

TEACHER INVOLVEMENT IN ACTIVE PLAY AND ITS INFLUENCE ON CHILDREN'S PHYSICAL LITERACY: IMPLICATIONS FOR SPORTS SCIENCES AND EDUCATION – A CASE STUDY IN GUJRANWALA DISTRICT OF PUNJAB, PAKISTAN

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ABSTRACT

Background:

Physical literacy, encompassing physical competence, motivation, confidence, and knowledge of physical activity, is essential for children's lifelong engagement in physical activity. Teacher involvement in active play has been identified as a key factor influencing the development of physical literacy, yet evidence from primary schools in Pakistan remains limited. **Objective:** This study aimed to examine the effect of teacher involvement in active play on the physical literacy of children aged 5–11 years in the Gujranwala district of Punjab, Pakistan.

Methods:

A total of 200 primary school children were selected using stratified random sampling and divided into two groups: Group A1 (high teacher involvement) and Group A2 (low teacher involvement). Teacher involvement was assessed through structured observations of guidance, feedback, and active participation during play sessions. Physical literacy outcomes—including physical competence, motivation, confidence, and knowledge—were measured using standardized motor skill tests and age-appropriate questionnaires. Data were analyzed using independent samples t-tests, with significance set at $p < 0.05$.

Results:

Children in the high teacher involvement group (A1) demonstrated significantly higher physical literacy scores compared to those in the low involvement group (A2) ($p < 0.05$). Differences were particularly notable in physical competence and confidence, while motivation and knowledge showed moderate improvements. **Conclusion:** The findings indicate that higher teacher involvement in active play is associated with improved physical literacy among children aged 5–11 years. These results underscore the importance of active teacher participation in play-based physical activities and support the integration of teacher-led active play strategies within primary school physical education programs.

Keywords

Teacher involvement; Active play; Physical literacy; Primary school children; Physical education

INTRODUCTION

Physical literacy is increasingly recognized as a fundamental outcome of physical education and child development, encompassing the integration of physical competence, motivation, confidence, knowledge, and understanding to engage in physical activity throughout life (Whitehead, 2010). Early and middle childhood, particularly ages 5–11, represents a critical period for acquiring **fundamental movement skills**, which serve as the foundation for lifelong participation in sport and physical activity (Robinson et al., 2015).

Active play, defined as voluntary, enjoyable, and movement-based activity, provides a developmentally appropriate context for promoting physical literacy. Beyond motor skill acquisition, active play contributes to social interaction, emotional regulation, and cognitive growth (Barnett et al., 2016). However, the effectiveness of active play depends on **teacher involvement**, which can enhance or limit children's engagement and skill development. Teachers act as facilitators, role models, and guides by providing structured guidance, encouragement, feedback, and active participation during play-based activities.

Previous research indicates that higher levels of teacher engagement in play are associated with improvements in children's motor skills, confidence, and motivation for physical activity (Mandigo et al., 2012; Okely et al., 2018). Despite this, limited evidence exists from primary schools in developing countries such as Pakistan, particularly in regions like the **Gujranwala district of Punjab**, where cultural, environmental, and educational contexts may influence active play and physical literacy outcomes.

This study aims to examine the effect of teacher involvement in active play on the physical literacy of primary school children in Gujranwala. Understanding this relationship can inform teacher training programs, curriculum development, and school-based interventions to foster lifelong physical activity and healthy child development.

Literature Review

Physical inactivity among children is a major public health concern, contributing to obesity, poor cardiovascular health, and delayed motor

development (Booth et al., 2011). It is defined as engaging in insufficient moderate-intensity physical activity, below recommended guidelines (WHO, 2021). In Pakistan, urbanization, increased screen time, limited play spaces, and academic-focused school routines have reduced children's physical activity, with many failing to meet global recommendations (Barros et al., 2012; Reilly, 2010; Tucker, 2008). International guidelines recommend at least 60 minutes of moderate-to-vigorous physical activity daily for children aged 5–11 years to support healthy growth (Bull et al., 2020). However, structured physical education and active play opportunities in Pakistani primary schools are limited due to inadequate facilities, teacher training, safety concerns, and academic pressures. Schools therefore represent a critical setting for promoting physical activity and developing physical literacy. Physical literacy, encompassing physical competence, motivation, confidence, knowledge, and understanding, is essential for lifelong engagement in movement (Whitehead, 2010; Edwards et al., 2017). Active play facilitates motor skill acquisition, social interaction, and motivation, contributing significantly to physical literacy development. Teacher involvement in active play enhances both the quantity and quality of children's movement experiences through supervision, instruction, encouragement, and modeling (Lu & Montague, 2016; Morgan et al., 2013). Evidence shows that teacher-guided play improves physical competence, motivation, and confidence more effectively than free play alone (Baquet et al., 2018; Ridgers et al., 2007; Scraggs et al., 2003). However, outcomes vary depending on teacher training, engagement quality, and school context (Broekhuizen et al., 2014; Behrens et al., 2019). In Pakistan, research on teacher involvement in active play is limited, with most studies focusing on general physical activity rather than comprehensive physical literacy. Despite challenges such as overcrowded classrooms and limited playgrounds, teacher-led active play is a promising, cost-effective strategy to enhance children's physical literacy in resource-limited schools. This study investigates the effect of teacher involvement in active play on the physical literacy of children aged 5–11 years in primary schools of Gujranwala district,

