



(RESEARCH ARTICLE)



Navigating the digital frontier: exploring ICT integration in teaching for enhanced learning experiences

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Abstract

In today's technologically driven world, Information and Communication Technology (ICT) integration in education has emerged as a transformative force in changing the conventional teaching and learning process. This study aims to examine the impact of Information and Communication Technology (ICT) integration in the teaching process and its influences on learning experiences and utilizes qualitative phenomenological research design. The participants identified via purposive sampling of this study were 20 teachers at San Isidro National High School. The participants were interviewed using semi-structured interview questions that focused on the teaching process and influences on learning experiences of ICT integration in teaching. ICT integration in teaching promotes and fosters a positive impact and enhanced learning experiences. The results suggested that ICT showcases a transformative potential in teaching, enhancing learning experiences and teachers have a significant pedagogical transformation. Also, it plays a vital role in learning essential 21st-century skills. However, challenges related to access to technology are apparent and highlight the need for professional development for teachers and further support, especially in ICT integration in teaching. Therefore, by understanding and leveraging these themes gained from this study teachers, policymakers, and educational institutions seeking to navigate the digital frontier effectively and further related studies may also be conducted.

Keywords: ICT integration; Teaching; digital frontier; 21st-Century skills

1. Introduction

In today's technologically driven world, Information and Communication Technology (ICT) integration in education has emerged as a transformative force in changing the conventional teaching and learning process. Creating new innovative and meaningful teaching strategies inside the classroom. Teachers incorporate digital tools and new resources in the teaching and learning process to foster effective and meaningful educational experiences. The use of ICT will not only enhance teaching and learning environments but also prepare the next generation for future lives and careers (Wheeler, 2001)

The advent of technology has transformed various industries, including education. In recent years, ICT has opened new opportunities and possibilities in teaching and learning. It enables us to embrace and go beyond the conventional way of teaching and cater to learners' diverse needs and learning styles.

ICT integration in teaching holds the promise of creating an interactive, dynamic, and meaningful learning environment by incorporating digital tools, multimedia resources, online platforms, and interactive applications to collaborate learners' learning experiences.

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In addition, ICT integration challenges teachers to reassess their pedagogical practices and approaches. The teacher needs to be confident and competent in the mastery skills of ICT integration which is appropriate to the learner's needs (Jones and Preece, 2006). The shift from a teacher-centered approach to a learner-centered one encourages teachers to act as facilitators of learning, promoting learners' exploration of knowledge and fostering critical and creative thinking in solving problems. This is because ICT can help learners develop their skills, boost their motivation, and widen their knowledge and information (Grabe M., & Grabe, C., 2007; Hussain et al., 2011).

Furthermore, ICT tools offer opportunities for engaging and interactive learning that captivate the students' interest and keep them motivated to actively participate in the teaching and learning process. Also, it promotes avenues for personalized learning experiences that can cater to the individualized learning paces, needs, preferences, and abilities of learners. As part of this, schools and other educational institutions that are supposed to prepare learners to live in "a knowledge society" need to consider ICT integration in their curriculum (Ghavifekr, Afshari & Amla Salleh, 2012).

This study aims to examine the impact of Information and Communication Technology (ICT) integration in the teaching process and its influences on learning experiences.

2. Material and methods

This study utilized qualitative phenomenological research design, as it seeks to understand and describe the experiences of teachers regarding ICT integration. The participants identified via purposive sampling of this study were 20 teachers at San Isidro National High School. Purposive sampling is also known as judgmental, selective, or subjective sampling (Crossman, 2018). This type of sampling ensures the best results suited to answer the research questions.

With the hope of gathering valid and reliable study and data, the participants were interviewed using semi-structured interview questions that focused on the teaching process and influences on learning experiences of ICT integration in teaching. The study adhered the ethical considerations throughout the research process and the participation was voluntary with consent and followed the data protection and privacy guidelines.

The data were transcribed and analyzed using thematic analysis. Themes and patterns related to the impact of ICT integration in the teaching process and its influences on the learning experiences were identified, coded, and interpreted to draw meaningful results and conclusions.

3. Results and discussion

This study aimed to examine the impact of Information and Communication Technology (ICT) integration in the teaching process and its influences on learning experiences. A qualitative phenomenological approach is employed. There were two major questions raised during the interview with the participants. The questions focused on the impact of Information and Communication (ICT) integration in the teaching process and its influences on learner experiences. A total of 20 teachers at San Isidro National High School composed the list of participants. They underwent interviews with follow-ups to clarify their responses to the given questions. The coded data are summarized as follows:

A significant pattern observed in the data was the transformation of pedagogical practices resulting from ICT integration. Most of the teachers answered that a shift from traditional teacher-centered approaches to more learner-centered ones. The teachers acknowledged that technology allowed them to create instruction based on individual student's needs, learning styles, and pace. They also think that ICT integration plays a vital role in nurturing essential 21st-century skills among learners.

Increased learning experiences were the positive impact of ICT integration, and it is one of the most consistent and dominant themes across all the teachers in the integration of ICT in teaching. They add that analysis of learning experiences indicated that their classes with higher ICT integration demonstrated a statistically significant improvement in overall learning outcomes compared to traditional classes.

However, the teachers emphasized also that while the benefits of ICT integration were apparent, the data also highlighted challenges and limitations faced by the teachers. Insufficient access to technology and an internet connection, limited training opportunities, and concerns about maintaining student focus during technology use emerged as key challenges.

4. Conclusion

ICT integration in teaching promotes and fosters a positive impact and enhanced learning experiences. The results suggested that ICT showcases a transformative potential in teaching, enhancing learning experiences. Moreover, teachers have a significant pedagogical transformation, indicating that ICT has become an essential catalyst in creating an interactive, meaningful, and dynamic learning environment that caters to the individual differences of learners. Also, it plays a vital role in learning essential 21st-century skills. However, challenges related to access to technology are apparent and highlight the need for professional development for teachers and the need for further support, especially in ICT integration in teaching.

Therefore, by understanding and leveraging these themes gained from this study teachers, school heads, policymakers, and educational institutions seeking to navigate the digital frontier effectively and further related studies may also be conducted. By utilizing the optimum power of ICT in teaching, teachers can continue to enhance learning experiences, foster 21st-century skills, and prepare students to thrive in an increasingly interconnected and technology-driven world.

Compliance with ethical standards

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Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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