



## Integrating game-based approach in students learning experiences in physical education: A phenomenological study

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### ABSTRACT

In the transition to the delivery of instruction, game-based learning in physical education is the key to filling the instructional gap by giving each student the freedom to develop their skills in the 21st century. This study employed a qualitative research design using a phenomenological approach to acquire an in-depth understanding of students' learning experiences through game-based learning in Physical Education. Participants were chosen through purposive sampling which was participated by 7 students from the Grade 10 level in one of the secondary public schools in the Philippines. Codes and themes were transcribed in the study. Based on the research results, three themes emerged: innovative approach, the functionality of the application, and student engagement and authentic learning experience. Physical education teachers have become innovative and creative in how to deliver instruction, especially in the areas of cognitive and skills acquisition using a game-based approach. This is done to help all students to be creative and adapt to the modern learning environment. This application was practical, usable and accessible for every student both inside and outside of the classroom with offline and online features. This study will equip Physical Education teachers with clarity and a road map to the modern world. This will also provide the required support for students to shift away from traditional classroom learning and become more innovative by producing mobile apps that provide students with games and the freedom to absorb the lesson through a game-based approach.

**Keywords:** Game-based learning; physical education; blended learning

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## INTRODUCTION

Moving to an advanced world by utilizing technology and developing students who are skilled in the digital world is the teacher's job to reach students in any way and form. The Department of Education is using online learning and modular learning methods to carry on the learning process throughout the COVID-19 outbreak (Abante, 2021). Blended learning takes place in the school's learning mode due to the division of the classes and scheduling and this is strengthened by the study (Hubackova & Semradova, 2016). Because of class division and scheduling, blended learning takes place in the school's learning mode. One of these continues to remain innovative, in particular the teacher-created mobile application for physical education that employs a games-based approach.

As the world entered a new genre of delivering instructions, game-based learning has had a tremendous effect on students' learning experiences. New skills often referred to as 21st-century skills are required by changes in social and technological conditions in

current society (Liu et al., 2020). As reiterated in the study of Qian and Clark (2016) a rising number of researchers are focused on creating educational games to improve students' learning of 21st-century skills in schools. Considering the numerous research findings that show the favorable impacts of games on learning. Similarly Jabbar and Felicia (2015) stated that game-based learning (GBL) contexts and game design features enhance engagement in learning. As stated by Wasserman and Banks (2017) through games, students will learn to laminate or attach deeper meaning to tangible items. This study is strengthened by Culajara (2022) that differentiated instruction is incorporated into the learning process to comprehend a dynamic system and can adapt to changes in students' learning. Furthermore, in the digital age, physical education is unique because, if the material is taught properly, it can enable the student to engage with mobility and the ability to complete the work (Diciano et al., 2020). According to the findings of Barany et al. (2020), teachers found it to be remarkably helpful in engaging students in learning.

Due to the change in the delivery of instruction and adaptation to 21st century skills and acquiring learnings, integrating game-based approach in Physical education is an effective way for every student to learn and as a means of reaching every students in the transition period of the learning. Physical education has a crucial role to play in this trying period and offers more opportunities than ever for all pupils to express their negative feelings (Schembri et al., 2021). Excellent instruction should be seen as the new norm in planning and execution, similar to the study of Tria (2020) to preserve and deliver in the educational setting amongst seclusion and community imprisonment which asserts that blended learning is increasingly gaining popularity across both academia and industry and it is one of the levels of the education trends which was a generation educated on interactive experiences that expects the same degree of interaction in every data and computer system (Fernandes et al., 2012). Using a game-based approach, the teacher provided students with the ability and support to understand the lesson and grasp the knowledge of the subject's content via the designed mobile application.

As Salvador-Ullauri et al. (2020) assert that complex games, also known as training games, are among the learning materials used in education today. These games were created for purposes and pure enjoyment with the prime aim of creatively reinforcing innovative thoughts (Salvador-Ullauri et al., 2020). Furthermore, Dunwell et al. (2013) reiterated that the incorporation of digital technology and multimedia has the potential to extend further than the limits of the classroom and provide a comprehensive insight into future careers and their effects in interactive and stimulating ways. Thus, Byun and Jung (2018) proved in the study that digital games (for example, video games or computer games) have been recognized as an effective instructional approach for increasing students' achievement and motivation. Game-based learning strategies have become popular in the mobile learning approach for actively engaging while also still having fun (Gean et al., 2015). With the study, the game-based application has supported and guided students in attaining learning goals and tasks. Moreover, the game encourages the adoption of pro-environmental attitudes and conduct (Ro et al., 2017). Teachers must connect with students in a wide range of ways as society moves toward a technologically advanced future and produce skilled learners for the digital world.

