INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2024, Vol. 5, No. 7, 2906 – 2918
http://dx.doi.org/10.11594/ijmaber.05.07.37

Research Article

Technology Integration in Physical Education Curriculum Implementation in the Philippines: A Scoping Review

Jaslee C. Campo, Tristan O. Licup, Edison G. Lumba, Erika G. Lingat, Julius Ceazar G. Tolentino*

College of Education, Don Honorio Ventura State University, Bacolor 2001, Pampanga, Philippines

Article history:
Submission 30 June 2024
Revised 07 July 2024
Accepted 23 July 2024

**Corresponding author:*
E-mail:
jcgtolentino@dhvsu.edu.ph

ABSTRACT

The approach utilized in the study is a scoping review typically employed to map existing literature on a specific topic that undergoes an in-depth analysis, focusing on concepts, gaps, and findings. This study aimed to examine the technologies integrated into PE curriculum implementation and their benefits and challenges in the educational process in the Philippines. Moreover, in the methodological process, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) framework are used to ensure the transparency and trustworthiness of the study. Three overarching themes were identified with the in-depth analysis of the literature selected. The first theme emphasized technology utilization in curriculum implementation in PE, which emphasizes integrated technologies and online education platforms. The second theme highlighted the benefits of technological integration in PE curriculum implementation, which has seen online learning and platforms as effective tools. Literature has stated that teachers, families, and the environment greatly impact the new learning modality. The third theme covered the challenges of technological integration in PE curriculum implementation, together with the resource and environmental challenges in online education. This also concerned components impacting teachers' and students' holistic development. Furthermore, this study found that from 2020 to 2024, online learning became a tool for continuous learning as an alternative to the COVID-19 pandemic. Institutions utilized various technologies for PE to support the curriculum implementation, as some foresaw the time as a learning experience and gained new skills, while others faced hindrances and challenges in these times.

Keywords: *Curriculum implementation, Online learning, Pandemic, Physical education, Scoping review, Technology integration*

How to cite:
Campo, J. C., Licup, T. O., Lumba, E. G., Lingat, E. G., & Tolentino, J. C. G. (2024). Technology Integration in Physical Education Curriculum Implementation in the Philippines: A Scoping Review. *International Journal of Multidisciplinary: Applied Business and Education Research*. *5*(7), 2906 – 2918. doi: 10.11594/ijmaber.05.07.37

Introduction

Physical education (PE) is a discipline that promotes fitness, lifelong wellness, healthy habits, and a well-rounded education. Curriculum implementation is a crucial aspect, as it is the life and action of a planned and designed curriculum. Furthermore, when PE and curriculum implementation are integrated, it becomes a systematic process for delivering the planned and designed PE curriculum, which ensures high-quality education and promotes physical literacy among students.

Moreover, with the inevitable changes in the world caused by major drivers such as Education 5.0 and the lessons learned from the coronavirus disease (COVID)-19 pandemic; to name a few, a plethora of social institutions are being shaped tremendously. For instance, in the context of education, while existing technologies were placed years ago, it was only until the pandemic forced almost everyone to migrate their conventional teaching and learning processes into more digitally driven perspectives. Integrating technology into education was considered a paradigm shift, specifically in the field of PE. From a PE teacher's perspective, technology has been seen as a learning material worth considering as it helps reduce the length of class sessions, helps students be more interactive, improves students' independence, and tests their productivity to meet the demands of the environment. Furthermore, it enhances engagement in physical activities, personalizes learning experiences, and expands learning opportunities.

To contextualize, the Philippines is known as one of the third-world countries that is struggling in various ways, especially in education. There was a need to address, elevate, and enhance the educational experiences of learners to continue lifelong learning and produce continuous development. Furthermore, technology integration in physical education curriculum implementation in the Philippines is a relevant and crucial aspect, as the world is continuously developing. There was a need to seek tools, materials, platforms, and strategies to be utilized to better serve students, ensure quality education, promote physical competence, and be able to cope with other countries in this rapidly modernizing world. This addresses the future and present challenges of Filipino teachers and students in preparing them for a technology-driven world with the alignment of the latest global trends and challenges.

In support, there are modern tools that can be used in education to bridge knowledge from teachers to students, students to students, and independent learning. These online platforms or tools, such as but not limited to Google Classroom, Facebook, YouTube, Google Docs, and Zoom, made a huge contribution to supplementing and extending the knowledge of teachers and students. Moreover, these platforms helped institutions continue the teaching and learning process, especially during pandemics like COVID-19. In physical education, institutions made learning possible through online learning, where students attended virtual classrooms and utilized different learning applications that learners could simulate, have activities, and watch videos to learn during PE classes.

By living in the frame of technology with the incorporation of curriculum implementation in PE, stakeholders have seen various challenges, including but not limited to lack of competence and training among teachers, limited access to technology, high costs of available devices, curriculum alignment of technology, student engagement, and undervaluing of technology integration, among others, which became a hindrance in the teaching-learning processes. These challenges underscore the multifaceted issues seen in the field of PE curricula, indicating a need for studying professional development, ensuring equitable access to resources in schools, refining strategies for student engagement, and recognizing the value of technology integration.

