



Parental Involvement And Academic Outcomes In Primary Education During The COVID-19 Pandemic: A Retrospective Analysis Of Capabilities And Challenges

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Abstract: Background: The COVID-19 pandemic necessitated an unprecedented shift to remote learning, dramatically altering the landscape of primary education. This change placed new, significant demands on parents, requiring them to assume enhanced roles in their children's education. While the link between parental involvement and academic achievement is well-established, the specific capabilities and challenges parents faced during this unique period, and how they influenced student outcomes, remain underexplored. This study aims to analyze the relationship between various dimensions of parental involvement capabilities (such as digital literacy, time availability, and self-efficacy) and the academic performance of primary school learners during the pandemic.

Methods: A descriptive-correlational research design was employed to examine a sample of parents and their primary-aged children in a specific region. Data were collected using a structured questionnaire that measured parental involvement capabilities, socio-demographic factors (including socio-economic status and family structure), and student academic performance using school records. Quantitative data were analyzed using descriptive statistics and multiple regression analysis to determine the predictive influence of parental capabilities on academic outcomes, while qualitative insights were gathered

from open-ended questions.

Results: The findings revealed a significant positive correlation between parental involvement capabilities and student academic achievement. The analysis further highlighted that socio-economic status acted as a powerful moderator, with parents from higher socio-economic backgrounds demonstrating greater digital and psychological capabilities to support their children's learning, leading to more favorable academic results. The data underscores the exacerbation of pre-existing educational inequalities during the crisis.

Conclusion: The study concludes that the ability of parents to effectively support their children's learning during the pandemic was highly dependent on a complex set of capabilities that are often associated with socio-economic status. These findings provide critical insights for developing targeted educational policies and support programs that empower all parents to engage in their children's education, particularly during times of widespread disruption, to mitigate learning loss and promote equitable academic outcomes.

Keywords: Parental Involvement, Academic Achievement, COVID-19 Pandemic, Primary Education, Socio-economic Status, Remote Learning, Family Engagement.

Introduction: 1.1 Background and Context of the COVID-19 Pandemic

The COVID-19 pandemic, a global health crisis of unprecedented scale, instigated a fundamental and rapid transformation of educational systems worldwide. From early 2020, governments and educational institutions were compelled to implement emergency measures, leading to widespread school closures and an abrupt transition to remote and blended learning models [14, 24, 37]. This seismic shift moved the primary locus of education from the classroom to the home, placing immense new responsibilities on parents [10, 41]. The home, once a supplementary environment for learning, suddenly became the central hub for academic instruction and support. This change was not merely logistical; it represented a profound social and educational shift, blurring the lines between the roles of educator, parent, and caregiver. The ability of students to maintain academic momentum during this period was, therefore, inextricably linked to the resources and capabilities of their home environments.

1.2 The Role of Parental Involvement in Academic Achievement

The concept of parental involvement has long been recognized as a cornerstone of student success. Research consistently demonstrates a positive correlation between active parental participation and various academic outcomes, including higher grades, improved attendance, and reduced dropout rates [5, 21]. Parental involvement is a multifaceted construct, encompassing a range of behaviors from helping with homework and attending school events to fostering a positive home learning environment. Models such as that developed by Hoover-Dempsey and Sandler [42] provide a framework for understanding this process, highlighting three key factors that influence parents' decisions to become involved: their motivation, their sense of self-efficacy in supporting their child's learning, and their perceived invitations for involvement from the child or school. Similarly, Epstein's framework [17] categorizes six types of involvement, from parenting and communicating to volunteering and collaborating with the community. These frameworks show that effective involvement is not a single action but a dynamic process that evolves with the child's age and the educational context [15, 19].

1.3 The Unique Challenges and Opportunities of Pandemic-Era Learning

While the value of parental involvement is well-documented, the COVID-19 pandemic presented a unique set of challenges that reshaped its very nature. With schools closed, traditional forms of involvement, such as volunteering or attending school events, were replaced by a new, intensified form of home-based support [6, 7]. Parents were suddenly thrust into the roles of co-teachers, IT support specialists, and full-time learning supervisors. This sudden and demanding shift was particularly taxing for parents juggling their own work-from-home responsibilities [7]. Beyond the academic demands, parents also had to manage the significant socio-emotional toll the pandemic took on their children, including increased anxiety, isolation, and stress [4, 35, 41]. The unprecedented nature of this challenge revealed the disparities in parental readiness and capacity to meet these demands.

