Improving Physical Activity Participation of MAPEH Pupils through Modified Games

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ABSTRACT

This study examined the effect of modified games on the physical activity participation of Grade 5 MAPEH pupils at Mindanao State University–Integrated Laboratory School (MSU-ILS). A classroom-based action research design guided by the Plan–Act–Observe–Reflect (PAOR) framework was employed to address observed low levels of active engagement and confidence in Physical Education (PE). Two hundred Grade 5 pupils participated in a two-week intervention consisting of daily 45-minute PE sessions integrating modified games designed to promote inclusive, developmentally appropriate, and learner-centered physical activities. Data were collected using a researcher-developed Likert-scale questionnaire administered as both pre-test and post-test, measuring three dimensions: Active Engagement in Physical Activities, Confidence in Physical Activity Participation, and Enjoyment and Motivation in Physical Education. Descriptive statistics, including mean and standard deviation, were computed using IBM SPSS Statistics 21 to analyze changes in pupils' responses. Results revealed observable improvements across all three dimensions following the intervention. Several indicators shifted from High to Very High levels, particularly in persistence, willingness to try new activities, pride in task completion, and enthusiasm toward PE. Qualitative reflections further indicated increased enjoyment, reduced hesitation, and stronger peer collaboration during physical activities. The findings suggest that modified games effectively enhance pupils' behavioral, cognitive, and affective participation in PE. Overall, the study affirms the value of integrating modified games as a practical and effective strategy for promoting active, confident, and motivated learners in elementary physical education.

Keywords: active engagement; learner-centered pedagogy; modified games; physical activity participation; physical education

INTRODUCTION

Regular participation in physical activity during childhood is widely recognized as a fundamental contributor to physical health, psychological well-being, and social development (Marzena et al., 2025). However, despite the inclusion of physical education (PE) as a core subject in school curricula, many elementary school pupils fail to meet recommended levels of daily physical activity. Insufficient engagement in physical activity during late childhood has been associated with increased sedentary behavior, reduced physical fitness, and diminished motivation to participate in movement-based activities (Lopes et al., 2021; World Health, 2020). These concerns underscore the need for effective instructional strategies that promote active participation within the school environment.

Grade 5 pupils represent a critical stage in which participation in physical activity often begins to decline. At this age, pupils become more aware of their physical abilities and increasingly compare their performance with peers, which can negatively influence their willingness to participate in PE activities (Holfelder & Schott, 2022). Traditional, technique-oriented teaching approaches may unintentionally marginalize pupils with lower skill levels, leading to reduced engagement, avoidance behaviors, and negative attitudes toward physical activity (Barnett et al., 2021). As such, fostering inclusive and motivating learning environments is essential to sustain participation among pupils with diverse abilities.

Motor competence has been identified as a central factor influencing children's engagement in physical activity (den Uil et al., 2023; Feitoza et al., 2022). Children who demonstrate higher levels of actual and perceived motor competence are more likely to participate actively in PE lessons and engage in moderate-to-vigorous physical activity both during and outside school hours (Lopes et al., 2021). Conversely, pupils with low motor competence or low self-perception of their abilities often experience frustration and disengagement, which can contribute to long-term physical inactivity (Carcamo-Oyarzun et al., 2025; Rose et al., 2023). Therefore, PE interventions should prioritize not only skill development but also enjoyment, confidence, and perceived competence.

Schools play a vital role in promoting physical activity, as PE classes provide structured and equitable opportunities for movement, social interaction, and motor learning (Cale, 2023; Walker et al., 2023). Within PE lessons, pupils engage cognitively, physically, and socially, making the subject a key setting for encouraging lifelong physical activity behaviors (Gouveia et al., 2022). However, maximizing pupils' participation requires pedagogical approaches that actively involve learners and allow meaningful engagement rather than passive repetition of isolated skills (Agyeman, 2024; Alfin Nur et al., 2024).

