

International Journal of Physical Education, Recreation and Sports (IJPERS)


Influence of Teaching Resources on Teaching of Traditional Sports and Games in Physical Education in Public Primary Schools in Machakos County, Kenya


Kithuka Raphael Munyao, Prof. Simon P. Munayi and Dr. Michael Otieno



Influence of Teaching Resources on Teaching of Traditional Sports and Games in Physical Education in Public Primary Schools in Machakos County, Kenya

 ¹Kithuka Raphael Munyao
PhD Student, University of Nairobi

 ²Prof. Simon P. Munayi
Associate Professor, Department of Physical Education and Sport, University of Nairobi

 ³Dr. Michael Otieno
Senior Lecturer, Department of Physical Education and Sport, University of Nairobi

Article History

Received 9th March 2025

Received in Revised Form 16th April 2025

Accepted 20th May 2025



How to cite in APA format:

Munyao, K., Munayi, S., & Otieno, M. (2025). Influence of Teaching Resources on Teaching of Traditional Sports and Games in Physical Education in Public Primary Schools in Machakos County, Kenya. *International Journal of Physical Education, Recreation and Sports*, 3(2), 1–15. <https://doi.org/10.47604/ijpers.3343>

Abstract

Purpose: This study investigated the Influence of teaching resources on teaching of traditional sports and games in physical education in public primary schools in Machakos County, Kenya.

Methodology: A descriptive research design was employed, utilizing questionnaires from 322 teachers, and focus group discussions with 32 groups of learners. Stratified random sampling was used to select participants. Descriptive analysis was used, which included means, standard deviation, relative frequencies, and percentages. A computer software programme, Statistical Package for Social Scientists (SPSS) version 21.0, was used for analysis to generate data array that was used for subsequent analysis of the data. Qualitative data was analysed using thematic analysis. Inferential statistics using the Chi-square test was applied to examine the relationship between the research variables. The analyzed data was presented using tables.

Findings: Results showed that the association between sufficient equipment for teaching TSG in PE and teaching of traditional sports and games during PE lessons in primary public schools in Kenya is significant ($\chi^2 = 171.213$; $df = 1$; $p = 0.000 < 0.05$). The study concluded there is a significant relationship between the availability of teaching resources and effective instruction of TSGs. However, critical shortages in TSGs specific materials, reference books, equipment, and facilities were noted.

Unique Contribution to Theory, Practice and Policy: The study recommended that the Ministry of Education and school administrations to upgrade teaching resources so as to achieve the integration of traditional sports and games (TSGs) into physical education.

Keywords: *Sports, Analysis, Education, Resources, Traditional Sports, Cultural Heritage, Public*

JEL Codes: *L83, I18, I21*

©2025 by the Authors. This Article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0>)

INTRODUCTION

The teaching of Physical Education (PE) is anchored in the International Charter of Physical Education, Physical Activity and Sport (UNESCO, 2015). The charter declares that every human being has a fundamental right of access to physical education and sport, which are essential for the full development of his/her personality. Physical education, a part of the school system, offers the most comprehensive and best-structured type of physical activity for the largest number of children and youth (Gadžić, 2020). Physical education is a crucial teaching subject that significantly impacts children's growth and development, and is a vital part of the school curriculum (Dragutinovic & Mitrovic, 2020 and Madondo & Tsikira, 2021).

However, contemporary data indicates a perceived deterioration in the attitudes of students towards physical education due to the resources. According to UNESCO (2018), adequate resources are essential for teaching a wide range of physical activities that meet curriculum standards and enhance student engagement. Resources are needed to authentically represent traditional sports and games, which often require specific equipment, space, or instructional materials that may not be readily available in all schools (Saura & Zimmermann, 2021). Studies reveal that sufficient and culturally relevant resources increase student participation by making lessons more engaging and relevant (Ladson-Billings, 2023).

The availability and quality of teaching resources are critical for effectively teaching TSGs in physical education. The usage of a diversity of resources is necessary for the successful implementation of a curriculum because they help students learn and teachers teach using a wider range of instructional materials (KICD, 2021). In many public primary schools in Kenya, limited access to appropriate resources such as equipment, instructional materials, and space significantly hinder integration of TSGs into the curriculum (Cheruiyot, 2024). For example, TSGs require specific items or designated areas that are not readily available, leading teachers to default to more mainstream sports that require less specialized equipment. This scarcity of resources can limit both the variety of activities offered and the overall effectiveness of the physical education programme (Mugo, 2021).

