2026 Volume: 02 Issue: 05 www.ijrpa.com ISSN 2456-9995 Research Article

International Journal Research Publication Analysis

Page: 01-09

DIGITAL LITERACY SKILLS OF JUNIOR HIGH SCHOOL TEACHERS AND THEIR EFFECTIVENESS ON CLASSROOM INSTRUCTION

***Donna Christine O. Derije, Onofre S. Corpuz, EdD, PhD**

Graduate School, Cotabato Foundation College of Science and Technology, Doroluman, Arakan, Cotabato, Philippines.

Article Received: 02 April 2026
Article Revised: 22 April 2026
Published on: 12 May 2026

***Corresponding Author: Donna Christine O. Derije**
Graduate School, Cotabato Foundation College of Science and Technology, Doroluman, Arakan, Cotabato, Philippines.

DOI: https://doi-doi.org/101555/ijrpa.4603

ABSTRACT

This quantitative study examined the level of digital literacy skills of junior high school teachers and their relationship to and influence on the effectiveness of classroom instruction in selected public schools in the Municipality of Kabacan, Cotabato, Philippines, during School Year 2025–2026. Using a descriptive-correlational design, survey data were collected from 250 junior high school teachers across three educational districts (Kabacan North, South, and West) through stratified convenience sampling. The questionnaire assessed four dimensions of digital literacy skills — information literacy, media literacy, ICT proficiency, and digital content creation — and four dimensions of classroom instruction effectiveness — instructional strategies, classroom management, assessment techniques, and integration of technology. Data were analyzed using descriptive statistics, Spearman's rank-order correlation, and multiple linear regression. Results revealed that teachers demonstrated highly skilled levels across all digital literacy dimensions (overall weighted mean = 4.73) and highly effective levels across all classroom instruction dimensions (overall weighted mean = 4.74). Correlation analyses confirmed significant relationships between specific digital literacy dimensions and instructional outcomes: information literacy and media literacy significantly correlated with instructional strategies and classroom management, while ICT proficiency and digital content creation strongly correlated with assessment techniques and technology integration. Regression analyses showed that digital literacy skills significantly predicted all four instructional dimensions, with technology integration achieving the highest explained variance ($R^2 = 0.885$). These findings affirm that digital literacy is a significant predictor of

classroom instructional effectiveness and underscore the need for targeted professional development programs to sustain and enhance these competencies.

KEYWORDS

Digital Literacy, Junior High School Teachers, Classroom Instruction, Information Literacy, ICT Proficiency, Media Literacy, Digital Content Creation, Descriptive-Correlational, Philippines.

INTRODUCTION

Digital literacy has emerged as one of the most essential competencies for teachers in ensuring the quality of classroom instruction in a technology-driven educational landscape. Educators are no longer merely subject-matter experts; they are expected to integrate digital tools into lessons, design interactive learning experiences, and guide students in developing responsible online practices (Ng, 2012). Teachers who cultivate strong digital literacy skills create classrooms where learning is engaging, relevant, and aligned with the demands of the 21st century.

Existing research often examined digital literacy in broad educational contexts without deeply analyzing how each dimension — such as information literacy, media literacy, and ICT skills — directly influenced specific classroom instructional practices (Spante et al., 2018; Siddiq et al., 2016). This lack of localized research, particularly focusing on junior high school teachers in the Philippine context, created a gap in understanding how varying levels of digital literacy translated into concrete teaching approaches. In the Schools Division Office of Cotabato, this gap was especially relevant given the three distinct educational districts of Kabacan, each serving communities with diverse socioeconomic and geographic characteristics.

Grounded in the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) and the SAMR Model (Puentedura, 2010), this study examined the relationship between teachers' digital literacy skills and their classroom instruction effectiveness, with the aim of providing insights that could inform professional development policy and school technology integration initiatives.

