

Factors affecting student engagement in PE and its impact on holistic student outcomes

Pilobello, Bernadette Bermaglomay I. ✉

Lyceum of the Philippines University Batangas, Philippines (katnissgregorio@gmail.com)

Onera, Michael D.

Lyceum of the Philippines University Batangas, Philippines (Oneramichael1@gmail.com)

Umali, Mary Grace L.

Lyceum of the Philippines University Batangas, Philippines (Umalimarygrace1195@yahoo.com)

Marasigan, Rosalinda H.

Lyceum of the Philippines University Batangas, Philippines (rosamarasigan03@gmail.com)



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Abstract

Understanding how to use the physical education (PE) classroom as a tool for creating well-rounded people is why it is important to research the factors influencing students' participation in PE. A descriptive survey was used to support sustainable and equitable education among college students at LPU Batangas, Batangas City. With a 95% confidence level at 5 % margin of error that 351 PE college students from specific LPU Batangas and LIMA campuses were part of the respondents of this study. Findings provide physical education positively affects mental health by reducing anxiety and fostering community support. Moreover, students educated in sustainable development are more capable of promoting local fitness initiatives. Factors such as cultural norms, academic pressures, and previous experiences influence student participation in physical education (PE). Promoting healthy lifestyles among students requires an understanding of these components. Additionally, a correlation exists between the outcomes of physical education classes and a student's overall achievements, both academically and personally. Physical education teachers are encouraged to incorporate anxiety-reduction techniques like yoga, Pilates, Tai Chi, and meditation into their lessons to promote active lifestyles. Additionally, the PE curriculum should be revised for equity and sustainability. School administration should facilitate accessible athletic and recreational events and integrate outdoor and environmental themes into sports activities. The research aims to explore various methodologies and engage diverse groups to evaluate a suggested course of action, physical education (PE) on mental health, academic success, and lifestyle.

Keywords: student engagement, affecting factors, physical education, impact of physical education

Factors affecting student engagement in PE and its impact on holistic student outcomes

1. Introduction

These days, the goal of education is shifting from being purely academic to support students' holistic growth by taking into account their mental, physical, social, and emotional health. Physical education (PE) is crucial to this transformative strategy, but student participation often undermines its effectiveness. Student's participation is influenced by various factors, such as curriculum, teaching methods, classroom social climate, and individual student perspectives. SDG Goal 4 on Quality of Education aims to offer top-notch, comprehensive education that encourages chances for continuous growth. It prioritizes access for underprivileged groups such as the poor, disabled, refugees, and rural residents and emphasizes equipping individuals with vital skills for sustainable living. This study identifies factors affecting student engagement in PE and its impact on holistic student outcomes among college students. It highlights how, physical education promotes resilience and emotional regulation in students, benefits their mental health, self-efficacy and sports environment.

According to Acero and Guillena (2024) engaged in physical activities achieve greater awareness in sports education, contributing to healthier lifestyles, academic success, and social-emotional skill development. Academic achievement in physical education is indicated by effective teaching methods and active student participation, with technology integration enhancing instructional strategies. By adopting a comprehensive approach to physical education, teachers can make learning more interesting and rewarding for all students enrolled in Path Fit 1 Fitness and Competency training 1, Path Fit 2 Exercise-based, PE 3 Individual Dual Sports and PE 4 Team sports. This will result in notable gains in academic, social, emotional, and physical outcomes. But in recent years, there has been an increased focus on the need for education to be sustainable and contribute to a better planet. Because of this, there is now more focus on how physical education may promote sustainable behaviors in terms of self-efficacy and sports environment factors. According to Abu-Omar et al. (2023), participating in specific physical activities can enhance one's health both personally and globally. Sustainable physical education initiatives will promote outdoor leisure and healthy living benefit both the recreation and healthcare sectors. Providing students with the tools will create a sustainable and healthy future. They may improve living conditions and promote characteristics like resilience, sportsmanship, and fair play.

Objectives of the Research - The study aims to identify factors affecting student engagement in PE and its impact on holistic student outcomes among college students in LPU Batangas. More specifically, it describes the profile of the respondents in terms of sex, year, level, and department; assess the factors affecting students' engagement to physical education in terms of personal interest, physical fitness level, self-efficacy, social influence, sports environment, and determine the impact of physical education on mental health, and motivation. Further, it tests the significant difference on the factors and impact when grouped according to respondents' demographic profile and a proposed plan of action based on the identified limitations of the study.

2. Literature Review

2.1 Factors affecting Student Engagement in PE

Encouraging personal interests, fitness levels, self-efficacy, social influence, and social environment enhance physical activity in physical education (PE), promoting successful student learning and development. Inclusive PE programs improve well-being and encourage lifelong physical activity, highlighting the need for awareness among educators and legislators. College students exhibit decreased interest in physical activity and increased sedentary behavior, even among those who meet activity standards. Calestine et al. (2017) reveal campus health initiatives should focus on the relationship between academic success and physical activity. In

physical education, teacher assistance profoundly influences student involvement, vital for instructional quality. Guo et al. (2023).

Effective instructional strategies in physical education had enhanced the student engagement by promoting autonomy, competence, and emotional support from teachers. A positive correlation exists between student participation and perceived teacher support, factors like autonomous motivation and psychological need fulfillment had influenced those physiological needs. Ranjeeth (2020) posted the significance of considering the student body of demographic profile in the design and delivery of PE programs, and challenges related to gender in education. As Deng & Legge's (2024) studies in New Zealand elementary schools identify six subthemes of physical education: fun, character and self-efficacy, social skills, physical well-being, and mechanisms for resetting. Instructors view physical education as crucial for social skills and overall well-being, prioritizing students' learning experiences. Internal factors such as enjoyment and activity significantly affect students' interest, surpassing external influences. Physical education (PE) is crucial for students' overall development, focusing on physical fitness, health, and well-being. It encompasses activities like games, sports, and exercise, promoting social skills and personal growth. Key benefits include better sleep, improved physical health, and enhanced academic performance. (Rockstar Academy 2024). Nurzhan et al. (2025) highlight student-centered teaching strategies enhance an engagement and effectiveness in physical education to promote student well-being when paired with motivational approaches. Tailored training and motivational interventions notably improve university students' engagement, satisfaction, intrinsic motivation, and frequency of participation in physical education programs.

