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Enhancing Active Engagement Through Outdoor-Based Physical Education Activities

Reyniel M. Belmonte[1], Dane Darryl S. Clor[2], Kylie Zell D. Eugenio[3], Johanna Paula D. Genolos[4], Katrina G. Neo[5], Geraldine R. Quesada[6], Kenneth A. Vigilia[7]
Central Luzon State University

Abstract: Student engagement is a critical determinant of meaningful learning and sustained participation in Physical Education (PE), yet disengagement remains prevalent among adolescents. This action research examined the effectiveness of outdoor-based Physical Education activities in enhancing students' active engagement, motivation, and participation. A total of 30 students (15 junior high and 15 senior high school) from a National High in Nueva Ecija, Philippines participated in the study using a pretest-posttest design. Data were collected through an observation checklist, a researcher-developed Likert-scale questionnaire, and open-ended response forms. Descriptive statistics were used to determine engagement levels, while the Wilcoxon Signed-Rank Test assessed differences between indoor and outdoor conditions. Thematic analysis was employed to analyze qualitative responses. Findings revealed that students initially demonstrated moderate engagement in indoor settings, particularly exhibiting low participation and effort. Following the implementation of outdoor-based activities, engagement significantly increased across all indicators, reaching very high levels in participation, cooperation, attentiveness, and sportsmanship ($Z = -3.27$, $p < .001$). Qualitative findings further indicated that outdoor environments enhanced students' enjoyment, motivation, social interaction, and emotional well-being. These results support prior evidence that motivation and learning environment are key predictors of physical activity participation and align with experiential learning principles emphasizing active, context-based engagement. The study concludes that outdoor-based Physical Education is an effective pedagogical strategy for improving student engagement and motivation. However, limitations related to sample size and intervention duration warrant further investigation. Future research should explore long-term implementations and broader populations to validate and extend these findings.

Keywords: engagement, experiential learning, motivation, participation, physical activity

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1. Introduction

Physical Education (PE) plays a critical role in promoting students' physical fitness, social development, emotional well-being, and lifelong healthy habits. However, student disengagement in PE remains a persistent concern. National data indicate that 75.5% of adolescents aged 10–19 fail to meet recommended physical activity levels (DOST-FNRI, 2024), reflecting a growing trend toward sedentary lifestyles. This issue highlights the urgent need for innovative and engaging pedagogical strategies in PE.

Traditional PE instruction, often characterized by repetitive indoor drills and teacher-centered approaches, has been shown to limit students' motivation and active participation. While these approaches may support skill acquisition, they frequently fail to address students' affective needs, such as enjoyment, autonomy, and interest. Prior research has consistently demonstrated that motivation is a key determinant of physical activity participation. For instance, researchers found that Filipino students' motivation significantly influences their

engagement in physical activity contexts, emphasizing the role of intrinsic and extrinsic factors in sustaining participation (Martin et al., 2016; Martin et al., 2017).

Moreover, barriers to physical activity such as lack of interest, limited space, and monotonous activities have been identified as critical factors contributing to student disengagement (Martin & Santos, 2015). Similarly, the increasing use of digital media has been associated with reduced physical activity levels among students (Martin et al., 2017), further reinforcing the need for more dynamic and engaging learning environments.

Student engagement in PE is a multidimensional construct that includes behavioral, emotional, and cognitive dimensions. While traditional PE often emphasizes performance and skill development, recent studies highlight the importance of affective engagement in sustaining participation. In this regard, participatory and student-centered approaches have been shown to enhance self-confidence, self-efficacy, and motivation among learners (Pestaño et al., 2025).

Outdoor-based Physical Education has emerged as a promising strategy to address these challenges. Outdoor environments provide students with greater space, autonomy, and opportunities for social interaction, which are essential for enhancing engagement. This aligns with experiential learning theory, which posits that learning occurs through direct experience, reflection, and active experimentation (Pole & McGee, 2026). In PE contexts, experiential learning has been shown to improve not only physical competence but also students' cultural appreciation and engagement, as demonstrated in studies on Philippine martial arts such as Arnis (Santos et al., 2022).