In this context, modified games have gained increasing attention as a learner-centered instructional strategy in PE. Modified games involve intentional adaptations to rules, playing space, equipment, and group size to ensure activities are developmentally appropriate and accessible to all pupils (Abad et al., 2020). By emphasizing play, decision-making, and continuous involvement, modified games reduce performance pressure and promote active participation, particularly among pupils who may feel less confident in traditional sport-based activities (Pardali et al., 2025; Tang et al., 2024).

Empirical evidence suggests that the use of modified games in PE can increase engagement levels, enhance enjoyment, and create more opportunities for sustained physical activity during lessons (Barba-Martín et al., 2020; Morales-Belando et al., 2022). These approaches also encourage cooperation, inclusion, and positive attitudes toward physical activity, which are essential for maintaining participation throughout elementary school. Despite these advantages, there remains limited research focusing specifically on how modified games influence physical activity participation among Grade 5 pupils within regular PE classes.

Given the importance of promoting active participation at this developmental stage, further investigation is warranted to examine instructional strategies that effectively engage pupils in physical activity. Therefore, the purpose of this study is to determine the effect of modified games on the physical activity participation of Grade 5 pupils during physical education classes. The findings of this study aim to contribute to evidence-based PE practices that support inclusive participation and the development of active lifestyles among elementary school pupils.

METHODOLOGY

Research Design

This study employed a classroom-based action research design, conducted by the researchers in their role as practitioners, to address observed issues related to low interest and confidence among Grade 5 pupils in Music, Arts, Physical Education, and Health (MAPEH). Action research was deemed appropriate because it is practitioner-led, context-specific, and problem-solving in nature, allowing teachers to systematically plan, implement, and refine instructional strategies while directly engaging with learners in an authentic classroom setting. The study was guided by the Plan–Act–Observe–Reflect (PAOR) action research framework, wherein the researchers first identified the problem and planned integrated and collaborative learning activities (Plan), implemented these activities during regular MAPEH lessons (Act), systematically observed pupils' responses, participation, interest, and confidence (Observe), and reflected on the effectiveness of the intervention to inform instructional adjustments (Reflect). This cyclical process supported continuous improvement of teaching practices and ensured that the intervention remained responsive to pupils' needs. The present study implemented a single action research cycle, considered sufficient to evaluate the immediate effects of the intervention on pupils' interest and confidence, while also providing a foundation for future cycles or follow-up studies aimed at sustaining and enhancing learning outcomes in MAPEH.

Research Context

The study was conducted at the Mindanao State University–Integrated Laboratory School (MSU-ILS), specifically involving Grade 5 learners enrolled in MAPEH classes, where instruction integrates music, arts, physical education, and health as part of the basic education curriculum. The researchers served as resource speakers and program facilitators, actively designing, implementing, and guiding integrated and collaborative learning activities while closely monitoring pupils' engagement, interest, and confidence throughout the intervention. Within this institutional context, the study responded to an observed issue of poor physical activity participation among Grade 5 pupils, characterized by limited engagement during PE-related activities, thereby highlighting the need for innovative, learner-centered strategies to promote active participation and positive learning experiences in MAPEH.

Participants of the Study

The participants of this study consisted of 200 Grade 5 MAPEH learners from Mindanao State University–Integrated Laboratory School (MSU-ILS) who were selected to take part in the action research intervention. A purposive sampling technique was employed to intentionally include learners who were regularly enrolled in Grade 5 MAPEH classes and directly exposed to the integrated and collaborative learning activities implemented in the study. The inclusion criteria required participants to have regular class attendance and the ability to participate in MAPEH activities, while learners with prolonged absences or medical conditions that limited their participation in physical activities were excluded from the study.

