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Teachers' Information and Communications Technology Skills, Professional Development, and Teaching Performance

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Abstract

This study examined the relationship between teachers' information and communications technology (ICT) skills, their engagement in professional development, and teaching performance in the Schools Division of Antique during the School Year 2024–2025. The respondents consisted of 365 teachers selected through stratified random sampling to ensure fair representation across school levels and subject areas. Data were gathered using a structured survey questionnaire that measured teachers' ICT competencies and professional development participation, while teaching performance was assessed through self-reported instructional practices. Descriptive statistics, Pearson correlation, and multiple regression analyses were used to analyze the data. The results indicated that teachers demonstrated a high level of ICT skills and actively participated in professional development activities . Teaching performance was likewise rated high, particularly in lesson delivery and instructional strategies. Correlation analysis revealed significant positive relationships between ICT skills and teaching performance, as well as between professional development and teaching performance. Regression analysis further showed that ICT skills and professional development significantly predict teaching performance, with ICT skills emerging as the stronger predictor. The findings suggest that teachers' technological competence and continuous engagement in professional development play a vital role in enhancing instructional effectiveness. Strengthening ICT training programs and providing sustained professional development opportunities are therefore essential to improving teaching performance and learner outcomes.

Keywords: ICT Skills, Professional Development, Teaching Performance, Teachers, Instructional Effectiveness

1. Introduction

The integration of information and communications technology (ICT) in education has become an essential component of 21st-century teaching and learning. ICT has transformed classroom practices by enabling teachers to design interactive lessons, enhance learner engagement, and improve instructional delivery. Teachers who possess strong ICT skills are better equipped to use digital tools, online resources, and technology-enhanced strategies that support meaningful learning experiences.

Professional development plays a crucial role in strengthening teachers' ICT competencies and overall teaching effectiveness. Continuous participation in training programs, workshops, and learning communities helps teachers keep pace with technological advancements and refine their pedagogical approaches. Teachers who actively engage in professional development are more likely to adopt innovative instructional practices and integrate ICT effectively into their classrooms, leading to improved student learning outcomes.

Despite the growing emphasis on ICT integration, many teachers continue to face challenges such as limited access to technology, insufficient training, and inadequate technical support. In the Philippine context, particularly in the Schools Division of Antique, there is a need for more empirical evidence that examines how teachers' ICT skills and professional development influence teaching performance. This study therefore sought to determine the levels of teachers' ICT skills and professional development engagement, and to examine how these factors relate to teaching performance during the School Year 2024–2025.

2. Methodology

This study employed a descriptive-correlational research design to examine the relationship between teachers' ICT skills, professional development engagement, and teaching performance. The respondents were 365 teachers from selected schools in the Schools Division of Antique. Stratified random sampling was used to ensure proportional representation across different school levels, subject areas, and teaching experience.

Data were collected through a structured questionnaire consisting of three sections. The first section assessed teachers' ICT skills, including computer literacy, use of digital instructional tools, and internet and software utilization. The second section measured professional development engagement, focusing on participation in workshops, training programs, and continuous learning activities. The third section examined teaching performance in terms of lesson delivery, instructional strategies, classroom management, and assessment practices. The instrument was adapted from validated tools and underwent expert validation. Reliability testing yielded Cronbach's alpha coefficients above 0.80, indicating strong internal consistency.

Ethical considerations were observed by securing approval from the Schools Division Office of Antique, obtaining informed consent from all participants, and ensuring confidentiality of responses. Data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis at a 0.05 level of significance.

3. Results

The findings showed that teachers possessed a high level of ICT skills, with computer literacy receiving the highest ratings, followed by the use of digital instructional tools and internet-based applications. This suggests that teachers are generally competent in utilizing technology to support teaching and learning.

Teachers also demonstrated a high level of engagement in professional development, particularly in ICT-related workshops and continuous learning activities. This indicates a strong commitment among

teachers to improving their instructional practices and staying updated with technological and pedagogical developments.

Teaching performance was likewise rated high, especially in lesson delivery and instructional strategies. Classroom management and assessment practices were also positively evaluated, reflecting teachers' ability to create effective learning environments and assess student progress appropriately.

Correlation analysis revealed significant positive relationships between ICT skills and teaching performance, as well as between professional development and teaching performance. Regression analysis further showed that ICT skills and professional development jointly predict teaching performance, with ICT skills emerging as the stronger influence.

4. Discussion

The results of the study highlight the important role of ICT skills in enhancing teaching performance. Teachers who are confident and competent in using technology are better able to design engaging lessons, facilitate interactive learning, and support diverse learner needs. These findings support existing research emphasizing that ICT competence is a key factor in effective instruction.

The high level of professional development engagement observed among teachers further underscores the value of continuous learning. Regular participation in training programs enables teachers to update their skills, adopt innovative teaching strategies, and apply new knowledge in the classroom. The positive relationship between professional development and teaching performance suggests that sustained learning opportunities contribute significantly to instructional quality.

The combined influence of ICT skills and professional development on teaching performance emphasizes the need for schools to view technology integration and professional growth as interconnected priorities. When teachers are both technologically skilled and professionally supported, they are more likely to deliver high-quality instruction that positively impacts learner outcomes.

5. Conclusion

The study concludes that teachers in the Schools Division of Antique demonstrate high levels of ICT skills and actively participate in professional development activities. These factors significantly contribute to their teaching performance, particularly in lesson delivery, instructional strategies, classroom management, and assessment practices. Both ICT skills and professional development are significant predictors of teaching performance, with ICT skills playing a more dominant role. Overall, the findings affirm that technological competence combined with continuous professional learning is essential for effective teaching and improved instructional quality.

6. Recommendations

Based on the findings, it is recommended that school administrators and the Schools Division Office of Antique continue to strengthen ICT training programs by providing access to updated digital tools, software, and instructional resources. Teachers should be encouraged to participate in continuous professional development activities that enhance both technological and pedagogical skills. Schools may also establish mentoring and peer-learning initiatives to support effective ICT integration in classroom instruction. Continuous monitoring, support, and feedback should be provided to ensure that professional

development efforts translate into improved teaching performance. Future studies may explore additional factors influencing teaching effectiveness, such as teacher motivation, leadership support, and learner engagement, to further enrich understanding in this area.

References

1. Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional development. Palo Alto, CA: Learning Policy Institute.
2. Department of Education (DepEd). (2019). Philippine ICT in education guidelines. Pasig City: Department of Education.
3. Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. Journal of Research on Technology in Education, 42(3), 255–284.
4. Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)? Contemporary Issues in Technology and Teacher Education, 9(1), 60–70.
5. Tondeur, J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: A systematic review of qualitative evidence. Educational Technology Research and Development, 65, 555–575.
6. UNESCO. (2017). ICT in education: Policy brief. Paris: UNESCO.