Furthermore, research on physical activity interventions including structured exercise programs and movement-based activities has consistently shown improvements in students' physical fitness, participation, and overall engagement (Martin et al., 2016; Martin et al., 2023). These findings suggest that meaningful, context-rich, and enjoyable activities are essential in fostering sustained student involvement.

Despite these contributions, there remains limited research on structured outdoor-based interventions in PE, particularly within the Philippine secondary school context. This study addresses this gap by examining how outdoor-based activities influence students' engagement, motivation, and participation in Physical Education.

2. Review of Related Literatures

Students' Engagement in Physical Education

Student engagement is a critical factor in effective learning, encompassing behavioral, emotional, and cognitive involvement. In Physical Education, engagement manifests through active participation, cooperation, and enjoyment of activities. Studies have shown that students with higher motivation levels are more likely to participate actively in physical activities and demonstrate sustained engagement (Martin et al., 2016; Martin et al., 2017). Furthermore, innovative pedagogical approaches, such as the Sport Education Model, have been found to enhance students' attitudes and participation in PE (Zhang et al., 2024).

Learning Environment in Physical Education

The learning environment significantly influences students' engagement and motivation. Outdoor environments, in particular, provide opportunities for experiential learning, increased mobility, and social interaction. Research indicates that outdoor activities improve students' motivation, physical activity levels, and overall learning experience (Zhang et al., 2024). Additionally, barriers such as limited space and lack of engaging activities have been identified as factors contributing to reduced participation (Martin & Santos, 2015), highlighting the importance of diverse and dynamic learning settings.

3. Methodology

Research Design

This study employed a classroom-based action research design utilizing a one-group pretest–posttest approach to examine the effects of outdoor-based Physical Education (PE) activities on students' engagement. Action research is appropriate in educational contexts as it allows practitioners to systematically investigate and improve instructional practices while generating context-specific evidence. The design enabled the researchers to

compare students' engagement levels before (indoor setting) and after (outdoor setting) the intervention, thereby determining the effectiveness of the implemented strategy within an authentic learning environment.

Participants and Sampling

The participants consisted of 30 students from a National High School in Nueva Ecija, Philippines, including 15 junior high school and 15 senior high school students. A purposive sampling technique was employed to select participants based on their enrollment in Physical Education classes and availability during the intervention period. The sample size is consistent with action research practices, which prioritize contextual depth and instructional improvement over generalizability. However, this limitation is acknowledged and addressed in the study's recommendations. All participants were treated as a single analytical group, as the primary objective was to evaluate changes in engagement within the same cohort before and after the intervention.

Research Instruments

Three instruments were utilized for data collection:

1. Observation Checklist

A structured observation checklist was used to assess students' engagement across five indicators:

- *Participation*
- *Cooperation*
- *Effort*
- *Attentiveness*
- *Sportsmanship*

Each indicator was rated using a 5-point scale, with higher scores indicating greater engagement. Multiple observers independently rated student behavior, and ratings were consolidated to ensure consistency and reduce observer bias.

2. Likert-Scale Questionnaire

A researcher-developed 5-point Likert-scale questionnaire was administered to measure students' perceived motivation, enjoyment, and engagement in PE activities.

To enhance validity:

- Items were aligned with engagement constructs identified in prior studies on motivation and physical activity participation (e.g., Martin et al., 2016; Martin et al., 2017).
- The questionnaire underwent content validation by PE instructors prior to administration.

3. Open-Ended Response Form

An open-ended questionnaire was used to gather qualitative data on students' experiences, preferences, and suggestions. This allowed for deeper insights into students' perceptions of outdoor-based learning environments.

Data Analysis

Both quantitative and qualitative data analyses were employed:

Quantitative Analysis

- Descriptive statistics (mean and verbal interpretation) were used to determine levels of student engagement before and after the intervention.
- The Wilcoxon Signed-Rank Test was used to assess the significance of differences between pretest and posttest scores.

