

Use of Technology Tools and Student Engagement Among Physical Education Classes in A Technology College in China

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Abstract: In physical education teaching, the application of science and technology has brought many changes and advantages, which is of great significance to improve the teaching quality and promote the all-round development of students. This study evaluated the relationship between PE teachers' use of technology in the classroom and students' participation in PE class at a polytechnic. It presents a correlation between the use of technology in physical education classes and student participation. Intervention variables such as demographic data and technology use of PE teachers are presented. It also shows student demographics and their participation in physical education classes. The research focuses on PE teachers' personal data variables such as gender, age, education level and years of experience, and students' personal data variables such as gender, age, grade and curriculum. In order to collect the required data, the researchers conducted a questionnaire survey on the participation of PE teachers and students. The results show that students support the use of educational technology in the physical education classroom, and the use of educational technology in the physical education classroom does not affect the level of classroom participation of physical education students. At the same time, teachers also see that their students are engaged in physical education. It is found that students' evaluation of the use of educational technology in physical education teaching is not limited by gender, age, grade and curriculum. Similarly, teachers' evaluation of students' physical education participation is not limited by gender, age, education level, and years of service as physical education teachers. On the basis of this, this study puts forward a review and evaluation of the existing physical education teaching strategies. Suggestions such as using digital tools to track students' performance in physical education classes in a timely manner, encouraging students to create digital profiles, and tracking students' workouts using mobile apps designed for sports can motivate students to actively participate.

Keywords: physical education classes; student engagement; technology tools.

1. Introduction

Technology has become a transformative force in the realm of physical education (PE), significantly enhancing student engagement within these classes. In traditional PE settings, maintaining student interest and participation has often posed challenges. However, the integration of technology tools has emerged as a promising solution to address these issues.

In recent years, there has been a growing emphasis on the incorporation of technology tools into physical education classes (Garcia et al., 2021). These tools encompass a wide array of innovations, including wearable fitness trackers, virtual reality simulations, interactive apps, and online resources. Their introduction into the physical education landscape raises intriguing questions about their impact on student engagement.

Incorporating technology in PE enables instant feedback. Wearable devices can monitor students' performance, providing real-time data on heart rate, steps taken, and more. Teachers can use this data to assess students' efforts and guide them toward better fitness outcomes.

Virtual PE classes have gained prominence, especially during the COVID-19 pandemic. Students can participate in live or pre-recorded PE sessions, allowing flexibility in scheduling and engaging in physical activities from the comfort of their homes.

However, despite its potential, integrating technology into PE classes presents challenges. Access to technology and reliable internet may be unequal, limiting some students'

participation. Additionally, there are concerns about screen time and sedentary behavior, which may counteract the benefits of PE.

Teachers need proper training to effectively use technology tools in PE classes. They must understand how to use devices, apps, and platforms to enhance the curriculum and engage students.

The future of technology in physical education is promising. Advancements in augmented reality (AR), VR, and artificial intelligence (AI) hold the potential to create immersive and interactive PE experiences, further boosting student engagement.

Incorporating technology tools into physical education classes has the potential to revolutionize the way students engage with physical fitness. Gamification, personalized learning, digital feedback, virtual classes, and mobile devices offer innovative solutions to the long-standing challenge of maintaining student interest in PE. While there are challenges to overcome, with proper training and equitable access, technology can empower students to lead healthier lives and embrace physical education with enthusiasm. As technology continues to advance, the future of PE classes holds exciting possibilities for improved student engagement and overall well-being.

2. Research Content

2.1. Conceptual Framework

Figure 1 shows the research paradigm on the assessing the relationship between the technology use the Physical Education (PE) teachers in their class and the students' engagement in their PE classes in a Technology College. It likewise presented the correlation of technology use in PE classes and student engagement.