Additionally, the scope of the study concerns all types of technologies and their integration into physical education curriculum implementation across all educational levels, focusing on the literature published from 2020 to 2024. Furthermore, this will emphasize the Philippine setting and the concepts' impact through a scoping review. Moreover, this study aims to identify different kinds of technologies integrated into the PE curriculum implementation in the Philippines, how these have impacted institutions, what their state is, what

their benefits from these modernizing tools, and what challenges they face. This study highlights preparing students, teachers, and institutions to promote dynamic learning, a technology-driven environment for better learning, serve students with quality instruction, and ensure physically competent learning in the 21st century.

Curriculum Implementation in PE

Curriculum implementation is the execution of a planned curriculum in the classroom through the efforts of teachers and learners. It is also the arrangement of the pre-planned curriculum through an assessment of the facilities, resources, and environment to ensure that the planned curriculum will be implemented with ease (Offorma, 2009). It also highlighted the development of pedagogies and systems as a professional responsibility among teachers to be effective in practical dimensions and technical quality (MacPhail & Whittle, 2020; Tolentino et al., 2020).

However, issues have arisen, which include a lack of motivation in teaching and limited means for facilities (Ghazali & Hari, 2016). It was also seen that the pandemic and COVID-19 have impacted people's lives, including in the educational process of curriculum implementation. The mode of learning has shifted to online and modular learning, which are flexible learning modalities (Tegero, 2022). PE has been neglected and has suffered many drawbacks due to misconceptions. Many people believed that PE was a dispensable subject that simply dealt with physical activities and nothing more. With that, establishing and implementing high-quality education in PE can provide students with the appropriate knowledge, behaviors, confidence, and skills to be physically active in life during the educational process (Cariaga, 2014).

Technology Integration in PE

Technology is the development and use of tools and machines, as well as the extension of capabilities to solve real-world problems. It is extremely concerned with what can or should be designed, made, or developed from natural world materials to satisfy human needs and wants (Karagozoglu, 2017). PE is a vital aspect of learning, wherein skills, knowledge, and attitudes are gained through human movements. It augments activities that will increase physical fitness and psychomotor capacities, as well as uplift all-around well-being through learning their fitness levels and choosing activities that work on their weaknesses and life skills in general (Kh, 2023). Integration of technology in PE is the incorporation of modern information technology like virtual reality devices and interactive activities into in-class instruction to improve student engagement, learning outcomes, and learners progress (Dizon et al., 2022; Marcaida et al., 2022; Wang, 2022). In addition, various technologies are applied in PE to facilitate both teaching and learning processes. It was found that the involvement of students has elevated and made learning interaction beneficial to the teacher because of the advantages brought by these tools such as but not limited to their participation (Almario et al., 2023; Dizon et al., 2023; Ji, 2023).

In addition to this, the inclusion of information technology enhances student spirit for training, boosting cooperation, and creating lifelong sports awareness. However, in the same study, it was indicated that integration of technology in PE also comes with its problems. Among the critical problems confronting technology integration in PE are lack of resources, inadequate socializing, difficulty in navigating online platforms effectively, and specialized training in handling the same online platforms in giving the required instruction online (Asare et al., 2023). In addition, there were challenges related to technology, scarcity of equipment, and difficulties in grading student performances (Reyes et al., 2023). Furthermore, the learners will always be at a loss when they do not have the much-needed equipment they are to use in their engagements, and this renders the online classes quite ineffective. The shift online has presented a challenge in assessing the learners' performance and providing documented feedback that is quite scant in observed effort (Tanucan, 2023).

Methodology

A scoping review is referred to as an approach that identifies knowledge, gaps, scopes of literature, concepts, and the conduct of

research. This approach became useful and helpful as it included inclusions and exclusions, which can be used as a method of conducting narrow research (Munn et al., 2018). Tricco et al.'s (2018) Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) framework for scoping reviews, concerning the Arksey and O'Malley (2005) framework, will be utilized and will be the guide in the study. This framework proceeds with (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) general characteristics of included studies, (5) data charting and collation, and (6) summarizing, reporting, and discussing findings. Furthermore, this methodological procedure is utilized to ensure the ease, transparency, validity, and trustworthiness of the study.

Identifying the Research Questions

The researchers aimed to identify the current state of technology integration within the physical education curriculum implementation in the Philippines. Specifically, the following research questions were addressed:

1. What are the current technologies being integrated into the PE curriculum in the Philippines, and how are they being implemented?
2. What are the benefits of integrating technology into the Physical Education curriculum among educators and students in the Philippines?
3. What are the identified challenges associated with integrating technology into the Physical Education curriculum among educators and students in the Philippines?

