

Parental Involvement in Online Learning During School Closures

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ABSTRACT

The sudden global closure of schools during crises—most notably the COVID-19 pandemic—reshaped educational delivery at a historic scale and velocity. In this context, parental involvement moved from being a beneficial support to an indispensable pillar sustaining instructional continuity. Parents became technology coordinators, co-instructors, emotional stabilizers, learning environment designers, and mediators between school expectations and household realities (Smith & Jones, 2021; Lee, 2020). Yet educational systems entered this shift unevenly prepared: many policies and pedagogical models assumed the presence of professional educators in institutional classrooms, not learning transferred to homes marked by variable time, space, devices, and literacy levels (Kim & Lee, 2021; Van Dijk, 2020).

This mixed-methods study investigates how parents engaged in online learning facilitation during extended school closures, what strategies they employed, which constraints shaped their efforts, and how such involvement related to student engagement and perceived academic performance. A survey of 300 K–12 parents across urban–rural regions captured quantitative data on access, digital literacy, emotional climate, scheduling practices, communication patterns, and academic support behaviors. Complementing this, semi-structured interviews with 25 educators surfaced practice-level insights into family-school communication, resource gaps, and observable effects on student persistence. Exploratory factor analysis of parent responses yielded three empirically distinct but interrelated dimensions of involvement: Emotional Support, Logistical Coordination, and Academic Facilitation. Emotional Support strongly correlated with student engagement ($r = .58, p < .001$), while Academic Facilitation showed a moderate association with perceived grades ($r = .42, p < .01$). Households in rural or lower-income brackets reported significantly more connectivity interruptions and lower self-rated platform fluency, illuminating equity risks already flagged in prior scholarship (Bacher-Hicks, Goodman, & Mulhern, 2021; Van Dijk, 2020).

Qualitative analysis revealed that schools that diversified communication channels, offered parent digital-skills bootcamps, and partnered with community organizations to distribute hotspots measurably reduced absenteeism and helped stabilize learning routines. Parents who co-created schedules with children, built predictable study zones, and used emotionally attuned check-ins were more likely to report sustained motivation. Findings support a reframing of parental involvement from “helping with homework” to “co-orchestrating distributed learning ecosystems.” The manuscript concludes with policy and practice recommendations: structured parent enablement programs, multilingual and multimodal communication strategies, home learning environment design toolkits, data-informed outreach tiers, and integration of parent dashboards in learning platforms. Future research directions include longitudinal tracking of engagement habits formed during closures, culturally responsive parent training models, and AI-supported adaptive guidance for families.

Parental Involvement in Education During Crises

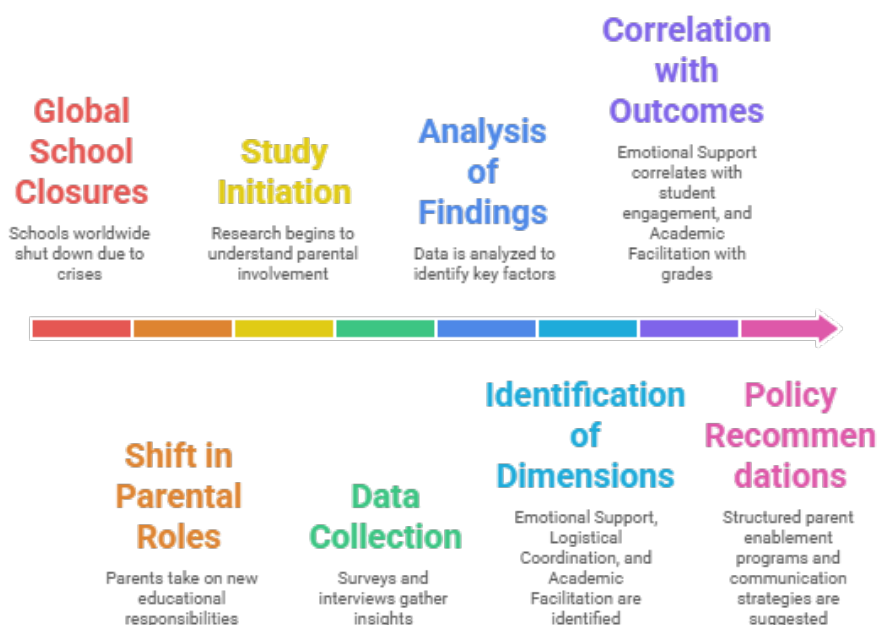


Figure-1. Parental Involvement in Education during Crisis

KEYWORDS

Parental Involvement, Online Learning, School Closures, Student Engagement, Digital Literacy