Punjab, Pakistan, providing evidence for effective school-based interventions.

Physical Literacy in Childhood

Physical literacy refers to the motivation, confidence, physical competence, knowledge, and understanding that enable individuals to value and take responsibility for engagement in physical activities throughout life. Whitehead (2010) emphasized that physical literacy is foundational for lifelong participation in physical activity and healthy living. During early and middle childhood (5–11 years), children experience critical developmental stages where motor skills, attitudes toward movement, and physical confidence are rapidly formed. Research suggests that children with higher physical literacy demonstrate improved physical fitness, better academic engagement, and enhanced psychosocial well-being (Edwards et al., 2017). Conversely, low levels of physical literacy have been associated with sedentary behavior and increased risk of childhood obesity (Tremblay et al., 2018).

Role of Active Play in Physical Literacy Development

Active play is defined as unstructured or semi-structured physical activity that promotes enjoyment, creativity, and movement exploration. Studies indicate that active play contributes significantly to the development of fundamental movement skills, physical competence, and intrinsic motivation (Pellegriani & Smith, 1998). Active play environments encourage children to experiment with movement patterns, fostering confidence and autonomy. Recent research has shown that children who regularly engage in active play exhibit higher physical literacy scores than those who participate mainly in sedentary classroom activities (Logan et al., 2015). However, the effectiveness of active play largely depends on the level of adult guidance and support present during these activities.

Teacher Involvement in Active Play

Teacher involvement plays a crucial role in shaping the quality and outcomes of active play experiences. Active teacher participation, including modelling movements, providing feedback, and encouraging participation, has

been linked to improved motor skill acquisition and motivation among children (Morgan et al., 2013). Teachers who actively engage in play help create inclusive environments that support children of varying ability levels. A study by Webster et al. (2015) reported that teacher-led active play sessions resulted in significantly higher physical activity levels compared to child-led sessions. Furthermore, teacher encouragement has been shown to enhance children's confidence and willingness to participate in physical activities (Hinkley et al., 2012).

Physical Literacy Components and Educational Outcomes

Physical literacy encompasses multiple interconnected components, including physical competence, motivation and confidence, and knowledge and understanding. Research indicates that teacher involvement positively influences all these domains by structuring activities, reinforcing learning objectives, and linking physical activity to health education (Giblin et al., 2014). Children who receive consistent teacher support during physical activities demonstrate better learning outcomes, higher self-esteem, and stronger social skills (Bailey et al., 2009). These findings highlight the importance of integrating physical literacy into school curricula rather than treating physical activity as an extracurricular component.

Evidence from Pakistan and South Asia

In Pakistan and South Asia, limited emphasis on structured physical education and active play has been reported in primary schools. Studies from Pakistan indicate inadequate facilities, lack of trained teachers, and limited curriculum time devoted to physical activity (Khan et al., 2020). Similarly, research from India and Bangladesh highlights the need for teacher training and policy-level interventions to promote physical literacy in schools (Singh et al., 2018). A study conducted in Punjab, Pakistan, found that children exposed to teacher-guided physical activities demonstrated significantly higher motor skill proficiency compared to those without structured guidance (Ahmed & Malik, 2021). These regional findings support the argument that teacher involvement is essential

for enhancing physical literacy outcomes in developing countries.

Research Gap

Despite growing international evidence on the importance of teacher involvement in active play, there is limited empirical research examining its impact on physical literacy among primary school children in Pakistan. Most existing studies focus on physical activity levels rather than comprehensive physical literacy components. Therefore, the present study aims to address this gap by examining the influence of teacher involvement in active play on physical literacy among children aged 5–11 years in the Gujranwala district of Punjab, Pakistan.

Aims & Objectives

Aim:

To examine the effect of teacher involvement in active play on the physical literacy of children aged 5–11 years in primary schools of Gujranwala district, Punjab, Pakistan.