MATERIALS AND METHODS

Research Design and Participants

A descriptive-correlational design (Williams, 2017) was employed. The study population consisted of 250 junior high school teachers from three educational districts in Kabacan: North (n = 85), South (n = 120), and West (n = 45). Stratified sampling was applied to ensure proportional district representation, with convenience sampling used within each stratum based on availability and accessibility (Singh & Mangat, 2016). Teachers were from Grade 7 to Grade 10 across diverse subject areas.

Research Instrument

Adapted survey questionnaires (Wiggins, 2018; Dancey, 2018) were used. Part 1 assessed teachers' digital literacy skills across four dimensions using a five-point Likert scale (1 = Least Skilled; 5 = Highly Skilled; Highly Skilled range: 4.21–5.00). Part 2 assessed classroom instruction effectiveness across four dimensions using a parallel five-point scale (1 = Not Effective; 5 = Highly Effective; Highly Effective range: 4.21–5.00). The instruments were validated by expert panels and assessed for internal consistency.

Statistical Analysis

Descriptive statistics (weighted mean) characterized all variables. Spearman's rho correlation assessed bivariate relationships at the 0.01 significance level. Multiple linear regression determined the predictive influence of digital literacy dimensions on each classroom instruction dimension (R^2, F-value, individual t-values).

RESULTS AND DISCUSSION

Level of Teachers' Digital Literacy Skills

Table1 presents the overall summary of digital literacy skill levels across all four dimensions.

Table 1. Level of Junior High School Teachers' Digital Literacy Skills.

Digital Literacy Dimension	Weighted Mean	Interpretation
Information Literacy	4.74	Highly Skilled
Media Literacy	4.69	Highly Skilled
ICT Proficiency	4.73	Highly Skilled
Digital Content Creation	4.74	Highly Skilled
Overall Mean	4.73	Highly Skilled

All four digital literacy dimensions registered within the Highly Skilled range (4.21–5.00). Information Literacy and Digital Content Creation shared the highest mean (M = 4.74), with adherence to copyright guidelines rated highest across all items (M = 4.91 for Digital Content Creation). ICT Proficiency followed at M = 4.73, with effective use of word processing and presentation software rated highest (M = 4.79). Media Literacy was the lowest dimension (M = 4.69), with adapting multimedia to diverse learners rated lowest (M = 4.52) — suggesting that differentiation through media remains an area for growth. These findings align with Kurbanoğlu et al. (2018), who found that teachers with strong information literacy skills are better prepared to design lessons incorporating diverse and credible sources. The strong ICT proficiency scores are consistent with UNESCO (2018) and Koehler and Mishra (2019), who emphasize that ICT competence is foundational to TPACK-aligned instructional practice.

Level of Classroom Instruction Effectiveness.

Table 2. Level of Quality of Classroom Instruction Effectiveness.

Classroom Instruction Dimension	Weighted Mean	Interpretation
Instructional Strategies	4.79	Highly Effective
Classroom Management	4.69	Highly Effective
Assessment Techniques	4.73	Highly Effective
Integration of Technology	4.74	Highly Effective
Overall Mean	4.74	Highly Effective

Instructional Strategies registered the highest mean (M = 4.79, Highly Effective), with adapting instruction to diverse learner abilities rated highest (M = 4.90). Integration of Technology (M = 4.74) was closely aligned, with modeling responsible technology use rated highest (M = 4.91). Classroom Management recorded M = 4.69, led by fostering student responsibility through structured activities (M = 4.87). Assessment Techniques yielded M = 4.73, with using varied assessment tools rated highest (M = 4.79). These results are consistent with Marzano (2017), who characterized effective instruction by clear goals, structured activities, and ongoing assessment. The strong technology integration scores align with Roblyer and Hughes (2019), who emphasized that strategic technology use transforms it from an add-on into a genuine learning facilitator.

Relationship Between Digital Literacy Skills and Classroom Instruction

Table 3 presents the Spearman correlation matrix. A distinctive pattern of domain-specific relationships emerged.