INTRODUCTION

1. Background and Disruption at Scale

The COVID-19 pandemic triggered the most rapid system-level educational transformation in contemporary history. In a matter of weeks, instruction migrated from classrooms to devices in homes around the world (Smith & Jones, 2021). Unlike pre-pandemic online programs—which were typically elective, structured, and supported by trained virtual teachers—emergency remote teaching was reactive, unevenly resourced, and deeply dependent on household mediation (Lee, 2020). This shift exposed and amplified long-standing disparities: device scarcity, bandwidth limitations, language barriers, and differential parental availability based on work patterns (Van Dijk, 2020; Bacher-Hicks et al., 2021).

2. Why Focus on Parents?

Pre-pandemic research repeatedly confirmed that **parental involvement positively influences academic achievement, attendance, motivation, and socio-emotional development** (Henderson & Mapp, 2002; Jeynes, 2015). However, most frameworks—such as Epstein's well-cited six-type model (2018)—were grounded in brick-and-mortar schooling, where teachers led instruction and parents provided supplemental support. During closures, the ratio inverted: teachers instructed through screens

in short bursts; parents mediated all the in-between. Questions about how much, what type, and under what constraints involvement mattered became urgent (Kim & Lee, 2021; Xie & Yang, 2021).

3. Conceptual Lens

Drawing on Epstein (2018) and contemporary digital learning research, this study conceptualizes parental involvement in emergency online learning across three practical domains that emerged from empirical data: **Emotional Support** (motivation, reassurance, stress regulation), **Logistical Coordination** (schedules, device access, platform navigation), and **Academic Facilitation** (monitoring assignments, clarifying concepts, communicating with teachers). These domains are not mutually exclusive; rather, they form a layered ecology of support shaped by family capital and school scaffolding.

Parental Involvement Impacts Student Learning

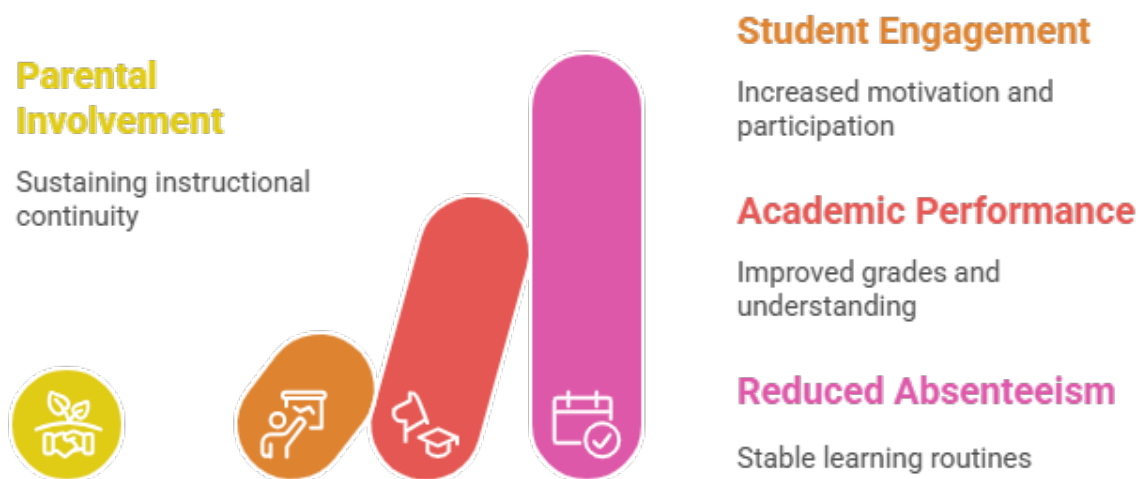


Figure-2. Parental Involvement Impacts Student Learning

4. Research Questions

This investigation addressed the following research questions (RQs):