Identifying Relevant Studies

The concept of curriculum implementation is dominant in the field of education, which makes it general in all aspects, subjects, or disciplines, which has an impact on the choices of search terms. The concept of PE is named in many ways, which are 'PE', 'exercise', 'sports', and 'health' in some combinations, but the notation of PE is always present. Furthermore, the notation of PE stayed and was applied in the search processes. Moreover, the term technology integration or integration of technology was also utilized to better address the study. In addition, the country of the Philippines was used as a term to contextualize the study and be able to contribute to addressing the gaps in a specific place and investigating the state of the country in terms of the aspect being looked at. Table 1 outlines the terms that were searched and used to thoroughly identify and look for literature that could be beneficial and support the study to answer the research questions. The final research was conducted using the Google Scholar, Scopus, and Web of Science databases, with the range of 2020 to 2024 being considered and applied. All the literature gathered by utilizing the keywords or notations was reviewed and read comprehensively. Moreover, the researchers placed the significant and relevant links to literature in a Google document, and the needed information, which are the author, year, introduction, findings and discussion, and conclusion, was looked at and comprehended.

Table 1. Notations to describe the concepts of 'Curriculum Implementation', 'Physical Education', and 'Technology Integration' in the literature search

	English Term
Notations of curriculum implementation dimension	'curriculum implementation', 'curriculum instruction', 'curriculum delivery'
Notations of physical education dimension	'physical education'
Notations of technology integration dimension	'technology integration', 'digital incorporation', 'information and communication technology (ICT) integration'

Study Selection

Table 2 seeks the inclusion and exclusion criteria applied in the selection of significant literature for the study. Curriculum planning, designing, and evaluation are different parts of the curriculum that have different functions,

which led to their exclusion from the study. Table 3 comprises the outcomes of all database searches conducted in the study. Furthermore, the database applied the search string identified and described in Table 1. Moreover, Moher et al. (2015) statements in the preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) have shown the study selection process reflection in Figure 1, which includes the process of searching from databases, manual searching, screening titles, and abstracts, screening full texts, and selecting eligible literature or articles for inclusion. Moreover, 24 articles were gathered and identified from the database search; a total of 9 were removed. Additionally, the articles gathered went through a screening process, in which first articles were excluded by referring to the titles and abstracts of the articles, and second, all articles were filtered and identified by having the standards set in Table 2. Furthermore, 15 articles were included in the study for analysis.

Table 2. Inclusion and exclusion criteria

Inclusion	Exclusion
• Curriculum implementation • Philippines • Physical education context • Year 2020 to 2024 literature • All kinds of technologies • All educational levels • All kinds of studies • English language • Published studies	• Curriculum planning, designing, and evaluation • Other countries • Other subjects • Other years • Other language • Unpublished studies

Table 3. Records were identified through database searching

Database	Result
Google Scholar	17
Scopus	6
Web of Science	1

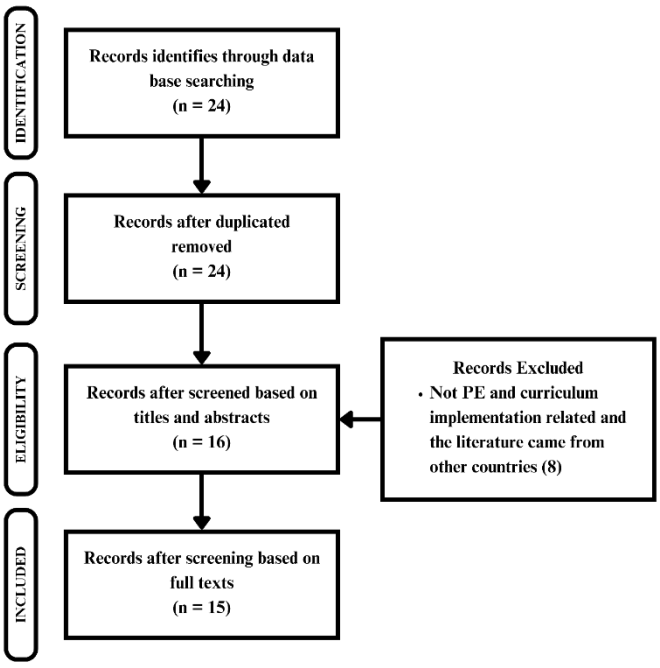

Figure 1. PRISMA flowchart of the study selection process (Moher et al., 2015).

General characteristics of included studies

The selected articles relevant to the study show that the publication years spanned from 2020 to 2024 (Figure 2). The articles included were distributed to their years and have seen to have relation to one another.

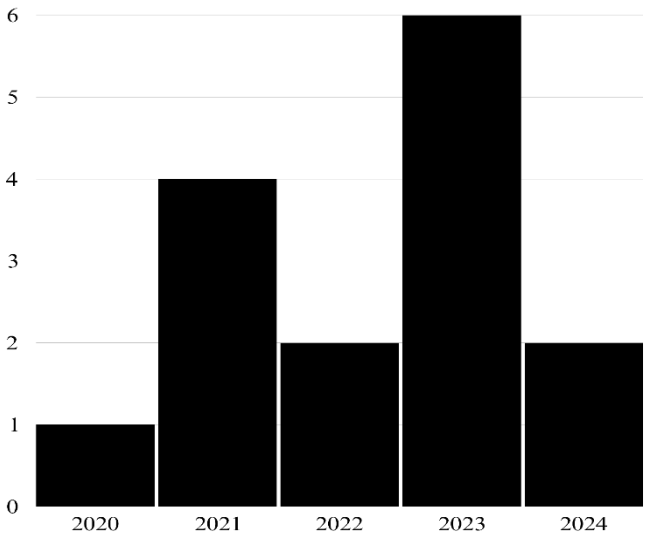

Figure 2. Distribution of publications by year in included studies.