This nonparametric test was selected because:

- The data were paired (same participants measured twice)
- The sample size was small
- *Normality assumptions for parametric tests were not met*

Qualitative Analysis

Qualitative data were analyzed using thematic analysis, following these steps:

1. Familiarization with the data
2. Coding of significant responses

3. Development of initial themes
4. Review and refinement of themes
5. Definition and presentation of themes supported by participant quotes

This approach enabled the identification of recurring patterns related to motivation, engagement, and learning experiences.

Ethical Considerations

Ethical standards were strictly observed throughout the study. Permission to conduct the research was obtained from the school administration and class advisers prior to data collection. Participation was voluntary, and informed consent was secured from all participants.

4. Results and Discussion

Level of students' active engagement in Physical Education classes before the implementation of outdoor-based activities

The findings revealed that students exhibited moderate engagement (M = 3.0) during indoor PE activities, with low levels of participation and effort. This suggests that while students demonstrated acceptable social behaviors such as cooperation and sportsmanship, they were not fully invested in the activities.

Table 1. Mean Engagement Score of Students before the Implementation of outdoors activities

Indicators	Mean	Verbal Interpretation
Participation	2.5	Low Engagement
Cooperation	3.5	High Engagement
Effort	2.0	Low Engagement
Attentiveness	3.0	Moderate Engagement
Sportsmanship	3.8	High Engagement
Overall	3.0	Moderate Engagement

Legend: 5.00-4.21 (Very High Engagement), 4.20-3.41 (High Engagement), 3.40-2.61(Moderate Engagement), 2.60-1.81(Low Engagement), 1.80-1.00(Very Low Engagement)

These findings align with earlier research by Martin & Santos (2015), which identified low motivation and perceived barriers as key contributors to reduced physical activity participation among students. The structured and repetitive nature of indoor activities may limit students' interest, leading to passive participation. Additionally, the results support findings from Martin et al. (2017), which showed that external factors such as digital distractions and lack of engaging environments contribute to decreased physical activity levels among students.

Level of students' active engagement in Physical Education classes after the implementation of outdoor-based activities

Following the implementation of outdoor-based activities, students' engagement significantly improved to a very high level (M = 4.3) across most indicators. Participation, cooperation, attentiveness, and sportsmanship all increased substantially.

Table 2. Mean Engagement Score of Students after the Implementation of outdoors activities

Indicators	Mean	Verbal Interpretation
Participation	4.3	Very High Engagement
Cooperation	4.5	Very High Engagement
Effort	3.8	High Engagement
Attentiveness	4.3	Very High Engagement
Sportsmanship	4.5	Very High Engagement
Overall	4.3	Very High Engagement

Legend: 5.00-4.21 (Very High Engagement), 4.20-3.41 (High Engagement), 3.40-2.61(Moderate Engagement), 2.60-1.81(Low Engagement), 1.80-1.00(Very Low Engagement)

This improvement can be attributed to the dynamic and interactive nature of outdoor environments, which provide opportunities for experiential learning, autonomy, and social interaction. These findings are consistent with prior studies showing that engaging and context-based physical activities enhance student motivation and participation (Antunes et al., 2024; Wainggai et al., 2025). Moreover, the results reflect the principles of participatory and student-centered learning, which have been shown to improve self-confidence and engagement among learners (Pestaño et al., 2025). The outdoor setting allowed students to move freely, collaborate with peers, and actively engage in meaningful tasks, thereby increasing their overall involvement.

Difference In Students' Active Engagement Before and After the Implementation of Outdoor-Based Activities

The Wilcoxon Signed-Rank Test confirmed a statistically significant difference between indoor and outdoor engagement levels ($Z = -3.27$, $p < .001$). This indicates that the outdoor-based intervention had a substantial impact on student engagement.

Table 3. Wilcoxon Signed-Rank Test for Students' Engagement before and after the Implementation of outdoors activities

Comparison	Mean Rank	Z	p-value	Interpretation
Before vs After Engagement	9	-3.27	<.001	Significant

This finding reinforces existing literature emphasizing the importance of innovative and contextually relevant teaching strategies in Physical Education. It also supports previous research demonstrating that structured physical activity interventions lead to improved participation and engagement outcomes (Martin et al., 2016; Martin & Santos, 2019).