Action Research Intervention

The action research intervention involved the implementation of modified games as an instructional strategy integrated into Grade 5 MAPEH lessons to enhance pupils' interest, confidence, and participation, particularly in physical activity components. The primary objective of the intervention was to promote active engagement, improve self-confidence in movement tasks, and foster positive learning experiences through developmentally appropriate and inclusive game-based activities. The intervention was conducted over a period of two weeks, with daily 45-minute sessions, each carefully structured to include an introduction, activity development, and reflection to ensure continuity and progressive learning. Instructional strategies combined short lectures, guided discussions, hands-on experiences, and structured physical activities, allowing learners to actively participate, collaborate with peers, and apply concepts through movement-based and experiential learning.

Action Research Procedure

The planning phase involved identifying the problem of low interest, confidence, and physical activity participation among Grade 5 MAPEH learners through informal classroom observations and a brief needs assessment, which informed the development of an intervention plan centered on modified games and collaborative learning; instructional materials, activity guides, and simple pretest–posttest instruments were prepared prior to implementation. During the action phase, the intervention was implemented through a series of structured seminar-workshop–style MAPEH sessions incorporating short lectures, demonstrations, and hands-on physical activities, conducted for 45 minutes per day over a two-week period. The observation phase focused on systematically collecting data throughout the implementation, including pupils' attendance, participation records, field notes on engagement and confidence, and results from pretest and posttest measures related to interest and confidence in MAPEH. Finally, the reflection phase involved evaluating the outcomes of the intervention by analyzing observed changes in learners' participation and responses, reflecting on the effectiveness of the modified games, and identifying challenges and areas for improvement to inform future instructional planning and subsequent action research cycles.

Research Instrument

The study utilized a researcher-developed Likert-scale questionnaire administered as both a pre-test and post-test to measure the effect of modified games on the physical activity participation of Grade 5 pupils. The instrument comprised thirty (30) positively worded statements organized into three dimensions: Active

Engagement in Physical Activities, Confidence in Physical Activity Participation, and Enjoyment and Motivation in Physical Education, with ten (10) items allocated to each dimension. The Active Engagement dimension assessed pupils' behavioral involvement, effort, persistence, and attentiveness during PE tasks; the Confidence dimension measured perceived self-efficacy and belief in one's ability to perform and improve movement skills; and the Enjoyment and Motivation dimension evaluated pupils' interest, emotional response, and intrinsic drive to participate in physical activities. Responses were recorded using a five-point Likert scale ranging from 5 – Strongly Agree to 1 – Strongly Disagree, with higher scores indicating higher levels of physical activity participation and related psychosocial attributes. The instrument was constructed based on the conceptual framework of the study, existing literature on engagement and motor competence in physical education, and the contextual characteristics of Grade 5 learners at Mindanao State University–Integrated Laboratory School (MSU-ILS)

Validity and Reliability

Content validity of the instrument was established through expert review by specialists in Physical Education and educational research who evaluated the items for clarity, developmental appropriateness, and alignment with the constructs of engagement, confidence, and motivation. Revisions were incorporated based on their recommendations to enhance precision and construct representation.

Internal consistency reliability was examined using Cronbach's alpha coefficient after the pilot administration of the instrument. The computed Cronbach's alpha values indicated high reliability across the three questionnaire dimensions: Active Engagement in Physical Activities ($\alpha = 0.88$), Confidence in Physical Activity Participation ($\alpha = 0.86$), and Enjoyment and Motivation in Physical Education ($\alpha = 0.90$). These coefficients exceed the commonly accepted threshold of 0.70, indicating strong internal consistency of the instrument. Standardized administration procedures and the use of identical items in both the pre-test and post-test further supported measurement reliability across time points.