Data Charting and Collation

Saldaña (2021) stated that the results of the included articles are further analyzed by using codes and categorization and elaborated to be able to organize, group, sort, and identify data that is similar, which will be put into categories and themes to share and show the same characteristics.

Summarizing, Reporting, and Discussion of Findings

The scoping review included 15 articles after in-depth analysis to thoroughly examine the scope of the study. With the utilization of the findings, 3 themes have been created which include technology utilization in curriculum implementation in PE with its subthemes, integrated technology-enhanced learning environment, and comprehensive online education platform, the second theme refers to the benefits of technological integration in PE curriculum implementation which highlights effective and inclusive curriculum implementation amidst the pandemic, collaboration and support in online learning, and utilization of online platforms, and third theme which tackles the challenges of technological integration in PE curriculum implementation, which under technological, resource, and environmental challenges in online teaching, and the impact on teachers' and students engagement, motivation, and well-being.

Result and Discussion

Theme 1. Technology Utilization in Curriculum Implementation in Physical Education

This theme was revealed through the literature that highlighted various technologies and how they were being reviewed in terms of enhancing teaching methods within physical education. The use of varied forms of technology in the educational process resulted in both benefits and challenges. While technologies such as virtual reality and interactive apps enriched learning experiences, they also presented barriers to access and other forms of technical hitches. In any case, however, educators have committed themselves to using such technology to improve how they engage and bring out the best effects on physical education students.

Subtheme 1.1. Integrated Technology-Enhanced Learning Environment

The major focus of this subtheme is the utilization of devices like laptops, computers, cellular phones, and other ICT-related materials for effective teaching methods. Teachers are instructed on how to use these tools and the

school offers help during the teaching and learning processes (Bongco & David, 2020; Lagman & Hernandez, 2024; Obja-an, 2024; Quijano, 20203). Moreover, the whole scenario provides a background where the technology fits effortlessly within the educational processes. The underlying aim is to bring more fun and proficiency into learning by fusing technology into the classroom and for effective learning to happen among learners (Angkay & Tagare, 2022). Apart from assisting in sharing knowledge, technology enhances teacher knowledge and student motivation and brings into existence a motivational learning environment. The current challenges with technologies include students's distraction and reduced knowledge of critical thinking (Zubaidi & Velusamy, 2024).

Subtheme 1.2. Comprehensive Online Education Platforms

The concept of this subtheme involves setting up online education platforms like computer rooms or meeting conferences with access to the internet for the facilitation of online classes. The students have access to recorded lectures, tutorials, and a broad spectrum of learning resources through printed works and online applications (Anguelo & Aquino, 2023; Diciano et al., 2021; Poblador, 20203). Moreover, physical education has also been enhanced by incorporating online resources like videos and mobile applications, which include games and interactive applications online. These make for a rich and robust online learning experience, ensuring the engagement of every student no matter their preference and the nature of the learning difference (Limbo-Rivera, 2023; Tanucan, 2023). Furthermore, the aim is to make learning accessible, interesting, and effective in the digital age. To support this statement, Josue et al. (2024) stated that online platforms have brought a change in the paradigm of education through accessibility, flexibility, and convenience. It allows learning at every possible time, location, and pace. They also enable interaction between students and teachers and collaboration through communication and discussion using the chat tool, discussion forums, and so on.

Theme 2. Benefits of Technological Integration in Physical Education Curriculum Implementation

This theme emerged from the literature, which highlighted the benefits of the utilization or integration of various technologies in physical education instruction. The shift to online modes in the time of COVID-19 made institutions enhance their learning processes to ensure continuous learning despite the pandemic. Moreover, different articles had main statements that covered the importance of having modernized methodologies and approaches in instruction. Pedagogies during the delivery ensure quality implementation, which resulted in maintaining students' interest, improved skills, knowledge, and values, as well as being physically competent in the field of PE amidst the event.

Subtheme 2.1. Effective and Inclusive Curriculum Implementation Amidst the Pandemic

This subtheme has come into play as it highlights the utilization of various instructional materials in handling the diverse interests of learners in implementing an effective and inclusive curriculum for students in the field of PE. Refinements were taken into consideration to ensure a smooth flow in the educational process despite being in a pandemic (Barot, 2023; Lagman & Hernandez, 2024; Poblador & Tagare, 2022; Solomon & Alforja, 2021; Quijano, 2023). Moreover, motivational techniques and strategies were utilized, which increased the productivity of learning and maintained continuous improvement among the students through the engagement of teaching and instruction (Tanucan, 2023; Quijano, 2023). To support these statements about the student's progress and growth, consistent and effective delivery of the curriculum is necessary. A new curriculum implementation could offer crucial training that should be connected to the specified learning objectives presented by the curriculum and meet individual students' needs (Pandey, 2018).