Personal interest - Personal interests significantly influence students' motivation, satisfaction, and participation in physical education (PE). Low interest can lead to disengagement, while enjoyable activities aligned with personal preferences foster active participation. Acknowledging personal interest is crucial for developing positive learning experiences and promoting sustainable health behaviors. Lin & Zhu (2022) survey to Chinese students identified key factors affecting motivation in physical education (PE), including expectation value, sports knowledge, self-efficacy, mastery-approach objectives, family sports environment, performance-avoidance goals, and gender. suggests that PE curriculum should focus on enhancing sports self-efficacy and setting realistic sports goals to increase student interest in PE. Implementing varied assessment techniques in a college physical education course enhances students' motivation, self-efficacy, perceived behavioral control, physical activity levels, and health-related knowledge. Notably, internal determination and self-motivation have increased, especially among females, highlighting the need to incorporate these factors into lesson plans. (Harrington, 2025).

For Acero & Guillena (2024) a continuous improvement in instructional strategies boost student achievement and success in physical education relies on effective teaching and student engagement. High emotional engagement from students, driven by strategies like technology integration and student-centered approaches, enhances performance in involvement, accountability, leadership, and game understanding. The students may support sustainability in classrooms, emphasizing the value of cooperation and institutional backing. It draws attention to the transformative nature of student-directed projects and the function that schools and universities play in promoting an environmentally friendly environment and giving students an advocate. (Mittal & Bansal 2024)

Teachers and students can improve the educational experience by focusing on critical components. Despite overall poorer performance in life skills within physical education, students gained significantly from applying service-learning (SL) knowledge. Notably, female students placed greater value on SL benefits and motivation compared to male students, had a variation in factors such as ego, environment, and social relatedness. (Kurniawan 2021). Clear instructions from trainers are beneficial for students' comprehension, motivation, physical activity, and interpersonal relationships. Effective sports communication enhances adolescents' physiological responses and abilities. Charlina et al. (2024) verbal communication in Indonesia fosters cultural values and participation. Technology-based communication may assist physical education teachers in addressing

challenges. Zeng et al. (2021) reveals that for Asian American high school students, extracurricular activity hours do not impact Phys-Ed GPA, but organized sports positively benefit female students. Academic behavior and school pride are found to correlate positively with Phys-Ed GPA, indicate a need to redistribute social structures for equitable educational access.

Physical Fitness Level - Students' physical fitness significantly affects their ability, confidence, and willingness to engage in physical education. Increased fitness levels boost motivation and enjoyment, while lower fitness leads to discomfort and fear of failure, decreasing participation. Physical education is essential for promoting a health-conscious lifestyle among students through active participation. De Jonge-Smith & Barber (2024) shows that single-sex and mixed-gender environments impact student motivation differently. Teachers significantly influence motivation; the importance of an inclusive atmosphere may foster the involvement in gender-inclusive high school PE programs. The study by Faragas et al. (2015) discovered the students have a normal body weight, male students are being more active than female students. This suggests that a strong foundation can encourage students to maintain good health and engage in active lifestyles.

Self-Efficacy - Self-efficacy can help create and execute physical education programs that empower college students, engage them, and support fair, sustainable, and holistic learning outcomes. Wu et al. (2024) study examines the impact of Chinese college students' perceptions of the sports environment on their athletic performance are the immediate roles of self-efficacy and physical activity behavior in sport learning. It concluded that perceptions predict both physical activity behavior and self-efficacy had an implication for developing interventions to enhance physical education learning outcomes. Huang et al. (2025) examined the effects of self-efficacy exercises on student engagement in physical education at five universities in Guangdong, China. It found a significant positive correlation between exercise self-efficacy and student involvement; higher self-efficacy enhances learning engagement through flow experiences. The role of psychological processes is a training efficacy and has a connection of self-efficacy and mental health among college students.

Han et al. (2022) indicated that exercise acts as a mediator between self-efficacy and physical fitness (PF), with low self-efficacy reduced PF's positive effects on self-efficacy. The study will enhance PF and promote physical activity to improve students' self-efficacy and mental health. Four incentive types of healthy appearance, healthy enjoyment, and motivation are influenced by family social classes regarding college students' sports motivation. Liu et al. (2023) in lower socioeconomic students shown less motivation, while those from higher socioeconomic backgrounds had enjoyed health and attractiveness. A positive relationship exists between motivation and self-perceived health, with healthier motivations associated with a reduced incidence of chronic illnesses. Cao et al. (2025) examined the connection between physical activity and achievement motivation among Chinese university students, life satisfaction and self-efficacy as mediators of success motivation. It provides insights for international efforts aimed at enhancing college students' motivation for success.

Sheng et al. (2025) analyzed physical activity, exercise self-efficacy, and motivation of college students, noted significant sex differences. Exercise of self-efficacy explained 58.50% of physical activity and the ability of motivation contributed 41.5%. For men, self-efficacy directly influenced physical activity and mediated effects, whereas for women, it enhanced ability motivation. Gender-specific interventions may boost physical activity by focusing on motivation and self-efficacy for women and self-efficacy for men. Bao (2025) studied the role of college students' commitment to physical activity as a mediator between peer interactions and exercise self-efficacy. It was found out no significant differences in peer interactions, but male students exhibit higher levels of exercise self-efficacy and commitment. Positive correlations were noted between peer relationships and exercise self-efficacy ($r = 0.832$), physical activity commitment ($r = 0.743$), and between exercise self-efficacy and physical activity commitment ($r = 0.758$). Enhancing peer interactions could boost students' physical activity and well-being.

Social Influence - Social influence can enhance the design of physical education settings by fostering environments, promote physical exercise, and prioritize social interactions with fairness among all college

students. The health benefits of physical activity do not align with the Global Action Plan on Physical Activity 2018–2030. The text explores social-cognitive concepts for interventions to sustain physical activity, focusing on motivation and cognition theories. Rodrigues et al. (2024) examined the influence of mental processes on physical exercise and propose strategies to improve participation and adherence. Fitness Buddies assists college students dealing with depression, anxiety, and low physical activity by fostering peer interaction and emphasizing competence, autonomy, and relatedness. Students' schedules and interests have led to reduced stress, enhanced peer relationships, and a more cohesive campus community. According to Kirby et al. (2022), FB is cost-effective initiative to promote sustained mental health and student success.

