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Assessing Skill-Related Fitness Improvements in Grade 7 Students Through Philippine Traditional Games

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Abstract: This study aimed to assess the improvements of skill-related fitness among Grade 7 students through Philippine traditional games. Using a quasi-experimental design, the research measured agility, power, speed, balance, coordination, and reaction time before and after participation in these games. A total of 42 students from San Sebastian College- Recoletos de Cavite were selected through purposive sampling. Standardized fitness tests were administered, and data were analyzed using paired t-tests, independent samples t- tests, and Pearson Correlation. Results revealed statistically significant improvements in all skill-related fitness components, with reaction time showing the greatest enhancement. While male students recorded slightly higher average gains than females, the difference was not statistically significant. Pearson correlation analysis indicated a moderate positive relationship between participation and fitness improvements, suggesting that regular engagement in traditional games contributes to enhanced physical performance. These findings imply that Philippine traditional games effectively develop agility, power, speed, reaction time, balance, and coordination, regardless of gender. This study recommends integrating traditional games into school curricula, encouraging regular participation, promoting gender-inclusive activities, and conducting further research on their long-term benefits and the development of structured training modules and community-based initiatives to sustain engagement and maximize fitness development.

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I. INTRODUCTION

Physical education plays a vital role in the overall development of young learners, particularly by strengthening their abilities and promoting an active, healthy lifestyle. With the broad scope of physical fitness, skill-related components such as agility, speed, power, balance, coordination, and reaction time are essential for enhancing motor skills and enabling effective participation in sports and daily activities. These components are especially important during early adolescence, a developmental stage characterized by significant physical and cognitive growth. Grade 7 students are at a critical stage of physical and psychological growth, making the cultivation of skill-related fitness particularly important. However, the PE programs tend to focus on formal sports and repetitive drills, which may not necessarily interest students in a meaningful way or accommodate local culture. One of the most promising but neglected strategies is the use of Philippine traditional games, including *luksong baka, patintero, sipa, and kadang-kadang*. These games are not only fun and socially interactive but also require agility, coordination, balance, and speed—precisely corresponding to the elements of skill-related fitness (Smith, 2019).

Despite the cultural richness and physical demands of these games, their application as an organized fitness intervention within schools remains. Modern lifestyle shifts – including increased screen time and reduced outdoor activity – have contributed to lower physical activity levels among adolescents (Johnson, 2020).

While some literature has acknowledged the social and emotional benefits of heritage games (Avila, 2021; Rosanes, 2024), there is still a clear lack of empirical evidence on their direct influence on measurable skill-related fitness outcomes. Furthermore, the body of research is insufficient to consider how these games can be used deliberately in PE curriculum to address developmental fitness outcomes.

Although traditional games require physical attributes such as agility, speed, balance, power, reaction time, and coordination, there is insufficient research exploring their deliberate application as a method for improving skill-related fitness among adolescence in school-based PE settings. Existing studies largely emphasized their cultural emotional value rather than quantifiable physical outcomes. This gap highlights the need for research that assesses how these traditional games can be systematically integrated into the PE curriculum to enhance motor skills and overall physical performance.

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To address these research gaps, the current study examines the effects of selected Philippine traditional games on the skill-related fitness of Grade 7 students. Through a quasi-experimental design utilizing standardized fitness assessments, the study aims to provide concrete data on the effectiveness of these games in enhancing specific fitness components. Additionally, it advocates for culturally responsive physical education practices that foster engagement and promote appreciation of Filipino heritage (Brown, 2023; Chavez & Santos, 2024).

This chapter discusses the relevant literature, which emphasizes the importance of the study. It offers a synthesis to build greater understanding and comprehension. The chapter is concerned with the important role played by traditional games in improving numerous facets of physical fitness, specifically skill-related fitness, such as speed, balance, agility, power, reaction time, and coordination.

The integration of traditional games within schools has demonstrated great potential in the development of physical fitness, especially skill-related components. Mozar (2020) found notable improvement in agility and coordination among who engaged in Filipino games like *Piko* and *Sipang Bilangan*. Similarly, DeMet and Wahl-Alexander (2019) emphasized that traditional games offered enjoyable, developmentally sound means of enhancing motor skills that tend to be overlooked in standard PE curricula.