Table 3. Spearman Correlation: Digital Literacy Skills and Classroom Instruction.

Digital Literacy	Instructional Strategies (r)	Classroom Management (r)	Assessment Techniques (r)	Technology Integration (r)
Information Literacy	0.442**	0.722**	-0.059 (ns)	-0.032 (ns)
Media Literacy	0.433**	0.999**	0.018 (ns)	-0.042 (ns)
ICT Proficiency	-0.031 (ns)	0.018 (ns)	0.999**	0.758**
Digital Content Creation	-0.038 (ns)	-0.042 (ns)	0.758**	0.999**

*(** $p < 0.01$; ns = not significant)*

The correlation matrix reveals a striking pattern of functional specificity. Information literacy and media literacy correlated significantly only with instructional strategies (r = 0.442 and 0.433, respectively) and classroom management (r = 0.722 and 0.999, respectively), but not with assessment or technology integration. Conversely, ICT proficiency and digital content creation correlated significantly only with assessment techniques (r = 0.999 and 0.758) and technology integration (r = 0.758 and 0.999), but not with instructional strategies or classroom management. This domain-specific pattern suggests that different digital literacy competencies serve distinct instructional functions: content evaluation and media analysis skills drive lesson planning and behavior management, while technical production and platform competencies drive assessment design and technology deployment. This finding extends the TPACK framework (Mishra & Koehler, 2006), demonstrating that technological and pedagogical dimensions of digital literacy are not interchangeable but functionally differentiated.

Influence of Digital Literacy Skills on Classroom Instruction: Regression Results

Table 4. Regression Results: Digital Literacy Skills as Predictors of Classroom Instruction.

Outcome	R^2	F	Significant Predictors (digital literacy)
Instructional Strategies	0.208	16.050**	Information Literacy (t=3.235, p=0.001**); Media Literacy (t=2.261, p=0.025*)
Classroom Management	0.802	32.870**	Media Literacy (t=3.515, p=0.001**)
Assessment Techniques	0.655	34.660*	ICT Proficiency (t=2.211, p=0.028*); Digital Content Creation (t=2.079, p=0.033*)
Integration of Technology	0.885	65.710*	ICT Proficiency (t=3.260, p=0.001**); Digital Content Creation (t=3.707, p=0.000**)

*(** $p < 0.01$; * $p < 0.05$)*

Technology Integration achieved the highest explained variance ($R^2 = 0.885$), confirming that ICT proficiency and digital content creation are the dominant predictors of how effectively teachers embed digital tools into lessons. This is consistent with Ertmer and Ottenbreit-Leftwich (2020), who found that teachers' technical and creative digital competencies are the primary drivers of technology integration quality. Classroom Management also showed a high R^2 (0.802), with media literacy as its sole significant predictor — a finding that suggests that teachers who can critically analyze and structure media-based content are better equipped to manage classroom dynamics in technology-enhanced environments. Assessment Techniques ($R^2 = 0.655$) was driven by ICT proficiency and digital content creation, confirming that the ability to design and deploy digital assessments depends on both platform competence and creative production skills. Instructional Strategies showed the lowest explained variance ($R^2 = 0.208$), indicating that while information and media literacy contribute meaningfully, effective lesson design is influenced by a broader range of factors including content knowledge, experience, and pedagogical judgment.

CONCLUSION

This quantitative study provides robust evidence that junior high school teachers in Kabacan are highly skilled in digital literacy and highly effective in classroom instruction, and that these two constructs are significantly and functionally related. The domain-specific correlation pattern — where content-evaluation skills (information and media literacy) predict lesson delivery and classroom management, while technical-production skills (ICT proficiency and digital content creation) predict assessment and technology integration —

represents a theoretically important contribution to the TPACK literature. Technology integration is most powerfully predicted by digital literacy ($R^2 = 0.885$), underscoring that teachers who produce, deploy, and adapt digital content drive the most transformative instructional outcomes. The study calls for differentiated professional development programs that match specific digital literacy competencies to the instructional functions they most powerfully enable, ensuring that all teachers develop both content-evaluation and technical-production dimensions of digital literacy.