Sports Environment - The sports environment significantly affects student participation in Physical Education, influencing physical, social, and psychological engagement. Important factors include peer relationships, teacher support, classroom structure, facility quality, and the overall atmosphere will support environment to enhance participation and enjoyment, while a hostile one reduces motivation and engagement. The outdoor classrooms foster inquiry, and teamwork integrates nature into education. Cutting-edge teaching methods and instructional games enhance these environments, from the School of Education at American University, Washington D.C. (2024), highlights the benefits of linking abstract concepts to practical applications the advantages of earning higher degrees and dual certifications for teachers. Assistant teacher in PE had increased student engagement, which is crucial for effective education. It is significantly positive link between perceived teacher support and student participation, notably in behavioral and emotional dimensions. Guo et al. (2023) highlight the importance of teacher support in areas of autonomy, competence, and emotional care, advocated to improve motivational teaching strategies and keep students to engage in physical education.

Chinese students in physical education enhances their sports knowledge and skills, the influential factors include self-efficacy, mastery-approach objectives, family sports environment, performance-avoidance goals, and gender. According to Lin & Zhu (2022), PE curriculum can improve and develop interest by enhancing teaching effectiveness, boost self-efficacy, and support realistic a sports goal setting. College students' comfort levels, utilization of campus leisure centers, and physical activity of women participated in more aerobic and group exercises, used less weights, and engaged in less muscle-strengthening activities. Wilson et al. (2022) was a feeling less at ease when using CRFs. Disassociation from music, social support, equipment knowledge, and outfit choices were among the methods used to improve comfort. Abu-Omar et al. (2023) stated that sports contribute to environmental deterioration and carbon emissions, which sparks conversations about mitigating techniques by promoting physical exercise with planetary health.

2.2 Impact of Physical Education

Physical Education improves mental health by reducing stress, enhancing sleep quality, and promoting mindfulness. Practices such as yoga and tai chi increase endorphin production elevates mood. Regular participation in PE cultivates resilience, strengthens relationships, and provides access to support networks, and enhance an overall well-being. Mental health influences students' involvement in physical education. Factors like school stress and lifestyle changes can detrimentally affect mental well-being. To focus on psychological health everyone can boost motivation, self-confidence, and emotional regulation to improve student engagement in physical activities. Physical activity interventions on students' mental health exhibited poor significant heterogeneity and risk of bias. Results were inconsistent, with issues related to intervention fidelity and inadequate application of behavioral change theories. Huang et al. (2024) suggested that physical activity may improve mental health and assess efficacy.

The student academic performance, especially through participation in extracurricular physical activities cultivate positive habits, better sleep and self-perception. Pelaez et al. (2024) noted that the Sustainable Development Goal on physical activity (PA) for mental health promotes educational quality and gender equality, urge the students to embrace healthy lifestyles and support PA in response to climate change. The stress from learning negatively affects academic performance and physical activity, with men exhibiting higher physical

activity levels. Rojas et al. (2024) in academic performance had indicated a higher achievement correlates with lower academic stress.

College students face increased mental health challenges linked to lower physical activity levels. Students In PE had and exercise to improve mental health, despite no clear connection between overall activity levels and mood swings. Taylor (2024) indicated physical exercise in college curriculum could enhance mental well-being. Regular participation in physical education enhances physical fitness, correlating with improvements in both physical and mental health. Nashwa (2024) emphasized a holistic approach that combines subjective experiences and objective evaluations to improve overall welfare. To enhance students' academic achievement, social skills, and personal growth a better academic performance may improve by social collaboration. Mann et al. (2022) emphasized positive impact of environments like school gardens and field trips on self-concept and well-being. To identify the best educational settings, it is essential to incorporate nature-focused education into curricula and teacher training.

Sustainable behavior in PE is encouraged through the Intervention Mapping. It focused on reducing clothing consumption, changing eating habits, enhancing waste management, and promoting biking or public transportation. Bucht et al. (2022) emphasized the integration of behavior modification strategies in physical education curricula to support sustainable practices. PubMed, Scopus, and the Virtual Health Library emphasize high-intensity aerobic exercise influences neuroplasticity and cognitive function. Exercise boosts cognitive abilities, cortical excitability, and anatomical brain changes. Herrera et al. (2024) asserted the benefits are applicable to individuals of all ages and mental health status.

Motivation for student participation in physical education (PE) is shaped by internal and external factors that encourage engagement in physical activities. Sindiani & Tsuk (2025) supported networks, financial concerns, and personal fulfillment significantly influence the motivation of undergraduate Physical Education Teacher Education (PETE) students need for enhanced curricula and improved PE programs. Promotion of health is essential for implementing physical education in schools, enhancing child well-being. Recent curriculum policies indicate a global trend to integrate health with physical education. A survey by Lynch (2024) "promotion of health and healthy lifestyles" was a key theme among prominent nations, and importance for quality physical education globally. Physical Education Teachers recognize the importance of PE in relation to the United Nations' Sustainable Development Goals. Teachers indicate SDGs' relevance of Baena-Morales & Villora (2024) emphasized the insufficient resources, guidelines, and expertise hinder the effective implementation of Education for Sustainable Development. It may improve the quality of physical education in schools to foster health.

The impact of video gaming on college students' creative thinking abilities, video games may enhance problem-solving skills and overall creativity. The semi-structured interviews suggested a potential link between gaming behaviors and academic success (Alwhaibi, 2024). The socio-emotional and academic benefits of nature-specific outdoor learning for school-age children in academic performance, wellness, and personal growth, noted a nature-based learning environments enhance student engagement, social skills, and potentially lead to academic progress (Mann et al., 2022). The reasons as self-report to physical exercise among adolescents identifies motivators such as competition, social recognition, and challenge, while tiredness and boredom as barriers. Girls encounter more obstacles to exercise compared to boys, who are driven by stronger incentives. The interaction between these challenges and motivators increase the likelihood of physical activity participation. (Pino et al., 2020).

Effective PE strategies to enhance student engagement and motivation is to foster equitable learning environments and comprehensive outcomes. Sustainable Development Goal 4, emphasize universal access an inclusive high-quality education by 2030, the objective is to improve employability, gender equity, free education, affordable higher education, early childhood development access, and sustainable development knowledge. Navarro-Patón et al. (2024) found students aged 10 to 17 have different levels of motivation and enjoyment in PE. Elementary school children report greater competence and enjoyment than secondary students.