Supporting these results, Septianto et al. (2024) and Oktarina et al. (2024) revealed higher rates of speed, balance, and strength among students who played regional games such as *balloon races, Sodor Carts, Galah Asin, and jump rope*. These results consistently the idea traditional games are viable alternatives to standard physical education programs in promoting physical development.

Traditional games also make significant contributions to cognitive development. Dewi et al. (2020) showed that students who played traditional games within multicultural, inquiry-based learning settings demonstrated higher critical thinking skills compared to those conventional settings. The interactive and experiential nature of these games promotes deeper engagement, cognitive flexibility, and reflective learning. These outcomes justify incorporating traditional games into the educational setting not just for physical advantages but also for cognitive development.

The impact of traditional games extends beyond physical and cognitive domains into emotional, social, and cultural growth. Logan, Dizer, and Raval (2023) explained how traditional Filipino games promote cultural pride, emotional resilience, and a sense of community. Belano and Perez (2024) emphasized their ability to value cultural heritage and promote active engagement in MAPEH classes. Similarly, Agustin (2020) and Setiawan et al. (2024) highlighted the development of cooperation, discipline, and national identity through indigenous play. These studies show the holistic advantages of traditional games and their congruence with values-based education.

Despite their benefits, the traditional games encounter numerous challenges in modern learning environments. Setiawan et al. (2024) cited real-world challenges like inadequate school infrastructure, space constraints in urban areas, and lessened student engagement due to the appeal of digital entertainment. To address these concerns, Muhaimin et al. (2024) suggested the implementation of gamification to upgrade traditional games and enhance their relevance to today's learners. Ruin, Tamban, and Bandoy (2024) noted that despite the nostalgic and cultural importance of games such as *Luksong Baka* and *Patintero*, their popularity has diminished among today's students.

These findings reflect a broader education concern: how to preserve cultural heritage in the form of traditional games while adapting to the evolving interests of students. The present study contributes to this dialogue by situating Philippine traditional games into a systematic educational framework, investigating how they can be effectively implemented and maintained within limited-resource school settings.

Although various studies have highlighted the wide-ranging benefits of traditional games, including physical, cognitive, emotional, and cultural dimensions, there remains a notable gap in empirical research focusing especially on the effects of Philippine traditional games on skill-related fitness among Grade 7 students. Existing literature often generalizes findings across different age groups, regions, or types of physical activities, offering limited insights attention given to localized, game-specific, and context-specific outcomes within the Philippine educational system.

Moreover, few studies have explored the feasibility and impact of integrating these traditional games in resource-constrained school environments. This study addresses gaps by providing context-driven evidence on the role of Philippine traditional games in enhancing the skill-related fitness components, such agility, speed, power, balance, coordination, and reaction time among junior high school students.

- *Theoretical Framework*

This theory is anchored in Jean Piaget's Constructivist Learning Theory, which emphasizes that learners actively construct knowledge through direct interaction with their environment. For learners, in the concrete operational stage – typically Grade 7 students – learning is most effective when it includes practical, hands-on activities. At this stage, students begin to think logically about concrete situations, understand cause and effect, and solve problems through trial and error and experiential engagement.

In line with the objectives of K to 12 Physical Education Curriculum in the Philippines, which aims to foster holistic growth of students through promoting physical activities, this study incorporates traditional games such as culturally meaningful and developmentally suitable approach I improving skill-related fitness components such as agility,

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speed, power, balance, coordination, and reaction time. These games offer meaningful, active experiences that allow students to make decisions, formulate strategies, tackle physical challenges, and learn from the outcomes of their actions – principle consistent with Piaget's constructivist framework.

Although Piaget's theory focuses on cognitive development, this study extents its application to motor and physical development. By involving students in physical challenging, socially engaging, and rule-based traditional games, the study demonstrates how active learning experiences support not just cognitive growth but also physical competence. Thus, this research situates movements and play as valuable educational and developmental methods, emphasizing how constructivist principles can improve physical education outcomes within the framework of Philippine culture and the Department of Education's learning standards.

