

Impact of Home-Based and School-Based Parental Involvement on Academic Achievement: An Empirical Study

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Abstract: Parental involvement is widely recognized as a critical determinant of student academic success, yet the differential impact of home-based versus school-based involvement remains insufficiently understood. This paper empirically examines the relationship between these two forms of parental engagement and academic achievement across diverse educational contexts. Drawing on a comprehensive synthesis of recent empirical studies, including hierarchical linear modeling analyses, meta-analyses, and large-scale assessments from multiple countries, the findings reveal that the effects of parental involvement are context-dependent and vary significantly by involvement type, subject domain, student developmental stage, and socioeconomic background. Home-based involvement generally demonstrates stronger and more consistent positive associations with academic outcomes than school-based involvement, though this pattern varies across cultural and educational contexts. The paper also examines moderating factors including socioeconomic status, parental education, and cultural context, drawing particular attention to evidence from the Indian educational landscape. These findings contribute to a nuanced understanding of how different forms of parental engagement influence student outcomes and inform evidence-based policy recommendations for promoting effective parental involvement strategies.

Keywords: Parental involvement, academic achievement, home-based involvement, school-based involvement, socioeconomic status, educational policy

I. INTRODUCTION

Parental involvement in education has long been considered a cornerstone of student academic success. Decades of research have established that when parents engage meaningfully in their children's education, students tend to demonstrate higher academic achievement, improved motivation, and more positive attitudes toward learning. However, the precise nature of this relationship remains contested, particularly regarding whether different forms of parental involvement—those occurring within the home environment versus those taking place at school—exert comparable effects on student outcomes.

The distinction between home-based and school-based parental involvement is conceptually significant for both theoretical and practical reasons. Home-based involvement encompasses activities such as assisting with homework, discussing school events, setting educational expectations, and providing learning resources within the home. School-based involvement includes attending parent-teacher conferences, participating in school governance, volunteering in classrooms, and engaging with teachers and administrators. Understanding the differential impact of these involvement types is essential for designing effective educational policies and parent engagement programs.

This paper provides an empirical examination of the relationship between home-based and school-based parental involvement and academic achievement. Drawing on recent quantitative studies, including hierarchical linear modeling analyses, meta-analyses, and large-scale assessments, the paper addresses three central research questions:

What is the differential impact of home-based versus school-based parental involvement on student academic achievement?
How do moderating factors—including socioeconomic status, parental education, and cultural context—influence this relationship?
What are the implications of these findings for educational policy and practice, particularly in diverse contexts such as India?

II. THEORETICAL FRAMEWORK

2.1 Conceptualizing Parental Involvement

Parental involvement is a multidimensional construct encompassing a range of behaviors, attitudes, and practices through which parents support their children's education. Epstein's overlapping spheres of influence model provides a foundational framework for understanding how family, school, and community contexts interact to shape student outcomes. Within this framework, parental involvement can be categorized along several dimensions, with the home-school distinction representing a fundamental organizing principle .

Home-based involvement refers to activities that parents undertake within the home environment to support learning. These include academic socialization—discussing school experiences, conveying educational expectations, and encouraging academic aspirations; cognitive-intellectual involvement—providing learning resources, reading with children, and engaging in intellectually stimulating activities; and homework involvement—assisting with, monitoring, and supervising homework completion .

School-based involvement encompasses parents' direct participation in the school environment. This includes attending parent-teacher conferences and meetings; volunteering in classrooms or school events; participating in school governance through parent-teacher associations; and engaging in home-school communication with teachers and administrators .

2.2 Mechanisms Linking Parental Involvement to Achievement

Several mechanisms explain why parental involvement influences academic achievement. First, parental involvement signals to children that education is valued, fostering motivation and positive academic self-concept . Second, involvement provides direct instructional support through homework assistance and academic guidance. Third, parental engagement facilitates communication between home and school, ensuring that parents can advocate for their children's needs and monitor their progress . Fourth, involvement promotes behavioral outcomes such as reduced absenteeism and increased time spent on homework .

However, these mechanisms may operate differently for home-based versus school-based involvement. Home-based involvement provides direct academic support and socialization within the family context, while school-based involvement primarily facilitates institutional engagement and advocacy. The relative effectiveness of these mechanisms may vary based on student age, subject domain, and family background characteristics.

III. METHODOLOGY

This study employs a systematic synthesis approach, analyzing findings from recent empirical research on parental involvement and academic achievement. The analysis draws on multiple quantitative studies employing rigorous methodological approaches, including:

Two-level hierarchical linear modeling (HLM) analyses utilizing large-scale longitudinal datasets such as the Early Childhood Longitudinal Study (ECLS-K)

Meta-analyses synthesizing findings across multiple studies with large aggregate samples

Large-scale national assessments with extensive samples, including the Hungarian National Competency Assessment database (n = 183,366)

Empirical studies from diverse national contexts, including India, Somalia, China, and the United States

The analysis focuses on studies that explicitly distinguish between home-based and school-based forms of parental involvement and assess their differential associations with academic achievement outcomes, primarily in reading and mathematics.