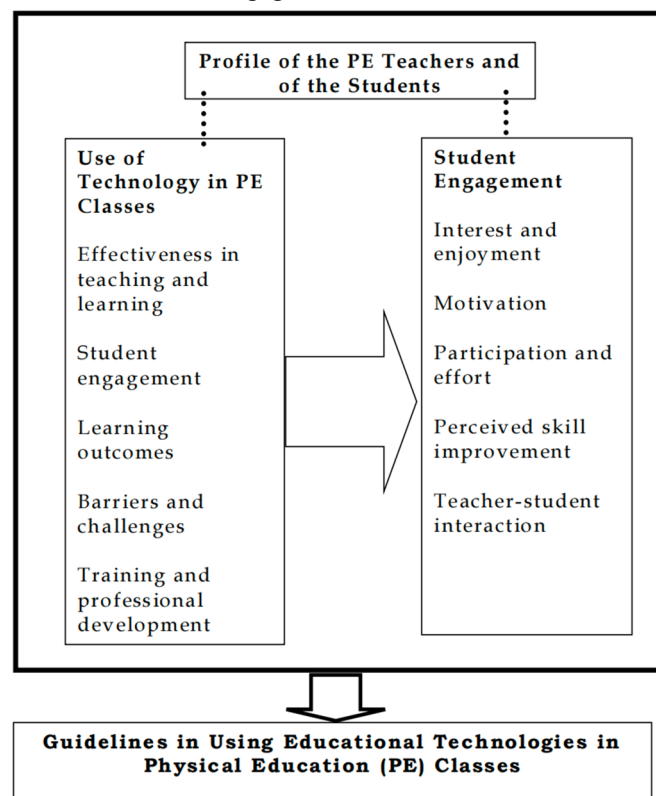


Figure 1. Research Paradigm

Figure 1 indicates the research paradigm of the study. It presents the intervening variables such as the PE teachers' demographic data and their use of technology. It also presents the students' demographic data and their engagement in their PE classes. Finally, it shows the relationship between use of technology and student engagement in PE classes.

It shows the expected output of the study, which is the guidelines in the use of educational technologies in Physical Education classes.

2.2. Statement of the Problem

This study determined the relationship between use of technology tools and student engagement among physical education (PE) classes.

The results of the study were used as a basis for the development of guidelines for the use of educational technologies in physical education (PE) classes to optimize student engagement.

2.3. Scope and Delimitation of the Study

The scope of the study covered the assessment of the relationship of the educational technologies the Physical Education (PE) teachers use in their PE classes and the engagement in their PE classes, assessed by students and teachers from a Technology College in china.

To be specific, the assessment of the use of educational

technologies includes effectiveness in teaching and learning, student engagement, learning outcomes, barriers and challenges, and training and professional development. These variables were correlated with the assessment of the student respondents of their engagement in their PE classes in terms of interest and enjoyment, motivation, participation and effort, perceived skill improvement, and teacher-student interaction.

2.4. Methodology

2.4.1. Research Design

In this study, the research approach employed was the descriptive-comparative-correlational method. This methodology encompasses the processes of describing, recording, analyzing, and interpreting conditions and relationships.

This study aimed to investigate the use of technology as assessed by the physical education teachers and its relationship to the engagement in PE classes as assessed by the students.

This research approach allowed the researcher to numerically analyze, compare, and correlate the relationships amongst the dependent and independent variables included in the study.

By utilizing this approach, the researcher was able to find any significant difference or relationship in the PE teachers' and students' demographic data such as area of specialization, age, educational attainment, and years of experience. The PE Teachers' assessment was correlated to the students' assessment.

2.4.2. Research Locale and Sampling Methods

The study was conducted at a Technology College in china.

2.4.3. Research Instrument

In gathering the needed data, the researcher made researcher-made questionnaires checklist on use of technology of the PE teachers and engagement of the students.

The first questionnaire with the two sets was composed of the following parts.

Part 1 – This section determined the demographic profile of the PE teacher and student respondents.

Part 2 for the students – This section determined the assessment of the PE student respondents of the educational technologies used by their teachers in their PE classes.

Part 2 for the PE teachers - This section determined the assessment of the teacher respondents of their student's engagement in their PE classes.

The four (4) point scale was used on the questionnaire checklist with respect to the use of technology in their classes of the PE teachers, as well as to the engagement of the students in their PE classes.