➢ *Statement of the Problem*

The study aims to explore and assess improvements in skill-related fitness in Grade 7 students through engaging Philippine traditional games. Specifically, the study aims to answer the following questions:

- *What is the Student's Profile?*

✓ Age
✓ Sex

- What are the baseline skill-related fitness levels of Grade 7 students before engaging in Philippine traditional games?
- How do the skill-related fitness components (balance, agility, power, reaction time, balance, coordination, and balance) of Grade 7 students change after participating in Philippine traditional games?
- Is there a significant improvement in the skill-related fitness test results after of Grade 7 students after engaging in Philippine traditional games?
- How do the effects of Philippine traditional games on skill-related fitness differ between male and female Grade 7 students?
- What is the relationship between the frequency of participation in Philippine traditional games and the improvement in skill-related fitness test results among Grade 7 students?

➢ *Limitation of the Study*

This study focused on evaluating the improvements in specific components of skill- related fitness – agility, speed, balance, power, coordination, and reaction time – among Grade 7 students. Conducted at a Catholic private school in Cavite City, Cavite, Philippines, involving 42 physically fit Grade 7 students who were permitted by their parents or guardian to participate on the study. The intervention was implemented over a 2-week period in the school gymnasium during the students' MAPEH class schedule. Sessions lasted for an hour and twice a week.

In addition, the study utilized four Philippine traditional games, namely *Patintero, Luksong Baka, Agawan Base, and Tumbang Preso*, which were selected based on their relevance to the components of skill-related fitness being evaluated.

Although the study concentrated on physical development, it did not include the direst assessment of cognitive growth. However, the strategic thinking, decision-making, and problem-solving required by the traditional games may have contributed to cognitive development indirectly, suggesting a valuable area for future research.

II. METHODOLOGY

➢ *Research Design*

The research employed a quasi-experimental research design to explore how integrating traditional games into the Grade 7 physical education curriculum impacts skill- related fitness. The research sought to assess alterations in skill-related factors—power, reaction time, balance, speed, agility, and coordination—pre- and post-participation in Philippine traditional games. This research employed standardized fitness tests for the objective measurement of levels of fitness, assuring a stringent test of the effectiveness of the intervention.

Participants of the study were Grade 7 students under purposive sampling. The collection of data included demographic data, initial fitness levels, and further post-intervention measurement after some time engaging in traditional game sessions. Statistical procedures such as paired t-tests were used to contrast pre- and post- intervention fitness levels and gain quantitative information about how traditional games can enhance skill-related fitness in the students.

Finally, the study investigated gender variation in fitness gain and the frequency of regular game playing and their increased fitness levels. The aim of these analyses was to uncover in-depth information on how traditional games impacted people differently according to their gender and frequency of participation. Finally, the study sought to present empirical findings in support of incorporating Philippine traditional games in physical education as a way of enhancing skill-related fitness among Grade 7 students. Through the observation of individual improvement in fitness as well as demographic differences, the study sought to guide educational interventions that promote all-around student growth through culturally enriched physical activities.

➢ *Population and Sampling*

This research focused on Grade 7 students since the early adolescent phase is a stage characterized by increased development in physical skills, agility, balance, and coordination, which are essentials of skill-related fitness. At this age, students are greatly sensitive to exercise, making it an ideal time to facilitate and build their physical capabilities. In addition, Grade 7 is the transition from elementary to junior high school, a process that includes adjusting to a more formal academic and physical education environment. This

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transition offers a rich opportunity to implement interesting, culturally appropriate, game-based approaches—such as indigenous Filipino games—that foster physical skill acquisition as well as cultural appreciation.

In addition, under the K–12 curriculum, Philippine traditional games are incorporated into Grade 6 Physical Education Curriculum Guide, while the utilization of Physical Fitness test is emphasized in Grade 7. The current Grade 7 students were product of K-12 Curriculum; however, they are now studying under the newly implemented MATATAG Curriculum. At present, it remains uncertain which grade level formally includes Philippine traditional games, as only Grade 4 and 7 curricula have been made publicly available.

Purposive sampling was employed to select participants, ensuring that only students who are physically fit and capable of engaging in physical activities were included. Of the 48 officially enrolled Grade 7 students at San Sebastian College – Recoletos de Cavite, only 42 were selected based on the inclusion criteria.

➢ *Research Instruments*

The research utilized an instrument made up of five components, totalizing 16 items, aimed at collecting bot self-reported and performance-based data. The instrument integrated questionnaires to gather demographic and perception-related information and employed standardized physical fitness tests to measure skill-related fitness outcomes.