This study adheres to know the learning experiences of the students in utilizing game-based approach in their learning performance in Physical Education. The study sought to answer the following questions: (1) in what aspect of the learning experience does game-based learning help the students; (2) how game-based learning through devised mobile applications enhanced students' learning; and (3) what impact of the game-based learning to the students is learning experience. With these, this study will be key to the

addition of innovation and teaching practices of each Physical Education teacher in delivering quality instruction in cognitive and skills acquisition with the help of the modern world of using technology.

## METHOD

The study used a qualitative research design employing a phenomenological approach through focus group discussion. As reiterated by [Kalra et al. \(2013\)](#), qualitative research uses an idealist or humanistic approach to answer the questions of the study and used to gain a sense of how people think, feel, act, and relate with one another which generates input that is not numerical. The participants in FGD were 7 students from Grade 10 level and purposive sampling was used to choose the participants. Learning experience design aims to address the gap by explaining the broader interaction when employing learning technologies ([Tawfik et al., 2021](#)). Integrating game-based approach in learning performances in Physical Education is used in the study which was a designed mobile application by the teacher.

Data collection was done through interviews and focus group discussions (FGD) which used to acquire an in-depth understanding of the learning experiences of the student. Coding and themes were transcribed and employed in the study. This was strengthened by the study of [Alhojailan \(2012\)](#) which assert that thematic analysis was used to examine qualitative data and develop a comprehensive understanding of the students' learning experiences. Using codes and themes, acquiring deep learning experiences and better understanding to the students learning experiences with the help of mobile application in their cognitive and skill acquisition. The study sought to answer the following questions: (1) what is the students' learning experiences using game-based approach?, (2) what is the impact of the game-based approach to students' learning experience, and (3) how game-based approach affects the students learning performances? The questionnaire's content was validated by Head Teacher and Master teacher to ensure that it addressed and fulfilled the study's objectives.

The study followed safety protocols since the focus group discussion was done in person or face-to-face. The study sent a letter of consent to the students included in the study as an assurance of their personal information and privacy. The study asked for permission from the School Head and the parents and gave assurance to the participants that any information given during the interview will be confidential and secretly kept.

## RESULTS AND DISCUSSION

The study explored the learning experiences of the Grade 10 students in utilizing game-based learning in Physical Education. Three themes emerged in the study: (1) innovative approach, (2) functionality and (3) student engagement and authentic learning experiences.

**Table 1. Results of the thematic analysis to the aspect affects the learning experiences of the students**

Meaningful Unit Sample	Superordinate Theme
Participant 1: This mobile application through game-based approach helped me in understanding the lesson through online and offline mode.	Innovative Approach
Participant 2: I had more ability and efficiency in using technology because of this mobile application with a game-based approach and it	

Meaningful Unit Sample	Superordinate Theme
gets more attention in learning because I enjoy it.	
Participant 3: This method is fun and very accessible to me because of the setting that the school has (blended learning) I can understand the lesson even when I'm at home because I learn better, and I enjoy it because of the mobile application made by the teacher.	
Participant 4: My learning experience in using this application got my attention more because of the videos, games and pictures that are inside it. I appreciate the teacher's creativity and innovation more.	
Participant 5: With this learning strategy, I had more capability to enhance my technological skills, I can no longer use the cellphone as only for social medias, but I can use it for learning such as this mobile application which is purely games and gain more knowledge because of prepared videos, games and pictures made by the teacher.	
Participant 6: I had the skill to use technology and I was impressed with this mobile application that we can use the cellphone and the teacher can make this mobile application.	
Participant 7: With this innovation and creation of the mobile application, I had more ability to be techy and adapt to other students in the use of technology that despite being in a public school, this mobile application with game-based approach.	