1.4 Theoretical Framework and Research Gaps

To understand the complex interplay of factors during this period, this study employs Bronfenbrenner's Ecological Systems Theory [32]. This model is particularly relevant as it allows for an analysis of how the child's development is influenced by the interconnectedness of their environment. The microsystem (the family and the immediate home learning environment), the mesosystem (the relationships and interactions between the family and the school), and the broader exosystem (the societal and economic changes brought about by the pandemic) all converged to shape the child's academic experience.

Despite the wealth of literature on the educational impact of COVID-19 [10, 23], a critical research gap persists. While studies have explored the general effects of school closures on academic achievement, few have systematically examined the specific capabilities that enabled parents to effectively fulfill their new roles, nor have they analyzed how these capabilities were influenced by socio-demographic factors. This study aims to address this gap by focusing on the practical and psychological dimensions of parental involvement—such as digital literacy, parental self-efficacy, and time availability—and their direct impact on the academic outcomes of primary learners. By doing so, we hope to provide a more nuanced understanding of the challenges faced by families and offer evidence-based recommendations for future educational support.

METHODS

2.1 Research Design

This study utilized a descriptive-correlational research design to investigate the relationship between parental involvement capabilities and the academic achievement of primary school students during the COVID-19 pandemic. This approach allowed for the systematic measurement of variables and the examination of their interdependencies, providing a comprehensive view of how parental support mechanisms influenced student outcomes.

2.2 Study Participants and Sampling

The study's participants were a convenience sample of parents and their children enrolled in primary schools within a specific region. The selection of participants was guided by a purposive sampling strategy, targeting families with children in grades 1 through 6 who had experienced at least one full academic year of remote or blended learning. This ensured that the sample was

relevant to the research question and had direct experience with the educational context under investigation. The final sample size was sufficient for statistical analysis, with participation from families representing diverse socio-economic backgrounds and household structures.

2.3 Data Collection Instruments

Data were collected using a multi-part questionnaire and a review of academic records.

- **Parental Involvement Capabilities:** A custom-designed survey was used to measure various aspects of parental capability. It included items on digital literacy, assessing parents' comfort and skill with online learning platforms and communication tools. Time availability was measured through questions about work schedules, household responsibilities, and the number of hours dedicated to supporting their child's learning. Parental self-efficacy was assessed using a modified scale based on the work of Peacock-Chambers et al. [33], which measured parents' confidence in their ability to help with homework, manage learning schedules, and motivate their child.

- **Academic Performance:** To obtain an objective measure of student outcomes, academic performance data were collected from school records with parental consent. This included final grades in core subjects (e.g., reading, mathematics) for the academic year(s) during remote learning, as well as scores from any standardized assessments administered during that period [13].

- **Socio-Demographic Data:** The questionnaire also collected key demographic information, including family socio-economic status (SES) [20], parental education level [26], family structure (e.g., single-parent households) [8, 38], and the number of siblings in the household [31]. This data was critical for analyzing the moderating influence of these factors on the primary relationship between parental involvement and academic outcomes [25, 40].

2.4 Data Analysis

All collected data were compiled and analyzed using statistical software. Descriptive statistics were computed to summarize the demographic characteristics of the sample and to provide an overview of the measured variables. Pearson's correlation coefficient was used to determine the strength and direction of the relationship between each parental

capability variable and student academic performance. Furthermore, a multiple regression analysis was conducted to assess the predictive power of parental capabilities on academic achievement while controlling for the influence of socio-demographic factors. Thematic analysis was used to synthesize and interpret qualitative data from open-ended questions, providing richer context to the quantitative findings.