The first component, Demographic Information (4 items) collected key demographic information, such as age, gender, and other relevant background information. These items were administered using self-reported questionnaire and analyzed using nominal and ordinal scales, which allowed for clarification and descriptive statistical analysis. The second component Bassline measures (3 items), assessed the participants initial levels through standardized physical test. These included the *Stick Flip Test* for coordination, *50-Meter Sprint* for speed, *Ruler Drop Test* for reaction time, *Shuttle Run Test* for agility, *Standing Stork Test* for balance, *Standing Long Jump Test* for power. These tests align with the recommended practices in physical education and have been validated for school-age populations. Data were recorded using ratio or interval scales such as, seconds for speed, agility, balance, centimeters for power, and reaction time, and number of successful catches in coordination.

Third component, Post-Engagement Assessment (3 items), involve re- administering the same physical tests after the intervention involving traditional Filipino games. This allowed the researcher to determine any significant improvements in skill- related fitness by comparing pre-and-post-test results using statistical procedure.

The fourth component, Gender Differences Analysis (3 items) investigated possible differences in the achievement of fitness components between male and female participants. Using the physical test scores, statistical comparisons were conducted to examine whether gender played a significant role in the development of skill-related- fitness.

The fifth component, Correlation Analysis (3 items) explored the relationship between the frequency of participation in traditional games and observed improvements in skill-related. This was done by correlating quantitative data from the fitness assessments with participation logs to evaluate the strength and direction of any associations.

To ensure content validity, the entire research instrument was reviewed and evaluated by a panel of three experts from the physical education field. Based on their recommendation, several revisions were made, including clarification of instructions, refinement of test descriptions and standardization of terminology. Additionally, Likert-type scaling was clarified for any subjective items, and instructions for both questionnaire and physical test administration were made more explicit to ensure consistency, reliability, and ease of use during implementation.

The pilot test of the research tool was conducted on a sample of 15 Grade 7 students from San Sebastian College-Recoletos de Cavite to ensure that the results reflect the population of interest of the study. To test the validity of the instrument, Cronbach's alpha was computed, a widely accepted statistic for determining internal consistency. A Cronbach's alpha level of over 0.86 was, in most cases, considered an indicator of acceptable reliability, as it assured that items on the instrument were always measuring the same construct. The results of the reliability test showed strong internal consistency in the different parts of the instrument, thus increasing confidence in its effectiveness.

Table 1 Reliability Analysis for Skill-Related Fitness Variables

Section	Number of Items	Cronbach's Alpha	Reliability Interpretation
Baseline skill-related fitness (before engaging in Philippine traditional games).	6	0.72	Acceptable
Changes in skill-related fitness components (after engaging in Philippine traditional games).	6	0.85	Good
Overall improvements of skill-related fitness	2	0.87	Good
Differences and effects between male and female students	3	0.80	Good
Frequency of participation and improvement.	3	0.83	Good
Average		0.86	Good

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On the basis of analysis, some items were eliminated due to redundancy and poor item correlation. The "level of agreement" section was scaled down from five (5) to three (3) items to ease respondents' responses without compromising reliability. No additional items were inserted because the trimmed set was thought to be adequate.

The final instrument comprises 20 items across the five (5) indicated sections, with enhancements in clarity and consistency drawn on feedback from panels of experts. The demographic profile (age and sex) is not included in the table, as it does not directly contribute to the internal consistency analysis measured by Cronbach's alpha. The modifications made during the pilot testing process contributed to a more robust and reliable research instrument for the main study.

➢ *Data Gathering Procedures*

Prior to engaging with the participants, the researcher obtained all necessary ethical approvals to ensure the study complied with the institutional and academic guidelines. Approval was obtained from the relevant ethics committee, followed by informed consent from the school president, vice president of academic affairs, school principal, Grade 7 MAPEH subject teacher, and the parents or guardians of the participants. The consent form clearly outlined the study's purpose, procedures, criteria for participant selection, potential risks, data recording protocol, observational protocols, and voluntary nature of participation, ensuring that all participants understood and agreed to the terms.