In addition to physical resources, teaching materials such as textbooks, teacher's guides, and multimedia content can enhance teachers' ability to deliver TSGs effectively. When schools prioritize the acquisition of teaching resources specifically tailored to TSGs, they demonstrate a commitment to cultural education and holistic student development. Providing teachers with the appropriate resources allows them to create engaging lessons that promote active participation and appreciation of traditional games.

This study aimed to examine the influence of teaching resources on teaching of traditional sports and games in physical education in public primary schools in Machakos County. Machakos County was selected randomly for this study. It is one of the forty-seven Counties in Kenya where no research has been done on teaching traditional sports and games. Machakos County is a cosmopolitan County. This is due to the fact that the county borders Nairobi and many individuals who work in the city live in Machakos County, and as a result, their children attend schools there. Thus, the region is defined by having both rural and urban schools and by having teachers from many ethnic populations. Additionally, the factors under investigation cut across generally all public primary schools since these schools are run and supported by the government. The teachers

are trained using the same curriculum design in Machakos County just like in all the other primary schools in Kenya.

Problem Statement

Traditional sports and games (TSGs) are essential for maintaining cultural heritage, encouraging physical development, and boosting social interaction among students (UNESCO, 2018). Younger generations are gradually losing interest in these sports due to a rising concern that they are not being sufficiently incorporated into the Physical Education (PE) curriculum (Herrera Velásquez et al., 2018). This begs the question of whether an important factor like teaching resources affect how well traditional sports and games are taught. In Kenya, national education policies that support culturally appropriate learning experiences encourage the inclusion of traditional sports and games (TSGs) in the Physical Education (PE) curriculum. In order to embrace cultural diversity and improve inclusive education, the Physical Education and Sports Policy for Basic Education (2021) places a clear emphasis on the promotion of traditional sports and activities.

In order to promote a healthy lifestyle and lifelong learning, the policy lays forth goals include teaching students positive attitudes, values, and skills through physical education and sports, as well as encouraging traditional games and sports to celebrate cultural diversity. However, despite these legislative measures, traditional games and sports are still not taught very well in Public primary schools in Machakos County, Kenya. The proper integration of TSG into the curriculum is hampered by lack of teaching resources. Such a challenge highlights the necessity of focused initiatives to close the gap between traditional sports and games education policy and practice. Although some studies have looked at physical education problems in general, there is a lack of context-specific research that looks at how teaching resources affect TSGs instruction, especially in rural and semi-urban counties like Machakos.

Moreover, the data that is now available is frequently quantitative and provides statistical insights without adequately representing the lived realities, perspectives, and experiences that students, teachers, and school administrators confront. In order to give a thorough grasp of the problem, this study uses a mixed-methods approach. The goal of this integrated approach is to provide useful and culturally sensitive solutions for enhancing the sustainability and teaching of traditional sports games in public primary schools in Machakos County, Kenya.

Theoretical Framework

This study is anchored on two complementary theories: Social Learning Theory (Bandura, 1977) and Ecological Systems Theory (Bronfenbrenner, 1979). Together, these theories provide a comprehensive understanding of the Influence of teaching resources on teaching of traditional sports and games in physical education in public primary schools. Social Learning Theory, developed by Albert Bandura in 1977, posits that learning occurs within a social context through observation, imitation, and modeling. The availability of resources, both physical and instructional, is a critical factor influencing the teaching of traditional sports in schools. Social learning theory underscores the role of the environment in learning, and a lack of resources can limit the ability of teachers to model and teach traditional sports effectively. This framework

provides a useful lens for understanding how the teaching of traditional sports in Kenyan schools is shaped by teaching resources.

For example, in resource-constrained settings, teachers may find it difficult to access the materials required to teach traditional games such as *bao* or *adumu*. If students do not have the necessary tools to practice these games, they are less likely to learn and participate in them. The presence of adequate resources such as equipment, instructional guides, and physical spaces allows teachers to demonstrate traditional games more effectively and provides students with the opportunity to observe and practice them. As Bandura (1986) argued, observational learning occurs most effectively when the learner is exposed to a functional, resource-rich environment that encourages active engagement.