Boys generally show higher enjoyment and intrinsic regulation than girls, while primary students exhibit more self-determined motivation compared to secondary students.

3. Methods

Research Design - This study examines the factors affecting student engagement in PE and its impact on holistic student outcomes, employing a descriptive survey to effectively gather relevant information. (Trochim, 2005)

Participants - The researcher used Rao soft calculator with a 95% confidence level and 5% margin of error, 351 students in total were chosen from PE college students from LPU Batangas and LIMA campus; 86 first-year students in Path Fit 1 Fitness and Competency Training, 85 in Exercise-based Path Fit 2, 85 in PE 3 Individual Dual Sports, and 85 in PE 4 Team Sports. A pilot test involving 50 participants was carried out to guarantee the internal consistency and dependability of the research tool utilized in this investigation.

Instruments - The study utilized modified questionnaires from Lin & Zhu (2022) to evaluate student-related factors including personal interest, self-efficacy, social influences, and the sports environment. Suguis & Belleza (2022) assessed student engagement and the mental health effects of physical education, while Bucht (2022) and Nashwan (2024) concentrated on motivation. Reliability was evaluated using Cronbach’s alpha, and a Likert scale was employed to explore sustainable physical education’s impact on mental health and motivation outcomes in selected LPU Batangas schools in Batangas City. The Likert scale is presented below:

4.00 – 3.00 Strongly agree	3.49 – 2.50 Agree	2.49 – 1.50 Disagree	1.49 - 1.00 Strongly disagree
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Data Procedure - The researcher proposed a plan that required approval from the college dean and research coordinator before data collection could commence. Key steps included to obtain ethics board approval, develop a pilot testing to survey with 50 students, in selected participants. The pilot test resulted in a Cronbach’s alpha of 0.85, ensuring clarity and reliability for all factors and the impact of PE. Questionnaires were administered in person over four weeks, with informed consent obtained from all participants, ensure a confidential and volunteer participation. A complete surveys were securely stored in locked cabinets and electronic files password-protected to maintain data privacy. The collected data was then encoded and organized for statistical analysis.

Data Analysis - Statistical analysis employed frequency and percentage distribution to characterize respondents by sex, year, level, and department. Weighted mean and rank assessed factors influencing students’ engagement in PE: personal interest, fitness level, self-efficacy, social influence, and sports environment; determine the impact on mental health and motivation. Inferential statistics, include regression analysis and Pearson’s Correlation Coefficient, tested hypotheses all conducted using SPSS version 28. The final phase involved interpretation of findings to clarify statistical results and address research questions.

Ethical Considerations - The research adhered to principles of informed consent, voluntary involvement, confidentiality, and damage minimization. Participants were thoroughly informed about the objectives, procedures, and potential risks. Ethical considerations of integrity, honesty, data privacy, and confidentiality were maintained throughout. Consent was obtained from respondents before data collection.

4. Results and Discussions

Table 1 shows the distribution of the research respondents; freshman responses make up 59.3% over sophomores with 40.70%. There are more women (59.00%) than men (41.00%). Physical education programs are customized to meet the individual needs, interests, and experiences of students, fostering positive engagement and lifelong habits of physical activity. Ranjeeth (2020) emphasized that the physical education

student body is an important demographic factor may be considered in the design and delivery of PE programs. Challenges related to gender in education were noted, particularly in Physical Education (PE), had enhanced holistic development (Rockstar Academy2024). It emphasized the importance of focusing on student profiles and engagement as key mediators for impactful outcomes within the relevant student population.

Table 1
Percentage Distribution of Respondents' Profile

Freshman	208	59.3
Sophomore	143	40.7
Sex		
Male	144	41
Female	207	59
Department		
CCAS	20	5.7
CON	87	24.8
CITHM	42	12
CBA	19	5.4
CAMP	72	20.5
DDM	37	10.5
LIMA	56	16
CCJE	18	5.1

Calestine et al. (2017) study in College of Nursing has the highest participant percentage at 24.8%, followed by the College of Allied Medical Program (20.50%), while the College of Criminal Justice Education has the smallest participation at 5.10%. Other departments participated equally indicate an equal distribution of participants. It is crucial to develop and execute tailored strategies for various courses to enhance and ensure equitable and sustainable Physical Education. Teachers are examining how students' individual preferences for activities, intrinsic motivation, and enjoyment of physical education affect their engagement and holistic outcomes. Deng & Legge (2024) established that physical education teachers enhance social skills, physical health, and academic performance. To advocate for the student is to focus on learning experiences over outcomes, and the significance of a strong physical education curriculum.

Table 2
Factors Affecting Student Engagement in Physical Education in terms of Personal Interest

Personal Interest	Weighted Mean	Verbal Interpretation	Rank
1. I am capable to handle my special requests	3.56	Strongly Agree	2
2. I can answer my inquiries correctly	3.57	Strongly Agree	1
3. I can acknowledge sudden change of preference that make them feel valued	3.55	Strongly Agree	3.5
4. I am confident to answer any of my questions	3.53	Strongly Agree	5
5. I can provide prompt and quick answer to inquiry	3.55	Strongly Agree	3.5
Composite Mean	3.55	Strongly Agree	

The results in Table 2 shown the factors affecting students' engagement in physical education in terms of personal interest, with a composite mean of 3.55, it was strongly agreed. The top highest engagement as to personal interest is students can answer inquiries correctly (3.57), capable to handle my special request (3.56), can acknowledge sudden change of preference that make them feel valued (3.55), and can provide prompt and quick answer to inquiry (3.55). Personal interest may foster a desire for equitable and sustainable education to utilize for the student engagement in (PE) classes. Charlina et al. (2024) emphasized that PE instructors' instructions, for the students' ability may respond and inquire about personal fitness, significantly affect engagement and well-being. It underlined the instructors' pivotal role to promote physical activity.

This emphasized the necessity for teachers to create a physical education curriculum to align with student interests by enhancing engagement and confidence. It highlights the role of inquiry in personal fitness goals and cites a study by Mittal & Bansal (2024) advocated to prioritize student-directed projects, collaboration, institutional support, and environmental sustainability in PE programs. In a discussion, students emphasized the importance of institutions to establish a holistic student success by providing feedback on support systems.