### *Theme 1: Innovative Approach to Students Learning Experience*

Teacher must be a support for each student as they adjust. Teachers became their support system as they gradually adjusted and adapted to the new normal of teaching and learning, and accepting changes aided their studies despite the two years they spent at home. The 21st century is all about innovation, particularly now that Covid-19 has arrived, employing technology in a unique way to provide our students with all their instruction. Additionally, it serves as a link for all instructors and students to reach the curriculum's stated objectives. The promotion of diversity is one of today's educational challenges is the students' proficiency in 21st-century skills (Tindowen et al., 2017), thus Ravelli and Leeuwen (2018) assert that there has to be a guiding force that changes brought about by the era of digital technology coexist with the advancement of improve the learning experience for students. Furthermore, teachers must have the skills and competencies to be productive in their work as technology used in education becomes more accessible (Koh et al., 2021). Furthermore, game-based instruction is a popular approach to learning that can improve the learning mechanisms of various types of learners (Bigueras, 2020). Because of the transition that occurred in the student's lives and the two years they were confined inside the home, utilizing game-based in their learning is a great help in adjusting their pace of learning because the incorporation of technology in their learning is better so they will understand the concept and lesson using game-based approach because this has been their support in the virtual world of learning and teaching amidst the pandemic. In employing the game-based approach, the students

were given the ability and support to understand the lesson and grasp the knowledge of the content of the subject through the designed mobile app by the teacher. With the participants' responses, game-based learning has a tremendous effect to their learning experiences particularly in becoming innovative. As participants contemplate:

**P1:** *This mobile application helped me in understanding the lesson through online and offline mode.*

**P2:** *I had more ability and efficiency in using technology because of this mobile application with a game-based approach and it gets more attention in learning because I enjoy it.*

For students to study and understand a lesson better and to provide them the flexibility to have a better grasp comprehension toward student successes, it is helpful to allow them the chance to realize their potential. Fundamentally improving user engagement and motivation (Fernandes et al., 2012), it is true that using a mobile application with a game-based learning strategy is an efficient way for students to study in a mixed manner with the classroom environment that was provided in the application and has the ability to complete tasks and an opportunity to comprehend the lesson even students are confined in their homes. Participants also shared that:

**P4:** *My learning experience in using this applicaion got my attention more because of the videos, games and pictures that are inside it. I appreciate the teacher's creativity and innovation more.*

**P3:** *This method is fun and very accessible to me because of the setting that the school has (blended learning) I can understand the lesson even when I'm at home because I learn better and I enjoy it because of the mobile application made by the teacher.*

The opportunity to develop experiences in video games that take a long time to emerge is very exceptional (Chye & Nakajima, 2012). The game-based approach has a tremendous effect on students learning experience. As participants reiterated on the positive impact on using the mobile application. With this opportunity to learn, students have a new way on learning which adapts on the 21st century trend. With the ability to learn independently and with the help of a game-based mobile application, students are given the freedom to do so. Students also have access to learning materials that can help them manage their time and attention.

**P5:** *With this learning strategy, I had more capability to enhance my technological skills, I can no longer use the cellphone as only for social medias but I can use it for learning such as this mobile application which is purely games and gain more knowledge because of prepared videos, games and pictures made by the teacher.*

**P7:** *With this innovation and creation of the mobile application, I had more ability to be techy and adapt to other students in the use of technology that despite being in a public school, this mobile application with game- based approach.*

**P6:** *I had the skill to use technology and I was impressed with this mobile application that we can use the cellphone and the teacher has the ability to make this mobile application.*



Because of the transition in the students' lives and the two years they were confined inside the home, incorporating game-based learning into their learning is a great help in adjusting their pace of learning because the incorporation of technology in their learning is better so they will understand the concept and lesson using game-based approach because this has been their support in the virtual world of learning and teaching amidst the pandemic. The instructional strategy aids students in overcoming learning challenges (Franco-Mariscal et al., 2016), thus innovation and creativity are essential to the achievement of good education (Culajara, 2022). It is the responsibility of teachers to find effective ways to deliver lessons, and it has been demonstrated that using mobile applications with a game-based approach significantly improves students' learning experiences. Given the feedback from the students, there is a chance to broaden this strategy in physical education. Despite the difficulty posed by the current world's rapid pace, we have a quick response to innovate and be creative as long as we students and continue our education.

**Table 2. Results of thematic analysis using game-based learning in Physical Education**

Meaningful Unit Sample	Superordinate Theme
Participant 1: Through the mobile application with games, my understanding was made easier because of the videos and content that are placed here. It is easier for me to understand the lessons indicated in the application.	
Participant 2: The game-based learning is enjoyable and you can really learn because you give yourself the ability to understand the lesson using your device anywhere and at any time because it is accessible.	
Participant 3: I used the application both online and offline. The lesson is easy to understand and I can build my own understanding of the lesson because of the games in the application.	
Participant 4: Anywhere and at any time I can use the application and I enjoy it and understand the lesson better because of the videos prepared by the teacher and games that are very interactive and engaging.	
Participant 5: This application is very accessible, it is available anytime because I own my time and learn to understand the lesson better to my own ability.	Functionality of Game-Based Learning
Participant 6: With the game-based approach in Physical Education, my time and my device have become more functional, I don't use my cell phone too much on social media sites because I enjoy using the application made by the teacher with games incorporated in our lesson.	
Participant 7: Through a mobile application with physical education games, my environment is safer because I can use it online and offline mode at the same time as having the ability to learn on my own. My environment is safe because I am only at home when using the application due to the blended learning modality that the school has.	