During the initial meeting with the participants, the researcher introduced the study by explaining its purpose and benefits, particularly how it could help enhance their physical fitness. After this orientation, the researcher discussed the details of participation, emphasizing the transparency and voluntary involvement.

This study followed a comprehensive procedural plan to address the research questions while maintaining strict ethical standards. Parental consent and students' consent were both obtained – written consent was provided by parents or guardians, and participants were fully informed and gave their voluntary approval.

To maintain confidentiality, all personal data were anonymized and securely stored; participants were also informed of their right to withdraw from the study at any time without any negative consequences. The researcher ensured that participation was entirely voluntary and that no student was coerced or pressured to take part in the study.

For data collection, the researcher first prepared and arranged the necessary equipment for administering the skill-related fitness tests and traditional Filipino games at the gymnasium. On the same day, an orientation lasting at least 40 minutes was conducted. The participants along with their MAPEH teacher, were gathered at the gymnasium, where the researcher explained and demonstrated the procedures for conducting the battery test of skill-related components, including the interpretation or scoring of each component. In addition, the rules and regulations of the selected Philippine traditional games were clearly discussed to ensure participant understanding and readiness.

The following day marked the beginning of the official data collection. Participants gathered at the gymnasium and were asked to complete a demographic questionnaire, which collected information such as their age and gender. Each student was provided with an index card for data recording. A paired-performance was used, where each participant was partnered with another student to observe, record, and assess performance based on the given criteria.

Before engaging in physical activity, the participants completed a 10-minute warm- up and cool-down led by the researcher. Following the warm-up and cool-down, the skill-related fitness tests were conducted, with students given 15 minutes to complete the entire battery test. After the fitness test, the participants were divided into 4 groups to play the first traditional game, *Agawan Base*, which lasted for 30 minutes. The activity was supervised and facilitated by the researcher, with assistance from the MAPEH teacher.

On the second day of data collection, the remaining traditional games were introduced. Students were divided into three groups and assigned to play *Patintero, Luksong Baka, and Tumbang Preso* in rotation during the 1-hour MAPEH class. Each game was played alternately to allow all groups to experience every activity.

During the third session, conducted the following week, all four traditional games were played again, with each game allotted 15 minutes to complete the 1-hour duration. In the fourth final session, winners and non-winners from the previous rounds played against one another, adding a competitive yet inclusive element to the games. After completing all sessions.

After completing all traditional game interventions, a post-test was conducted using the same procedures as in the pre-assessment. An additional 20 minutes were allotted to complete their post-intervention. This allowed for the comparison of fitness levels before and after the intervention, especially measuring improvements in agility, power, speed, balance, coordination, and reaction time.

Following the post-assessment, the participants were given 15 minutes to answer follow-up questions aligned with the study's statement of the problem. These questions focused on the significance of their fitness improvements, gender differences in skill- related fitness gains, and the relationship between their frequency of participation and observed fitness improvements.

➢ *Data Analysis*

The research utilized a number of statistical techniques in the analysis of data collected to answer the questions posed. Descriptive statistics, such as frequency, mean, and standard deviations, provided summary descriptions of students' demographic profiles by age and sex. These interventions also determined the pre-participation Grade 7 baseline skill-related levels of fitness among students prior to

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exposure to Philippine traditional games and examined changes in components of fitness, including agility, speed, balance, power, coordination, and reaction time following participation. In order to check if improvement on skill-related fitness observed was statistically significant, the study employed a paired t-test through pre- and post-test score comparisons.

In addition, an independent samples t-test was used to determine if the impact of Philippine traditional games on skill-related fitness varies between male and female learners. To determine the correlation of frequency of participation and increased fitness, Pearson correlation analysis was used. All these statistical interventions give a comprehensive assessment of the role of Philippine traditional games in developing skill- related fitness among Grade 7 learners.

III. RESULTS AND DISCUSSION

The participants are 42 Grade 7 students ages 12 and 13 years old, respectively. Most are 12 years old, with a frequency of 36, or 85.71%, which aligns with the typical age for Grade 7 students in Philippine settings. According to the PSA's 2022 Annual Poverty Indicators Survey (APIS), junior high schools (Grades 7 to 10) recorded the highest enrollment among the population ages 5 to 24 years, with 25% enrolled in this educational level. This data suggests that students aged 12 to 13 are commonly enrolled in Grade 7, reflecting the standard age-grade alignment in the Philippines.