IV. FINDINGS

4.1 Differential Impact of Home-Based and School-Based Involvement

Empirical evidence consistently demonstrates that home-based and school-based parental involvement exert differential effects on student academic achievement, though the pattern varies across studies and contexts.

A two-level hierarchical linear modeling analysis utilizing the ECLS-K dataset found that reading achievement was influenced by both home-based and school-based parental involvement, whereas mathematics achievement was influenced only by home-based involvement. Specifically, home-based involvement factors including homework assistance, number of books in the home, and library visits significantly predicted both reading and mathematics scores. School-based involvement factors—including participation in school governance and volunteering—significantly predicted reading achievement but not mathematics achievement. Notably, parent-teacher interaction did not significantly influence either reading or mathematics achievement.

A study examining parental involvement in the Asian educational context, utilizing PIRLS 2006 data, found that home-based parental involvement had a significant positive relationship with student achievement, while school-based parental involvement did not demonstrate a significant relationship. This study further identified that both student-level and school-level home-based involvement significantly impacted achievement, with school-level home-based involvement exerting a stronger effect.

However, research from the Hungarian context presents a more complex picture. Analysis of the Hungarian National Competency Assessment database ($n = 183,366$) found that home-based parental involvement had a negative effect on achievement, while teacher-parent conferences and discussing school events—forms of school-based involvement—had positive effects. This finding challenges the generalizability of the positive impact of parental involvement and highlights the importance of context in shaping the effectiveness of different involvement types.

Relational parental involvement—defined as parents' strong, positive relationships with their children, the other parent, and teachers—has emerged as a particularly influential form of engagement. A meta-analysis of 76 quantitative studies ($n = 239,649$ urban students) found that relational parental involvement may have a stronger and more enduring impact on urban students' outcomes than traditional school-based involvement, highlighting the importance of nurturing positive family and parent-teacher relationships.

4.2 Moderating Factors: Socioeconomic Status and Parental Education

The relationship between parental involvement and academic achievement is significantly moderated by socioeconomic status and parental education.

A meta-analysis examining the parental expectations component of parental involvement across 54 quantitative studies found statistically significant effects across students of different age groups, races, genders, and nationalities. The results were particularly substantial in the highest quality studies, suggesting that expectations transcend socioeconomic boundaries in their influence.

Research from the Indian context provides nuanced insights into the role of socioeconomic status. A study conducted at Malwanchal University, Indore, with 250 parent-student pairs found that socioeconomic status did not significantly predict parental involvement ($p = 0.825$, $\beta = 0.0125$, $R^2 = 0.000$). Instead, parental education level emerged as a stronger predictor of engagement, with graduate/postgraduate parents demonstrating higher involvement (Mean = 3.48) compared to parents with no formal education (Mean = 2.61). Cultural factors, including family-based educational expectations and gendered divisions of parental roles, also significantly shaped involvement patterns.

Evidence from India further indicates that while parental involvement is positively associated with learning outcomes, involvement is lower among government school children and parents with lower socioeconomic status, contributing to achievement gaps. Children perform better when parents attend parent-teacher association meetings, discuss

schoolwork with teachers, and supervise homework. Notably, learning outcomes of children in government schools improve more with parental involvement than those in other school types .

The moderating role of parental education is further illuminated by research from Somalia. A study of 104 parents in Benadir schools found that home-based involvement ($\beta = 0.327$, $p = .001$) and parental education ($\beta = 0.336$, $p < .001$) were significant positive predictors of student academic achievement. Parental education significantly moderated the relationship between home-based involvement and achievement ($\beta = -0.424$, $p = .023$), indicating that home-based involvement has a stronger positive effect on students whose parents have lower education levels. This suggests that home-based involvement may function as a compensatory mechanism where formal academic capital is scarce .

4.3 Developmental and Subject-Specific Effects

The impact of parental involvement varies by student developmental stage and academic subject. A meta-analysis based on large-scale assessments in China, encompassing 399,375 students, found that the effects of overall parental involvement and its subdimensions on academic achievement were generally small. However, moderating effects were significant: overall parental involvement and involvement in learning and daily life were more strongly associated with achievement for Year 4 students than for Year 8 students, suggesting that parental involvement is more impactful during earlier developmental stages .

Similarly, research on parental involvement in homework assistance indicates diminishing returns as children enter adolescence, with discussion, encouragement, and academic socialization becoming more effective forms of involvement for older students . Parental expectations, in particular, maintain strong associations with achievement across developmental stages .

Subject-specific differences also emerge. Home-based involvement appears more strongly associated with mathematics achievement than school-based involvement, while reading achievement is influenced by both home and school involvement types . This pattern may reflect the different skill development pathways for these subjects, with mathematics learning occurring primarily through structured academic support at home, while reading skills benefit from both home-based literacy environments and school-based engagement.

4.4 Cultural and Contextual Variations

The relationship between parental involvement and academic achievement varies significantly across cultural and educational contexts. Research from the Asian educational context, characterized as culturally distinct from Western educational systems, found that home-based involvement exerted stronger positive effects than school-based involvement . However, the Hungarian context revealed a negative association between home-based involvement and achievement, suggesting that the nature of home-based involvement activities—and their effectiveness—varies substantially across contexts .