Data Collection Procedures

Data collection was conducted in two phases: pre-intervention and post-intervention. The pre-test was administered to all 200 participants prior to the implementation of the two-week modified games intervention to establish baseline measures of pupils' active engagement, confidence, and enjoyment in Physical Education (PE). The post-test was administered to the same group of pupils after the intervention using the identical instrument to determine observable changes in the measured variables. The questionnaire was distributed electronically through Google Forms to ensure standardized administration, efficient data collection, and secure storage of responses. Clear instructions were provided to pupils, and sufficient time was allotted for completion. Formal permission to conduct the study was obtained from the school head/principal of Mindanao State University–Integrated Laboratory School (MSU-ILS) and approval from the Executive Committee on Research. Participation was voluntary, and confidentiality and anonymity were maintained by not collecting identifying personal information and restricting data access to the researchers.

Data Analysis

Both quantitative and qualitative data analysis procedures were employed to comprehensively evaluate the effects of the modified games intervention on the physical activity participation of Grade 5 pupils. Quantitative data were obtained from the Likert-scale pre-test and post-test questionnaires measuring Active Engagement, Confidence in Physical Activity Participation, and Enjoyment and Motivation in Physical Education. All quantitative data from the 200 respondents were encoded and analyzed using IBM SPSS Statistics Version 21.

Descriptive statistics, specifically the computation of mean and standard deviation, were used to summarize pupils' responses for each item and dimension. To determine whether the observed differences between pre-test and post-test scores were statistically significant, paired-sample t-tests were conducted for each of the three dimensions. The paired-sample t-test is appropriate for comparing the means of the same group measured at two different time points and allowed the researchers to determine whether the intervention produced statistically significant improvements in pupils' engagement, confidence, and motivation.

In addition to quantitative analysis, qualitative data were collected through pupils' written reflections included in the open-ended section of the post-test questionnaire. These responses were analyzed using a thematic analysis approach in which recurring words, phrases, and patterns were identified, categorized, and grouped into emerging themes. The qualitative findings were used to support and explain the quantitative results, allowing for a deeper interpretation of pupils' experiences during the intervention.

In addition to quantitative analysis, qualitative data were collected through pupils' written reflections included in the open-ended section of the post-test questionnaire. Pupils were encouraged to express their experiences, feelings, and perceptions regarding the modified games and PE activities. These responses were analyzed using a simple thematic analysis approach, wherein recurring words, phrases, and patterns were identified, categorized, and grouped into emerging themes. The qualitative findings were used to support, explain, and enrich the quantitative results by providing deeper insights into pupils' lived experiences during the intervention. The integration of quantitative and qualitative analyses allowed for a more comprehensive understanding of the effectiveness of modified games in enhancing physical activity participation.

Ethical Considerations

Ethical standards were strictly observed throughout the conduct of this study to ensure the protection, rights, and welfare of all participants. Prior to the implementation of the research, formal approval was obtained from the school head/principal of Mindanao State University–Integrated Laboratory School (MSU-ILS), as well as clearance from the Executive Committee on Research, ensuring that the study complied with institutional research policies and ethical guidelines. Informed consent was secured from the parents or guardians of the Grade 5 pupils, and participants were provided with clear explanations regarding the purpose, procedures, duration, and expected outcomes of the study.

Participation in the study was strictly voluntary, and pupils were informed that they could withdraw at any time without academic penalty or negative consequences. To protect participants' privacy, confidentiality and anonymity were maintained throughout the research process. No identifying personal information, such as names or student numbers, was collected in the questionnaires. All responses were treated with strict confidentiality and were used solely for academic and research purposes. Access to the collected data was limited to the researchers, and electronic data were securely stored to prevent unauthorized access. These measures ensured that the study upheld ethical principles of respect, beneficence, and integrity in educational research.

RESULTS

This section presents the findings of the study based on the pre-test and post-test measurements of pupils' active engagement, confidence in physical activity participation, and enjoyment and motivation in Physical Education. Descriptive statistics, including the mean and standard deviation, were computed using IBM SPSS Statistics 21 to summarize pupils' responses before and after the two-week intervention. A comparative analysis of the pre-test and post-test results was conducted to determine observable changes in pupils' engagement and affective responses following the implementation of modified games in PE classes.