Kurniawan (2021) argued that integrating traditional sports, fitness, and various physical activities into PE can increase student engagement and enjoyment to improve an educational experience. The alignment of Physical Education teaching methods with the Sustainable Development Goals (SDGs) by 2030, advocates a holistic health and physical education (HPE) framework. It encompassed social, environmental, and economic dimensions of sustainable development, it may suggest a comprehensive teaching methodology to an effective of promoting health and healthy lifestyles, key focus in "Best Practice" among nations (UNESCO, 2014).

Table 3

Factors Affecting Student Engagement in Physical Education in terms of Physical Fitness Level

Physical Fitness Level	Weighted Mean	Verbal Interpretation	Rank
1. When I am being observed while playing, I usually show how I feel.	3.39	Agree	4
2. My academic performance improved.	3.48	Agree	1
3. I engage in physically demanding activities for comparatively extended periods of time.	3.43	Agree	3
4. I can engage in moderate-to-intense physical activity to extend a period of time to enhance my health benefits.	3.47	Agree	2
Composite Mean	3.44	Agree	

Table 3 presents the factors affecting students' engagement to physical education in terms of physical fitness level; with a composite mean of 3.44 or agree. The highest agreed items were my academic performance improved (3.48), can engage in moderate-to-intense physical activity to extend a period to enhance my health benefits. (3.47) and engage in physically demanding activities for comparatively extended periods of time. (3.43). Students in (PE) has positively impacted in physical fitness, health awareness, and the importance of grades as well. According to de Jonge-Smith & Barber (2024) PE curriculum is essential for fostering an active and health-conscious lifestyle among students. Schools are encouraged to implement physical education programs to promote participation in physical activities, improve well-being and enhancing academic performance. (S.-P. Fagaras 2015) emphasized the significance of pedagogical factors in enhancing student participation in physical education. It promotes an overall physical activity and healthy habits to participate positively in academic success and improve a quality of life. Effective strategies will increase student engagement including flexible schedule of sports clubs and integrate of using modern technology.

Table 4

Factors Affecting Student Engagement in Physical Education in terms of Self-Efficacy

Self-Efficacy	Weighted Mean	Verbal Interpretation	Rank
1. I use my potential interest to examine the connection between self-efficacy and knowledge development in P.E.	3.5	Strongly Agree	3
2. I become more personally interested, which strengthens my argument for the significance of self-efficacy in P.E.	3.5	Strongly Agree	3
3. I assess my emotional response to playing sports, particularly when it's a positive experience.	3.51	Strongly Agree	1
4. I develop a sustained and steady personal interest in physical education, and work on building my confidence in sports.	3.5	Strongly Agree	3
5. I'm more likely to gain confidence and a positive sense of self-esteem if I play school sports.	3.44	Agree	6
6. I can participate in sporting events.	3.34	Agree	7
7. I get motivated for some activities based on my expectancy for success.	3.49	Agree	5
Composite Mean	3.47	Agree	

Table 4, factors affecting students' engagement to physical education in terms of self-efficacy has an overall composite mean of 3.47 agree. The highest agreement in terms of self-efficacy are assess my emotional response to playing sports, particularly when it's a positive experience (3.51), use my potential interest to examine the connection between self-efficacy and knowledge development in P.E., become more personally interested, which strengthens my argument for the significance of self-efficacy in P.E., and develop a sustained and steady personal interest in physical education, and work on building my confidence in sports. (3.50 respectively).

The study by Wu et al. (2022) indicated that physical exercise significantly enhances self-efficacy among students, which in turn mediates their engagement in exercise. Moreover, it establishes a correlation between higher self-efficacy levels and improved emotion regulation abilities. Self-efficacy, a concept by psychologist Albert Bandura, suggests one's ability to perform actions significantly affects motivation and success. For (PE) students, the confidence to apply skills rather than skill development may enhance learning engagement and exercise efficacy. Huang et al. (2025) found a positive exercise, self-efficacy, and knowledge engagement for the students in Guangdong Province. Students also agree they can participate in sporting events (3.34) showing that PE program can successfully address the student's participation in sporting events by combining and creating a more inclusive, self-assured, involvement of student body. Han et al. (2022) promoted a healthy exercise activity, enhance college students' self-efficacy, exercise behavior, and physical fitness, thereby to improve their mental well-being during sporting events.

Table 5

Factors Affecting Student Engagement in Physical Education in terms of Social Influence

Social Influence	Weighted Mean	Verbal Interpretation	Rank
1. I participate in class and have an impact on my classmates' lives both at home and at school.	3.44	Agree	2
2. My college peers have noted that I participate actively in every program.	3.4	Agree	3
3. I get motivated for some of my activities based on perceived values I receive.	3.48	Agree	1
Composite Mean	3.44	Agree	

Table 5 shows factors affecting students' engagement to physical education in terms of social influence with overall composite mean of 3.44 (agree). The top highest agreement in terms of in terms of social influence are students get motivated for some of PE activities based on perceived values they received (3.48), participate in class and have an impact on my classmates' lives both at home and at school (3.44), and their college peers have noted that they participate actively in every program (3.40). To enhance student engagement and ensure equitable outcomes, physical education curricula may prioritize a positive social environment and incorporate values from both school and home. Lui et al. (2023) indicated that college students are motivated to participate in sports and PE programs that promote constructive peer interaction, teamwork, and mutual support. According to Rodrigues (2024), tactics can be used to promote empathy and acceptance amidst societal changes. Initiatives like Fitness Buddies can help college students may enhance their psychological well-being and strengthen community ties. While (Kirby et al., 2022) social influence engagement offered insights on creating physical education environments should encourage an exercise and support an equitable for all students.

