

“YOU CAN DO IT”: EXPLORING THE LIVED EXPERIENCES OF PHYSICAL EDUCATION TEACHERS IN THE INTEGRATION OF TECHNOLOGY IN INSTRUCTION

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Abstract

The integration of technology in physical education (PE) has become increasingly essential in enhancing instructional delivery and student engagement. However, teachers continue to encounter challenges in effectively incorporating digital tools into teaching. This study employed a qualitative phenomenological design to explore the lived experiences of five physical education teachers from Central Mindanao University teaching General Physical Education and Bachelor of Physical Education (BPED) courses. Data were collected through in-depth interviews and a focus group discussion and analyzed using thematic analysis. Findings revealed two major categories of technology integration: computer applications and physical activity (PA) trackers and related gadgets. Teachers identified key challenges, including limited technological knowledge, difficulty sustaining student interest, and internet connectivity issues. Despite these challenges, participants reported significant benefits such as improved instructional delivery and enhanced academic performance, supported by increased student engagement and meaningful learning experiences. The study underscores the importance of institutional support, ICT training, and continuous professional development to strengthen teachers' competencies. Effective technology integration in physical education enhances both teaching practices and student outcomes, highlighting the need for adaptive and innovative instructional approaches.

Keywords: Technology Integration; Phenomenological design; Physical Education; Instructional Delivery; ICT in Education

1. Main text

Introduction

The use of technology has been gradually introduced to our society. The perceptions and experiences of Physical Education teachers in the inclusion of technology the teaching and learning process has been an issue that needed to be dealt with. PE teachers have different outlook on the use of technology in the Physical Education pedagogy. The digitalization of the teaching process has affected the preparedness of the teachers to use technology in teaching. Physical education teachers cannot escape this concern in using technology as the instructional program.

Recent surveys indicate a disconnect: despite technology's growing importance in today's classrooms, a significant number of educators report feeling unprepared to integrate it into their teaching.

Research rooted in Technological Pedagogical Content Knowledge underscores the significance of educators' technological proficiency as a key determinant of successful integration (Liu et al., 2023). Likewise, Tondeur et al. A 2021 study found that even with more access to digital tools, teachers often lack the necessary knowledge or confidence to use technology effectively in their teaching.

To address these issues, international standards and guidelines have been created to help educators use technology in their teaching. The International Society for Technology in Education emphasizes the importance of teachers being able to design, carry out, and assess learning experiences that use technology.

Recent research suggests that physical education teacher training programs need to include technology integration more intentionally to adequately prepare future teachers for the demands of modern teaching methods (Papastergiou & Mastrogiannis, 2022).

Furthermore, contemporary research suggests that effective technology integration transcends basic technical proficiency; it necessitates the ability to align digital tools with educational objectives and the specific needs of students (Sargent & Casey, 2024). This highlights the persistent need for structured professional development initiatives and institutional support systems designed to improve educators' readiness and competence in incorporating technology into their teaching practices.

In the Philippines, the incorporation of technology into education has gained considerable importance, especially given the necessity for digital transformation in teaching approaches. Recent studies reveal that teachers from different fields, including physical education (PE), are increasingly utilizing various digital technologies to improve teaching methods, boost student involvement, and streamline assessment processes (Toquero, 2021). Specifically, in the context of physical education, emerging technologies like fitness applications, wearable devices, and online platforms are being utilized to aid student learning in both theoretical and practical settings (Papastergiou & Mastrogiannis, 2022).

Despite the growing emphasis on technology integration within general education, however, research focusing on discipline-specific applications—especially within physical education—remains limited, thereby highlighting the need for more contextually relevant and practice-oriented investigations (Sargent & Casey, 2024).

During the COVID-19 pandemic, the integration of technology into physical education saw increased prevalence in Mindanao and other developing regions, particularly as remote learning became heavily dependent on digital platforms. Studies show that educators utilized online learning management systems, mobile applications, and virtual communication tools, thereby requiring access to devices like laptops, cellphones, and dependable internet connections (Tria, 2022). However, these rapid transitions also exposed significant challenges, including digital disparities, inadequate infrastructure, and a deficiency in technological skills among educators (Tondeur et al., 2021).