2.4.4. Data Gathering Procedure

The researcher got permission from the school administrators. They explained to the respondents of the purpose of the study and instructions. The respondents were given enough time to answer the survey.

The data were gathered, tallied, and processed with Statistical Package for Social Science (SPSS). The processed data was interpreted and analyzed, and the results will be used to develop guidelines for the use of educational technologies in Physical Education (PE) classes.

Finally, the interpretation and analysis of data was done. Summary of findings, conclusions, and recommendations

were formulated.

2.4.5. Statistical Treatment of the Data

The responses to the survey questionnaire were tallied using the SPSS, and then they were tabulated and organized accordingly. The data were presented, analyzed, and interpreted using frequency, percentage, mean, standard deviation, independent samples t-test, one-way ANOVA, and Pearson's r correlation.

2.4.6. Ethical Considerations

The researcher was constructively considered and carefully followed the ethical considerations that must be met to protect the rights of all the respondents. The following are the Ethical considerations: Conflict of Interest, Privacy and Confidentiality, Informed Consent Process, Recruitment, Risk.

3. Results and discussion

3.1. Profile of the Respondents

3.1.1. Student Respondents

Table 1 presents the frequency distribution of the profile of student respondents in terms of sex, age, grade level and course.

Table 1. Frequency Distribution of Student Respondents' Profile

	Frequency	Percentage
Sex		
Male	184	48.4%
Female	196	51.6%
Total	380	100%
Age		
15-20 years old	263	69.2%
21-25 years old	117	30.8%
Total	380	100%
Grade Level		
Year 1	115	30.3%
Year 2	96	25.3%
Year 3	86	22.6%
Year 4	83	21.8%
Total	380	100%
Course		
Engineering	65	17.1%
Science, Technology & Mathematics	27	7.1%
Economics and Business	77	20.3%
Language and Literature	13	3.4%
Education	4	1.1%
Other Courses	194	51.1%
Total	380	100%

Sex. One hundred eighty-four (184) or 48.4% of the student respondents are male while one hundred ninety six (196) or 51.6% are female. This indicates that more than half of the student respondents are female.

Age. Two hundred sixty-three (263) or 69.2% of the student respondents are 15-20 years old, while one hundred seventeen (117) or 30.8% are within 21-25 years old. This goes to show that majority of the student respondents are within the age group of 15-20 years old.

Grade Level. One hundred fifteen (115) or 30.3% of the student respondents are from year level 1, ninety-six (96) or 25.3% are from year level 2, eighty six (86) or 22.6% are from year level 3, and eighty three (83) or 21.8% are from year level 4. The result shows that most of the student respondents are from year level 1.

Course. Sixty-five (65) or 17.1% of the student respondents are from Engineering course, twenty seven (27) or 7.1% from Science, Technology and Mathematics, seventy seven (77) or 20.3% from Economics and Business, thirteen (13) or 3.4% from Language and Literature, four (4) or 1.1% from Education, and one hundred ninety four (194) or 51.1% from other courses. This indicates that more than half of the student respondents are taking other courses that are not in the identified disciplines.

3.1.2. Teacher Respondents

Table 2 presents the frequency distribution of the profile of teacher respondents in terms of sex, age, educational attainment and years of experience as PE teacher.

Table 2. Frequency Distribution of Teacher Respondents' Profile

	Frequency	Percentage
Sex		
Male	58	64.4%
Female	32	35.6%
Total	90	100%
Age		
26-30 years old	50	55.6%
31-35 years old	18	20.0%
36-40 years old	13	14.4%
41 years old & above	9	10.0%
Total	90	100%
Educational Attainment		
Bachelor's degree	2	2.2%
Master's degree	72	80.0%
Doctoral degree	16	17.8%
Total	90	100%
Years of Experience as PE Teacher		
1-5 years	39	43.3%
6-10 years	34	37.8%
11-15 years	10	11.1%
16-20 years	7	7.8%
Total	90	100%

Age. Fifty (50) or 55.6% of the teacher respondents are within 26-30 years old, eighteen (18) or 20.0% are 31-35 years old, thirteen (13) or 14.4% bare 36-40 years old, and nine (9) or 10% are 41 years old and above. The result shows that majority of the teacher respondents are within the age group of 26-30 years old.