Table 6

Factors Affecting Student Engagement in Physical Education in terms of Sports Environment

Sports Environment	Weighted Mean	Verbal Interpretation	Rank
1. I assess the success of my school's physical education programs and my capacity to comprehend my sports education more fully.	3.46	Agree	2.5
2. I participate in school sports, attended environmental play events, and join my peers in physical education lessons.	3.32	Agree	5
3. I encourage my classmates to play sports, promote healthy athletic behaviors, and improve sports-related gains, and I participate in environmental plays.	3.41	Agree	4
4. I participate in activities designed to enhance my health.	3.46	Agree	2.5
5. As I engage in my physical activities, I enhance the educational experience and learn solely through discovery.	3.47	Agree	1
Composite Mean	3.42	Agree	

Table 6 are the factors affecting student engagement in physical education in terms of sports environment; it yielded a composite mean of 3.42 agree, therefore, students' participation in physical education is significantly impact by the sports environment, and shows a positive impression of the facilities, equipment, and activities. The top highest agreement in terms of in Sports Environment are students engaged in my physical activities and enhanced the educational experience and learn solely through discovery (3.47), then participate in activities

designed to enhance my health and assess the success of my school’s physical education programs and my capacity to comprehend my sports education more fully (both 3.46 respectively). Also, agree is encourage my classmates to play sports, promote healthy athletic behaviors, and improve sports-related gains, and I participate in environmental plays (3.41).

Students stress the importance of universities maintaining a suitable sports environment with adequate equipment for diverse activities and skill levels. Regular inspections and upkeep of PE facilities are essential for safety and cleanliness. The School of Education at American University Washington D.C. (2024) noted that sports environments serve as dynamic learning spaces that foster inquiry and teamwork. To improve physical education, curricula should incorporate effective teaching methods and instructional games. Least agreed is I participate in school sports, I attend environmental play events, and I join my peers in physical education lessons (3.32). To improve student involvement in physical activity is to promote social and environmental benefits. Strategies included increasing awareness and participation in school sporting events through platforms like social media and collaborations with student organizations, foster an inclusive and ecologically conscious culture had strengthened the social environment among students engaged in activities outside of school. (Guo et al., 2023).

Table 7
Summary Table of Factors Affecting Students Engagement in Physical Education

Factors	Weighted Mean	Verbal Interpretation	Rank
Personal Interest	3.55	Strongly Agree	1
Physical Fitness Level	3.44	Agree	3.5
Self-efficacy	3.47	Agree	2
Social Influence	3.44	Agree	3.5
Sports Environment	3.42	Agree	5
Composite Mean	3.46	Agree	

Table 7 is the summary table for factors affecting students’ engagement to physical education, the composite mean of 3.46, agree that student’s engagement in physical education had a variety of levels. The top highest agreement factors affecting students’ engagement in physical education is Personal Interest (3.55), Self-efficacy (3.47), Physical Fitness Level, Social Influence (3.44), and Sports Environment (3.42). Student engagement in physical education (PE) is crucial for developing healthy habits in young adults, yet higher education institutions struggle with low participation. Key issues involve low motivation, limited teaching methods, and insufficient individualized instruction. Research shows that improving personal interest and self-efficacy can enhance engagement, and integrating health-oriented educational modules may further increase student involvement in PE classes (Lin & Zhu, 2022). Nurzhan-Temirbay et al. (2025) were concluded that certain pedagogical changes significantly enhanced student involvement in physical education classes. Key factors included grouping students by fitness levels, integrating theory with practice, introducing new lesson formats, and organizing sports events and competitions, all supported by statistical results. Students engaged in fitness level showed greater interest in physical education, the effectiveness of individualized approaches. The inclusion of theoretical lessons on health contributed to increased motivation. New lesson formats, such as outdoor training and sports games were a powerful incentive to improve their activities.

Table 8
Impact of Physical Education as to Mental Health

Mental Health	Weighted Mean	Verbal Interpretation	Rank
1. Exercise increases blood flow to the brain, which in turn improves my cognitive function, alertness, and concentration.	3.57	Strongly Agree	1
2. Engaging in physical activities makes me feel competent and capable, which enhances my sense of self-efficacy.	3.55	Strongly Agree	3.5
3. I can use exercise as a constructive way to release tension and frustration.	3.55	Strongly Agree	3.5
4. PE gives me the chance to socialize, and the support I receive from these relationships has a positive effect on my mental health.	3.54	Strongly Agree	6
5. I felt more positive overall when engaging in P.E.	3.55	Strongly Agree	3.5
6. I noticed decrease in anxiety as I actively join P.E. activity.	3.51	Strongly Agree	7
7. My overall mood improved as I participate in PE activity.	3.55	Strongly Agree	3.5
Composite Mean	3.55	Strongly Agree	

Table 8 is the impact of physical education to mental health, which was strongly agreed and with a composite mean 3.55. This means that impact to health is the holistic method to students' psychological advantages by incorporating mental health concepts, coping mechanisms, and stress-reduction measures into physical education classes. The top highest agreement in terms of exercise increases blood flow to the brain, which in turn improves my cognitive function, alertness, and concentration strongly agree (3.57), engaging in physical activities makes me feel competent and capable, which enhances my sense of self-efficacy, use exercise as a constructive way to release tension and frustration (3.55), felt more positive overall when engaging in P.E., and my overall mood improved as I participate in PE activity (3.55) respectively. Also, PE gives me the chance to socialize, and the support I receive from these relationships has a positive effect on my mental health (3.54), and I noticed decrease in anxiety as I actively join P.E. activity (3.51).

Students at the university emphasized self-efficacy in health influences their ability to create and engage in physical education programs, and enhance their holistic learning outcomes. Physical Education will benefit mental health by reducing stress, increasing mindfulness, and improving sleep quality. Activities like yoga and tai chi release endorphins, enhance mood, alleviate stress, and foster positive relationships to overall well-being, according to Huang (2024) physical exercise had an intervention significantly improve mental health. Students' socialization positively impacts their mental health by enhancing motivation, confidence, and enjoyment that will lead to increase participation and teamwork to reduce stress and boost self-esteem. To Develop good habits an adequate sleep, a healthy self-concept, and a balanced study environment, is essential for academic success. According to Pelaez et al. (2024) mental health and academic performance aligned with the Sustainable Development Goal on physical activity for mental health and educational quality. Rojas et al. (2024) indicated a higher academic performance correlated with lower academic stress. Taylor (2024) demonstrated a physical exercise in college students' to enhance mental health, college students generally face increased mental health which is vulnerable to reduce physical activity levels. It was found physical activity levels and depressive states had differences in negative emotional states were observed between students enrolled in physical activity courses and those who were not.