Table 1: Pre-Test and Post-Test of Pupils' Active Engagement in Physical Activities

Item	Active Engagement in Physical Activities	Pre-Test Mean	Pre-Test SD	Pre-Test Interpretation	Post-Test Mean	Post-Test SD	Post-Test Interpretation
1	I actively join physical activities during PE class.	4.29	.973	Very High	4.45	.759	Very High

2	I participate even when the activity is physically tiring.	3.81	.749	High	4.15	.587	High
3	I move continuously during PE activities.	3.74	.893	High	3.95	.826	High
4	I follow the rules when playing games in PE.	4.45	.723	Very High	4.60	.598	Very High
5	I try my best during physical activities.	4.35	.985	Very High	4.50	.607	Very High
6	I stay involved in the activity from start to finish.	4.00	.775	High	4.25	.910	Very High
7	I do not easily give up during physical games.	3.81	1.046	High	4.35	.745	Very High
8	I listen carefully to instructions before playing.	4.29	1.071	Very High	4.45	.945	Very High
9	I am willing to try new physical activities.	3.84	.969	High	4.55	.605	Very High
10	I stay focused while playing games in PE.	4.19	.946	High	4.60	.503	Very High

Note: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Table 1 presents the pre-test and post-test results of pupils' active engagement in physical activities during Physical Education (PE) classes. The pre-test results indicate that pupils generally demonstrated a High to Very High level of active engagement prior to the intervention. Specifically, items such as actively joining physical activities (M = 4.29), following game rules (M = 4.45), trying their best (M = 4.35), and listening carefully to instructions (M = 4.29) were interpreted as Very High, suggesting that pupils already showed strong positive engagement behaviors. However, several indicators such as participating when physically tired (M = 3.81), moving continuously (M = 3.74), staying involved from start to finish (M = 4.00), not easily giving up (M = 3.81), willingness to try new activities (M = 3.84), and staying focused (M = 4.19) were interpreted as High, indicating areas with potential for further improvement.

Following the implementation of the intervention, improvements were observed across all indicators. Most items increased to the Very High level, including staying involved from start to finish (M = 4.25), not easily giving up (M = 4.35), willingness to try new physical activities (M = 4.55), and staying focused while playing games (M = 4.60). Notably, willingness to try new physical activities and staying focused showed marked increases, suggesting enhanced enthusiasm and sustained attention during PE activities. While some items remained within the High category (e.g., participating when physically tired and moving continuously), their mean scores still improved compared to the pre-test results.

Overall, the findings indicate that the intervention positively influenced pupils' active engagement in physical activities. The upward shift from High to Very High in several engagement indicators suggests that the modified games and structured PE activities contributed to strengthening pupils' participation, persistence, focus, and overall involvement during physical education classes.

Table 2: Pre-Test and Post-Test of Pupils' Confidence in Physical Activity Participation

Item	Active Engagement in Physical Activities	Pre-Test Mean	Pre-Test SD	Pre-Test Interpretation	Post-Test Mean	Post-Test SD	Post-Test Interpretation
1	I feel confident when playing physical games.	3.68	1.107	High	4.10	.718	High
2	I believe I can perform physical activities well.	3.94	.998	High	4.35	.671	Very High
3	I am not afraid to make mistakes during games.	3.26	1.264	Moderate	3.75	.910	High
4	I feel comfortable playing with my classmates.	3.81	1.195	High	4.35	.671	Very High
5	I feel proud when I complete a physical task.	4.16	1.157	High	4.70	.470	Very High
6	I am confident in my movement skills (running, jumping, throwing, etc.).	3.94	1.124	High	4.10	1.071	High
7	I am willing to demonstrate an activity in front of the class.	3.32	1.166	Moderate	3.65	1.182	High
8	I feel brave when joining competitive games.	3.87	.846	High	4.15	.587	High
9	I believe I can improve my physical skills.	3.87	1.258	High	4.55	.686	Very High
10	I feel confident even when the game is challenging.	4.00	.931	High	4.10	.788	High