Educational Attainment. Two (2) or 2.2% of the teacher respondents are Bachelor's degree holders, seventy-two (72) or 80% are Master's degree holders, and sixteen (16) or 17.8% are Doctoral degree holders. This goes to show that majority of the teacher respondents are Master's degree holders.

Years of Experience as PE Teacher. Thirty-nine (39) or 43.3% of the teacher respondents have been PE teachers for 1-5 years, thirty four (34) or 37.8% for about 6-10 years, ten (10) or 11.1% for 11-15 years, and seven (7) or 7.8% for 16-20 years. This indicates that most of the teacher respondents have been teaching PE subject for not more than ten years.

3.2. Student Respondents' Assessment of the Educational Technologies Used in their PE Classes

3.2.1. On Effectiveness in Teaching and Learning

Table 3. Student Respondents' Assessment on the Educational Technologies Used in their PE Classes in Terms of Effectiveness in Teaching and Learning

Effectiveness in Teaching and Learning	Mean	SD	Qualitative Description	Interpretation	Rank
1.The use of educational technologies has significantly improved the quality of instruction in our PE classes.	3.43	0.61	True of my PE Classes	Effective Use	4.5
2.Educational technologies have positively impacted student engagement and understanding of PE concepts and skills in our classes.	3.45	0.60	True of my PE Classes	Effective Use	2.5
3.I have found that educational technologies enhance my ability to effectively learn PE content.	3.43	0.63	True of my PE Classes	Effective Use	4.5
4.The integration of technology in PE instruction has improved our overall learning experience.	3.47	0.59	True of my PE Classes	Effective Use	1
5.Educational technologies are an essential tool for achieving instructional goals in our PE classes.	3.45	0.60	True of my PE Classes	Effective Use	2.5
Composite Mean	3.45	0.57	True of my PE Classes	Effective Use	

Legend: 3.51-4.00 Very True of my PE Classes(VTPEC)/Very Effective Use(VEU);2.51-3.50 True of my PE Classes (TPEC)/Effective Use (EU);1.51-2.50 Slightly True of my PE Classes (STPEC)/Slightly Effective Use (SEU); 1.00-1.50 Not True of my PE Classes (NTPEC)/Not Effective Use (NEU)

As shown in Table 3, student respondents perceived that it is true of their PE classes that the integration of technology in PE instruction has improved their overall learning experience with the highest assessment of 3.47 interpreted to have an effective use. Similarly they also perceived that it is true to their PE classes that educational technologies have positively impacted student engagement and understanding of PE concepts and skills in their classes with the mean values of 3.45 respectively interpreted to have an effective use.

3.2.2. On Student Engagement

Table 4. Student Respondents' Assessment on the Educational Technologies Used in their PE Classes in Terms of Student Engagement

Student Engagement	Mean	SD	Qualitative Description	Interpretation	Rank
1. our PE classes show increased motivation and enthusiasm when educational technologies are integrated.	3.43	0.63	True of my PE Classes	Effective Use	2
2. The use of educational technologies effectively enhances our participation and engagement in PE activities.	3.46	0.60	True of my PE Classes	Effective Use	1
3. Technology tools are instrumental in keeping us actively engaged during our PE lessons.	3.41	0.66	True of my PE Classes	Effective Use	5
4. I have observed that educational technologies help us maintain focus and enthusiasm throughout the class.	3.42	0.61	True of my PE Classes	Effective Use	3.5
5. We are more eager to participate in PE activities that involve the use of technology.	3.42	0.63	True of my PE Classes	Effective Use	3.5
Composite Mean	3.41	0.59	True of my PE Classes	Effective Use	

Legend: 3.51-4.00 Very True of my PE Classes(VTPEC)/Very Effective Use(VEU);2.51-3.50 True of my PE Classes (TPEC)/Effective Use (EU);1.51-2.50 Slightly True of my PE Classes (STPEC)/Slightly Effective Use (SEU); 1.00-1.50 Not True of my PE Classes (NTPEC)/Not Effective Use (NEU)