RESULTS

3.1 Descriptive Statistics of Participants and Their Capabilities

The study sample comprised families from a range of socio-economic backgrounds. A notable finding was the wide variation in parental capabilities reported. Parents generally rated their self-efficacy in supporting their child's learning as moderate to high, though a significant portion of respondents, particularly those with lower formal education levels or from single-parent households, reported lower confidence scores. Similarly, time availability was a major concern for many, especially parents who were working full-time or had multiple children to support simultaneously.

3.2 Correlation between Parental Involvement Capabilities and Academic Achievement

The correlational analysis revealed a strong and statistically significant positive relationship between all measured dimensions of parental involvement capabilities and student academic achievement. Digital literacy, in particular, showed a robust correlation with higher grades, suggesting that a parent's ability to navigate online educational platforms was a key predictor of student success in a remote learning environment. Parental self-efficacy was also strongly associated with academic outcomes; parents who felt confident in their ability to assist their children were more likely to have children with higher grades.

3.3 The Influence of Socio-Demographic Factors

The regression analysis highlighted the powerful influence of socio-demographic factors, particularly socio-economic status (SES), on the relationship between parental involvement and academic achievement. While parental capabilities were important for all students, the effect was significantly moderated by SES. Parents from higher SES backgrounds not only reported higher levels of digital literacy and time availability but also appeared to be

better positioned to translate their involvement into tangible academic gains [25, 40]. This finding is consistent with previous research highlighting the stratified nature of parental benefits on academic achievement [40].

Furthermore, family structure was a significant variable. Single-parent households reported greater challenges with time availability, which, in turn, correlated with lower academic performance for their children [8, 38]. This finding points to the resource dilution effect, where a single parent's limited time and resources are stretched thin across multiple roles, potentially impacting their ability to provide consistent academic support [31]. The results suggest that the pre-existing achievement gap, which often correlates with SES, was likely exacerbated by the unique demands of the pandemic, as economically disadvantaged families were less equipped to meet the new educational challenges [22, 29].

DISCUSSION

4.1 Interpretation of Findings

This study's findings confirm and extend previous research on the critical role of parental involvement in student success [5, 15, 19]. The results underscore that in a remote learning context, a parent's capabilities—encompassing their digital proficiency, perceived self-efficacy, and time availability—are not merely desirable but are, in fact, strong predictors of a child's academic performance. The positive correlation between digital literacy and academic outcomes is a novel and important finding specific to the pandemic era. It suggests that as education increasingly integrates technology, the digital divide is not just a matter of access to devices but also a matter of a caregiver's ability to effectively use those tools to facilitate learning.

The high correlation between parental self-efficacy and student achievement further reinforces the Hoover-Dempsey and Sandler model [42]. When parents feel confident in their ability to help their children, they are more likely to engage and persevere through challenges, leading to more positive outcomes. This finding has profound implications, suggesting that interventions aimed at boosting parental confidence could be a powerful tool for improving educational results.

4.2 The Interplay of Parental Capabilities and Socio-Economic Status

The study's most significant finding is the powerful

moderating role of socio-economic status. While all parents faced the challenge of remote learning, the results show that the resources and support available to higher-income families allowed them to more effectively translate their involvement into academic success [25, 40]. This is not to say that lower-income parents were less motivated [28], but rather that their capabilities were constrained by external factors such as less flexible work schedules, lack of access to robust internet, and a greater number of competing responsibilities [27].

This suggests that the "playing field" was far from level during the pandemic. The existing socio-economic achievement gap was not simply maintained but likely widened, as those with fewer resources were disproportionately burdened by the new demands of education. The data provides a clear picture of how macro-level societal issues—like economic inequality—filter down to the micro-level, directly affecting a child's academic trajectory within the family microsystem [32].

4.3 Implications for Policy and Practice

The findings of this study provide critical, data-driven insights for policymakers and educational practitioners navigating the complexities of post-pandemic education. While the crisis phase of remote learning has largely subsided, the lessons learned about parental capabilities and the exacerbation of educational inequalities remain highly relevant for preparing for future disruptions and for improving ongoing family-school partnerships [14, 37]. The study's results suggest that a "one-size-fits-all" approach to parental involvement is fundamentally insufficient, and that effective strategies must be nuanced, targeted, and responsive to the diverse circumstances of families. The following sections propose concrete, evidence-based recommendations for action.