Perceive interest and motivation of students based on Physical Education Activities Learning Environment

Students reported high levels of enjoyment, motivation, and participation in outdoor PE activities. They expressed greater excitement, comfort, and understanding of the activities in outdoor settings.

Table 4. Students Feedback

Statement	Mean	Verbal Interpretation
I actively participate in Physical Education activities.	4.1	Agree
I put effort into completing PE tasks.	4.2	Agree
I cooperate with my classmates during activities.	4.4	Strongly Agree
I enjoy participating in PE activities.	4.3	Strongly Agree
I feel excited during outdoor PE sessions.	4.1	Agree
I feel more comfortable learning outdoors.	4.1	Agree
I stay focused during PE activities.	4.0	Agree
I understand the purpose of the activities better outdoors.	4.2	Agree
I think outdoor activities help me learn better.	4.1	Agree
Outdoor PE activities make me more motivated to participate.	4.1	Agree
I prefer having PE classes outdoors.	3.9	Agree

Legend: 5.00-4.21 (Strongly Agree), 4.20-3.41 (Agree), 3.40-2.61(Neutral), 2.60-1.81(Disagree), 1.80-1.00(Strongly Disagree)

These findings highlight the critical role of affective engagement in PE. As shown in earlier research, motivation significantly predicts students' willingness to participate in physical activity (Martin et al., 2017; Hamilton et al., 2024). When students perceive activities as enjoyable and meaningful, they are more likely to engage actively. Furthermore, the positive emotional responses observed in this study are consistent with findings from Santos et al. (2022), which demonstrated that experiential and culturally relevant activities enhance both engagement and appreciation in PE contexts.

Table 5. Outdoor PE Activities Students Likes

Themes	Codes	Description	Response
Enjoyment and Fun	enjoyment, excitement, fun, happiness	Students find outdoor PE activities enjoyable, exciting, and entertaining.	"fun", "more exciting", "having fun with friends", "more enjoyable than indoor classes"
Freedom of Movement	space, mobility, freedom	Outdoor activities provide more space and allow students to move freely.	"more space to move", "move freely", "open space"
Fresh Air and Natural Environment	fresh air, sunlight, nature	Students appreciate being outdoors with fresh air and sunlight.	"enjoy fresh air", "sunlight", "enjoy nature while being active"
Social Interaction	interaction, communication, bonding	Outdoor activities allow students to interact and bond with classmates.	"communication with other participants", "fun with friends", "interact with classmates"
Participation in Sports and Games	sports, games, physical activity	Students enjoy playing sports and engaging in active games outdoors.	"basketball", "volleyball", "playing games", "jogging", "sports"

These results align with broader research indicating that meaningful, socially interactive, and enjoyable environments are essential for sustaining student engagement. Notably, students' preference for variety, teamwork, and participatory planning reflects principles of student-centered pedagogy, which have been linked to improved motivation and self-efficacy (Bhardwaj et al., 2025; Shelton, 2024).

Table 6. Effect of Outdoor Activities in Students Participation and Motivation

Themes	Codes	Description	Response
Increased Energy and Enthusiasm	energy, excitement, enthusiasm	Outdoor activities make students feel energetic and excited.	"more energetic", "more excited to join", "feel energized"
Increased Motivation	motivation, encouragement, reduced boredom	Outdoor settings motivate students to participate more actively.	"makes me more motivated", "less boring", "encourages me to join"
Positive Emotional Effects	happiness, mood improvement, stress reduction	Outdoor activities improve mood and reduce stress.	"boosts my mood", "lowers my stress", "makes me happy"
Increased Participation	willingness, active involvement, effort	Students become more willing to join and participate in activities.	"more willing to join", "more active", "try my best in activities"

Table 6 shows how outdoor activities affect students' involvement and motivation. These themes are derived from the codes found in their responses. The results were similar from that of Santos (2024) suggest that these activities boost students' energy and enthusiasm, as many reported feeling livelier and more excited during

outdoor physical education. Santillan et al. (2018) also reported the participants feeling better emotionally, with improved mood and less stress during these activities. Students also showed a greater willingness to join in and take part in the activities. Overall, the findings suggest that outdoor activities have a positive effect on students' motivation, emotional well-being, and participation in Physical Education classes.