As shown in Table 4, student respondents perceived that it is true of their PE classes that the use of educational technologies effectively enhances their participation and engagement in PE activities with the highest assessment of 3.46 interpreted to have an effective use. Likewise, it was also perceived by the students that it is true of their PE classes to show increased motivation and enthusiasm when educational technologies are integrated, they have observed that educational technologies help them maintain focus and enthusiasm throughout the class, and they are more eager to participate in PE activities that involve the use of technology with the mean values of 3.43, 3.42, and 3.42 respectively interpreted to have an effective use.

3.2.3. On Learning Outcomes

Table 5. Student Respondents' Assessment on the Educational Technologies Used in their PE Classes in Terms of Learning Outcomes

Learning Outcomes	Mean	SD	Qualitative Description	Interpretation	Rank
1. I have observed notable improvements in our physical fitness due to the use of educational technologies.	3.41	0.63	True of my PE Classes	Effective Use	3
2. Educational technologies positively contribute to our skill development in PE.	3.44	0.61	True of my PE Classes	Effective Use	1
3. We acquire a deeper understanding of PE concepts using technology.	3.41	0.62	True of my PE Classes	Effective Use	3
4. Learning outcomes related to PE objectives are consistently achieved when technology is integrated.	3.41	0.62	True of my PE Classes	Effective Use	3
5. Educational technologies facilitate better retention of PE knowledge and skills among us students.	3.40	0.62	True of my PE Classes	Effective Use	5
Composite Mean	3.41	0.59	True of my PE Classes	Effective Use	

Legend: 3.51-4.00 Very True of my PE Classes(VTPEC)/Very Effective Use(VEU);2.51-3.50 True of my PE Classes (TPEC)/Effective Use (EU);1.51-2.50 Slightly True of my PE Classes (STPEC)/Slightly Effective

Use (SEU); 1.00-1.50 Not True of my PE Classes (NTPEC)/Not Effective Use (NEU)

As shown in Table 5, student respondents perceived that it is true of their PE classes that educational technologies positively contribute to their skill development in PE with the highest assessment of 3.44 interpreted to have an effective use. Similarly, it was perceived by them that it is true of their PE class of the notable improvements in their physical fitness due to the use of educational technologies, that they acquire a deeper understanding of PE concepts using technology, and learning outcomes related to PE objectives are consistently achieved when technology is integrated with the mean values of 3.41 respectively interpreted to have an effective use.

3.2.4. On Barriers and Challenges

Table 6. Student Respondents' Assessment on the Educational Technologies Used in their PE Classes in Terms of Barriers and Challenges

Barriers and Challenges	Mean	SD	Qualitative Description	Interpretation	Rank
1. Integrating educational technologies into our PE classes has been challenging due to technical, logistical, or resource-related issues.	3.41	0.63	True of my PE Classes	Effective Use	2
2. Despite challenges, I have found effective ways to manage and overcome obstacles related to technology integration in PE.	3.36	0.67	True of my PE Classes	Effective Use	1
3. I encounter resistance from my classmates when introducing new technology tools in PE lessons.	2.94	1.01	True of my PE Classes	Effective Use	5
4. Balancing technology use with traditional PE instruction can be a complex task.	3.30	0.70	True of my PE Classes	Effective Use	3
5. Limited access to necessary technology resources can hinder the smooth integration of educational technologies.	3.28	0.76	True of my PE Classes	Effective Use	4
Composite Mean	3.26	0.63	True of my PE Classes	Effective Use	

Legend: 3.51-4.00 Very True of my PE Classes(VTPEC)/Very Effective Use(VEU);2.51-3.50 True of my PE Classes (TPEC)/Effective Use (EU);1.51-2.50 Slightly True of my PE Classes (STPEC)/Slightly Effective Use (SEU); 1.00-1.50 Not True of my PE Classes (NTPEC)/Not Effective Use (NEU)

As shown in Table 6, student respondents perceived that it is true of their PE classes that despite challenges, they have found effective ways to manage and overcome obstacles related to technology integration in PE with the highest assessment of 3.36 interpreted to have an effective use. Similarly, it was also perceived by the student respondents that it is true of their PE classes that integrating educational technologies into their PE classes has been challenging due to technical, logistical, or resource-related issues, balancing technology use with traditional PE instruction can be a complex task, limited access to necessary technology resources can hinder the smooth integration of educational technologies with the mean values of 3.41, 3.30, and 3.28 respectively all interpreted to have an effective use.