Ecological Systems Theory suggests that access to teaching resources, such as equipment and instructional materials for traditional sports, is influenced by broader environmental factors at the mesosystem and exosystem levels. For example, in Kenya, the availability of resources may depend on school funding, government policies, and community support. There is need to prioritize resources for schools in underserved areas and marginalized communities (KIPPRRA, 2024). The government with the support of various stakeholders should consider allocating adequate funding to support inclusive education initiatives and infrastructure development. Schools with stronger connections to local communities or external organizations may have greater access to resources, which can directly impact the quality of education provided (Bronfenbrenner, 1979). The availability of resources for traditional sports not only supports the practical teaching of these games but also reflects the broader cultural values of the community in maintaining these traditions within the educational system.

The exosystem, which includes the influence of local government and political leadership, also affects the promotion of TSG in schools. County governments in Kenya are responsible for funding co-curricular activities and maintaining sports infrastructure. However, priorities often lie in constructing standard sports fields or funding competitive events that yield political visibility. For instance, a county education office might sponsor football tournaments but allocate no budget for cultural festivals or traditional games competitions. Furthermore, political leaders might favor schools in their strongholds when distributing sports equipment, further widening inequalities. Schools that rely solely on public funding without active parent-teacher associations or alumni support often miss out on resources needed to promote TSG.

The mesosystem and microsystem levels reflect how families, local leaders, and community organizations contribute to the availability of traditional games in schools. In rural communities, elders can serve as cultural resource persons to teach games like “Ajua” or “Blada” (a jumping game popular in Kenyan communities). However, in urban settings—especially in overcrowded schools or informal settlements—space constraints and modernization trends reduce opportunities for children to learn and practice these games (Oshungbohun, 2024).

At the macrosystem level, government policy establishes the legal and institutional framework for incorporating traditional sports and games into the education system. In Kenya, while the national curriculum acknowledges the importance of Physical and Health Education (PHE), traditional games are often underemphasized due to a stronger focus on competitive, Western-style sports like soccer or athletics. For example, although the Ministry of Education may approve traditional

games in the syllabus, the lack of clear policy directives, assessment tools, or budget allocation for TSG materials results in inconsistent uptake across schools. This disconnect between policy intention and operational support undermines TSG integration.

In rural areas of Machakos County, Kenya, some public primary schools are situated on limited plots of land—a reflection of decisions made within the macrosystem, particularly historical land allocation policies that failed to prioritize space for co-curricular development. At the microsystem level, this spatial limitation directly impacts learners' day-to-day experiences. For example, in one school in Mwala Sub-County, students must share a small open space that serves simultaneously as an assembly area, football pitch, and dining ground, leaving minimal room for engaging in traditional games such as *blada* or *mama na baba*. This not only restricts opportunities for physical development but also hinders the transmission of cultural heritage through Traditional Sports and Games (TSGs). Addressing these challenges requires interventions at both the exosystem level—through improved land use planning and community infrastructure—and the mesosystem, where schools and local authorities must collaborate to integrate TSGs meaningfully. Ultimately, successful integration depends not only on teacher preparedness but also on systemic support across all ecological levels.

The support from school administration is a key factor in the ecological system that influences the teaching of traditional sports in schools. Administrators are responsible for creating policies and allocating resources that enable or hinder the inclusion of traditional sports in the curriculum. Bronfenbrenner's theory emphasizes that the school environment, shaped by administrators' decisions, plays a significant role in curriculum implementation (Bronfenbrenner, 1979). In Kenyan public primary schools, school administrators who value and actively support the integration of traditional sports create an environment where teachers are more likely to prioritize these activities. Administrative support can also influence the availability of time, funding, and resources for the successful delivery of these games.

Gaps

Contextual Gap: The study by Ajadi and Kayode (2022) examined the influence of teaching resources on physical education teachers' effectiveness in Kwara State, Nigeria, providing valuable insights into the general relationship between resources and teacher performance. However, their research focused broadly on physical education without addressing traditional sports and games specifically, which are crucial for cultural preservation and identity. Additionally, the study was conducted in Nigeria, leaving a contextual and geographical gap regarding the availability and impact of teaching resources in Kenyan primary schools, where cultural dynamics and resource allocation may differ significantly. It also did not explore how specific types of teaching resources, such as indigenous equipment and instructional guides for traditional sports, directly influence teaching outcomes. Thus, there is a need for a localized study in Kenya to determine how teaching resources impact the teaching of traditional sports and games in physical education, addressing both cultural relevance and resource adequacy.