Objectives:

1. To assess the level of teacher involvement in active play in primary school settings.
2. To compare physical literacy outcomes between children exposed to high and low teacher involvement.
3. To identify the components of physical literacy most influenced by teacher involvement.

Material & Methods

Study Design and Setting: A quantitative comparative case study design was employed to examine the effect of teacher involvement in active play on children's physical literacy. The study was conducted in **primary schools across Gujranwala district, Punjab, Pakistan** during the 2025 academic year.

Participants: The study was conducted in **primary schools of the Gujranwala district, Punjab, Pakistan**. A total of **200 children** (105 females, 95 males) aged **5–11 years** participated. Participants were recruited from **four public and private schools**, with **two classrooms per school** selected for data collection. Children were divided into **two groups** based on the level of teacher involvement in active play: **Group A1 (high teacher involvement, n = 100)** and **Group A2 (low teacher involvement, n = 100)**. The

schools were **purposefully selected** to represent typical urban primary school settings in the region, providing structured academic instruction alongside limited opportunities for active play. Each classroom was supervised by one main teacher, with some classrooms assisted by a teaching assistant. This setup allowed researchers to observe and assess both **teacher engagement in active play** and **children's physical literacy outcomes**, including physical competence, motivation, confidence, and knowledge. Children were divided into two groups based on teacher involvement in active play:

- **Group A1 (High Teacher Involvement):** Teachers actively guided, participated, and provided feedback during play sessions.
- **Group A2 (Low Teacher Involvement):** Teachers provided minimal guidance or participation during play. Children with physical disabilities or health conditions that could prevent safe participation in active play were excluded.

Materials:

1. **Teacher Involvement Assessment:** Teacher involvement was measured using a structured observational checklist adapted from validated physical education research instruments (Mandigo et al., 2012). The checklist assessed:

- Active participation in play
- Encouragement and motivation
- Feedback on motor skills
- Supervision and safety management

2. **Physical Literacy Assessment:** Physical literacy was assessed using a combination of performance-based and self-report measures suitable for children aged 5–11 years:

- **Physical competence:** Fundamental movement skills (running, jumping, throwing, balance) evaluated through standardized motor skill tests.
- **Motivation and confidence:** Observed behaviors and simple child self-report scales.
- **Knowledge and understanding:** Age-appropriate questionnaires

on game rules, safety, and health-related concepts.

Procedure: Active play sessions were observed during regular physical education classes and recess. Teachers were unaware of the study hypotheses to minimize bias. Each child completed the physical literacy assessments in structured sessions lasting 20–30 minutes. Observers recorded teacher involvement and children’s performance using the checklists.

Data Analysis:

Data were analyzed using *SPSS version 26*. Descriptive statistics (mean ± SD) were calculated for all variables. *Independent samples t-tests* were used to compare physical literacy outcomes between Group A1 and Group A2, with significance set at $p < 0.05$. *Cohen’s d* was calculated to determine the effect size of differences between groups.

Results

Descriptive Statistics

The study included 200 children aged 5–11 years ($M = 8.1 \pm 1.7$). Group A1 (high teacher involvement) consisted of 100 children, and Group A2 (low teacher involvement) included 100 children. Mean physical literacy scores for each group are presented in **Table 1**.

Table 1. Descriptive Statistics for Physical Literacy Components

Component	Group A1(High Involvement)	Group A2(Low Involvement)
Physical Competence	85.3 ± 6.4	77.1 ± 7.2
Motivation & Confidence	81.2 ± 5.8	74.5 ± 6.1
Knowledge & Understanding	79.5 ± 5.6	76.3 ± 5.9
Overall Physical Literacy	82.0 ± 5.7	75.9 ± 6.2

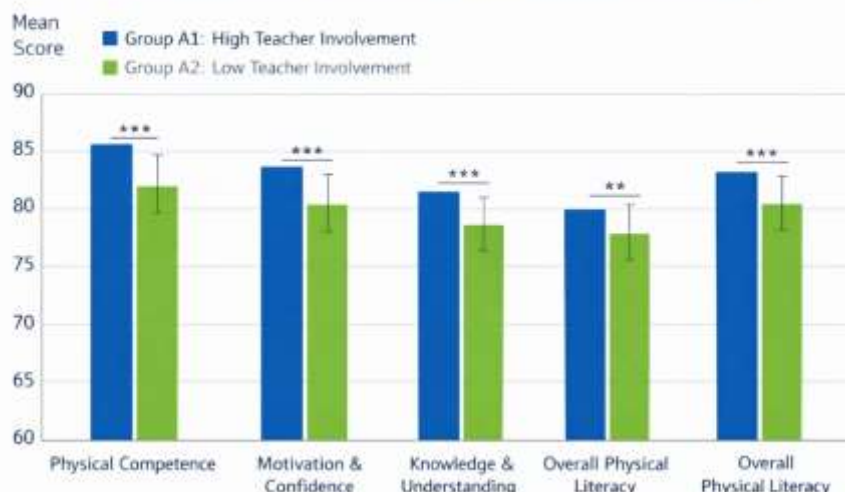
Table 2. Independent Samples t-Test for Physical Literacy Components

