, such as creativity, adaptability, and continuous learning. Erwin and Mohammed (2022) noted that structured digital literacy instruction and professional development opportunities can significantly improve both teaching practices and

student learning experiences. However, the lack of consistent training programs and institutional support continues to hinder teachers' ability to fully develop and apply digital literacy skills. This situation presents a pressing problem in basic education, particularly in developing contexts where access to resources and training may be limited.

Given these challenges, it becomes essential to explore the relationship between digital literacy and teaching performance among basic education teachers. Understanding this relationship can provide valuable insights into how educators can be supported in improving their competencies and adapting to the demands of digital education. Furthermore, such research can inform policy development, teacher training programs, and curriculum design to ensure that teachers are equipped with the necessary skills to deliver effective and engaging instruction.

In conclusion, this study aimed to examine the influence of digital literacy on teaching performance among teachers in basic education. Specifically, it sought to determine the extent to which digital literacy contributes to teachers' instructional effectiveness and professional competence, thereby providing evidence-based recommendations for enhancing educational practices in the digital age.

Literature Review

Digital literacy has increasingly been recognized as a critical component of effective teaching, particularly in the context of rapidly evolving educational technologies. It refers to teachers' ability to utilize digital tools, access information, and facilitate learning in technology-rich environments. Falloon (2024) emphasized that digital literacy goes beyond technical skills and includes pedagogical understanding, critical thinking, and ethical use of technology, all of which are essential in modern teaching. This perspective highlights the need for teachers to develop comprehensive competencies to enhance student learning experiences.

The relationship between digital literacy and teaching performance has been widely explored in recent studies. Røkenes et al. (2022) found that teachers with higher levels of digital competence tend to demonstrate more effective classroom practices, particularly in integrating

technology into instruction. Their study revealed that digital skills significantly influence lesson delivery, classroom management, and student engagement. Similarly, Apriyadi (2026) reported that digital competence frameworks serve as a guide for improving teachers' instructional effectiveness, reinforcing the idea that digital literacy is directly linked to teaching quality.

In addition, Adnan et al. (2024) reported the impact of digital competence on teaching practices and found that teachers' confidence in using technology positively affects their instructional performance. Digitally literate teachers are more likely to use innovative teaching strategies, leading to improved student outcomes. Supporting this, ElSayary (2023) highlighted that professional development programs focused on digital skills significantly enhance teachers' ability to integrate technology in meaningful ways, thereby improving overall teaching performance.

Moreover, Janthapassa et al. (2024) emphasized that digital literacy plays a crucial role in fostering creativity and adaptability among teachers. Their findings indicate that digitally competent teachers are better equipped to design interactive and student-centered learning environments. In the same vein, Nagel (2025) pointed out that teachers' digital competence influences not only their teaching practices but also their attitudes toward continuous professional development, which is essential for sustaining teaching effectiveness.

The importance of digital literacy is further reinforced by studies focusing on its role in student engagement and learning outcomes. König et al. (2025) and König et al. (2023) reported that teachers' digital skills significantly contribute to effective online and blended learning environments, particularly in ensuring student participation and motivation. Likewise, Sipamla and Maqoqa (2026) highlighted that the integration of digital tools enhances instructional delivery when teachers possess adequate digital literacy skills, but insufficient competence can hinder teaching effectiveness.

Despite its recognized importance, several studies have identified challenges in the development of teachers' digital literacy. Lucas et al. (2024) noted that many teachers still exhibit gaps in digital competence due to limited training opportunities and a lack of institutional support. This gap can negatively affect teaching performance, particularly in basic education, where foundational learning is crucial.

Overall, the literature suggests that digital literacy is a key determinant of teaching performance in contemporary education. It influences instructional strategies, classroom engagement, and professional growth. However, persistent gaps in teachers' digital competence highlight the need for further research and targeted interventions to strengthen digital literacy among educators.

Research Questions

This study aimed to determine the relationship between digital literacy and teaching performance among basic education teachers. Specifically, it aims to answer the following questions:

1. What is the level of digital literacy of basic education teachers in terms of the following dimensions?
 - a. Technical Skills
 - b. Cognitive Skills
 - c. Socio-Emotional Skills
2. What is the level of teaching performance of teachers as reflected in their Individual Performance Commitment and Review Form (IPCRF) ratings?
3. Is there a significant relationship between teachers' digital literacy and their teaching performance?

II. METHODOLOGY

Research Design

This study employed a descriptive–correlational research design to examine the relationship between digital literacy and teaching performance among basic education teachers.