Subtheme 2.2. Collaboration and Support in Online Learning

As the pandemic continues, a shift to a new learning modality is seen as necessary to carry

on the teaching and learning process. The literature covered the benefits of teacher collaboration and the engagement of family members in ensuring education during this period. Furthermore, the statements concerning the collaboration between teachers ensure lifelong learning and for effective learning to happen among students and family engagement being present in their children's online learning promotes enthusiasm, a positive learning environment, and motivation in classes (Angkay & Tagare, 2022; Daga, 2021; Tanucan, 2023). Moreover, this occurrence has ensured a decreased number of dropouts (Daga, 2021). To support this, a study highlights the role of school-family collaborative relations that foster learning in students. For instance, during the Covid-19 pandemic, guidance and counseling teachers collaborated with parents to overcome barriers in online learning, underlining the fundamental role of the parents in guiding their children's education and in the support of counseling programs in the schools (Amalia et al., 2023).

Subtheme 2.3. Utilization of Online Platforms

This subtheme covers the technologies utilized in the literature concerning online PE classes. The different kinds of materials, equipment, and technologies used include, but are not limited to, online videos, mobile applications, and video tapes. E-materials are also seen as a tool for effective learning to ensure manageable learning environments, convenience, and reduced financial burden among students and teachers (Anguelo & Aquino, 2023; Diciano et al., 2021; Poblador, 2023). Furthermore, this ensured the delivery of instruction and the development of physical competencies. In supporting these claims, a study delved into the feasibility of the utilization of online platforms in the field of education and it showed that this strategy is an effective channel and an opportunity for alternatives (Susiani et al., 2022).

Theme 3. Challenges of Technological Integration in Physical Education Curriculum Implementation

After scoping all the literature included in this study, it delved into the challenges that the teachers and students experienced caused by the integration of technology into the PE curriculum. The administration of technology has brought positive outcomes. However, institutions still experienced negative effects that became a hindrance and challenge in the educational process. Problems stopped institutions from achieving and elevating the overall learning experience of students. Despite these challenges, institutions' commitment to serving students with quality education will remain, and they will pour more effort into solving these challenges.

Subtheme 3.1. Technological, Resource, and Environmental Challenges in Online Teaching

Under this subtheme, the shift into flexible learning modalities during the pandemic brought shortcomings that were unexpected and had demands that needed to be addressed. These challenges faced by teachers and students are in the finances, budgets, or funding of the teaching and learning materials, facilities, and equipment needed to better serve students in the process of learning (Angkay & Tagare, 2022; Cullarin-Bernales, 2021; Limbo-Rivera, 2023; Tanucan, 2023). Working spaces also became an issue as they hindered communication between students and teachers as the spaces to study were insufficient (Diciano et al., 2021; Limbo-Rivera, 2023; Tanucan, 2023). Moreover, it was seen that technological advancement investments are crucial in the time of quarantine to contribute to the goals and achieve skills in the contemporary world and it was seen that education in the Philippines is lacking in this aspect (Angkay & Tagare, 2022; Tanucan, 2023). In addition, exposing teachers to technological training and seminars about various technologies in teaching and PE would contribute to being efficient and effective despite being in distance learning (Angkay & Tagare, 2022; Barrot, 2023; Diciano et al., 2021; Obja-an, 2024; Solomon & Alforja, 2021; Tanucan, 2023). Having strategies in technology would be beneficial to them as it promotes their professional development and would fill in the gaps of a teacher. Furthermore, the time allocation for PE classes has been seen to be taken into consideration because of the limited screen time and projection (Limbo-Rivera, 2023; Tanucan, 2023). Aspiring PE teachers would have a difficult time being prepared as

their experiences of being physically competent are hindered because of the alteration of the modality. To support this statement, Pandit and Agrawal (2022) stated that implementation of a collaborative approach, utilization of online learning tools, and ability to use technology are key factors in creating an environment that would eradicate and address the issue of ineffective teaching.

Subtheme 3.2. Impact on Teachers' and Students' Engagement, Motivation, and Well-being

This subtheme emphasized the personal challenges of both teachers and students in elevating their performances in the teaching and learning processes, respectively. The impact of the pandemic made a huge impact on the well-being of its people, and they were limited in their opportunities to go beyond their capabilities. The COVID-19 pandemic made teachers have technostress as it became an unhelpful situation because it was uncontrollable and hindered them from bringing quality and authentic education to learners (Tanucan, 2023). It also made teachers frustrated about adapting to the changes as they teach online and how it works (Tanucan, 2023). They faced trials and errors in teaching efficiently and effectively online, which affected their performances and social ties (Angkay & Tagare, 2022; Tanucan, 2023). Moreover, students faced demotivation in studying lessons and were not eager to learn in the online environment (Lagman & Hernandez, 2024; Limbo-Rivera, 2023). They neglected the importance and values of PE, which affected their commitment and failed to fulfill their academic responsibilities (Angkay & Tagare, 2022; Limbo-Rivera, 2023). With this, students were shown to have a huge gap in skill acquisition, and teachers were also seen to lack in demonstration of skills in online classes, which correlated to the outcome of students (Diciano et al., 2021; Poblador & Tagare, 2022; Tanucan, 2023). In supporting these claims, Tadesse and Muluye (2020) explored that institutions were prepared to pay for the losses during times of pandemic, as it was evident that online learning did not suffice the needs of students when schools reopened their respective schools. With this, it was truly evident that there was a huge gap and loss when flexible learning was implemented. It just shows how much institutions prepare themselves to avoid this happening again.