Table 7. Students' Suggestions to Make PE Classes More Engaging

Themes	Codes	Description	Response
Fun and Interactive Games	fun, interactive, enjoyable games	Students suggested adding more enjoyable games and activities.	"add fun games", "interactive games", "capture the flag"
Variety of Activities	variety, different sports, choices	Students want different sports and activity choices.	"variety of games", "basketball, yoga, dance", "different sports"
Teamwork and Group Activities	teamwork, cooperation, group work	Students suggested more cooperative and group-based tasks.	"group activities", "teamwork challenges", "cooperation games"
Use of Motivation Strategies	rewards, music, competition	Students recommended rewards, music, and competitions.	"give prizes", "use music", "friendly competitions"
Student Participation in Planning	student voice, involvement, decision-making	Students want the opportunity to suggest activities.	"allow students to suggest activities", "take turns teaching activities"

Table 7 shows what students think would make Physical Education classes more engaging based on the codes created from their responses. Many suggested adding fun, interactive games to make lessons more engaging. Students also suggested offering a mix of activities and sports, such as basketball, yoga, dance, and other games, to keep classes interesting and prevent boredom. Overall, they prefer PE sessions that are fun, varied, engaging, and involve teamwork, as these features help them participate more actively.

5. Conclusion

This study provides empirical evidence that outdoor-based Physical Education activities significantly enhance students' active engagement, motivation, and participation. The transition from indoor to outdoor learning environments resulted in substantial improvements across behavioral and affective dimensions of engagement, particularly in participation, attentiveness, cooperation, and sportsmanship. The statistically significant difference between pre- and post-intervention scores confirms the effectiveness of outdoor learning as a pedagogical intervention in Physical Education.

These findings reinforce the growing body of literature emphasizing the central role of motivation and learning context in shaping physical activity behaviors. Consistent with prior research, students are more likely to participate actively when learning environments are meaningful, enjoyable, and socially interactive (Martin et al., 2016; Martin et al., 2017). Moreover, the results align with evidence that structured and engaging physical activity programs contribute to improved participation outcomes and physical engagement (Choi et al., 2024).

The qualitative findings further highlight that outdoor environments foster enjoyment, autonomy, and social connection key drivers of intrinsic motivation. These outcomes are consistent with experiential learning theory, which posits that direct engagement in meaningful activities enhances both learning and retention. Additionally, the emphasis on participatory and collaborative experiences reflects contemporary pedagogical approaches that prioritize student agency and self-efficacy, which have been shown to improve engagement and performance outcomes including improved controlled aggression in combat sports in PE (Santos, 2026).

Overall, this study underscores the importance of rethinking traditional PE instruction and adopting more dynamic, student-centered, and environment-based approaches to promote sustained engagement in physical activity.

6. Recommendations

Based on the findings and conclusion of this study, the researchers recommended that Physical Education teachers regularly include outdoor activities in their lessons at least once or twice a week to boost student engagement and motivation. Teachers can create structured outdoor programs with different sports, group games, and activities chosen by students to keep everyone involved. Schools should ensure outdoor spaces and equipment are safe, easily accessible, and suitable for various activities. To encourage participation, teachers can use friendly competitions, group challenges, and music. This study had a small sample size and focused on a specific group of students, which may limit the generalizability of the results. Future research could include more students, different schools, and longer programs to better understand the long-term effects of outdoor Physical Education on student engagement, motivation, and overall activity levels.