For example, Central Mindanao University had already started to use technology in PE before the epidemic. Conversely, educators continue to encounter difficulties in adapting to rapidly evolving technologies. Research suggests that inadequate technological competence, insufficient training, and a dependence on traditional teaching methods remain impediments to effective integration (Liu et al., 2023). These challenges underscore the importance of understanding teachers' lived experiences, given that their adaptability, viewpoints, and abilities are critical for the successful incorporation of technology within educational contexts. Consequently, teachers necessitate continuous professional development and institutional support to ensure their preparedness for the demands of technology-enhanced physical education.

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Methods

This study used a qualitative approach, specifically a phenomenological method, to investigate physical education teachers' personal experiences with using technology in their teaching. Qualitative

research, by its nature, emphasizes gathering and analysing non-numerical data to better understand participants' perspectives, experiences, and interpretations of a specific topic. The study's participants were faculty members from Central Mindanao University who taught General Physical Education and Bachelor of Physical Education (BPED) courses. The selection of these five individuals was based on their relevant teaching experience and their active use of technology in their teaching. In-depth interviews (IDIs) and a focus group discussion (FGD) were employed to gather comprehensive and nuanced data. Participants were chosen because they were directly involved in the school's teaching and learning processes, making them essential sources of information for this study.

Results and Discussions

This section provides a discussion of the first research question of the study. It focuses on the types of technology that were included in the Physical Education teacher education program. For this study, the participants were asked about the types of technology they used in teaching Physical Education. Figure 1 shows the result of the thematic analysis which summarizes the answer to the first objective of this study.

Computer Application. Recent literature confirms that computer applications have become essential instruments in improving the teaching and learning processes in physical education. Recent research demonstrates that digital technologies, including presentation software, learning management systems, and interactive applications, facilitate instructional delivery and enhance student engagement. For example, Martín-Rodríguez et al. (2025), showed that using technology, like digital apps, in physical education can help students remember what they learn, improve their physical skills, and encourage them to study independently.

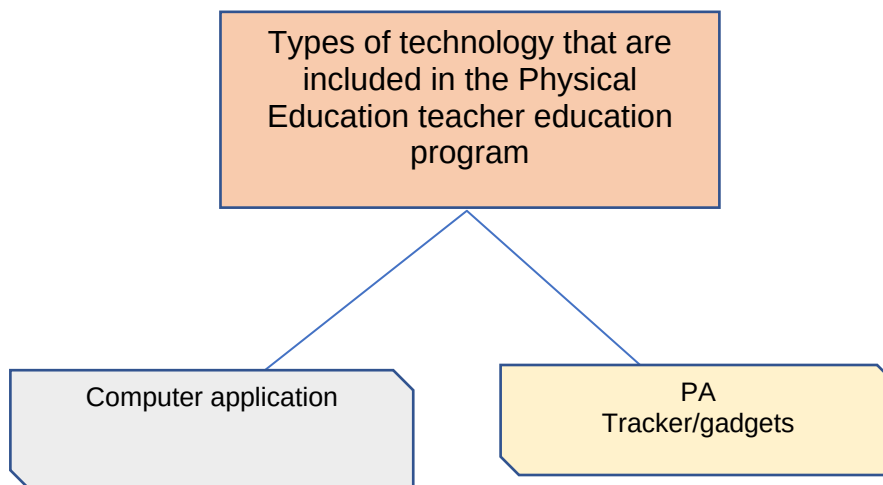


Figure 1. Types of technology that are included in the Physical Education teacher education program

Research indicates that using computer-based technologies creates more dynamic and student-centered learning environments. Bharati (2024) discovered that digital tools can enhance personalized learning and promote inclusivity. These tools allow teachers to customize activities, making sure they meet the specific needs of every student.

Furthermore, using technology in the classroom has been linked to increased student participation

and interest. According to Li, M. (2024), a positive relationship between using digital resources in physical education and students' active involvement and motivation in the subject.

Game-based systems and interactive platforms, as emerging technologies, are shown to improve educational experiences by increasing student motivation, focus, and enjoyment (Priante & Tsekouras, 2025). These findings suggest that computer applications are essential not only for delivering content but also for creating an engaging and inclusive educational environment.