Conclusion

The study aims to identify the technologies used during the curriculum implementation in PE, then find out the benefits and challenges brought by these technologies and prepare for the alteration of teaching and learning processes, spread awareness, and promote prevention among the stated challenges experienced by the inputs of literature selected contextualized in the Philippines. Furthermore, this provides an overview and a review of the scoped articles to help and guide institutions in the future to continue effective learning and the transfer of skills while being holistically competent despite being in a pandemic.

The utilization of scoping review as an approach ensures a specified area of study and learning as it includes the inclusion and exclusion criteria to be utilized for an effective study to process. The methodological procedure, Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) framework ensured the ease, transparency, validity, and trustworthiness of the study which made it comprehensive and deeply analyzed. It also brought the review into a systematic process as it covered all procedures to be tackled.

With this literature, three themes emerged, which include: technology utilization in PE curriculum implementation and the benefits of technology integration in PE curriculum implementation. and challenges of technology integration in PE curriculum implementation. The first theme highlights technology utilization in terms of the integration of learning materials, resources, or equipment that can be used in the educational process and the different learning or online platforms to continue the learning process during the pandemic. The second theme covered the benefits of technological integration in the same field as its implementation, which focuses on enhancing the effectiveness and inclusiveness of online learning amidst the pandemic, as well as the collaboration among stakeholders such as teachers and the support of the family and the environment

for effective and positive learning to happen. The third theme emphasized the challenges faced by teachers and students in the educational teaching and learning process in integrating technologies, which covered technological, resource, and environmental challenges faced by both teachers and students, as well as the impact on their engagement, motivation, and development of well-being.

Furthermore, from the findings in the 15 pieces of literature selected, it was evident that in the years 2020–2024, the pandemic occurred, which had a huge impact on the teaching and learning processes in institutions and forced teachers and students to shift to an online modality. This idea reflected a positive skill obtained in the time of online learning, but also negative outcomes as it prevented students from the field of physical education from receiving quality education and instruction, which resulted in them being physically incompetent and unprepared for future endeavors. In addition, the integration of technologies in PE classes emphasized online platforms to continue and extend learning and did not invest in PE equipment like smartwatches, heart rate monitors, and devices that can be used during physical activities. Moreover, the findings serve as a stepping stone for institutions, PE teachers, and students to be prepared in these times, carry the skills and benefits learned during online learning and use them as an advantage for lifelong learning, be advocates of effective and quality implementation with technology integration, and be 21st-century learners by being perseverant, flexible, and adaptable in difficult times.

Recommendation

Taking into consideration the conclusion of the study, the following recommendations were deduced: It is recommended to utilize different kinds of technologies in the field of physical education curriculum implementation, especially in online learning. Institutions must take advantage of these to better grasp teaching and learning experiences, ensure lifelong learning and authentic experiences, and obtain 21st-century skills despite being in times of difficulty like the pandemic. Students and teachers must put them to good use to be able to have continuous learning to its extent and lessen the hindrances to achieving learning. Furthermore, challenges must be emphasized in this period to be able to be aware, to not be limited, and to better prepare students in the process of gaining knowledge and skills in PE and being developed holistically and teachers to be competent and literate in technologies. Moreover, researchers must take into consideration creating scoping reviews as an approach and having PRISMA as a methodological process to ensure and craft studies effectively and contribute to various disciplines. Additionally, it is also recommended to have similar studies, which will highlight other countries and acknowledge their utilized technologies and experienced challenges. Researchers from other fields or majors are also recommended to have a similar study to identify their challenges in online learning and to be aware of their needs and the gaps that need to be filled. Curriculum planning, designing, and evaluation must also be considered during the pandemic to better prepare, align, and solve the issues faced by students to prevent challenges during distance learning, lessen the burden among students and teachers in the educational process, and have a systematic approach to better solve challenges that can be faced by institutions.

References

Aguelo, M. J., & Aquino, J. M. (2023). Students' dance performances and the utilization of e-materials in physical education. *Edu Sportivo: Indonesian Journal of Physical Education, 4*(1), 46-56. https://doi.org/10.25299/es:ijope.2023.vol4(1).11262

Almario, J. I. F., Castro, R. L. G., Pabustan, C. J. S., David, C. J. P., Macabali, A. J., Tolentino, J. C. G., & Valenzuela, L. R. (2023). Fostering Pre-service Physical Educators' Retention of Concepts in a Professional Education Course Using Moneypoly Game. *International Journal of Multidisciplinary: Applied Business and Education Research, 4*(9), 3366-3389. https://doi.org/10.11594/ijmaber.04.09.24