Note: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Table 2 presents the pre-test and post-test results of pupils' confidence in physical activity participation. The pre-test findings show that pupils generally demonstrated a High level of confidence, with most items falling within the High interpretation range. However, two indicators—being unafraid to make mistakes during games (M = 3.26) and willingness to demonstrate an activity in front of the class (M = 3.32)—were interpreted as Moderate,

suggesting that some pupils initially experienced hesitation in risk-taking and public performance during physical activities.

Following the two-week intervention, improvements were observed across all indicators. Several items increased to the Very High level, including belief in performing physical activities well (M = 4.35), comfort in playing with classmates (M = 4.35), pride in completing physical tasks (M = 4.70), and belief in improving physical skills (M = 4.55). Notably, the previously Moderate indicators improved to High, indicating enhanced willingness to take risks and participate more confidently in class activities. Other items such as confidence in movement skills, bravery in competitive games, and confidence during challenging games also showed increases in mean scores, although they remained within the High category.

Overall, the results suggest that the intervention had a positive impact on strengthening pupils' confidence in physical activity participation. The upward shift from Moderate to High and from High to Very High across several items reflects improved self-belief, peer comfort, resilience, and readiness to engage in both cooperative and challenging physical activities.

Table 3: Pre-Test and Post-Test of Pupil's Enjoyment and Motivation in Physical Education

Item	Active Engagement in Physical Activities	Pre-Test Mean	Pre-Test SD	Pre-Test Interpretation	Post-Test Mean	Post-Test SD	Post-Test Interpretation
1	I enjoy participating in PE activities.	4.10	1.106	High	4.30	.979	Very High
2	I feel excited when we have physical games.	4.03	1.080	High	4.50	.827	Very High
3	I look forward to PE class.	4.19	.833	High	4.45	.826	Very High
4	Playing games in PE makes me happy.	4.03	1.016	High	4.65	.489	Very High
5	I feel motivated to join physical activities.	3.84	.898	High	4.45	.686	Very High
6	I prefer active games over sitting activities.	3.48	1.061	High	4.35	.587	Very High
7	I like playing games with modified rules.	3.81	1.014	High	4.15	.875	High
8	I enjoy working with my classmates during games.	4.00	.931	High	4.10	.788	High
9	I feel energetic during PE class.	3.87	.991	High	4.50	.513	Very High
10	I think physical activities are important for me.	4.19	.873	High	4.70	.571	Very High

Note: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Table 3 presents the pre-test and post-test results of pupils' enjoyment and motivation in Physical Education (PE). The pre-test findings indicate that all items were interpreted as High, suggesting that pupils already had a generally positive disposition toward PE activities prior to the intervention. Indicators such as enjoying participation (M = 4.10), looking forward to PE class (M = 4.19), and recognizing the importance of physical activities (M = 4.19) reflect an encouraging baseline level of enjoyment and motivation, although there was still room for enhancement.

After the two-week intervention, notable improvements were observed across most indicators. Several items increased to the Very High level, including enjoyment in participating in PE (M = 4.30), excitement during physical games (M = 4.50), happiness while playing games (M = 4.65), motivation to join physical activities (M = 4.45), preference for active games (M = 4.35), feeling energetic (M = 4.50), and recognition of the importance of physical activities (M = 4.70). Items related to liking games with modified rules and enjoying working with classmates remained within the High level but still demonstrated an increase in mean scores.

Overall, the results suggest that the intervention positively enhanced pupils' enjoyment and intrinsic motivation toward Physical Education. The shift from High to Very High in most indicators indicates that the modified games and interactive PE strategies effectively strengthened pupils' enthusiasm, energy, and positive emotional responses during physical activities.