3.2.5. On Training and Professional Development

Table 7. Student Respondents' Assessment on the Educational Technologies Used in their PE Classes in Terms of Training and Professional Development

Training and Professional Development	Mean	SD	Qualitative Description	Interpretation	Rank
1. I have received adequate training and professional development related to the use of educational technologies in PE instruction.	3.24	0.77	True of my PE Classes	Effective Use	5
2. I feel confident in our ability to effectively integrate technology into our learning practices in PE.	3.37	0.65	True of my PE Classes	Effective Use	3
3. Ongoing development opportunities are essential for staying current with technology trends in our PE education.	3.38	0.65	True of my PE Classes	Effective Use	1.5
4. The training we have received has positively impacted our ability to utilize technology for learning PE concepts.	3.36	0.66	True of my PE Classes	Effective Use	4
5. I actively seek opportunities to enhance my skills in using educational technologies for PE instruction.	3.38	0.65	True of my PE Classes	Effective Use	1.5
Composite Mean	3.35	0.63	True of my PE Classes	Effective Use	

Legend: 3.51-4.00 Very True of my PE Classes(VTPEC)/Very Effective Use(VEU);2.51-3.50 True of my PE Classes (TPEC)/Effective Use (EU);1.51-2.50 Slightly True of my PE Classes (STPEC)/Slightly Effective Use (SEU); 1.00-1.50 Not True of my PE Classes (NTPEC)/Not Effective Use (NEU)

As shown in Table 7, student respondents perceived that it is true of their PE classes that ongoing development opportunities are essential for staying current with technology trends in the PE education, and that they actively seek opportunities to enhance their skills in using educational technologies for PE instruction with the highest assessment of 3.38 respectively interpreted to have an effective use.

3.3. Teacher Respondents' Assessment of the Student Engagement in their PE Classes

3.3.1. On Interest and Enjoyment

Table 8. Teacher Respondents' Assessment on Student Engagement in Terms of Interest and Enjoyment

Interest and Enjoyment	Mean	SD	Qualitative Description	Interpretation	Rank
1. I find my students in PE classes highly interesting and engaging.	3.26	0.70	True of my PE Classes	Engaged	1
2. My students in PE classes are enjoyable and make me look forward to attending all my classes with them.	3.23	0.60	True of my PE Classes	Engaged	4
3. I have a high level of interest in the activities and exercises in my PE classes.	3.24	0.64	True of my PE Classes	Engaged	2.5
4. students in my PE classes actively participate in PE because they find it interesting.	3.24	0.71	True of my PE Classes	Engaged	2.5
5. My students are genuinely enjoying the content and activities in my PE classes.	3.17	0.67	True of my PE Classes	Engaged	5
Composite Mean	3.23	0.39	True of my PE Classes	Engaged	

Legend: 3.51-4.00 Very True of my PE Classes/Very Engaged;2.51-3.50 True of my PE Classes/Engaged;1.51-2.50 Slightly True of my PE Classes /Slightly Engaged; 1.00-1.50 Not True of my PE Classes/No Engagement

As shown in Table 8, teacher respondents perceived that it is true of their PE classes that they are highly interesting and engaging with the highest assessment of 3.26 interpreted as engaged. Similarly, it is true of their PE classes that they have a high level of interest in the activities and exercises in their PE classes, that students in their PE classes actively participate in PE because they find it interesting, and that their students in PE classes are enjoyable and make them look forward to attending all their classes with them with the mean values of 3.24, 3.24, and 3.23 respectively interpreted as engaged.