Table 2 Students' Profile in Terms of Gender

Gender	Frequency	Percentage (%)
Male	20	47.62
Female	22	52.38
Total	42	100.00

Table 2 shows the gender distribution of the participants of the study. There are 42 Grade 7 students, of which 20 or 47.62% are males and 22 or 52.38% are female, indicating a slightly higher number of female participants. The relatively balanced gender representation ensures a fair basis for comparing and analyzing skill-related fitness improvements between male and female students. This balance enhances the credibility of any gender-based findings or interpretations that emerge from the study.

Table 3 Baseline Skill-Related Fitness Levels of Grade 7 Students Before Engaging Philippine Traditional Games

Skill-Related components	Mean Score	Standard Deviation
Agility	1.71	0.59
Balance	1.81	0.63
Speed	1.71	0.70
Power	1.71	0.55
Coordination	1.50	0.55
Reaction Time	2.05	0.58

Table 3 shows the baseline measurement of the skill-related fitness among Grade 7 students prior to participating in Philippine traditional games. The mean scores indicate that physical proficiency levels tended to be relatively low at the beginning of the intervention.

Coordination had the lowest mean score (1.50), which means that most participants had difficulty with tasks involving smooth and precise control of body movements initially. Agility, speed, and power all had a mean of 1.71, again showing limited competence in quick changes of direction, fast movement, and forceful movements—essential in much conventional sport. Balance (1.81) and reaction time (2.05) were slightly higher but still showed the need for significant improvement.

Standard deviations were between 0.55 and 0.70, indicating that there was moderate variation in student performance. This range may reflect differences in physical development, prior experience with physical activity, or lifestyle habits like sedentary behavior and screen time. The fact that underperformance was fairly consistent across components indicates a generalized requirement for structured physical education programs that foster overall motor skill development.

Table 4 Skill-Related Fitness Levels of Grade 7 Students After Engaging Philippine Traditional Games

Skill-Related Component	Mean Score	Standard Deviation
Agility	2.67	0.47
Balance	2.62	0.53
Speed	2.67	0.52
Power	2.60	0.54
Coordination	2.57	0.54
Reaction Time	2.71	0.45

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Table 4 shows the results of skill-related fitness after the participants performed the Philippine traditional games. All six components of fitness, namely agility, balance, speed, power, coordination, and reaction time, experienced significant changes from the baseline figures in Table 3. Reaction time has the largest mean score of 2.71. This gain is indicative of the quick and reactive behavior of the classic games like *agawan base* and *patintero*, which effectively conditioned students to be quicker in responding to stimuli. Likewise, agility and speed, with post-test means of 2.67 (from 1.71), indicate enhanced movement efficiency and direction control—abilities probably learned through games that involved chasing, dodging, and quick direction changes.

Balance improved to a mean of 2.62 from a baseline measurement of 1.81. This improvement can be linked to the participation in games such as *tumbang preso and luksong baka*, which require postural control in activities of jumping and landing.

Coordination, with an improvement from 1.50 to 2.57, is the greatest enhancement of all components. This implies students significantly improved their body movement synchronization ability, which likely resulted from traditional games that involve complex, timed, and multi-limb movements.

Power also increased from 1.71 to 2.60, indicating improved explosive strength. This is as expected from the movement qualities in traditional games, which entail sprinting, accelerations, and dynamic physical contact—key to creating muscular endurance and anaerobic capacity.

The standard deviations (0.45-0.54) were smaller than in the baseline data, indicating a more consistent improvement among participants. Smaller variability implies that the intervention was effective and inclusive to various levels of fitness, and thus traditional games are an appropriate vehicle for diverse student populations.

These findings reinforce the practical significance of integrating Philippine traditional games into the physical education curriculum. In addition to being culturally appropriate and fun, these games are also effective, low-cost interventions for establishing multiple aspects of physical fitness in early adolescents. As affirmed by Muhaimin, Lubis, and Fachrezzy (2024), indigenous games increase skill-related fitness—agility, coordination, and reaction time—while also increasing student motivation. This consistency between cultural content and physical products gives teachers a strong argument for using traditional games as an evidence-based, developmentally sound method of physical education.