DISCUSSION

The present study sought to determine the effect of modified games on Grade 5 pupils' physical activity participation, particularly in terms of active engagement, confidence, and enjoyment and motivation in Physical Education. The findings indicate that the two-week modified games intervention led to observable improvements across all three dimensions, with several indicators shifting from High to Very High levels of interpretation. Quantitative results demonstrated increased mean scores in persistence, willingness to try new activities, confidence in performance, and enjoyment of PE tasks, while qualitative reflections revealed enhanced enthusiasm, reduced hesitation, and stronger peer collaboration. These patterns suggest that integrating developmentally appropriate modified games can effectively strengthen pupils' behavioral, cognitive, and affective participation in PE. The effectiveness of game-based pedagogies in improving engagement and motivation is consistent with recent evidence emphasizing learner-centered approaches in physical education (Abad et al., 2020; Barba-Martín et al., 2020; Gouveia et al., 2022; Morales-Belando et al., 2022; Lopes et al., 2021).

The improvement in active engagement may be attributed to the structural characteristics of modified games, which promote continuous involvement, decision-making, and inclusive participation. The observed increase in pupils' persistence, focus, and willingness to try new physical activities aligns with the premise that modified games reduce performance pressure while maintaining meaningful physical exertion. Game-based pedagogies encourage sustained moderate-to-vigorous physical activity by maximizing active time and minimizing inactivity (Gouveia et al., 2022). Moreover, the integration of cooperative elements likely strengthened pupils' attentiveness and rule-following behaviors, reinforcing active participation (Morales-Belando et al., 2022). Research also suggests that contextualized, game-centered instruction enhances engagement more effectively than traditional technique-driven methods (Abad et al., 2020; Barba-Martín et al., 2020). However, some studies caution that engagement gains may depend on teacher facilitation quality and contextual factors, which can moderate intervention effects (Casey & Goodyear, 2021; Ho et al., 2023).

The increase in pupils' confidence in physical activity participation reflects the potential of modified games to strengthen perceived motor competence and self-efficacy. Pupils who initially reported moderate levels of confidence in demonstrating skills or making mistakes exhibited improvements after the intervention, suggesting reduced fear of failure and enhanced self-belief. According to self-efficacy theory, mastery experiences and supportive feedback are primary contributors to confidence development (Bandura, 2021; Holfelder & Schott, 2022). The collaborative and non-threatening nature of modified games likely provided repeated success experiences, reinforcing pupils' competence perceptions. Recent studies affirm that pedagogical models emphasizing understanding and participation improve perceived competence and confidence (Morales-Belando

et al., 2022; Gouveia et al., 2022; Liu et al., 2022). Conversely, research has noted that short-term interventions may not produce long-lasting confidence changes without sustained reinforcement (Coulter et al., 2023), suggesting the importance of continued implementation.

The significant improvements in enjoyment and motivation underscore the affective benefits of modified games in PE. Pupils reported higher excitement, happiness, energy, and intrinsic motivation after the intervention, indicating that the learning environment became more emotionally engaging. Enjoyment has been identified as a strong predictor of continued physical activity participation in children (Lopes et al., 2021). Game-based approaches stimulate intrinsic motivation by promoting autonomy, competence, and relatedness, consistent with self-determination theory (Ryan & Deci, 2020; Vasconcellos et al., 2021). The emphasis on active play and peer interaction may have strengthened pupils' positive emotional associations with PE (Abad et al., 2020; Morales-Belando et al., 2022). Nonetheless, some literature highlights that motivational effects can diminish if novelty fades, emphasizing the need for varied and progressive activity design (Kirk, 2023).