*Theme 2: The functionality of the game-based approach to students learning experience*

The use of the mobile application has been quite beneficial in their adaptation to the modern world of learning, particularly the inclusion of a game-based approach to training. One of the most essential components that need to be present in order to carry out teaching and learning process is instructional and learning materials (Harsono, 2015). Education through technological learning is made possible by the 4.0 industrial revolution (Astalini et al., 2019). When it comes to integrating technology into instruction, physical education presents a significant challenge. As a result, teachers' tasks are essential to achieving the desired goals and being possible to attain all students. Participants added to consider:

**P1:** *Through the mobile application with games, my understanding was made easier because of the videos and content that are placed here. It is easier for me to understand the lessons indicated in the application.*

**P2:** *The game-based learning is enjoyable and you can really learn because you give yourself the ability to understand the lesson using your device anywhere and at any time because it is accessible.*

**P3:** *I used the application both online and offline. The lesson is easy to understand and I can build my own understanding of the lesson because of the games in the application.*

The objective of the mobile application is to provide every student with the chance to learn 21st century skills, especially digitized learning, which uses technology to obtain knowledge and skills. Additionally, every student benefits greatly from game-based approach since it has the students convenient time and can access in all situations. Students can do this through an asynchronous and synchronous learning modality as a student who has to focus on other subjects.

**P4:** *Anywhere and at any time I can use the application and I enjoy it and understand the lesson better because of the videos prepared by the teacher and games that are very interactive and engaging.*

**P5:** *This application is very accessible, it is available anytime because I own my time and learn to understand the lesson better to my own ability.*

**P6:** *With the game-based approach in Physical Education, my time and my device have become more functional, I don't use my cell phone too much on social media sites because I enjoy using the application made by the teacher with games incorporated in our lesson.*

Every student is allowed to have the freedom and efficiency in using technology, particularly in the learning process, because students are able to adapt to the increasingly digital environment. Because the usage of games in the mobile application is enjoyable and worthwhile, kids pay more attention to the significance of their gadgets that are utilized in the learning and teaching process and are better able to discipline themselves to attend such classes or activities.

*P7: Through a mobile application with physical education games, my environment is safer because I can use it online and offline mode at the same time as having the ability to learn on my own. My environment is safe because I am only at home when using the application due to the blended learning modality that the school has.*

The Covid-19 virus, which is still a threat to our environment, can be avoided with this game-based learning strategy. Moreover, as cited by [Irfannuddin et al. \(2021\)](#), the school learning system has undergone adjustments as a result of the COVID-19 outbreak. In order to help all students be creative and adapt to the modern learning environment, physical education teachers have become innovative and creative on how to deliver instruction, especially in the areas of cognitive and skills acquisition through a mobile application that offers a game-based approach. With these, game-based approach was helpful in students adjustment in the transition of the new normal of education, this implies that using mobile application made them easy to understand and adapt to the lesson and able to learn the lesson even in the confinement of their home and can access offline and online mode.

**Table 3. Results of Thematic Analysis of the Impact of Students' Learning Experience**

Meaningful Unit Sample	Superordinate Theme
Participant 1: Through the game-based approach in PE class, I understand the lesson better and I enjoy learning because I am allowed to learn using my ability.	Students' engagement and authentic learning experiences
Participant 2: In a modern way, game-based learning has made me enjoy doing each activity more and the exciting part of each game because this technique is new and I learn more.	
Participant 3: The games are exciting and full of enjoyment because I can collaborate with classmates while doing the task.	
Participant 4: Through the games, I understand the lesson better because the application is simple and easy to use.	
Participant 5: I have become more engaged in learning because I use my device and I no longer need to write notes because the mobile application has what I need apart from the activities.	
Participant 6: I understand the lesson better when there are games or activities and the way of learning is innovative because it uses technology that can be used in offline and online modes.	
Participant 7: The application is easy to use, the games are fun and my time is more productive when I use the mobile app because I learn and understand the lesson better.	

