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Teachers' Innovativeness, Information and Communication Technology Skills and Instructional Competence

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Abstract

This study examined the influence of teachers' innovativeness and information and communication technology (ICT) skills on their instructional competence among 365 public elementary teachers in the Schools Division of Antique during the year 2025. Using a descriptive-correlational research design, the study aimed to determine the levels of teachers' innovativeness, ICT skills, and instructional competence, as well as to investigate the relationships and predictive effects of innovativeness and ICT skills on instructional competence. Data were gathered through a researcher-developed and validated questionnaire consisting of three sections: teachers' innovativeness, ICT skills, and instructional competence. The instrument underwent expert validation and pilot testing, which yielded a high reliability coefficient (Cronbach's alpha = 0.89). The results showed that teachers demonstrated high levels of innovativeness, particularly in creativity in lesson planning and the adoption of innovative teaching strategies, and high ICT skills, especially in digital literacy and technology integration. Instructional competence was also rated high, with classroom management, instructional delivery, and lesson preparation emerging as the strongest areas. Correlation analysis revealed significant positive relationships between teachers' innovativeness and instructional competence and between ICT skills and instructional competence. Further, multiple regression analysis indicated that teachers' innovativeness and ICT skills jointly predicted instructional competence, accounting for 56% of the variance.

Keywords: Teachers' Innovativeness, ICT Skills, Instructional Competence, Elementary Education, Professional Development, Educational Technology

Introduction

In the contemporary educational landscape, the integration of technology and innovative teaching approaches has become increasingly important in enhancing teachers' instructional competence. Teachers' innovativeness refers to their capacity to generate, adopt, and implement new teaching strategies that actively engage learners and improve learning outcomes (Gumus, 2017). Innovative teachers are not only open to change but also intentionally create learning environments that promote creativity, critical thinking, and problem-solving among students (Fullan, 2014). This ability to innovate has been associated with higher levels of instructional competence, as teachers who apply creative strategies are better able to address diverse learner needs and maximize classroom effectiveness (Ertmer & Ottenbreit-Leftwich, 2010).

Closely related to innovativeness are teachers' Information and Communication Technology (ICT) skills, which involve the effective use of digital tools, software, and online resources to support teaching and learning (Koehler & Mishra, 2009). Teachers with strong ICT skills are able to integrate technology into lesson planning, instructional delivery, and learner assessment, thereby improving teaching efficiency and learner engagement. Research has consistently shown that teachers' ICT proficiency is positively associated with instructional competence, as technologically skilled educators are more capable of designing interactive and learner-centered lessons (Tondeur, van Braak, Ertmer, & Ottenbreit-Leftwich, 2017).

Despite the recognized importance of innovativeness and ICT skills, empirical studies in the Philippine context, particularly in the Schools Division of Antique, remain limited. Understanding how these factors influence instructional competence among public elementary teachers is essential for developing targeted professional development programs and informed policy interventions aimed at improving teaching quality.

Hence, this study sought to determine the levels of teachers' innovativeness and ICT skills and to examine their influence on instructional competence among 365 public elementary teachers in the Schools Division of Antique during the year 2025.

This study aimed to assess the levels of teachers' innovativeness and Information and Communication Technology (ICT) skills and their influence on instructional competence among public elementary teachers in the Schools Division of Antique during the year 2025. Specifically, it examined teachers' innovativeness in terms of creativity in lesson planning, adoption of new teaching strategies, and openness to educational innovations. It also assessed teachers' ICT skills with respect to digital literacy, instructional technology integration, and online communication proficiency. Furthermore, the study evaluated teachers' instructional competence in classroom management, instructional delivery, lesson preparation, and learner assessment. In addition, it investigated the relationships among teachers' innovativeness, ICT skills, and instructional competence, as well as the extent to which innovativeness and ICT skills predict instructional competence. The findings are expected to provide valuable insights into how teachers' creativity and technological competence contribute to effective instruction, thereby guiding school administrators, policymakers, and professional development initiatives in enhancing teaching quality and learner outcomes.

Methodology

This study employed a descriptive-correlational research design to determine the levels of teachers' innovativeness, ICT skills, and their influence on instructional competence among public elementary teachers in the Schools Division of Antique during the year 2025. The descriptive component focused on identifying the current status of teachers' innovativeness, ICT skills, and instructional competence, while the correlational component examined the relationships and predictive influence of innovativeness and ICT skills on instructional competence.

The respondents consisted of 365 public elementary teachers selected through total enumeration to ensure comprehensive representation of teachers actively engaged in instructional responsibilities within the division.

Data were collected using a researcher-developed questionnaire that was validated by experts in educational technology and teaching methods. The instrument was composed of three main parts: Part I assessed teachers' innovativeness in terms of lesson planning creativity, adoption of new teaching

strategies, and openness to educational innovations; Part II measured ICT skills, including basic digital literacy, integration of technology in teaching, and online communication proficiency; and Part III evaluated instructional competence, focusing on classroom management, instructional delivery, lesson preparation, and learner assessment. The instrument underwent pilot testing and yielded a Cronbach's alpha coefficient of 0.88, indicating high reliability.

Ethical considerations were strictly observed, including securing informed consent from the respondents, maintaining anonymity, and ensuring the confidentiality of all responses.

Data analysis involved the use of descriptive statistics such as frequency, percentage, mean, and standard deviation to describe the variables. Pearson Product-Moment Correlation was applied to determine significant relationships among teachers' innovativeness, ICT skills, and instructional competence, while multiple regression analysis was conducted to assess the predictive influence of innovativeness and ICT skills on instructional competence at a 0.05 level of significance.