Amalia, A., Lessy, Z., & Rohman, M. (2023). A social collaboration model between guidance and counseling teacher and parent to guide students during distance learning. *AL-ISHLAH: Jurnal Pendidikan, 15*(1), 785–794. https://doi.org/10.35445/alishlah.v15i1.2061

Angkay, D. I. S., & Tagare, R. J. L. (2022). Teaching tertiary physical education in the new normal: Gains, drawbacks, and suggestions. *European Online Journal of Natural and Social Sciences, 11*(4), 932-945. https://european-science.com/eojnss/article/view/6363/pdf

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology, 8*(1), 19–32. https://doi.org/10.1080/1364557032000119616

Asare, S., Addae Kyenkyehene, S., & Kwadwo Emmanuel, M. (2023). Interactive technology in physical education classroom: A case of a Ghanaian college of education. *American Journal of Education and Information Technology*. https://doi.org/10.11648/j.ajeit.20230702.11

Barrot, J. S. (2023). K to 12 curriculum reform in the Philippines: Towards making students future ready. *Asia Pacific Journal of Education, 43*(4), 1193-1207. https://doi.org/10.1080/02188791.2021.1973959

Bongco, R. T., & David, A. P. (2020). Filipino teachers' experiences as curriculum policy implementers in the evolving K to 12 landscape. *Issues in Educational Research, 30*(1), 19-34. https://www.iier.org.au/iier30/bongco.pdf

Cariaga, J. N. (2014). The physical education program of state universities in Isabela: An assessment. *Research Journal of Physical Education,* 2320, 9011. https://www.isca.me/PHY_EDU_SCI/Archive/v2/i10/1.ISCA-RJPES-2014-053.pdf

Cullarin-Bernales, J. J. (2021). Implementation of school-based sports management program of private higher education institution. *International Multidisciplinary Research Journal, 3(*2), 237-243. https://doi.org/10.54476/iimrj305

Daga, C. T. (2021). The status of high school MAPEH teachers in Leyte division, Philippines. *International Journal of Research Publications, 71*(1), 10-10. https://doi.org/10.47119/IJRP100711220211757

Diciano, J., Mateo, W., Junior, R. J., Versoza, J. I., & Tindowen, D. J. (2021). Students' experiences in learning physical education in an online environment. *Edu Sportivo: Indonesian Journal of Physical Education*, 2(3), 140-154. https://doi.org/10.25299/es:ijope.2021.vol2(3).7792

Dizon, S. G., Fernandez, P. M. Q., Dalangin, H. R. S., Mungcal, K. S., Tolentino, J. C., & Valenzuela, L. R. (2022). Sustaining Pre-Service Teachers' Virtual Engagement in a Health Education Course through Interactive Buzz Sessions. *International Journal of Multidisciplinary: Applied Business and Education Research, 3*(8), 1526-1547. https://doi.org/10.11594/ijmaber.03.08.15

Ghazali, M. IA., & Haris, A. (2016). Implementation of teacher learning in physical education curriculum at the junior school in Makassar, Indonesia. *Journal of Physical Education and Sport, 16*, 683. https://doi.org/10.7752/jpes.2016.s1110

Ji, X. (2023). Application of modern information education technology in physical education teaching and training. *2023 International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE)*. https://doi.org/10.1109/icdcece57866.2023.10151397

Josue A., Bedoya-Flores, M. C., Mosquera-Quiñonez, E. F., Mesías-Simisterra, Á. E., & Bautista-Sánchez, J. V. (2023). Educational platforms: Digital tools for the teaching-learning process in education. *Ibero-American Journal of Education & Society Research,* 3(1), 259–263.

https://doi.org/10.56183/iberoeds.v3i1.626

Karagözoğlu, B. (2017). Description and historical perspectives of technology. *Science and Technology from Global and Historical Perspectives,* 105–135. https://doi.org/10.1007/978-3-319-52890-8_5

Kh, S. (2023). A comparative study on Kho Kho and Kabaddi male players of Mangalore University intercollegiate team. *Indian Journal of Applied Research,* 52–55. https://doi.org/10.36106/ijar/3415951

Lagman, J. D. N., & Hernandez, R. J. W. (2024). Assessing the impact of remote learning on learning competencies of senior high school students in the Health Optimizing Physical Education (HOPE) program. *American Journal of Physical Education and Health Science, 2*(1), 40-52. https://doi.org/:10.54536/ajpehs.v2i1.2527

Limbo-Rivera, C. B., (2023). Lived experiences of health optimizing physical education (HOPE) teachers. *International Journal of Innovation, Creativity and Change.* 17(1), 512-518. https://www.ijicc.net/images/Vol_17/Iss1/17148_Rivera_2023_E1_R.pdf

MacPhail, A., & Whittle R. (2020). The PE school curriculum challenge: The shared construction, implementation and enactment of school physical education curriculum school physical education and teacher education, 103-115. https://doi.org/10.4324/9780429330186-10