Recent bibliometric analyses reveal a global surge in the integration of digital technology within physical education, specifically concerning video feedback, pedagogical innovations, and digital learning tools (Zhang & Wang, 2025). This observation implies an increasing acknowledgment of the importance of computer programs in modern physical education practices. This was expressed by Participant 1:

The different technology that I used in teaching physical education are the basic Microsoft application, video editing, and usage of application downloadable from the internet.
(P1)

The technology I have mainly used are as follows: Online Collaboration Tools (such as Google docs, menti.com, padlet.com, jamboard); Class Management System (Google Classroom); Presentation Tools (Canva.com) ; and Lecture/Demonstration Capture Tools (OBS) (P4)

PA Tracker/Gadgets. Recent investigations indicate that the increased utilization of wearable technology, such as pedometers and heart rate monitors, within physical education curricula correlates with improved student performance and heightened motivation. These devices facilitate precise monitoring of both physical exertion and physiological reactions, thereby enabling educators to design tailored, goal-focused instructional strategies. For instance, Goodyear et al. (2022) found that wearable technology provides immediate feedback, which aids students in assessing their activity levels and deepening their understanding of their physical well-being, consequently promoting greater engagement and motivation in physical education settings.

Papastergiou and Mastrogiannis (2022) further emphasized the role of digital and wearable technologies in personalized learning. These tools enable educators to monitor student progress and then adapt teaching methods to meet individual needs and abilities. This highlights the importance of tailoring physical education programs to meet the diverse needs of all students.

Furthermore, Chen and colleagues' (2023) systematic review revealed that wearable activity trackers significantly elevate students' physical activity and foster sustained participation by setting measurable goals and providing continuous feedback. These findings suggest that pedometers and heart rate monitors serve as reliable tools for performance evaluation and are also effective in motivating students and supporting flexible, student-focused physical education programs. Technology is an aid in teaching PE and participants were satisfied with the result of using technology in teaching PE as expressed by Participant 2:

It helps us a lot in teaching physical education. Especially, with 50 students at the same time. Also, it gives us accurate results in their performance. (P2)

Figure 2 shows the challenges of teachers in integrating technology in teaching PE. For this study, I asked the participants on the problems they have met when integrating technology in teaching PE. The figure will show the result of my thematic analysis which summarizes the second objective of this study.

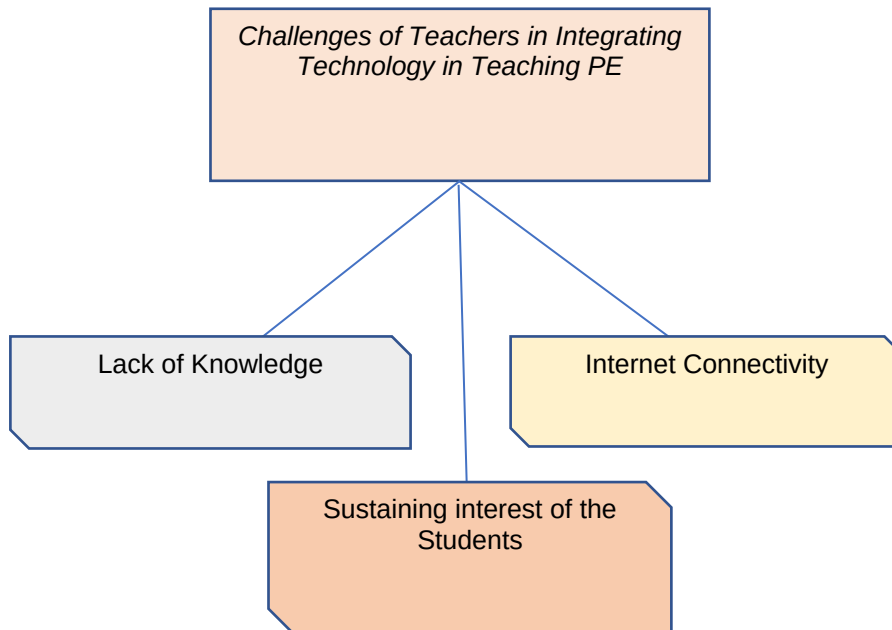


Figure 2. Challenges of Teachers in Integrating Technology in Teaching PE

Internet Connectivity. Recent investigations have confirmed that internet access is a crucial factor in the successful integration of technology within educational contexts, including physical education. Reliable internet access is essential for the distribution of digital materials, enabling communication, and supporting interactive learning. Barrot and his team (2021) discovered that unreliable internet connections significantly hindered both students and teachers during online learning programs in the Philippines, consequently impacting participation, engagement, and overall academic performance.