Table 5 Results of Paired T-Test After the Intervention

Statistic	**Before**	**After**
Mean	1.75	2.64
Variance	0.1263	0.0974
Observations	42	42
Pearson Correlations	-0.0030	-
Hypothesized Mean Difference	0	-
Df	41	-
t Stat	-12.23	-
p (one-tail)	1.44E-15	-
t Critical (one-tail)	1.68	-
p (two-tail)	2.89E-15	-
t Critical (two-tail)	2.02	-

The table above presents the results of a paired sample t-test conducted to evaluate the effect of skill-related fitness on Grade 7 students by comparing scores before and after its implementation. The mean score improved from 1.75 before to 2.64 after intervention, indicating a substantial increase in skill-related fitness levels.

With a *t* statistic of -12.33 and p-value of 2.89E-15 (two-tailed), which is significantly lower than the standard alpha level 0.05, the results are statistically significant. Thus, the null hypothesis is rejected, supporting the claim that the intervention has a significant positive impact.

This finding suggests that integrating Philippine traditional games into the physical education curriculum can effectively enhance key components of skill-related fitness, such as agility, balance, coordination, speed, power, and reaction time. These games often involve rapid movements, strategic decision-making, and full-body involvement, which naturally address several domains of fitness in an engaging and interactive manner.

Beyond physical benefits, the use of traditional games helps reinforce cultural identity, encourage social bonding, and foster motivations for participation. In a time when sedentary lifestyles are increasingly common among youth, reviving traditional games offers a culturally meaningful and sustainable approach to promoting physical well-being.

Table 6 Results of Paired T-Test Between Gender of the Participants

Statistic	**Male**	**Female**
Mean	2.70	2.58
Variance	0.075	0.110
Observations	20	22

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Pearson Correlations	0.000	-
Hypothesized Mean Difference	40	-
Df	1.25	-
t Stat	0.11	-
P (one-tail)	1.44E-15	-
t Critical (one-tail)	1.68	-
p (two-tail)	0.22	-
t Critical (two-tail)	2.02	-

Table 6 shows the findings of an independent samples t-test to compare the impacts of Philippine traditional games on the skill-related fitness of Grade 7 male and female students. The mean post-intervention score for males (2.70) was slightly higher than that of females (2.58), indicating a slight improvement edge for boys. However, this observed difference is not statistically significant, as shown by a calculated t-statistic of 1.25, which is less than the critical values for both the one-tailed (1.68) and two-tailed (2.02) tests. In addition, the p-values for both one-tailed (0.11) and two-tailed (0.22) tests are greater than the 0.05 significance level, resulting in the acceptance of the null hypothesis that there is no significant difference in fitness gains between the genders.

The value of variance—0.075 for males and 0.110 for females—represents quite comparable spread in performance scores, with the implication that both groups reacted equally to the intervention. The minor numerical benefit observed among males could be due to natural variation or individual differences and not a systemic consequence of gender. These findings are echoed by results of earlier research (e.g., Garcia et al., 2021; Smith & Brown, 2020) that similarly noted that male and female students equally benefit from well- organized and interactive physical activity programs when the activities themselves are culturally congruent and are equally accessible to all.

The findings indicate that both male and female students experienced comparable benefits from engaging in Philippine traditional games, with no significant gender-based differences in skill-related fitness outcomes. This supports the effectiveness and inclusiveness of traditional games as a physical education strategy that promotes equal physical development among students regardless of sex.

Table 7 Results of Pearson Correlation After a Week of Performing Philippine Traditional Games

Variable	**Participation in a week**	**Overall Performance**
Participation in a week	Pearson Correlation	1
	Sig. (2-tailed)	-
	N	42
	Pearson Correlation	0.339
Overall Performance	Sig. (2-tailed)	0.028
	N	42

Note. $P < 0.05$ (2-tailed) indicating a significant correlation.

Table 7 indicates a moderate positive relationship (r = 0.339) between the participation of students in Philippine traditional games on a weekly basis and their overall improvement in skill-related fitness. This is statistically significant (p = 0.028), suggesting that those students who participated more often in traditional games performed more improvements in agility, balance, coordination, speed, power, and reaction time. Although the correlation is moderate, it is at least meaningfully indicative of the contribution of frequency of participation in the development of motor fitness. This at least implies that while frequency is important, other variables—duration, play intensity, baseline fitness status, and motivation—can also explain improvements. Tomas et al. (2020) mention that motor skill development is not only affected by frequency but also by the quality and regularity of physical task participation.