Conceptual Gap: Several factors impede the teaching and learning of TSGs, according to a study by Sulistyanyingtyas et al. (2019) on the usage of traditional games in early childhood education. Despite the insights provided by the study on the challenges of using traditional games in early childhood education, there is a significant research gap regarding the specific influence of teaching

resources on traditional sports and games (TSG) in physical education in Kenya. Their study highlights general issues such as inadequate facilities and lack of resources, but it does not address how these limitations directly affect the implementation of TSG in PE curricula or how resource availability impacts teacher effectiveness and student outcomes. Furthermore, their focus on early childhood education overlooks the unique challenges faced in primary schools, where TSG serve as a tool for cultural preservation and physical development. This gap underscores the need for localized studies that explore the availability, adequacy, and utilization of teaching resources in fostering effective TSG instruction in Kenyan public primary schools.

Geographical Gap: Swanepoel, (2021) study investigated the current state and status of physical education in the intermediate schooling phase (Grade 4-6), in selected public schools from the Alberton region of Gauteng, South Africa. The results of the study showed difficulties in PE delivery and implementation. Swanepoel's (2021) study focused on the state and status of physical education in the intermediate schooling phase in South Africa, but it did not address the specific incorporation of traditional sports and games into the curriculum. While the study examined the general challenges of physical education, such as resource limitations and teacher preparedness in South Africa, it lacked a focus on culturally significant activities that preserve heritage, which is a key concern in Kenya. In contrast, a study in Kenya would need to consider how traditional sports and games align with the goals of cultural preservation and identity reinforcement in primary education. This creates a research gap in understanding the role of traditional sports within broader educational and cultural frameworks, particularly in diverse African contexts like Kenya.

METHODOLOGY

The research used a descriptive study design and adopted a multistage sampling technique, combining stratification and random sampling to ensure fair representation of both learners and teachers, thereby enhancing the validity, reliability, and generalizability of the findings. Public primary schools in Machakos County were first grouped according to sub-counties (e.g., Athi River, Mwala, Yatta). Simple random sampling was then applied within each sub-county's list of schools to ensure each school had an equal chance of being selected. Schools were then categorized based on enrollment size (e.g., small, medium, large). The final stratification considered socio-economic differences. Each stratum contributed a proportional number of schools, teachers, and learners, selected through random sampling within each category. For each selected school only teachers responsible for teaching Physical Education (PE) in Grades 4-6 were considered. The target population for this study included teachers and learners. Data from Machakos County Director of Education and the Teachers Service Commission (2024) showed that there are 862 public primary schools and 8110 primary school teachers in Machakos County. Data on resource availability was gathered from PE teachers in Grades 4-6 using a structured questionnaire. For learners, focus group discussions (FGDs) were organized with groups of eight students per class, stratified by grade and gender. Additionally, an observation checklist was employed to assess the physical environment, the availability of sports facilities, and the extent to which TSGs were integrated into PE lessons.

A pilot test of 40 respondents from eight sub-counties was conducted via questionnaire to assess its appropriateness and comprehension. The specialist in TSGs assessed data collection instruments to guarantee content validity, and as a result, the material met the goal clearly. Validity

test was conducted using KMO and Bartlett's Test of Sphericity measures. The drop-and-pick method was used specifically for collecting teacher questionnaires. Two research assistants were responsible for distributing and collecting the questionnaires. Both descriptive and inferential statistical techniques were employed to clean, code, and analyze the data collected. Data analysis for the study included quantitative and qualitative methods. The mean, standard deviations, and frequencies/percentages are all part of the descriptive analysis. The Chi-square test, a non-parametric statistical method, was employed to evaluate the associations between the independent variable (availability of teaching resources) and the dependent variable (teaching of traditional sports and games in physical education).

RESULTS

Validity of Research Instruments

The researcher conducted a pilot test of the questionnaire to assess its appropriateness and comprehension. A sample of 40 respondents was selected from eight sub-counties for this pilot study. This number represents approximately 10% of the total sample size of 367 respondents, aligning with Kumar and Kothari's (2014) recommendation for pilot testing. Validity test was conducted using KMO and Bartlett's Test of Sphericity measures. The method is employed to assess if research instrument accurately measures its intended target. Table 1 presents the study KMO and Bartlett's Test summary results. It shows that a KMO statistic on the availability of teaching resources of 0.833 was significant, which exceeds the test set's required threshold of significance of 0.5. The Bartlett's Test of Sphericity yielded significant results (Chi-Square=998.94 with 15 degrees of freedom, $p < 0.05$). This suggests that the sample data acquired on the availability of teaching resources is sufficient for drawing conclusions and producing findings based on the data analysis.