Results

The findings revealed that public elementary teachers in the Schools Division of Antique demonstrated a high level of innovativeness, with an overall weighted mean of 4.31 (SD = 0.36). Among the indicators of innovativeness, creativity in lesson planning received the highest rating (M = 4.36, SD = 0.34), followed by openness to educational innovations (M = 4.29, SD = 0.37) and adoption of new teaching strategies (M = 4.28, SD = 0.38). These results indicate that teachers actively implement creative instructional approaches and remain receptive to innovative educational practices, supporting previous findings that teacher innovativeness enhances instructional effectiveness (Gumus, 2017).

With regard to ICT skills, the respondents also exhibited a high level, with an overall mean of 4.27 (SD = 0.35). Digital literacy obtained the highest mean score (M = 4.33, SD = 0.32), followed by technology integration in teaching (M = 4.25, SD = 0.36) and online communication proficiency (M = 4.23, SD = 0.37). This suggests that teachers possess the necessary digital competencies to effectively integrate ICT into instructional processes, consistent with studies emphasizing the strong link between ICT skills and teaching effectiveness (Tondeur et al., 2017).

In terms of instructional competence, teachers were likewise rated at a high level, with an overall mean of 4.29 (SD = 0.34). Classroom management (M = 4.32, SD = 0.33) and instructional delivery (M = 4.31, SD = 0.34) emerged as the strongest areas, followed by lesson preparation (M = 4.28, SD = 0.35) and learner assessment (M = 4.25, SD = 0.36). These findings indicate that teachers effectively manage classroom activities and deliver instruction that supports learning.

Correlation analysis revealed significant positive relationships between teachers' innovativeness and instructional competence ($r = 0.61$, $p < 0.01$) and between ICT skills and instructional competence ($r = 0.64$, $p < 0.01$). These results suggest that higher levels of innovativeness and ICT proficiency are associated with stronger instructional competence. Moreover, multiple regression analysis showed that teachers' innovativeness and ICT skills significantly predicted instructional competence, accounting for 56% of the variance ($R^2 = 0.56$, $F = 212.45$, $p < 0.01$), confirming their combined influence on instructional effectiveness.

Discussion

The findings of the study emphasize the important role of teachers' innovativeness in enhancing instructional competence. Teachers who demonstrate creativity in lesson planning and adopt innovative

teaching strategies are better able to engage learners, address diverse learning needs, and implement effective instructional practices. This supports the assertion of Gumus (2017) that innovative teaching contributes significantly to instructional effectiveness.

Similarly, strong ICT skills enable teachers to integrate technology more effectively into classroom instruction, resulting in improved learner engagement and more interactive, student-centered learning experiences (Tondeur et al., 2017). Teachers' digital literacy and technological competence appear to strengthen their overall instructional performance.

The significant relationships among innovativeness, ICT skills, and instructional competence highlight their interrelated influence on teaching effectiveness. Teachers who are both innovative and technologically proficient tend to demonstrate higher competence in lesson delivery, classroom management, and assessment. These findings underscore the importance of professional development programs that simultaneously promote innovative teaching practices and ICT integration skills.

Overall, the results suggest that fostering both innovativeness and ICT competence among teachers is essential in improving instructional quality and enhancing learner outcomes. Educational leaders and policymakers should therefore prioritize initiatives that support creative and technology-driven teaching practices.

Conclusion

Based on the findings, it is concluded that public elementary teachers in the Schools Division of Antique during the year 2025 exhibit high levels of innovativeness, ICT skills, and instructional competence. Teachers demonstrate creativity in lesson planning, openness to adopting new teaching strategies, and a willingness to embrace educational innovations, all of which contribute significantly to their instructional effectiveness. In addition, teachers possess strong ICT skills, including digital literacy, technology integration in teaching, and online communication proficiency, enabling them to deliver lessons effectively and engage learners in technology-enhanced environments.

The study further concludes that teachers' innovativeness and ICT skills are significantly correlated with and jointly predict instructional competence, highlighting their role as critical determinants of effective teaching. Teachers who are both creative and technologically skilled tend to exhibit higher levels of competence in classroom management, lesson delivery, preparation, and learner assessment. These findings underscore the interconnected nature of innovativeness and ICT proficiency in shaping quality instructional practices. Thus, strengthening teachers' creativity and technological skills is essential for sustaining high standards of teaching and improving learner performance in elementary education.

Recommendations

In light of the conclusions, the following recommendations were proposed:

Professional Development Programs: School administrators should implement continuous training and workshops that focus on enhancing teachers' innovative teaching strategies and ICT competencies, providing practical and hands-on learning experiences.

Mentoring and Peer Collaboration: Schools should establish mentoring and peer collaboration systems that allow teachers to share innovative ideas, instructional resources, and effective ICT practices, thereby fostering a supportive and creative professional culture.

Provision of Technological Resources: Educational institutions should ensure the availability of adequate ICT tools, digital learning materials, and reliable internet connectivity to support effective technology in-

tegration in instruction.

Encouragement of Reflective Practice: Teachers should be encouraged to engage in reflective practices that allow them to evaluate their teaching strategies, instructional effectiveness, and use of ICT for continuous professional growth.

Further Research: Future studies may explore additional factors influencing instructional competence, such as school climate, administrative support, and learner characteristics, to provide a more comprehensive understanding of effective teaching practices.

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