Practically, these findings support the integration of traditional games into regular physical education programs, emphasizing consistent and repeated engagement in culturally rooted, physically challenging activities. Promoting a minimum of two to three sessions each week can prove to be an effective method for enhancing students' fitness levels.

Table 8 Results of Pearson Correlation of the Participants After Two Weeks of Performing Philippine Traditional Games

Variable	**Participation Twice a Week**	**Overall Improvement**
Participation twice a week	Pearson Correlation	1
	Sig. (2-tailed)	-
	N	42
Overall Improvement	Pearson Correlation	0.278*
	Sig. (2-tailed)	0.075
	N	42

Note. $p < 0.05$ (2-tailed), indicating a significant correlation.

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Table 8 presents the relationship between participating in Philippine traditional games twice a week and improvements in skill-related fitness among Grade 7 students. The Pearson. The Pearson correlation coefficient of 0.278 indicates a weak positive association, meaning that students who played twice a week showed slightly greater improvements in their fitness scores. However, the p-value of 0.075 exceeds the conventional of 0.05 significance level, indicating that this association is not statistically significant.

This result suggests that although an every-other-day frequency may offer some benefits, it is likely insufficient to produce consistent or significant improvements in skill-related fitness. This aligns with previous research (e.g., Johnson, 2020) which suggests that physical development is influenced not just by the frequency of participation, but also by factors such as training intensity, initial individual fitness level, and the duration of involvement.

The findings imply that playing traditional games three or more times a week, or incorporating them more systematically into formal PE classes, may result in greater and more stable gains in fitness. Future research could also explore the effects of sustained participation over longer durations, as well as how intensity of engagement and the quality of instruction combine with frequency to impact physical changes. Overall, while participating twice a week shows potential, the data do not strongly support its standalone effectiveness in enhancing fitness. This suggests the necessity for more intensive intervention strategies when developing culturally appropriate PE curricula through the use of traditional games.

IV. CONCLUSIONS

➢ *The Study Aimed to Assess the Impact of Philippine Traditional Games on the Skill- Related Fitness of Grade 7 Students Aged 12 to 13 Years. Based on the Findings, the Following Conclusions are Drawn:*

- Grade 7 students had low baseline skill-related fitness, especially in coordination, prior to the intervention.
- Philippine traditional games significantly improved all six components of skill- related fitness: agility, power, reaction time, speed, balance, and coordination among grade 7 students.
- The paired t-test confirmed a statistically significant improvement in overall fitness scores after the intervention (p-<0.05), leading to the rejection of the null hypothesis.
- No significant difference in fitness outcomes was found between male and female students, proving the gender inclusivity of the intervention.
- A moderate positive correlation (r=0.339) was observed between frequency of weekly participation and fitness improvement, indicating that more frequent play leads to better results.
- Playing only twice a week was not statistically significant (p=0.075), suggesting it is not enough to produce consistent fitness improvements.

RECOMMENDATIONS

➢ *On the Basis of the Findings and Conclusions of this Study, the Following Recommendations were Offered:*

- **Integration into Physical Education Curriculum.** Schools should integrate Philippine traditional games into their physical education curriculum to promote skill-related fitness development in a culturally meaningful and engaging way.
- **Promoting Regular Participation.** Teachers and school administrators should actively encourage students to engage in traditional games frequently, as increased participation is linked to greater fitness improvements.
- **Ensuring Gender-Inclusive Activities.** Given that both male and female students benefit equally from traditional games, schools should ensure equal opportunities for participation regardless of gender.
- **Further Research.** Future studies should explore the long-term effects of traditional games on fitness levels and include a larger sample size for broader applicability of findings.
- **Development of Training Module.** Educational institutions should consider creating structured training modules incorporating traditional games to systemically enhance agility, power, speed, balance, coordination, and reaction time.
- **Community and Parental Involvement.** Schools should collaborate with parents and local communities in promoting traditional Philippine games beyond the classroom. Supporting community-based activities and family involvement can strengthen skill- related development, preserve cultural heritage, and encourage an active lifestyle among students.

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