7. References

1. Antunes, H., Rodrigues, A., Sabino, B., Alves, R., Correia, A. L., & Lopes, H. (2024). The effect of motivation on physical activity among middle and high school students. *Sports*, *12*(6), 154.
2. Bhardwaj, V., Zhang, S., Tan, Y. Q., & Pandey, V. (2025, February). Redefining learning: student-centered strategies for academic and personal growth. In *Frontiers in Education* (Vol. 10, p. 1518602). Frontiers Media SA.
3. Choi, S. M., Wang, F. J., Sum, R. K. W., Ching, B. H. H., Leung, E. F. L., & Ho, R. W. K. (2024). The motivational impact of sport education model on daily physical activity levels among university students: a mediation analysis. Scientific Reports, 14(1), 27964.
4. Hamilton, K., Phipps, D. J., Schmidt, P., Bamberg, S., & Ajzen, I. (2024). First test of the theory of reasoned goal pursuit: predicting physical activity. *Psychology & Health*, *39*(1), 24-41.
5. Martin, J. T., Acampad, E. M., Baligad, R. A., Larce, A. E., & Santos, M. E. (2017, October). Correlation of physical activity and social media use of students. In *2nd International Conference on Sports Science, Health and Physical Education*.
6. Martin, J. T., Tubera, J. G., Monta, V. D., Naguiat, E. S., Yambao, M. J. C., Tullao, M., ... & Baligad, R. (2016). Motivation and physical activity participation of Filipino college students. *Asia Life Sciences*, *25*(1), 245-54.
7. Martin, J., Santos, M., & Tubera, J. (2017). Students' motivation profiles as predictors of physical activity participation. In *Proceedings of the 2nd International Conference on Sports Science, Health and Physical Education (ICSSHPE 2017)-Volume* (Vol. 1, pp. 349-353).
8. Martin, J. T., & Santos, M. E. (2019). Correlates for Arnis Participation of Philippine Junior High School Students. *Ido Movement for Culture. Journal of Martial Arts Anthropology*, *19*(2), 36-40.
9. Martin, J. T., & Santos, M. E. (2015). Perceived barriers to walking activity of college students. Asia Life Sciences, 24(1), 207-218.
10. Pestano, R. D., Salazar, N. L., Jesus, J. T. D., Martin, J. T., Santos, M. E., Miller, J. C., … Pestaño, J. V. (2025). Fostering Sustainable Development in Sports: The Role of Participative Coaching on Self-Confidence and Self-Efficacy of Student-Athletes. *Journal of Lifestyle and SDGs Review*, *5*(2), e03073. https://doi.org/10.47172/2965-730X.SDGsReview.v5.n02.pe03073.
11. Pole, K., & McGee, M. (2026). Experiential learning. In *Teaching and Learning in Higher Education* (pp. 51-63). Singapore: Springer Nature Singapore.
12. Santillan, J. P., Martin, J. T., Santos, M. E., & Yambao, L. L. (2018). International students' cultural adaptation in the Philippines. *Asian EFL Journal*, *20*(12), 234-252.

13. Santos, M., Martin, J., Mhico Sigua, E., & Manuel, S. (2022). Effects of Online Teaching on Perceived Physical Competence and Cultural Appreciation of the Philippine Martial Arts "Arnis". *Ido Movement for Culture. Journal of Martial Arts Anthropology*, *22*(5), 48-54.
14. Santos, M. (2024). Development and preliminary validation of a questionnaire for assessing fitness centers. *Jurnal SPORTIF: Jurnal Penelitian Pembelajaran*, *10*(1), 157-170.
15. Santos, M. (2026). Investigating aggression control in combat training among college physical education students. *SPORT TK-EuroAmerican Journal of Sport Sciences*, *15*, 14. https://doi.org/10.6018/sportk.621791.
16. Shelton, D. C. (2024). The Impact of a Student-Centered Curriculum on Self-Efficacy and Career Readiness in Digital Musicianship, Production, and Composition in a Digital Musicianship Course. University of Florida.
17. Wainggai, H. H., Widyanto, Z., Mangolo, E. W., & Qomarrullah, R. I. (2025). The Application of Project-Based Learning in Enhancing Student Creativity and Collaboration in Physical Education Subjects. Journal of Physical Education Health and Sport, 12(1), 175-181.
18. Zhang, W., Xu, M., Feng, Y., Mao, Z., & Yan, Z. (2024). The Effect of Procrastination on Physical Exercise among College Students—The Chain Effect of Exercise Commitment and Action Control. *International Journal of Mental Health Promotion*, *26*(8).

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Corresponding Author: Katrina G. Neo, Central Luzon State University.

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