The descriptive method was used to determine the level of teachers' digital literacy in terms of technical, cognitive, and socio-emotional skills, as well as their teaching performance based on their Individual Performance Commitment and Review Form (IPCRF) ratings. On the other hand, the correlational approach was utilized to analyze the nature and degree of association between the identified variables without manipulating them. This design is appropriate for the study as it allows for a systematic description of existing conditions and the identification of significant relationships between digital literacy and teaching performance in a real-world educational setting.

Participants of the Study

The participants of this study consisted of 137 basic education teachers from two selected secondary schools in the Division of Cagayan. The study employed a total enumeration sampling technique, wherein all teachers in the identified schools were included as respondents. This approach was utilized to ensure comprehensive data collection and to accurately represent the entire population within the selected setting. By involving all available teachers, the study minimized sampling bias and provided a more reliable basis for examining the relationship between digital literacy and teaching performance. The participants varied in terms of age, gender, years of teaching experience, and subject specialization, allowing for a more holistic understanding of the variables under investigation.

Instrumentation

This study utilized a researcher-made questionnaire as the primary data-gathering instrument to assess the digital literacy of basic education teachers. The questionnaire was designed based on existing literature and aligned with the identified dimensions of digital literacy, namely: technical skills, cognitive skills, and socio-emotional skills. It consisted of structured items that measured teachers' competencies in using digital tools, evaluating and processing information, and practicing appropriate digital communication and ethics. A Likert-scale format was employed to allow respondents to indicate the extent of their agreement with each statement.

In addition, data on teaching performance were obtained from the teachers' Individual Performance Commitment and Review Form (IPCRF) ratings, which served as the basis for measuring their professional performance. Before data collection, the instrument underwent content validation by experts in education and research to ensure clarity, relevance, and reliability.

Analysis of Data

The data collected in this study were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics, particularly the mean, were used to determine the level of teachers' digital literacy in terms of technical, cognitive, and socio-emotional skills. Likewise, the teaching performance of the respondents was described based on their Individual Performance Commitment and Review Form (IPCRF) ratings. To ensure a clear and meaningful interpretation of the computed mean values, the following scale was applied:

Range	Digital Literacy	Range	Teaching Performance
1.00 – 1.74	Very Low – demonstrates minimal knowledge and insufficient ability to use digital tools effectively; requires extensive support.	Below 1.500	Poor
1.75 – 2.49	Low – shows limited digital skills and occasional difficulty in using technology in teaching	2.499 – 1.500	Unsatisfactory
2.50 – 3.24	Moderate – exhibits acceptable digital competence and can use technology with some consistency	3.499 – 2.500	Satisfactory

3.25 – 4.00	High – demonstrates strong digital skills and consistently applies technology effectively in teaching	4.499 – 3.500	Very Satisfactory
		5.000 – 4.500	Outstanding

Besides, the Pearson Product-Moment Correlation Coefficient (Pearson r) was employed as an inferential statistical tool to determine the presence, strength, and direction of the relationship between teachers' digital literacy and their teaching performance. This statistical method enabled the researcher to establish whether a significant relationship exists between the variables and to assess the degree to which digital literacy influences teaching performance.

III. RESULTS AND DISCUSSION

The level of digital literacy of basic education teachers in terms of the following dimensions

Table 1 shows the findings reveal that the basic education teachers possess an overall high level of digital literacy (mean = 3.12), indicating that they are generally competent in integrating digital tools into their teaching practices. Among the dimensions, technical skills (mean = 3.18) and socio-emotional skills (mean = 3.13) were both rated high, suggesting that teachers are capable of operating technological tools effectively and demonstrating appropriate digital communication, collaboration, and ethical practices in instructional settings. However, cognitive skills (mean = 3.05) were assessed at a moderate level, implying that teachers may experience some limitations in critically evaluating, analyzing, and applying digital information in teaching. These findings imply that while teachers are functionally prepared to use technology, there is still a need to strengthen their higher-order digital competencies, particularly in information processing and critical thinking. As a result, professional development programs should be designed to enhance teachers' cognitive digital skills to ensure a more meaningful and effective integration of technology, ultimately improving teaching quality and student learning outcomes.

The findings are supported by previous studies that underscore the importance of digital literacy among teachers. Basilotta-Gómez-Pablos et al. (2022) found that teachers generally possess adequate digital competencies, particularly in the operational use of technology, but still require further development in higher-order digital skills such as information evaluation and critical analysis. Similarly, Janthapassa et al. (2024) emphasized that digital literacy enhances teachers' ability to communicate, collaborate, and effectively adapt to technology-rich learning environments, thereby strengthening instructional practices. Moreover, Lucas et al. (2024) reported that while many teachers demonstrate proficiency in using digital tools, gaps remain in advanced digital competencies involving critical thinking and informed decision-making. These findings corroborate the present study, wherein teachers exhibited high levels of technical and socio-emotional skills but only moderate cognitive skills, indicating the need for continued professional development programs that focus on strengthening higher-order digital literacy competencies.