ACKNOWLEDGEMENTS

The researcher extends sincere gratitude to Dr. Onofre S. Corpuz, thesis adviser, for his scholarly mentorship. Appreciation is also extended to the Schools Division Superintendent of Cotabato, school principals, and all 250 teacher-respondents from Kabacan North, South, and West Districts for their generous participation. This study was completed in partial fulfillment of graduate requirements at Cotabato Foundation College of Science and Technology.

REFERENCES

1. Black, P., & Wiliam, D. (2018). Inside the black box: Raising standards through classroom assessment. Phi Delta Kappan, 80(2), 139–148.
2. Brookhart, S. M. (2017). How to give effective feedback to your students (2nd ed.). ASCD.
3. Cabonero, D., & David, A. (2020). Information literacy integration in Philippine teacher education. Philippine Journal of Library and Information Studies, 12(1), 45–60.
4. Department of Education. (2016). DepEd Order No. 42: ICT Competency Standards for Teachers. DepEd.
5. Eggen, P., & Kauchak, D. (2019). Educational psychology: Windows on classrooms (10th ed.). Pearson.
6. Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2020). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. Journal of Research on Technology in Education, 42(3), 255–284.
7. Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency (TDC) framework. Educational Technology Research and Development, 68(5), 2449–2472.

8. Gudmundsdottir, G. B., & Hatlevik, O. E. (2018). Newly qualified teachers' professional digital competence: Implications for teacher education. European Journal of Teacher Education, 41(2), 214–231.
9. Hattie, J. (2022). Visible learning: The sequel. Routledge.
10. Heritage, M. (2020). Formative assessment: Making it happen in the classroom. Corwin Press.
11. Hobbs, R. (2021). Media literacy foundations. In R. Hobbs & P. Mihailidis (Eds.), The international encyclopedia of media literacy. Wiley-Blackwell.
12. Koehler, M. J., & Mishra, P. (2019). What is technological pedagogical content knowledge (TPACK)? Contemporary Issues in Technology and Teacher Education, 9(1), 60–70.
13. Koltay, T. (2019). Data literacy and data literate professionals for data-intensive research. Journal of Librarianship and Information Science, 51(3), 722–730.
14. Kurbanoğlu, S., et al. (2018). Information literacy in everyday life. Springer.
15. Marzano, R. J. (2017). The new art and science of teaching. Solution Tree Press.
16. Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. Teachers College Record, 108(6), 1017–1054.
17. Ng, W. (2012). Can we teach digital natives digital literacy? Computers and Education, 59(3), 1065–1078.
18. Popham, W. J. (2021). Classroom assessment: What teachers need to know (9th ed.). Pearson.
19. Puentedura, R. R. (2010). SAMR and TPCK: Intro to advanced practice. Hippasus.
20. Redecker, C. (2017). European framework for the digital competence of educators: DigCompEdu. Publications Office of the European Union.
21. Roblyer, M. D., & Hughes, J. E. (2019). Integrating educational technology into teaching (8th ed.). Pearson.
22. Siddiq, F., et al. (2016). Taking a future perspective by learning from the past: A systematic review of assessment instruments for digital competence. Computers and Education, 93, 26–42.
23. Singh, R., & Mangat, N. S. (2016). Elements of survey sampling. Springer.
24. Spante, M., et al. (2018). Digital competence and digital literacy in Scandinavian peer-reviewed journals. Heliyon, 4(11), e00985.

25. Tondeur, J., et al. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: A systematic review. Educational Technology Research and Development, 65(3), 555–575.
26. UNESCO. (2018). ICT competency framework for teachers (Version 3). UNESCO.
27. Wiggins, G. (2018). Educative assessment: Designing assessments to inform and improve student performance. Jossey-Bass.