Student engagement is generally recognized as having a significant influence on learning and performance ([Kahu, 2013](#)). Similarly, [Lukenchuk \(2016\)](#) cited student involvement concern for online learning where instructional and reinventing concepts, connectivity, and interaction are some challenges, thus, teachers must have seen this new approach to teaching as a more pleasant and pragmatic way to learn in the digital era ([Estrellan et al., 2021](#)). However, In actuality, schools struggle to provide students with



meaningful learning, and achieving the learning standards in the new normal of education (Culajara et al., 2022).

*P1: Through the game-based approach in PE class, I understand the lesson better and I enjoy learning because I am allowed to learn using my ability.*

*P2: In a modern way, game-based learning has made me enjoy doing each activity more and the exciting part of each game because this technique is new and I learn more.*

*P3: The games are exciting and full of enjoyment because I can collaborate with classmates while doing the task.*

*P4: Through the games, I understand the lesson better because the application is simple and easy to use and I can manage my time.*

The students are progressively regaining access to conventional instruction that was lost during the two years of confinement at home probably to the modifications and improvements that have been made to the learning environment. Furthermore, Arrieta (2020) reiterated that students are able to learn through technology and has been a key tool and may lead in novel opportunities for learning and teaching. This is to strengthen by the study of Dimaculangan et al. (2022) that understanding of digital technology and introduced student-centered digital teaching strategies could lead to innovative and creativity of the students. Hence, using the mobile application with game-based approach as assert by Papa (2020) allows individual to manage time that has an essential effect on students' performance.

*P5: I have become more engaged in learning because I use my device and I no longer need to write notes because the mobile application has what I need apart from the activities.*

*P6: I understand the lesson better when there are games or activities and the way of learning is innovative because it uses technology that can be used in offline and online modes.*

*P7: The application is easy to use, the games are fun and my time is more productive when I use the mobile app because I learn and understand the lesson better.*

Students become innovative and enable themselves to unlock their capabilities through technology (Sayfullayeva et al. 2021). Through an innovative way of learning, game-based learning in Physical Education is the key to addressing gaps in instruction where each student is given the freedom to enhance themselves and better perform their own ability to adapt to the 21st century. As Septian and Sukarmin (2021) suggested that creating virtual spaces to the teaching and learning process could be a way in developing students' skills and knowledge and allowing them to unlock their full capability.

## **CONCLUSION**

Based on the study's findings, being inventive and accepting changes is a major help and support for every teacher and school in delivering and reaching educational goals. On the other hand, every teacher is creative and innovative in teaching delivery. This research will provide clarity and a roadmap to the modern world for Physical Education teachers.

This will enable teachers and students to adapt to the 21st century skills which is digitalization and computerization. However, this study still has limitations that there are still schools who do not have access in internet and lack of devices. Nonetheless, this study will provide the necessary support to move away from traditional classroom learning and become more inventive by developing mobile applications that provide students with games and the freedom to absorb the lesson through a game-based approach. In the time we live in, having the ability to develop and improve a person's abilities and knowledge by giving them tasks that might help them achieve success and a deep sense of purpose is a bridge to learning performances that are more comprehended and take an active role in learning the lesson.

Moreover, the incorporation of technology, learning while having fun is made possible by using a less conversational and more demonstrative approach. Physical education teachers have become innovative and creative in how to deliver instruction, especially in the areas of cognitive and skills acquisition through a mobile application that offers a game-based approach. Students learning experiences are significantly influenced when physical education teachers use a game-based approach to assist them to grasp and apply the skills. The incorporation of technology into the classroom must allow students to study independently, and students must be able to complete work autonomously to avoid becoming jaded by traditional classroom information delivery methods. The study's findings offer a method for increasing student learning outcomes that offer in the teaching and learning process in Physical Education.

### RECOMMENDATION

To reach every student, it is unique to offer this mobile application that features a game-based approach to physical education. This study paved way for the improvement and enhancing students learning experience through adapting and adjusting to the 21st century skills and capabilities. With these, game-based approach must incorporate into the new normal of education as the school had a transition to an in-person modality and students slowly adjusted and adapt to the new setting. Learning and teaching performances in Physical Education must integrate ICT as part of adapting to the digitalization era. Thus, school must provide a concrete innovative and strategic plan for enhancing the technological capabilities of the teachers and students where accessibility and availability of the devices should be addressed to adapt to the 4.0 education industry, particularly in developing a 21st skilled students and most importantly, as an agent of delivering instructions, capacitating teachers' technological capabilities through seminars/training/workshops to enhance their ability to integrate ICT in their delivery of instruction. Through this, game-based approach may utilize as a strategy in improving students' learning experiences.

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