The convergence between quantitative increases and qualitative reflections strengthens the credibility of the findings. Pupils' written expressions describing PE as "more fun," "exciting," and "less stressful" support the statistical improvements observed in engagement and confidence scores. This triangulation indicates that modified games not only improved measurable indicators but also reshaped pupils' perceptions and emotional responses toward physical activity. Similar integration of behavioral and affective outcomes has been reported in recent PE intervention studies (Gouveia et al., 2022; Morales-Belando et al., 2022; Ho et al., 2023). The alignment between numerical gains and lived experiences reinforces the conclusion that learner-centered pedagogies can influence both participation patterns and psychological readiness for physical activity (Liu et al., 2022; Casey & Goodyear, 2021).

The findings highlight important implications for classroom practice and school-based PE programs. Implementing modified games even within a short two-week period can enhance engagement, confidence, and enjoyment among elementary learners. Schools may adopt structured yet flexible game-based modules to foster inclusive and motivating PE environments. Teacher professional development should emphasize game-centered pedagogies that maximize active participation and reduce performance anxiety (Barba-Martín et al., 2020; Morales-Belando et al., 2022). Policymakers and administrators can integrate modified games into PE curriculum frameworks to promote sustained physical activity behaviors (Gouveia et al., 2022; Lopes et al., 2021). Such strategies may contribute to strengthening school-based physical activity culture and long-term health outcomes. In line with the World Health Organization (WHO) recommendations that children should engage in at least 60 minutes of moderate-to-vigorous physical activity daily, integrating modified games into regular PE instruction may serve as a practical strategy to help schools contribute to these global physical activity targets.

Despite its promising findings, the study has several limitations. Although the sample size consisted of 200 Grade 5 pupils, all participants were drawn from a single educational institution, which may limit the generalizability of the findings to other school contexts. The absence of a control or comparison group also restricts the ability to attribute the observed improvements solely to the modified games intervention. Additionally, the intervention period lasted only two weeks, which may not fully capture long-term behavioral changes in pupils' physical activity participation.

The study relied primarily on self-reported questionnaire responses, which may introduce response bias, as pupils might provide socially desirable answers. Future research should consider integrating objective measures of physical activity, such as activity trackers or structured observation tools, to strengthen the validity of the findings. Furthermore, implementing longer intervention periods and multiple action research cycles may help determine whether the positive effects of modified games can be sustained over time.

Future research should consider longitudinal designs to examine the sustainability of engagement and confidence gains over extended periods. Implementing multiple action research cycles may provide deeper insights into continuous improvement processes. Comparative or quasi-experimental designs with control groups could strengthen causal conclusions. Further studies may also explore the impact of modified games on objective

physical activity measures and academic outcomes. Expanding research across diverse school contexts would enhance generalizability and scalability.

CONCLUSION

The findings of this study demonstrate that the integration of modified games into Physical Education classes positively influenced the physical activity participation of 200 Grade 5 pupils at Mindanao State University–Integrated Laboratory School (MSU-ILS). The consistency of improvements across a relatively large group of participants strengthens the evidence supporting modified games as an effective learner-centered instructional strategy in elementary PE. Across the three measured dimensions active engagement, confidence in physical activity participation, and enjoyment and motivation observable improvements were recorded after the two-week intervention. Several indicators shifted from High to Very High levels, particularly in areas related to persistence, willingness to try new activities, pride in task completion, and emotional enthusiasm toward PE. These results suggest that modified games serve as an effective learner-centered strategy that promotes not only behavioral involvement but also psychosocial development in physical education settings.

Furthermore, the convergence of quantitative increases and positive qualitative reflections strengthens the conclusion that modified games contribute to a more inclusive, motivating, and developmentally appropriate PE environment. By reducing performance pressure, encouraging cooperation, and maximizing active participation time, the intervention enhanced pupils' self-confidence, enjoyment, and sustained engagement in physical activities. Although the study was limited to a single action research cycle and a specific school context, the outcomes provide practical evidence that structured, game-based instructional strategies can meaningfully enhance pupils' participation in PE. Overall, this study affirms the value of modified games as a viable and effective approach for promoting active, confident, and motivated learners in elementary physical education.

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