3.3.2. On Motivation

Table 9. Teacher Respondents' Assessment on Student Engagement in Terms of Motivation

Motivation	Mean	SD	Qualitative Description	Interpretation	Rank
1. My students are highly motivated to actively participate in my PE classes.	3.24	0.64	True of my PE Classes	Engaged	2
2. Factors such as improving their physical fitness motivate them to engage fully in PE.	3.14	0.73	True of my PE Classes	Engaged	5
3. My students are motivated by the goal of leading a healthy lifestyle through PE.	3.23	0.69	True of my PE Classes	Engaged	3
4. The encouragement and support from my the teacher motivate them to do their best in class.	3.32	0.58	True of my PE Classes	Engaged	1
5. Achieving personal fitness goals is highly motivating for my students in PE.	3.21	0.66	True of my PE Classes	Engaged	4
Composite Mean	3.23	0.43	True of my PE Classes	Engaged	

Legend: 3.51-4.00 Very True of my PE Classes/Very Engaged;2.51-3.50 True of my PE Classes/Engaged;1.51-2.50 Slightly True of my PE Classes /Slightly Engaged; 1.00-1.50 Not True of my PE Classes/No Engagement

As shown in Table 9, it was true of the PE classes that the encouragement and support from the teachers motivate them to do their best in class with the highest assessment of 3.32 interpreted as engaged. Similarly, it was also true of the PE classes that the students are highly motivated to actively participate in their PE classes, that students are motivated by the goal of leading a healthy lifestyle through PE, and that achieving personal fitness goals is highly motivating for the students in PE with the mean values of 3.24, 3.23, and 3.21 respectively interpreted as engaged.

3.3.3. On Participation and Effort

Table 10. Teacher Respondents' Assessment on Student Engagement in Terms of Participation and Effort

Participation and Effort	Mean	SD	Qualitative Description	Interpretation	Rank
1. They actively participate in PE activities and consistently put in a high level of effort.	3.16	0.67	True of my PE Classes	Engaged	2
2. Their level of participation and effort in PE is consistently high.	3.20	0.72	True of my PE Classes	Engaged	1
3. They willingly engage in PE activities even when they are challenged.	3.10	0.77	True of my PE Classes	Engaged	4
4. They exert maximum effort to excel in PE activities.	3.08	0.74	True of my PE Classes	Engaged	5
5. They take an active role in group activities and collaborate with peers.	3.12	0.68	True of my PE Classes	Engaged	3
Composite Mean	3.13	0.48	True of my PE Classes	Engaged	

Legend: 3.51-4.00 Very True of my PE Classes/Very Engaged;2.51-3.50 True of my PE Classes/Engaged;1.51-2.50 Slightly True of my PE Classes /Slightly Engaged; 1.00-1.50 Not True of my PE Classes/No Engagement

As shown in Table 10, it was true of the PE classes that their level of participation and effort in PE is consistently high with the highest assessment of 3.20 interpreted as engaged. Likewise, it was also true of the PE classes that they actively participate in PE activities and consistently put in a high level of effort, that they take an active role in group activities and collaborate with peers, and that they willingly engage in PE activities even when they are challenged with the mean values of 3.16, 3.12, and 3.10 respectively interpreted as engaged.

3.3.4. On Perceived Skill Improvement

Table 11. Teacher Respondents' Assessment on Student Engagement in Terms of Perceived Skill Improvement

Perceived Skill Improvement	Mean	SD	Qualitative Description	Interpretation	Rank
1. I feel that their skills and abilities in sports and physical activities have significantly improved through our PE classes.	3.19	0.65	True of my PE Classes	Engaged	4
2. I believe my PE classes have contributed to noticeable skill enhancement.	3.24	0.66	True of my PE Classes	Engaged	2
3. I have seen improvements in their physical abilities because of their PE classes.	3.22	0.63	True of my PE Classes	Engaged	3
4. The PE classes have positively impacted their competence in various sports.	3.30	0.66	True of my PE Classes	Engaged	1
5. They feel more confident in their athletic abilities due to our PE classes.	3.18	0.65	True of my PE Classes	Engaged	5
Composite Mean	3.23	0.40	True of my PE Classes	Engaged	