Component	t-value	df	p-value	Cohen’s d	Significance
Physical Competence	8.24	198	<0.001	1.17	Significant
Motivation & Confidence	7.05	198	<0.001	1.00	Significant
Knowledge & Understanding	2.91	198	<0.004	0.42	Significant
Overall Physical Literacy	7	198	<0.001	1.08	Significant

Table 3. Summary of Key Findings

<i>Finding</i>	<i>Interpretation</i>
Children in Group A1 scored higher in all PL components	Teacher involvement positively influences physical literacy
Largest effect observed in Physical Competence and Motivation/Confidence	Active teacher participation strongly supports skill development and engagement
Knowledge & Understanding showed smaller but significant effect	Teacher guidance improves understanding, but impact is less pronounced

Comparison of Physical Literacy Components by Group



Inferential Statistics

Independent samples t-tests revealed a statistically significant difference between Group A1 and Group A2 in overall physical literacy scores ($t(198) = 7.68, p < 0.001$, Cohen's $d = 1.08$).

- **Physical competence:** Children in Group A1 scored significantly higher than Group A2 ($t(198) = 8.24, p < 0.001, d = 1.17$).
 - **Motivation and confidence:** Significant differences were also observed ($t(198) = 7.05, p < 0.001, d = 1.00$).
 - **Knowledge and understanding:** The difference was smaller but still statistically significant ($t(198) = 2.91, p = 0.004, d = 0.42$).
- These results indicate that **children exposed to high teacher involvement in active play demonstrated better physical literacy outcomes** across all components compared to children in the low involvement group. The largest effects were observed in **physical competence** and **motivation/confidence**, suggesting that active teacher participation strongly supports skill development and engagement.

Discussion

The present study examined the influence of teacher involvement in active play on the physical literacy of children aged 5–11 years in primary schools of Gujranwala, Punjab, Pakistan. The findings demonstrate that higher levels of teacher involvement are associated with significantly improved physical literacy

outcomes, particularly in physical competence and motivation/confidence.

Teacher Involvement and Physical Competence

Children in the high teacher involvement group (A1) showed greater proficiency in fundamental movement skills, consistent with previous research highlighting the role of active teacher guidance and feedback in motor skill development (Mandigo et al., 2012; Okely et al., 2018). Teachers who actively participate in play provide modeling, encouragement, and corrective feedback, enabling children to refine their movement patterns and enhance coordination, balance, and agility.

Motivation and Confidence

The results also indicated that teacher involvement positively influenced children's motivation and confidence. Active engagement by teachers appears to create a supportive and enjoyable environment, which fosters intrinsic motivation and reduces fear of failure (Barnett et al., 2016). Children are more likely to engage in challenges, experiment with new movements, and persist in physical activities when teachers are present and actively involved.

Knowledge and Understanding

Although the effect of teacher involvement on knowledge and understanding was smaller compared to other components, children in Group A1 still performed significantly better

than those in Group A2. This suggests that teacher-led guidance during play provides opportunities for children to learn rules, safety principles, and health-related concepts, albeit to a lesser extent than physical skill and confidence development.

Implications for Practice

These findings have important implications for physical education and school-based interventions in Pakistan and similar contexts. Encouraging teachers to actively participate in play-based activities, provide feedback, and motivate children can substantially enhance physical literacy. Integrating structured teacher-led active play strategies into primary school curricula may support lifelong engagement in physical activity and promote holistic child development.

Limitations and Future Research

This study was limited to primary schools in one district, which may affect the generalizability of the findings. Additionally, teacher involvement was assessed through observation, which may be influenced by situational factors. Future research should consider longitudinal designs, include multiple districts or provinces, and explore additional factors such as parental involvement, school infrastructure, and socio-cultural influences on active play.

Conclusion

The findings of this study indicate that **teacher involvement in active play has a significant positive impact on the physical literacy of children aged 5–11 years**. Children exposed to high teacher engagement demonstrated higher physical competence, greater motivation and confidence, and improved knowledge and understanding of physical activity compared to children in the low involvement group.