Adedoyin and Soykan (2023) found that the lack of good internet infrastructure and limited access to reliable internet hinder the effective use of technology in education, particularly in developing countries. These issues create significant

obstacles to using multimedia resources, online platforms, and real-time interactive features, which are all essential parts of modern teaching methods.

Furthermore, Trust and Whalen's (2021) research underscored that connectivity issues impede instructional practices, while simultaneously affecting communication, collaboration, and access to digital resources for both educators and learners. This finding emphasizes the critical role of a reliable internet connection as a fundamental requirement for effective technology integration across physical education and other academic disciplines. This is expressed by Participant 5:

Internet connectivity and sustaining interest of the learners.
(P3)

The challenges that I had in integrating technology in teaching PE is unstable internet connectivity. (P5)

Lack of knowledge. Recent investigations consistently highlight inadequate technological skills and insufficient training as substantial barriers to the successful incorporation of technology within educational settings. Educators often struggle to effectively employ digital technologies, a consequence of both their limited technological expertise and a scarcity of professional development resources. A survey examining teacher preparation revealed that technological inadequacy and a lack of training were among the most prevalent challenges, thereby underscoring the critical need for the continued provision of ICT capacity-building initiatives (Mane, 2025).

Demissie (2022) also stressed the importance of teachers' digital skills in using technology effectively. This is because teachers who lack enough technological and teaching knowledge might not use digital tools in the classroom as effectively as they could.

Furthermore, recent reviews of the literature indicate that educators' understanding, particularly regarding the use of technology in teaching and specific subjects, remains a significant challenge in education. These shortcomings are often linked to a lack of sufficient professional development, inadequate technical support, and limited chances to use technology-based teaching methods (Paran et al., 2024). This was stated by Participants:

The problem that I met in integrating technology in teaching is the lack of knowledge. There are things that I cannot do because I just don't have the training or know-how. (P1)

It was really difficult since we are not yet familiar with this technology and it takes an ample time to adapt with this type of technology. (P2)

Sustaining interest of the students. Recent studies support the idea that, despite students' frequent use of technology, they often struggle to use it effectively for learning, particularly in physical education. Research shows that students' technological skills and digital literacy significantly affect their ability to participate in technology-enhanced learning environments.

Dimo et al. (2024) found a direct relationship between students' technological preparedness and their self-efficacy in online physical education learning, implying that students lacking adequate preparation may encounter challenges in the effective application of digital technologies within educational contexts.

Likewise, Wagiran and colleagues (2022) discovered that students' insufficient technological proficiency, coupled with a lack of motivation and inadequate preparation, impedes their engagement within e-learning settings. This observation implies that technological familiarity does not invariably translate into its utility for academic pursuits.

Furthermore, recent research highlights that a lack of digital literacy continues to be a significant barrier to the effective use of educational resources. Baubonytė (2026) emphasized that insufficient digital literacy reduces students' willingness to use and adopt physical activity applications, thereby illustrating the importance of providing students with training and education on how to use technology effectively. This was a challenge stated by Participant 3 and Participant 5:

The use of technology...sustaining
interest of the students. (P3), (P5)

Figure 3 shows the effects of technology integration in teaching PE. For this study, the participants were asked on the benefits of integrating technology in teaching physical education. The figure will show the result of my thematic analysis which summarizes the third objective of this study.

Delivery of instruction is easier. Recent studies indicate that the rapid expansion of mobile technology has significantly facilitated the instruction of physical education. Digital resources, including

mobile applications, video analysis software, and interactive platforms, empower educators to enhance their teaching methodologies and assist students in acquiring new skills through visual and data-oriented approaches, as demonstrated by Kilag et al. (2023) conducted a systematic review that revealed that technology such as mobile applications, motion sensors, and interactive platforms enhance student engagement, motivation, and skill acquisition in physical education environments.

Martín-Rodríguez et al. (2025), also suggested that using technology in teaching, like multimedia and video-based methods, helps to show movement, gives immediate feedback, and makes learning more personal. These tools help children understand and perform difficult physical activities better.