In the Indian context, cultural factors such as family-based educational expectations and gendered divisions of parental roles significantly shape involvement patterns. Mothers consistently demonstrate higher levels of home-based involvement than fathers across multiple studies . The prevalence of government school enrollment among lower socioeconomic groups, combined with lower levels of parental involvement in these schools, contributes to achievement gaps that require targeted policy interventions .

V. DISCUSSION

5.1 Implications for Understanding Parental Involvement

The empirical findings reviewed in this paper challenge simplistic assumptions about the universal benefits of parental involvement. While parental engagement generally promotes academic achievement, not all forms of involvement are equally effective, and their impact varies significantly by context, subject, and student characteristics.

Home-based involvement emerges as particularly important for academic achievement, with especially strong associations with mathematics achievement . This may reflect the direct instructional support that home-based involvement provides, including homework assistance, academic socialization, and the cultivation of learning-oriented family environments. The findings also suggest that home-based involvement may be particularly beneficial for

students from lower socioeconomic backgrounds, potentially serving as a compensatory mechanism where formal academic resources are limited .

School-based involvement, while important, demonstrates more variable effects. Participation in school governance and volunteering appears to support reading achievement , but parent-teacher interaction alone does not consistently predict academic outcomes . This suggests that the quality and nature of school-based involvement matter more than mere presence at school events.

5.2 Implications for Policy and Practice

The findings have several implications for educational policy and practice, particularly in the Indian context where parental involvement patterns are shaped by socioeconomic and cultural factors .

First, policies should prioritize home-based involvement strategies, recognizing their consistent positive associations with academic achievement. This includes promoting parental awareness of how to support learning at home, providing resources for home learning environments, and encouraging academic socialization practices such as discussing school events and expressing educational expectations .

Second, targeted support is needed for parents with lower education levels, whose involvement may have particularly strong effects on their children's outcomes . Capacity-building programs that enhance parents' confidence and competence in supporting their children's learning could yield significant returns in student achievement.

Third, policymakers should address the disparities in parental involvement between government and private schools. Given that learning outcomes of children in government schools improve more with parental involvement, strategies to increase engagement among government school parents could help close achievement gaps .

Fourth, cultural factors shaping parental involvement must be addressed. In the Indian context, gendered divisions of parental roles and family-based educational expectations significantly influence involvement patterns . Gender-sensitive policies that encourage father involvement and address cultural barriers to parental engagement could promote more equitable distribution of involvement responsibilities.

5.3 Limitations and Future Research Directions

The studies reviewed in this paper have several limitations that should be addressed in future research. First, the cross-sectional nature of many studies limits causal inference; while associations are well-established, the direction of causality remains unclear. Longitudinal studies that trace the trajectory of parental involvement and its effects over time are needed . Second, measurement of parental involvement varies substantially across studies, making direct comparisons challenging. Future research should develop and validate standardized measures that distinguish clearly between home-based and school-based involvement types.

Third, cultural and contextual variation in the effectiveness of involvement types requires further investigation. The negative association between home-based involvement and achievement observed in the Hungarian context warrants examination in other cultural contexts to identify the conditions under which home-based involvement may be less effective. Fourth, research on parental involvement in the Indian context remains limited. While recent studies provide important insights , large-scale, nationally representative studies that examine the differential effects of home-based and school-based involvement in India are needed to inform evidence-based policy.

VI. CONCLUSION

This empirical study has examined the differential impact of home-based and school-based parental involvement on academic achievement, drawing on a comprehensive synthesis of recent quantitative research from multiple national contexts. The findings reveal that the relationship between parental involvement and academic achievement is complex and context-dependent, challenging assumptions about the universal benefits of parental engagement.

Home-based parental involvement consistently demonstrates stronger and more positive associations with academic achievement than school-based involvement, particularly in the domain of mathematics . However, the effectiveness of home-based involvement varies substantially across cultural contexts and may be influenced by the nature and quality

of involvement activities . Relational parental involvement—encompassing strong, positive relationships with children and teachers—emerges as a particularly influential form of engagement .

Socioeconomic status and parental education significantly moderate the relationship between involvement and achievement . Importantly, home-based involvement may have stronger positive effects on students whose parents have lower education levels, suggesting that it can serve as a compensatory mechanism where formal academic capital is limited . These findings challenge assumptions about the primacy of socioeconomic status and highlight the potential of targeted parental involvement programs to address educational disparities.

The implications for educational policy and practice in the Indian context are significant. Promoting home-based involvement strategies, providing targeted support for parents with lower education levels, addressing disparities in involvement between government and private schools, and addressing cultural factors shaping involvement patterns represent promising avenues for improving student outcomes.

Future research should employ rigorous longitudinal designs, standardized involvement measures, and culturally sensitive approaches to further elucidate the mechanisms through which different forms of parental involvement influence academic achievement. Such research will inform evidence-based policies that leverage parental engagement as a resource for improving educational outcomes in diverse contexts.

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