Legend: 3.51-4.00 Very True of my PE Classes/Very Engaged; 2.51-3.50 True of my PE Classes/Engaged; 1.51-2.50 Slightly True of my PE Classes/Slightly Engaged; 1.00-1.50 Not True of my PE Classes/No Engagement

As shown in Table 11, it was true of the PE classes that the PE classes have positively impacted their competence in various sports with the highest assessment of 3.30 interpreted as engaged. Similarly, it was true of the PE classes that they have contributed to noticeable skill enhancement, that they have seen improvements in their physical abilities because of their PE classes, and that they feel that their skills and abilities in sports and physical activities have significantly improved through the PE classes with the mean values of 3.24, 3.22, and 3.19 respectively interpreted as engaged.

3.3.5. On Teacher-Student Interaction

Table 12. Teacher Respondents' Assessment on Student Engagement in Terms of Teacher-Student Interaction

Teacher-Student Interaction	Mean	SD	Qualitative Description	Interpretation	Rank
1. The interaction between me and my PE students during classes is excellent.	3.22	0.68	True of my PE Classes	Engaged	4.5
2. My PE students are approachable and responsive to questions and concerns.	3.36	0.64	True of my PE Classes	Engaged	1
3. They feel comfortable asking questions and seeking guidance from my PE teacher.	3.22	0.68	True of my PE Classes	Engaged	4.5
4. Our PE students foster a positive and engaging learning environment.	3.27	0.63	True of my PE Classes	Engaged	3
5. The quality of interaction between me and my students greatly enhances my teaching experience.	3.30	0.63	True of my PE Classes	Engaged	2
Composite Mean	3.27	0.41	True of my PE Classes	Engaged	

Legend: 3.51-4.00 Very True of my PE Classes/Very Engaged; 2.51-3.50 True of my PE Classes/Engaged; 1.51-2.50 Slightly True of my PE Classes/Slightly Engaged; 1.00-1.50 Not True of my PE Classes/No Engagement

As shown in Table 12, it was true of the PE classes that students are approachable and responsive to questions and concerns with the highest assessment of 3.36 interpreted as engaged. Likewise, it was also true to the PE classes that the quality of interaction between the teacher and the students greatly enhances the teaching experience of teachers, that they foster a positive and engaging learning environment, interaction between teacher and PE students during classes is excellent, and that students feel comfortable asking questions and seeking guidance from their PE teachers with the mean values of 3.30, 3.27, 3.22 and 3.22 respectively interpreted as engaged.

4. Conclusion and Recommendation

4.1. Conclusion

Student respondents are mostly female of not more than twenty years of age taking up different courses, while teachers are mostly young male holding Master's degree and have been PE teachers for not more than ten years.

The use of educational technologies used in PE classes was observed by the students to be effective.

Students have relatively the same assessment on the use of educational technologies in their PE classes regardless of their sex, age, grade level, and course.

Teachers have seen their students to be engaged in their PE classes.

Teachers have relatively the same assessment on the level of engagement of students in their PE classes regardless of their sex, age, educational attainment, and years of experience as PE teachers.

The use of educational technologies in PE classes did not influence the level of engagement of PE students in their classes.

4.2. Recommendation

Based on the conclusions derived in this study, the following are the recommendations:

Review and assess the existing strategies on the use of educational technologies in teaching PE subjects to ensure a more dynamic and interactive learning environment that motivates students to actively participate, improve their physical fitness and develop a lifelong interest in health and wellness.

Use digital tools for providing timely feedback, conducting assessments, and tracking students' performance in PE classes which could help teachers tailor instruction to meet individual student needs and enhance engagement.

Students may be encouraged to create digital portfolios showcasing their progress, achievements, and reflections on their PE learning journey which could help them track their growth and stay motivated.

The use of mobile apps designed for PE may also be considered to help students track their workouts, set goals, and access instructional videos or fitness routines which can also facilitate communication between students and teachers.

The elements of gamification in PE classes may also be introduced using educational platforms where teachers can create challenges and give rewards to motivate students to participate actively.

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