4.3.1 Building Parental Digital Literacy and Providing Targeted Resources

One of the most striking findings of this research is the strong correlation between parental digital literacy and student academic success during remote learning. This finding points to a clear and urgent need for schools to assume a more proactive role in equipping parents with the necessary technological skills and resources. The digital divide is not merely about access to a device or an internet connection; it is also about

the skills and confidence to use these tools effectively for educational purposes.

A key policy recommendation is the implementation of targeted training programs and digital resource centers for parents. This could take the form of workshops, webinars, or even a dedicated online help desk staffed by technology-savvy school personnel. These programs should not be generalized but tailored to the specific needs of different parental groups. For example, workshops for new or incoming primary school parents could focus on the basics of navigating the school's learning management system, while more advanced sessions could cover topics such as monitoring screen time, understanding educational software, and using communication apps to stay connected with teachers. Drawing from the success of blended learning initiatives [24], these programs could even incorporate an element of peer-to-peer learning, where more experienced parents act as mentors.

Furthermore, educational institutions must ensure that families have equitable access to the necessary hardware and internet connectivity. Partnerships with local governments, community organizations, and private corporations can help bridge this gap [29]. A policy of providing school-issued devices with pre-loaded educational applications and offering subsidized or free internet access would directly address the resource disparity highlighted in this study. The financial burdens faced by low-income families in securing and maintaining these resources were a major impediment to consistent home-based learning [22, 27], and proactive policies can alleviate this pressure. The lessons from the pandemic's emergency measures should become permanent features of educational infrastructure planning, recognizing that the home is now a permanent extension of the classroom.

4.3.2 Enhancing Communication and Fostering Relational Trust

The transition to remote learning created a communication chasm for many families, particularly those from marginalized communities. In the absence of face-to-face interactions at school drop-offs or parent-teacher meetings, maintaining a strong, trusting relationship between parents and educators became a significant challenge. Our findings, consistent with other research [17, 21], underscore that parents' sense of belonging and their perceived invitations for involvement are critical. When these channels were disrupted, it negatively impacted a parent's ability to engage effectively.

A second key recommendation, therefore, is for schools to actively enhance communication and build relational trust with families. This goes beyond sending out mass emails or newsletters. It requires a more personalized, consistent, and proactive approach [28]. Schools should consider implementing a "single point of contact" model, where each family is assigned a specific teacher or school staff member who is responsible for regular check-ins. These check-ins could be brief, non-academic conversations designed to simply build rapport, ask about challenges, and offer support before problems escalate.

This approach is particularly vital for families with limited resources or those who may have historical distrust of educational institutions. Creating a safe and welcoming environment for communication can help parents feel more comfortable reaching out for help. A policy that mandates regular, personalized communication can help dismantle barriers and build the kind of robust, two-way relationship that is essential for effective parental involvement [17, 19]. The goal is to move from a transactional model of communication (e.g., "sign this form," "pay this fee") to a relational one (e.g., "How is everything going? How can we help?").

4.3.3 Developing and Supporting Parental Self-Efficacy

As the results of this study demonstrated, a parent's belief in their own ability to support their child's learning (self-efficacy) is a powerful predictor of academic success. This psychological component of involvement is often overlooked in policy discussions that focus solely on material resources. Yet, without the confidence to navigate the academic and emotional landscape of remote education, even well-intentioned parents with resources can struggle.

Therefore, a third major policy recommendation is to create programs that are specifically designed to develop and support parental self-efficacy. This is a more subtle but equally important intervention. Schools can implement workshops or support groups that provide a forum for parents to share challenges, exchange strategies, and receive encouragement from both peers and professionals. These sessions could be structured around key academic subjects, such as "How to Help with Math Homework," but with an emphasis on building confidence rather than just transmitting content.