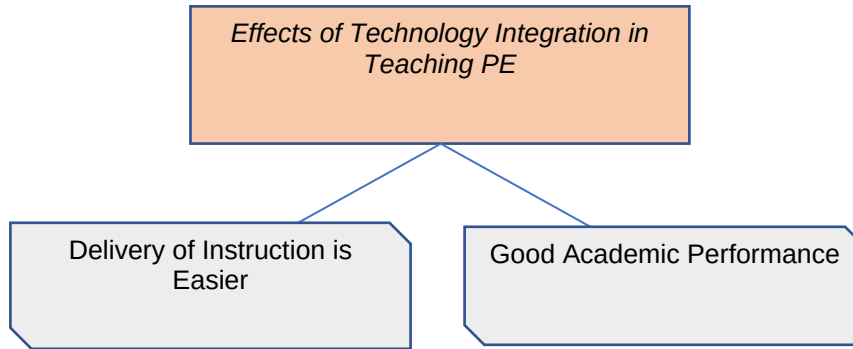


Figure 3 Benefits of Technology Integration in Teaching PE

Digital technologies furnish educators with the capacity to evaluate students' movements, provide immediate feedback, and design more engaging lessons that accommodate diverse learning needs (Zhong et al., 2025). Consequently, this supports the assertion that the integration of ICT tools within physical education not only improves lesson quality but also enriches the overall learning experience for students. Aside from that, learning can be enhanced beyond strategies. As mentioned by Participant 4:

It makes delivering of instruction easier. Theories and concepts are easier to explain because of the presentation tools. (P4)

Using audio-visual presentations, projectors and computer presentations makes teaching easy. Also, fitness tools enable me to track student's record conveniently. (P2)

Good Academic Performance. Recent investigations provide substantial evidence that the integration of technology within physical education curricula correlates with enhanced academic achievement and a more comprehensive learning experience. Pedagogical approaches incorporating technology, such as flipped classrooms, multimedia tools, and digital platforms, demonstrably foster increased student engagement, motivation, and cognitive advancement. As an illustration,

Hinojo-Lucena and colleagues (2021) found that the implementation of flipped learning in physical education correlates with notable enhancements in students' academic performance, self-directedness, and motivation, as well as their interactions with educators and classmates. Sailer and Homner's (2023) research yielded comparable findings, demonstrating that technology-integrated learning environments, including gamified and digital instructional approaches, positively influenced students' academic outcomes. This was achieved by fostering increased engagement, involvement, and the capacity for meaningful learning. Their study's outcomes suggest that digital technologies facilitate both the acquisition of new knowledge and the development of advanced cognitive abilities, such as problem-solving and critical thinking. In addition, Martín-Rodríguez and colleagues (2025) emphasized that the integration of digital technologies within physical education curricula yields improvements in both cognitive and physical learning outcomes. Their

research demonstrated that technology facilitates students' comprehension of subject matter, skill acquisition, and engagement, thereby contributing to elevated academic performance and reduced sedentary behavior. They are not only making good with their intellectual health but also with their physical health as stated by Participant 3.

The benefits that I have experienced in integrating technology in teaching PE is having superior academic performance, motor fitness, and attitude towards school also these activities offer unique opportunities concerning socialization, problem solving, self-expression, and conflict resolution. (P3)

I think the benefits that my students have is that their learning experience becomes more meaningful and they can understand the lesson well. (P1)

Future Directions

Based on the findings and implications of this study on the lived experiences of physical education teachers in integrating technology into teaching, the following future directions are recommended:

First, the *Department of Education (DepEd)* and the *Commission on Higher Education (CHED)* should strengthen their support for technology integration by ensuring the provision of adequate resources, including ICT equipment, digital tools, and reliable infrastructure. Such support is essential to enable teachers to effectively implement technology-enhanced instruction and provide students with meaningful and engaging learning experiences.

Second, *school administrators* should prioritize continuous professional development by offering regular training and capacity-building programs on ICT applications. Strengthening teachers' technological competencies will enhance instructional effectiveness and improve student learning outcomes.

Third, *physical education teachers* are encouraged to proactively adapt to the rapidly evolving technological landscape. By developing digital competence and staying informed about emerging tools and challenges, teachers can enhance their instructional practices and better respond to the demands of modern education.

Finally, *future researchers* may extend this study by exploring the lived experiences of other stakeholders, such as coaches and students, across diverse contexts, including rural and urban settings. Further studies may also employ mixed-methods or comparative approaches to provide a more comprehensive understanding of technology integration in physical education.

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