Table 9
Impact of Physical Education as to Motivation

Motivation	Weighted Mean	Verbal Interpretation	Rank
Since I took PE...			
1. The activity program encouraged me to work harder.	3.49	Agree	4.5
2. I can challenge myself to reach my fitness objective.	3.51	Strongly Agree	1.5
3. I urged my peers to continue leading an active live.	3.46	Agree	8
4. I was inspired to work out on a regular basis.	3.45	Agree	9
5. I was motivated to begin taking on more challenging tasks.	3.47	Agree	7
6. It inspired me to do in additional activities.	3.51	Strongly Agree	1.5
7. I'm encourage to stay actively by the physical activity program.	3.49	Agree	4.5
8. It motivated me to continue exercising on a regular basis. .	3.5	Strongly Agree	3
9. I was motivated to keep in getting involved in the program every day.	3.48	Agree	6
Composite Mean	3.48	Agree	

Table 9 impact of physical education as to motivation has a composite mean of 3.48 agree. The top highest agreement in terms of impact of physical education as to motivation is an able to challenge myself to reach my fitness objective inspired me to do in additional activities (3.51), and it motivated me to continue exercising on a regular basis (3.50) strongly agree. Motivation is a key psychological element that influences how physical education (PE) impacts students. It encompasses internal and external factors that drive students to engage in and maintain physical activity, significantly affecting their perception of PE as a valuable and enjoyable educational experience. In physical education, motivation enhances student engagement, effort, and confidence. It leads to a better fitness and skills development increased attendance and enjoyment. Conversely, low motivation fosters negative attitudes, poor attendance, and limited skill growth. Sindiani & Tsuk (2025) indicated that motivation is affected by personal fulfillment, enhanced curricula, and improved PE programs.

On the other hand, they agree that students are encourage to stay actively by the physical activity program, and encouraged me to work harder (3.49, was motivated to keep in getting involved in the program every day (3.48), to keep in getting involved in the program every day (3.47), urged peers to continue leading an active live (3.46) and inspired to work out on a regular basis (3.45). Promotion of health is crucial for effective physical education in primary and secondary schools to contribute the students well-being. Course curriculum policies illustrate the impact of health in physical education, with an increase trend to integrate health and wellbeing. Lynch (2024), "promotion of health and healthy lifestyles" emerged as a key theme among "Best Practice" nations (UNESC, 2014, p.10). Sustainable Development Goals (SDGs) by 2030 necessitate a comprehensive health and physical education (HPE). Baena-Morales & Villora (2024) proposed a teaching approach with HPE framework in social, environmental, and economic dimensions of sustainable development.

Table 10
Summary Table of Impact of Physical Education

Impact	Weighted Mean	Verbal Interpretation	Rank
Mental Health	3.55	Strongly Agree	1
Motivation	3.48	Agree	2
Composite Mean	3.52	Strongly Agree	

Table 10 is the summary table on the impact of physical education with has composite mean of 3.52 and strongly agreed. Mental health was considered highest for students believed how PE developed their intellectual, social, and mental domains, which is consistent with the objectives of a well-rounded education. Mental health positively influences motivation, self-worth, and concentration, enhancing engagement in physical education (PE). Teachers observe that students with poor mental health leads to reduced effort and engagement, adversely affecting their coordination and focus. This situation can increase anxiety and diminish confidence, lead to impaired learning and performance. Positive experiences can reduce stress and enhance social connections to benefit mental health. Alwhaibi (2024) demonstrated that physical education positively impacts holistic outcomes, encompass cognitive benefits such as enhanced academic performance, problem-solving abilities, and creativity. College students are vulnerable to mental health due to decreased of physical activity. Taylor (2024) that students enrolled in physical activity exhibited a better emotional states than their peers who did not participate. Motivation plays a role in supporting students’ mental health. PE curriculum should align learning outcomes to enhance academic achievement, social skills, and personal growth. Mann et al. (2022) emphasized educational outcomes and advocate the integration of health-focused education into school curricula and teacher training to maximize benefits.

Table 11
Difference of Responses on the Factors Affecting Students Engagement to Physical Education When Grouped According to Profile

Profile Variables	U/H	p-value	Interpretation
Year Level			
Personal Interest	14077	0.371	Not Significant
Physical Fitness Level	13889.5	0.27	Not Significant
Self-efficacy	13960	0.306	Not Significant
Social Influence	13360.5	0.086	Not Significant
Sports Environment	13121.5	0.05	Not Significant
Sex			
Personal Interest	13883	0.251	Not Significant
Physical Fitness Level	13462.5	0.106	Not Significant
Self-efficacy	12589.5	0.009	Significant
Social Influence	12857	0.02	Significant
Sports Environment	12566.5	0.009	Significant
Department			
Personal Interest	8.753	0.271	Not Significant
Physical Fitness Level	21.943	0.003	Significant
Self-efficacy	23.007	0.002	Significant
Social Influence	22.856	0.002	Significant
Sports Environment	28.384	<.001	Highly Significant

Sheng et al. (2025) found significant sex variation in exercise motivation, self-efficacy, and physical activity

among Chinese college students. Self-efficacy is a strong predictor of physical activity, especially in men have the ability motivation while women have a self-efficacy as most influential factor. It is the ability of motivating to emphasize gender on the relationship between physical activity and exercise self-efficacy. It indicates a need for gender-specific health intervention strategies. Sports environments play a crucial role in student engagement in physical education, need safety, inclusivity, resources, and positive social interactions to enhance motivation and participation. Research by Wang et al. (2023) support social and architectural elements and promote physical activity among students. Most of the respondents are from medical department (CAMP and Nursing), and significant results like physical fitness level (p-value = 0.003), social efficacy (p-value = 0.002) and social influence (p-value = 0.002) is related to the department they belong. Bao (2025) investigated the role of college students' commitment to physical activity, there exits positive correlations exist between physical activity commitment ($r = 0.743$), and between exercise self-efficacy and physical activity commitment ($r = 0.758$) thus enhancing peer interactions could improve students' physical activity and well-being.