Table 1: KMO and Bartlett's Test Summary Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.833
Bartlett's Test of Sphericity	Approx. Chi-Square	998.094
Availability of teaching resources	Df	15
	Sig.	0.000

Reliability of Research Instruments

The data collected from the pilot study was analyzed for correlation within the items. Cronbach's alpha test was used to determine the internal consistency of the measuring instrument, as well as if various items within a scale measure the same construct and whether the data collected on each variable had significance for the dependent variable. The results in Table 2 above indicated that the research instrument was reliable since the measured variable indicated reliability values above 0.8.

Table 2: Questionnaire Reliability in the Analysis Results

Variable	Cronbach Alpha	Number of Items
Availability of teaching resources	0.814	14

Descriptive Statistics

A course book is an organized and thorough educational tool used to direct instruction in a particular subject or discipline. A course book in physical education frequently includes theoretical information, hands-on exercises, teaching techniques, and guidelines that teachers can utilize to teach a variety of subject areas, including mainstream sports and games. A course book for teachers, especially in the context of teaching traditional sports and games during PE lessons in Machakos County, Kenya, would serve as a key instructional resource.

The study was meant to establish presence of such critical books on TSGs. The study aimed to establish whether such essential TSG reference books exist in schools. Findings revealed that 256 teachers (79.5%) reported having no access to any course books or reference materials on TSGs. Only 56 teachers (17.4%) indicated having access to any instructional resources related to traditional sports. The small minority 17.4% who attempt to teach TSGs borrow the methodology from the mainstream sports like football after getting the games from the learners. The small minority (17.4%) also indicated that, they get information from the internet. From Table 3, results show that majority of teachers (256) 79.5% strongly disagreed that they can easily access course books and other reference material for teaching TSG (56) 17.4% disagreed; 6 (1.9%) neither agreed nor disagreed and only (4) 1.2% of teachers' respondents to questionnaire agreed. These findings indicate that course materials and additional reference resources for teaching TSG during physical education classes are not readily accessible by teachers in primary schools in Machakos county, Kenya. In the absence of a standardized course book, certain teachers may lack the requisite expertise or confidence to effectively teach TSG, leading to inconsistent educational experiences for students.

Table 3: Availability of Teaching Resources (Course Book for Teacher)

Statements on course book for teacher	Strong disagree	Disagree	Neutral	Agree	Strongly agree
Teachers can easily access course books and other reference material for teaching TSG	(256) 79.5%	(56) 17.4%	(6) 1.9%	(4) 1.2%	(0) 0%
There are adequate reference materials available for teaching TSG in PE	(206) 64.0%	(114) 35.4%	(2) 0.6%	(0) 0%	(0) 0%
TSG reference materials are well integrated with PE curriculum	(88) 27.3%	(176) 54.7%	(49) 15.2%	(9) 2.8%	(0) 0.0%
Reference materials for teaching TSG are up-to-date	(113) 35.1%	(125) 38.8%	(78) 24.2%	(6) 1.9%	(0) 0.0%

Facilities and Spaces

Results in Table 4 show, (171) 53.1% and (97) 30.1% teachers respectively strongly disagreed and disagreed that their school has adequate indoor facilities and play grounds for teaching TSG in PE, (24) 7.5% were neutral; (18) 5.6% strongly agreed and (12) 3.7% of the teachers agreed with the statement. These results prove that the majority of primary schools in Kenya lack sufficient indoor facilities and playgrounds for the instruction of TSG in physical education.