Dimensions	Mean	Interpretation
Technical Skills	3.18	High
Cognitive Skills	3.05	Moderate
Socio-Emotional Skills	3.13	High
Overall Mean	3.12	High

The level of teaching performance of teachers as reflected in their Individual Performance Commitment and Review Form (IPCRF) ratings

The findings reveal that the teaching performance of the respondents is generally outstanding, as evidenced by a mean rating of 4.58, which falls within the highest performance category. A large majority of the teachers, comprising 98.54% percent 135 out of 137), obtained an Outstanding rating, while only 1.46 percent (2 teachers) were rated Very Satisfactory. This

indicates that teachers consistently demonstrate a very high level of competence, commitment, and effectiveness in fulfilling their professional responsibilities. The results imply that teachers in the selected secondary schools are performing at an outstanding level in terms of instructional delivery, classroom management, and assessment practices. Furthermore, the overwhelmingly high-performance ratings suggest that teachers are capable of meeting and even exceeding established standards, possibly supported by their adaptability to instructional demands, including the use of digital tools.

The findings are supported by related studies that highlight the characteristics of high-performing teachers in contemporary educational settings. Adnan et al. (2024) found that teachers who possess strong competencies in utilizing educational technologies and adapting to instructional innovations tend to demonstrate higher levels of teaching effectiveness and professional performance. Similarly, ElSayary (2023) reported that continuous professional development and digital upskilling initiatives significantly enhance teachers' instructional practices, classroom management skills, and overall teaching quality. These studies affirm the present findings, suggesting that the outstanding teaching performance of the respondents may be associated with their ability to adapt to changing educational demands and continuously improve their professional competencies, including the effective use of digital tools in teaching and learning

Teaching Performance	Frequency	Percent
3.499 – 2.500 (Very Satisfactory)	2	1.46
5.000 – 4.500 (Outstanding)	135	98.54
Mean	4.58	

Correlational results between teachers' digital literacy and their teaching performance

The findings reveal that there is a positive and statistically significant relationship between teachers' digital literacy and their teaching performance ($r = 0.621$, $p = 0.000$). This indicates that higher levels of digital literacy are associated with better teaching performance among basic

education teachers. The strength of the relationship suggests that digital literacy plays an important role in enhancing instructional effectiveness, classroom management, and assessment practices. This implies that teachers who are more competent in using digital tools, processing information, and practicing responsible digital behavior are more likely to perform at a higher professional level. Consequently, the result underscores the need for continuous professional development programs focusing on improving teachers' digital literacy, particularly in strengthening their competencies across technical, cognitive, and socio-emotional dimensions to sustain high teaching performance.

The findings of the study are supported by several related studies discussed in the literature review. Røkenes et al. (2022) found that teachers' digital competence significantly influences their instructional practices and overall teaching effectiveness. Similarly, Adnan et al. (2024) reported that digitally competent teachers demonstrate higher teaching performance due to their ability to integrate technology meaningfully into the classroom. In the same vein, Janthapassa et al. (2024) emphasized that enhanced digital literacy leads to improved pedagogical practices and increased student engagement, thereby contributing to better teaching outcomes. These studies affirm the present findings, highlighting that digital literacy is a key determinant of teaching performance in modern educational settings.

Based on the findings of the study, it can be assumed that digital literacy has a significant and positive influence on teaching performance among basic education teachers. Teachers with higher levels of digital competence tend to demonstrate better instructional effectiveness and overall professional performance, emphasizing the importance of continuously developing digital literacy skills in education.

Variable	Coefficient (r)	Probability	Statistical Inference	Remarks
Teachers' Digital Literacy and Teaching Performance	0.621	0.000	Significant	Positive relationship

IV. CONCLUSION

In conclusion, the study established that digital literacy is significantly and positively associated with teaching performance among basic education teachers. The findings revealed that teachers generally possess a high level of digital literacy, particularly in technical and socio-emotional skills, although cognitive skills still require further enhancement. Moreover, the teaching performance of the respondents was found to be outstanding, indicating a high level of professional competence. The significant relationship between digital literacy and teaching performance implies that teachers who are more digitally competent are better equipped to deliver effective instruction, manage classrooms efficiently, and utilize appropriate assessment strategies. These results highlight the critical role of digital literacy in improving educational outcomes and emphasize the need for continuous capacity-building programs, targeted training, and institutional support to strengthen teachers' digital competencies. Ultimately, enhancing digital literacy among teachers can lead to sustained improvements in teaching quality and overall educational effectiveness.

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