In different departments, physical fitness level, self-efficacy, and social influence significantly impact student engagement. The importance of considering the academic environment in developing PE programs and treatments, as a universal approach may not be effective for all students. A customized strategies had acknowledged the distinct needs and social dynamics of various majors can be beneficial. Physical Education (PE) classes from levels 1 to 4 is influenced by the quality of teacher support and the learning environment rather than just the year level. To enhance student-teacher interactions and instructional methods contribute to greater engagement in physical education. Zeng (2021) recommended a role of engagement and personal interest in promoting healthy physical exercise college students. Fostering interest in physical education (PE) is essential for student engagement can benefit all academic departments. To enhance motivation, self-efficacy, and behavioral control, Harrington (2025) recommended methodological approaches that assess and increase students' personal interest in PE. Engagement responses differ based on factors such as profile, gender, and department.

Table 12
Difference of Responses on the Impact of Physical Education When Grouped According to Profile

Profile Variables	U/H	p-value	Interpretation
Year Level			
Mental Health	14362.5	0.566	Not Significant
Motivation	13672.5	0.181	Not Significant
Sex			
Mental Health	13319	0.075	Not Significant
Motivation	12661.5	0.013	Significant
Department			
Mental Health	7.201	0.408	Not Significant
Motivation	16.245	0.023	Significant

Table 12 is the test of significant difference of responses on the impact of physical education when grouped according to profile, statistically, motivation (p-value = 0.013) is significantly related to sex and department (p value = 0.023). This explained that female and male students taking Physical Education are motivated by cooperative and supportive environments. They may vary in social and cultural expectations, but both are affecting their confidence and engagement. Men generally possess more confidence in physical tasks, and factors like self-efficacy and body image significantly influence motivation levels. According to Navarro et al (2024) examined motivation, psychological needs, and enjoyment in physical education among 740 children (410 girls) aged 10 to 17, found boys showed greater intrinsic regulation and enjoyment than girls. Students displayed more self-determined motivation and enjoyment than secondary students, with boys outperforming girls in these measures.

Students' motivation in physical education is influenced by departmental affiliation and the perceived value of the subject. Variations in motivation and confidence relate to different physical exercise experiences, while learning preferences affect enjoyment and engagement. Bradea et al. (2025) found that no significant differences in motivation, a need to improve pedagogical practices to align with current demands. Students' personal interest

in physical education is shaped by their respective departments. Both sexes benefit from physical activity about mental health, but students' motivations vary by gender. While mental health advantages for all, Pino et al. (2020) identified that the motivations and barriers related to physical activity are influenced by gender differences. Physical education had a benefit to mental health for college students; it addressed in human needs. However, motivation varies by department due to educational requirements, prior experience, physiological confidence, and cultural standards inherent in different academic programs. To promote healthy lifestyles among students, it is essential to examine the factors to influence student engagement in physical education to all age group regardless of year level.

Table 13

Proposed Action Plan for Student Engagement in PE and Its Impact on Holistic Student Outcomes

Key Results	Strategies	Person/s responsible	Success Indicator
Factors Affecting Student Engagement			
A. Sports environment			
1. participated in school sports, attended environmental play events, and join my peers in physical education lessons.	* Host environmental physical education activities *Coordinate with the NSTP instructors regarding environment and health related programs	NSTP and PE Teachers, Students Parents, And Family members,	*80% of students attended hosting of environmental program
2. Encourage my classmates to play sports, promote healthy athletic behaviors, and improve sports-related gains, and I participate in environmental plays.	*Incorporate in the curriculum environmental health conscious in healthy life style in food and program. * provide diet activities for students in collaboration with parents and guardians in-order to enhance life style.	Department Heads for curriculum, Students Parents, And Family members,	*100% of the teachers coordinated with the NSTP classes to collaborates regarding environmental and health related activities. *100% of the PE teachers culminating activities will focus on health program instead of field demo.
Impact on Holistic Student Outcomes			
1. urged my peers to continue leading an active live	Video diary at home of daily routine of 30 minutes workout as part of a weekly performance graded task.	Teachers, students, parents, Family members,	100% of school compliance to SDG 3 Good health and wealth being.
2. was inspired to work out on a regular basis	*Do various home physical fitness activities such as biking, swimming, pet walking, walking sunbathing and others as part 20% as graded assignment	Teachers, students, parents, Family members,	100% of the students comply a part of performance task and graded assignment with regular a physical home activity.

5. Conclusions

1. There are more freshman responses than sophomore, more women than men the College of Nursing has the highest number of participants, followed by CAMP and CCJE. PE students have student engagement and impact on PE patterns in overall PE encounters.

2. The factors influencing student engagement in physical education includes personal interest and self-efficacy. The benefits of health education through physical activity had enhanced a knowledge of increasing student engagement by promoting healthy lifestyle habits and overall well-being among young adults.

3. The impact of physical education (PE) on students' mental health is significant, as it promotes development in intellectual, social, and mental domains. This alignment supports a comprehensive educational experience, positively affecting motivation, self-worth, and concentration, which in turn boosts engagement in PE.

4. The impact of physical education (PE) on students' mental health significantly promotes intellectual, social, and mental development, enhancing motivation, self-worth, and concentration, which increases engagement in PE. Gender shapes students' participation in PE, the need for programs will ensure equitable involvement. Therefore, gender-specific health intervention strategies are essential to address the distinct needs of different departments and improve research outcomes.

5. Motivation in Physical Education is significantly related to sex and departmental affiliation. Both male and female students take in cooperative and supportive environments. The motivation was influenced by departmental affiliation that prioritize academic achievement or physical activity. The positive mental health benefits of physical education are recognized across departments. The basic human needs were addressed to basic needs and challenges to all college students.

6. The researcher proposed action plan to enhance Student Engagement in PE towards its Impact on Holistic Student Outcomes.

Recommendations

1. Physical education teachers may promote active lifestyles by incorporating anxiety-reduction techniques into physical activities such as mind-body exercises like yoga, Pilates, Tai Chi, and meditation.

2. The department chairperson may incorporate SGD for sustainable education for college students; the chair of the CCAS department may offer instruction on the factors influencing students' participation in physical education and how they impact overall student outcomes.

3. School administration, through self-directed activities, may encourage lifelong fitness skills, personal relevance, and enjoyment while prioritizing consistency over intensity to increase motivation.

4. The office of student affairs may promote accessible athletic and recreational events, intramurals, recreational club sports, and integrate outdoor activities and environmental themes into sports environment activities.

5. Future researcher may use a variety of methodologies and involve a range of groups long-term impacts of physical education (PE) on lifestyle, academic achievement, and mental health require further investigation to improve student engagement.

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