Table 4: Availability of Teaching Materials (Facilities Spaces)

Statements on facilities spaces	Strong disagree	Disagree	Neutral	Agree	Strongly agree
The school has adequate indoor facilities and play grounds for teaching TSG in PE	(171) 53.1%	(97) 30.1%	(24) 7.5%	(12) 3.7%	(18) 5.6%
Using necessary facilities enhances student engagement in TSG during PE	(0) 0.0%	(0) 0.0%	(10) 3.1%	(84) 26.1%	(228) 70.8%
The facilities availability enhances teacher confidence in teaching TSG	(0) 0.0%	(0) 0.0%	(40) 12.4%	(168) 52.2%	(114) 35.4%

Equipment

The tools, supplies, and resources that teachers and students utilize to support learning, hone skills, and participate in a variety of physical activities in PE are referred to as equipment. Table 5 presents results of teachers' level of agreement on statements regarding the availability of equipment for teaching materials. The results on statement whether school has adequate and relevant equipment for teaching TSG in PE, show that (150) 46.6% respondents disagreed, (113) 26.4% strongly disagreed; (33) 10.2% were neutral; (48) 14.9% agreed; and (6) 1.9% strongly agreed. These results indicates that most primary schools in Kenya do not have adequate and relevant equipment for teaching TSG in PE.

Table 5: Availability of Equipment for Teaching TSGs during PE

Statements on Equipment	Strong disagree	Disagree	Neutral	Agree	Strongly agree
The school has adequate and relevant equipment for teaching TSG in PE	(113) 26.4%	(150) 46.6%	(33) 10.2%	(48) 14.9%	(6) 1.9%
Basic and relevant equipment are crucial in teaching TSG in PE	(32) 9.9%	(18) 5.6%	(25) 7.8%	(198) 61.5%	(49) 15.2%
There is a need for more updated equipment for teaching TSG in PE	(0) 0.0%	(5) 1.6%	(35) 10.9%	(198) 61.5%	(84) 26.1%

Time Allocation

In the context of teaching TSGs, time allocation refers to the precise amount of time allotted for instruction, practice, and play of TSGs in the curriculum. The study findings revealed that (235) 73.0% of respondents strongly disagreed that, there specific time allocated for teaching TSGs in the school timetable; (85) 14.9% disagreed; and (2) 0.6% neither agreed nor disagreed with the statement (see Table 6). The findings suggest that no specific time is allocated for teaching TSG in PE, as evidenced by the majority of teachers who strongly objected to the statement that, there is specific time allocated to teaching TSGs.

Table 6: Availability of Teaching Materials (Time Allocation)

Statements on time allocation	Strong disagree	Disagree	Neutral	Agree	Strongly agree
There is specific time allocated for teaching TSGs in your school timetable	(235) 73.0%	(85) 26.4%	(2) 0.6%	(0) 0%	(0) 0%
There is a fair balance between classroom learning and the time provided for PE activities, including TSG	(210) 65.2%	(106) 33.0%	(4) 1.2%	(2) 0.6%	(0) 0%
TSGs are prioritized equally with other PE activities in the allocated time?	(94) 29.2%	(147) 45.7%	(76) 23.6%	(5) 1.6%	(0) 0.0%
Allocating enough time for teaching TSG improves learners learning outcomes	(3) 0.9%	(4) 1.2%	(84) 26.1%	(176) 54.7%	(55) 17.1%

Teachers were additionally requested to specify if their schools possessed adequate equipment and indoor facilities for delivering TSG in physical education classes. The results of the study data are presented in Table 7. The results show, majority 70.2% of teachers indicated that their schools do not have sufficient equipment and indoors facilities for teaching TSG in physical education classes while 29.8% agreed that they have sufficient equipment for indoor facilities and grounds for teaching TSGs. These study findings implied that majority of public primary schools in Machakos County, Kenya do not have adequate equipment and indoors facilities and grounds for teaching TSG in physical education classes as indicated by the majority 70.2% respondents.

Table 7: Equipment and Indoors Facilities and Grounds for Teaching TSG in PE Classes

Does the school possess sufficient equipment and indoor facilities for teaching TSG in physical education classes	Frequency	Percent
Yes	96	29.8
No	226	70.2
Total	322	100

Secondly, study sought teachers' opinion on whether their schools had enough gymnasiums and grounds to teach traditional sports and games during PE lessons. The study findings are as indicated in Table 8. According to the results of the survey, 31.4% of respondents believed that traditional sports and games were taught adequately during PE sessions in their schools, whereas the majority of teachers disagreed (68.6%). This study shows that the majority of public primary schools in Machakos County, Kenya do not dedicate adequate time teaching of traditional sports and games during PE lessons, as expressed by the majority (68.6%) of respondents.