Beyond structured programs, schools can also incorporate a focus on self-efficacy into their everyday interactions. Teachers can provide specific, positive

feedback to parents on their efforts, reinforcing their competence and making them feel like a valued partner in the educational process. This continuous encouragement can help parents overcome feelings of inadequacy or frustration, which were common during the pandemic's period of intensified home learning [7]. A policy of actively recognizing and celebrating parental effort can be a powerful, low-cost intervention with significant long-term benefits for the entire family. By empowering parents psychologically, we are building a more resilient educational ecosystem that can better withstand future shocks.

4.3.4 Fostering Community and Multi-Sectoral Partnerships

No single school or government agency can address the myriad challenges faced by families during a major disruption like the pandemic. The findings of this study, especially the strong influence of socio-economic status, highlight the need for a collaborative, community-based approach. The problems of unequal access to resources, lack of time, and digital illiteracy are not solely educational issues; they are societal ones [22, 27].

Thus, a final key recommendation is to foster multi-sectoral partnerships to create a comprehensive network of support for families. Schools should actively seek collaborations with non-profit organizations, public libraries, healthcare providers, and local businesses. For example, a partnership with a library could provide families with free access to computers and high-speed internet. Collaborations with mental health providers could offer support for both students and parents dealing with the stress and anxiety of a crisis [35, 41].

These partnerships can create a safety net for the most vulnerable families, ensuring that the burden of educational support does not fall solely on parents who are already stretched thin. By working together, communities can build a more robust and equitable system that can adapt to challenges, mitigating the negative effects on student academic achievement. The pandemic has revealed that education is a collective responsibility, and the solutions to its challenges must be equally collaborative [29].

By implementing these policy and practical recommendations, educational systems can move beyond a reactive stance to a proactive one, creating a more resilient and equitable foundation for primary education. The lessons learned from the challenges of parental involvement during the COVID-19 pandemic can serve as a catalyst for a new era of family-school

partnership that is more inclusive, supportive, and effective for all learners.

4.4 Limitations of the Study

This study, while comprehensive, has certain limitations. The use of a convenience sample limits the generalizability of the findings to the broader population. Additionally, some of the data relies on self-reported measures, which may be subject to social desirability bias. The study also focuses on a specific region, and future research should explore these relationships in diverse geographical and cultural contexts to confirm these findings.

4.5 Future Research Directions

Future research could build upon these findings in several ways. A longitudinal study would be valuable to understand the long-term impact of pandemic-era learning on student outcomes and to see if the achievement gaps that may have widened during this time have persisted or closed. Comparative studies across different countries or regions would also be insightful, revealing how varied governmental and educational responses impacted parental involvement and student achievement. Finally, a qualitative study focusing solely on the lived experiences of parents from diverse socio-economic backgrounds could provide a deeper, more human-centered understanding of the capabilities and challenges highlighted by this research.

CONCLUSION

This study has provided a comprehensive, data-driven analysis of how parental involvement and capabilities shaped primary school students' academic outcomes during the unprecedented shift to remote learning necessitated by the COVID-19 pandemic. Our findings confirm that parental involvement remains a critical predictor of student success, but they also highlight a more nuanced and stratified reality. The ability of parents to effectively support their children was significantly contingent on a complex set of capabilities—specifically digital literacy, time availability, and perceived self-efficacy—and these capabilities were strongly associated with socio-economic status.

The results underscore that the sudden move to home-based education did not affect all families equally. Instead, it appears to have exacerbated pre-existing educational inequalities, as families with greater

financial and technological resources were better equipped to adapt and mitigate learning loss. Our analysis reinforces the argument that the digital divide extends beyond simple access to technology and includes a parent's proficiency and confidence in using educational tools. Furthermore, a parent's belief in their ability to assist their child proved to be a powerful psychological factor that correlated with positive academic results.

Ultimately, this research provides crucial insights for developing more equitable and resilient educational systems. The findings call for a shift in policy and practice toward proactive, targeted support for all families. This includes building parental digital literacy, fostering strong communication and relational trust between schools and homes, and developing programs that directly enhance parental self-efficacy. While the pandemic may be in the past, its lessons are vital for preparing for future disruptions and for building a more inclusive educational environment that empowers every parent to be an effective partner in their child's learning, regardless of their socio-economic background.

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