Marcaida, J. L. M., Ortega, H. C. A., Castañeda, E. S., Cadeliña, P. M. M., Garcia, R. R. I., Valenzuela, L. R., & Tolentino, J. C. (2022). Gamification in a virtual ecology (GIVE): Enhancing classroom engagement in physical education among senior high school students. *International Journal of Multidisciplinary: Applied Business and Education Research, 3*(11), 2278-2289. https://doi.org/10.11594/ijmaber.03.11.14

Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., Stewart, L. A., & Prisma-P Group. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic reviews, 4*(1), 1. https://doi.org/10.1186/2046-4053-4-1

Munn, Z., Peters, M. D., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology, 18*(1), 1. https://link.springer.com/article/10.1186/s12874-018-0611-x

Obja-an, J. R. (2024). Junior high school teachers' curriculum implementation concerns in reopening of schools after COVID-19: the Philippine context: High school teachers' curriculum implementation. *International Journal of Curriculum and Instruction*, *16*(2), 333-349. https://ijci.globets.org/index.php/IJCI/article/view/1446/720

Offorma, G. C. (2009). Curriculum implementation in distance learning, University of Nigeria, Nsukka, Nigeria.

Pandey, N. (2019). Barriers to effective curriculum implementation. *TechnoLearn: An International Journal of Educational Technology, 8*(2), 65-69. https://www.indianjournals.com/ijor.aspx?target=ijor:tle&volume=8&issue=2&article=005

Pandit, D., & Agrawal, S. (2022). Exploring challenges of online education in covid times. *FIIB Business Review, 11*(3), 263-270. https://doi.org/10.1177/2319714520986254

Poblador, S. A. C., & Tagare, R. L. (2022). K to 12 transition in action: Threading the opportunities and challenges on the implementation of senior high school sports track in Southern Philippines. *Edu Sportivo: Indonesian Journal of Physical Education, 3*(1), 65-76. https://doi.org/10.25299/es:ijope.2022.vol3(1).8467

Poblador, S. A., & Lagunero-Tagare, R. J. (2023). Exploring the positive experiences of senior high school teachers in teaching the sports track during the K-12 transition

years in southern Philippines. *Research in Education and Learning Innovation Archives*, *31*(1), 17-32. http://dx.doi.org/10.7203/realia.31.25888

Quijano, G. (2023). Assessing the K-12 program implementation in the Philippines as an input to school-based policy plan. *Journal for Educators, Teachers and Trainers, 14*(1), 248-266. https://doi.org/10.47750/jett.2023.14.01.022

Reyes, E. M., Daran, D. N., & Daran, A. M. (2023). Junior high school MAPEH teachers' lived experiences, difficulties and coping mechanism in teaching physical education in distance learning. *International Journal of Research Publications,* 126(1). https://doi.org/10.47119/ijrp1001261620224985

Saldaña J. (2021). The coding manual for qualitative researchers. London: Sage. https://uk.sagepub.com/en-gb/eur/the-coding-manual-for-qualitative-researchers/book273583

Solomon, A. B., & Alforja, N. S. (2021). Effectiveness of using different modalities to the learners' performance in physical education 8. *International Journal of Recent Innovations in Academic Research*, *5*(7), 100-121. https://journals.indexcopernicus.com/api/file/viewByFileId/1314130.pdf

Susiani, T. S., Salimi, M., Hidayah, R., Fauziah, M., & Astuti, D. (2022). Utilization of free platforms in online learning. *Proceedings of the 5th International Conference on Learning Innovation and Quality Education,* 1-5. https://doi.org/10.1145/3516875.3516997

Tadesse, S., & Muluye, W. (2020). The impact of covid-19 pandemic on education system in developing countries: A review. *Open Journal of Social Sciences, 8*(10), 159-170. https://doi.org/10.4236/jss.2020.810011

Tanucan, J. C. M. (2023). The difficulties of teaching traditional filipino games online. *International Journal of Learning, Teaching and Educational Research, 22*(3), 108-127. https://doi.org/10.26803/ijlter.22.3.7

Tegero, M. (2022). Skill acquisition challenges of bachelor of physical education students in flexible learning amidst the covid-19 pandemic. *International Journal of Research Publications, 101*(1). http://dx.doi.org/10.47119/IJRP1001011520223169

Tolentino, J. C. G., Miranda, J. P. P., Maniago, V. G. M., & Sibug, V. B. (2020). Development and evaluation of localized digital learning modules for indigenous peoples' health education in the Philippines. *Universal Journal of Educational Research, 8*(12), 6853-6862. https://doi.org/10.13189/ujer.2020.081251

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsely, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., Lewi, S., Godfrey, C. M., Macdonald, M. T., Langlois, E. V., Soares-Waiser, K., Moriarty, J., Clifford, T., Tuncalp, O., & Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine, 169*(7), 467–473. https://doi.org/10.7326/M18-0850

Wang, X. (2022). Thinking and practice of integrating information technology into college physical education teaching. *International Journal of Science and Engineering Applications,* 437–438. https://doi.org/10.7753/ijsea1112.1061

Zubaidi, A. M., & Velusamy, S. (2024). The necessity of educational technology in teaching methods. *Advances in Information Quality and Management*, 1–12. https://doi.org/10.4018/978-1-6684-7366-5.ch033