Table 8: Indoors facilities and grounds to teach TSGs during PE lessons

Is the teaching of traditional sports and games during PE lessons given enough time?	Frequency	Percent
Yes	101	31.4
No	221	68.6
Total	322	100

Thirdly, the respondents were asked to indicate whether they agree that public primary schools in Machakos County, Kenya have enough instructional materials for teaching traditional sports and games in PE. Table 9 present data analysis results. The results highlights a significant gap in the availability of instructional materials for teaching traditional sports and games (TSGs) in PE lessons. Only 6.5% of teachers reported having sufficient instructional materials, while 93.5% indicated their schools lacked these resources.

Table 9: Instructional Materials for Teaching TSGs in PE Lessons

Do you have instructional materials for teaching traditional sports and games?	Frequency	Percent
Yes	21	6.5
No	301	93.5
Total	322	100

Chi-Square Test

A chi-square test was done to determine whether there was a significant relationship between the availability of teaching resources and the teaching of traditional sports and games in PE lessons in public primary schools in Machakos County, Kenya. The chi-square test results are shown in Table 10. The results show that the association between sufficient equipment for teaching TSG in PE and teaching of traditional sports and games during PE lessons in primary public schools in Kenya is significant ($\chi^2 = 171.213$; $df = 1$; $p = 0.000 < 0.05$). This study also identified that enough indoor facilities and play grounds to teach traditional sports and games has a significant relationship with

teaching of traditional sports and games during PE lessons in primary public schools in Machakos County, Kenya ($\chi^2 = 184.205$; $df = 1$; $p = 0.000 < 0.05$). Study results also acknowledged that there is a significant relationship between schools having enough instructional materials for TSGs and the teaching of traditional sports and games during PE lessons in public primary schools in Machakos County, Kenya ($\chi^2 = 139.976$, $df = 1$; $p = 0.000 < 0.05$). From these results it can be concluded that availability teaching resources has a significant relationship with teaching of traditional sports and games in PE lessons in public primary schools in Machakos County, Kenya.

Table 10: Chi-square Test between Teaching Resources and Teaching of TSGs in PE Lessons

Statements	Response	Have you ever taught traditional sports and games during physical education lesson		Df	Chi-Square (χ^2)	P-value (Sig at 0.05)
		Yes	No			
Does the school have sufficient equipment and indoors facilities for teaching TSG in physical education classes?	Yes	81 (25.2%)	15 (4.7%)	1	171.213	0.000
	No	62 (19.3%)	164 (50.9%)			
Total		143 (44.4%)	179 (55.6%)			
Is the teaching of traditional sports and games during PE lessons given enough time?	Yes	101 (31.4%)	0 (0.0%)	1	184.205	0.000
	No	42 (13.0%)	179 (55.6%)			
Total		143 (44.4%)	179 (55.6%)			
Do you have instructional materials for teaching traditional sports and games?	Yes	21 (6.5%)	0 (0.0%)	1	139.976	0.000
	No	122 (37.9%)	179 (55.6%)			
Total		143 (44.4%)	179 (55.6%)			

CONCLUSION AND RECOMMENDATIONS

Conclusion

Based on the findings, the study concluded that teaching resources have a significant influence on teaching of traditional sports and games in physical education in public primary schools in Machakos County, Kenya. Study descriptive findings revealed that course materials and additional reference resources for teaching TSG during physical education classes are not readily accessible by teachers. The study also showed that most primary schools in Machakos County, Kenya lack course books and other reference material for teaching TSG during PE classes. The study's findings highlighted the urgent need for Kenya to digitally reclaim and safeguard its traditional Sports and games.

Recommendations

The study found that the majority of schools lacked instructional materials, equipment, and designated spaces for TSGs. The study recommended the development of a comprehensive TSGs course book for teaching TSGs that would provide clear guidance on rules, cultural context, strategies, and lesson structures. It also recommended that schools should prioritize creating or modifying outdoor and indoor spaces to accommodate diverse TSGs. Since many traditional games require open, flexible spaces rather than specialized facilities, schools can repurpose existing areas to better support group-based and field games. The study further recommended provision of a standardized kit including balls, sticks, mats, and game-specific items. This would ensure teachers have the essential tools needed for effective TSGs delivery. Finally, the study recommended that the Ministry of Education should mandate a clear, protected time slot for TSGs within the PE timetable. This would ensure that teachers have enough time to cover both gameplay and the cultural significance of traditional sports. Additionally, the development of robust monitoring and evaluation (M&E) frameworks was recommended to track implementation progress, assess the quality of TSGs integration, and inform future policy and resource adjustments. Such frameworks would help ensure accountability, sustainability, and continuous improvement in the delivery of traditional sports and games in schools.