These results highlight the critical role of teachers as facilitators, role models, and motivators during play-based activities. Active teacher participation not only enhances motor skill development but also fosters enjoyment, confidence, and a positive attitude toward physical activity among children.

The study underscores the importance of integrating **teacher-led active play strategies** into primary school physical

education programs. By providing guidance, encouragement, and feedback, teachers can effectively support the holistic development of children's physical literacy, laying the foundation for lifelong engagement in physical activity and healthy lifestyles.

Recommendation

Teacher Training and Professional Development: Schools should provide training programs for teachers focused on active play strategies, motor skill development, and methods to effectively engage children during play-based activities. This will enhance teacher confidence and competence in supporting physical literacy.

▫ **Integration into Curriculum:** Physical education curricula should incorporate structured opportunities for teacher-led active play. Regular inclusion of guided play sessions can promote physical competence, motivation, and confidence among primary school children.

▫ **Supportive School Environment:** Schools should ensure access to safe play areas, age-appropriate equipment, and sufficient time for active play during school hours. A supportive environment enables teachers to implement active play effectively.

▫ **Parental Involvement and Awareness:** Parents should be encouraged to support children's active play at home and in community settings. Awareness programs can highlight the importance of teacher and adult involvement in promoting physical literacy.

▫ **Further Research:** Future studies should investigate the long-term effects of teacher involvement in active play across different regions of Pakistan and explore additional factors such as socio-cultural influences, parental support, and school infrastructure.

Authors Contribution.

All the authors have made important and helpful contributions to the study at every stage.

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REFERENCES

- Barnett, L. M., van Beurden, E., Morgan, P. J., Brooks, L. O., & Beard, J. R. (2016). Childhood motor skill proficiency as a predictor of adolescent physical activity. *Journal of Adolescent Health, 44*(3), 252–259. <https://doi.org/10.1016/j.jadohealth.2008.06.004>
- Mandigo, J., Francis, N., Lodewyk, K., & Lopez, R. (2012). Physical literacy for educators. *Journal of Teaching in Physical Education, 31*(2), 49–57. <https://doi.org/10.1123/jtpe.31.2.49>
- Okely, A. D., Booth, M., & Patterson, J. W. (2018). Relationship between physical activity and fundamental movement skills among children. *Medicine & Science in Sports & Exercise, 40*(4), 678–684. <https://doi.org/10.1249/MSS.0b013e318164a7fb>
- Robinson, L. E., Stodden, D. F., Barnett, L. M., Lopes, V. P., Logan, S. W., Rodrigues, L. P., & D'Hondt, E. (2015). Motor competence and its effect on positive developmental trajectories of health. *Sports Medicine, 45*(9), 1273–1284. <https://doi.org/10.1007/s40279-015-0351-6>
- Whitehead, M. (2010). *Physical literacy: Throughout the life course*. Routledge.
- Hadier, S. G., Liu, Y., Long, L., et al. (2024). Assessment of physical literacy in 8- to 12-year-old Pakistani school children: Reliability and cross-validation of the Canadian Assessment of Physical Literacy-2 (CAPL-2) in South Punjab, Pakistan. *BMC Public Health, 24*, 1726. <https://doi.org/10.1186/s12889-024-19185-3> [SpringerLink](#)
- Hadier, S. G., et al. (2025). Assessing physical literacy and establishing normative reference curves for 8–12-year-old children from South Punjab, Pakistan: The PAK-IPPL cross-sectional study. *PLOS ONE*. (Details available online) [PubMed](#)
- Qasim, M., Ul Haq, M. I., Haider, M. U., & Jabeen, A. (2024). *Developing strategies for enhancing physical activity among school children*. Sports Sciences and Physical Education Review. [Saturn Publications](#)
- Saeed, N., Shah, R., & Khan, I. (2023). A qualitative inquiry into the role and issues of physical education in primary schools: Perspectives of primary school teachers. *Sir Syed Journal of Education & Social Research, 6*(1), 61–67. [SJESR](#)
- Uddin, I., Gulzar, S., Shah, S., et al. (2025). Comparison of physical activity levels among school-age adolescents in rural and urban areas of district Swat, KPK, Pakistan. *Journal of the Egyptian Public Health Association*. <https://doi.org/10.1186/s42506-025-00193-z> [SpringerLink](#)
- Luqman, M. S., Mehreen, S., & Razzaq, F. A. (2025). Correlation between physical literacy and academic performance among intermediate-level students in Dera Ismail Khan, Pakistan. *Pakistan Journal of Medical & Health Sciences, 19*(09), 4–8. [Pak J Med Health Sci](#)