REFERENCES

- Ajadi, M. T., & Kayode, F. E. (2022). Influence of teaching resources on physical education teachers effectiveness in Kwara State, Nigeria. *International Journal of Educational Innovation and Research*, 1(1), 11-18.
- Cheruiyot, B. (2024). Evaluating teaching practice in Kenya: Successes and failures. *East African Journal of Education Studies*, 7(4), 735-741.
- Ladson-Billings, G. (2023). "Yes, but how do we do it?": Practicing culturally relevant pedagogy. In *White teachers/diverse classrooms* (pp. 33-46). Routledge.
- Kenya institute of Curriculum Development (2021). Basic Education Curriculum Framework, Nairobi, Kenya.
- Saura, S. C., & Zimmermann, A. C. (2021). Traditional sports and games: intercultural dialog, sustainability, and empowerment. *Frontiers in psychology*, 11, 590301.
- Bandura, A. (1977). Social Learning Theory. *Prentice-Hall*.
- Bandura, A. (1986). Social Foundations of Thought and Action: A Social Cognitive Theory. *Prentice-Hall*.
- Oshungbohun, A. I. (2024). Utilizing play spaces for heritage preservation in preschools. *Journal of African Innovation and Advanced Studies*, 5(2), 45-60.
- Bronfenbrenner, U. (1979). *Ecological systems theory*. American Psychological Association.
- Dragutinovic, K., & Mitrovic, M. (2020). Attitudes of Teachers towards Physical Education Teaching in Elementary School. *Journal of Anthropology of Sport and Physical Education*, 4(2), 29-33.
- Ferry, M., & McCaughy, N. (2013). Secondary physical educators and sport content: A love affair. *Journal of Teaching in Physical Education*, 32(4), 375-393.
- Gadžić, A. J. (2020). Effects of the Calisthenic Exercise Program in the Physical Education Teaching on the Elementary School Pupils' Motor Abilities. *Inovacije u nastavi-časopis za savremenu nastavu*, 33(4), 91-106.
- Hardman, K., & Marshall, J. J. (2009). *World-wide Survey of School Physical Education*. UNESCO.
- Herrera Velásquez, W. A., & Rey Calderón, A. Z. (2018). Implementación de biofiltro como agente depurador de aguas residuales del conjunto Aranjuez II, en el municipio de Villavicencio Meta.
- Kennedy, S. G., Smith, J. J., Hansen, V., Lindhout, M. I., Morgan, P. J., & Lubans, D. R. (2018). Implementing resistance training in secondary schools: an exploration of teachers' perceptions. *Translational Journal of the American College of Sports Medicine*, 3(12), 85-96.
- Kumar, C. S., & Kothari, H. (2018). Pilot test for reliability and validity of the study on exploring factors of training effectiveness for it competency among the employees of public sector banks. *Splint International Journal of Professionals*, 5(3), 33-44.

- Munayi, S. P. (2015). *Evaluation of primary school physical education teaching and learning process for learners with intellectual disability in Kenya (Doctoral dissertation)*.
- Shava, G. N. (2017). Integrating leadership models to enhance the performance of learners in South African schools. *Journal of Educational Studies*, 16(2), 183-203.
- Society of Health and Physical Educators (SHAPE). (2015). *The essential components of physical education*. SHAPE America.
- Sulistyaningtyas, R. E., & Fauziah, P. Y. (2019, June). The implementation of traditional games for early childhood education. In *3rd international conference on current issues in education (ICCIE 2018)* (pp. 431-435). Atlantis Press.
- Swanepoel, C. (2021). The state and status of physical education in the intermediate schooling phase: A South African perspective. *South African Journal of Childhood Education*, 11(1), 1-9.
- UNESCO (2018). UNESCO digitalizes traditional African games to preserve and expose traditional culture. 2018. UNESCO Office in Nairobi.
- UNESCO. (2015). *Traditional Sports and Games: An integral part of the world's intangible heritage*. Paris: UNESCO
- Williams, J. (2017). Embedding Indigenous content in Australian physical education-perceived obstacles by health and physical education teachers. *Mystery Train*.