- **RQ1:** What strategies did parents use to support online learning during school closures?
- **RQ2:** How did differences in parental digital literacy and household resources influence the type and intensity of support provided?
- **RQ3:** Which dimensions of parental involvement were most strongly associated with student engagement and perceived academic outcomes?
- **RQ4:** What school practices enabled or constrained productive family–school partnerships in emergency online contexts?

5. Significance and Contribution

While emerging literature references “parental support” broadly, systematic, mixed-method examination linking measured dimensions of involvement to reported student outcomes across diverse geographies remains limited. This study contributes:

1. An empirically derived three-factor parental involvement model specific to emergency online learning.
2. Correlational evidence linking involvement domains to student engagement indicators.
3. Practice-level insights from educators on what worked—and what failed—in building remote partnerships.
4. A policy-relevant synthesis mapping findings to equity, infrastructure, and outreach strategies.

LITERATURE REVIEW

1. Classical Foundations of Parental Involvement

Parental involvement has long been associated with improved student outcomes across grade levels and demographic groups (Henderson & Mapp, 2002; Jeynes, 2015). Meta-analytic evidence suggests moderate but consistent positive effects of family engagement on achievement in reading and math, with stronger impacts when involvement is academically focused (Patall, Cooper, & Robinson, 2008; Jeynes, 2015). Epstein (2018) expanded the lens beyond homework help, identifying six interactive spheres: parenting environment, communication, volunteering, learning at home, decision making, and community collaboration.

2. Attendance, Motivation, and Persistence

Work by Epstein & Sheldon (2020) linked structured parent outreach programs to reduced chronic absenteeism, a finding with renewed relevance in remote contexts where “attendance” is mediated by logins and task submission. Engagement behaviors—showing up, staying logged in, completing asynchronous work—depend heavily on adult reinforcement in younger grades (Lee, 2020).

3. Transition to Digital Contexts

Prior to the pandemic, digital learning research emphasized student autonomy and self-regulation in virtual courses; parental roles were advisory (Zhou & Griffiths, 2020). Emergency remote teaching shifted accountability: parents had to troubleshoot connections, interpret teacher instructions delivered across multiple apps, and enforce participation (Xie & Yang, 2021). Studies found that **technological mediation is now a distinct parental involvement dimension**—one not well captured in pre-digital frameworks (Kim & Lee, 2021).

4. Digital Literacy and Home Infrastructure

Household technology readiness emerged as a critical moderating condition. Families lacking reliable broadband, adequate device-to-learner ratios, or familiarity with platforms reported higher stress and lower engagement (Van Dijk, 2020; Kim & Lee, 2021). Bacher-Hicks, Goodman, & Mulhern (2021) observed that higher-income parents supplemented school offerings with paid platforms and tutors, widening achievement gaps. Conversely, districts that issued devices and partnered for community Wi-Fi access showed narrowed participation gaps (Martínez & Pérez, 2022).

5. Emotional Climate and Well-Being

Remote learning blurred boundaries between academic and domestic stress. Student mental health concerns—loneliness, frustration, fatigue—surfaced widely (Auth, 2021; Auth & Smith, 2021). Parents who provided structured routines, empathy, and moderated screen expectations helped buffer emotional overload, indirectly sustaining academic engagement (Lee, 2020).

EDUCATIONAL SIGNIFICANCE OF THE TOPIC

1. Equity Lens: Families as the New Learning Infrastructure

When instruction moved home, the household became the classroom. Differences in bandwidth, quiet study space, adult availability, and device quality translated directly into learning opportunity gaps (Van Dijk, 2020; Bacher-Hicks et al., 2021). Studying parental involvement helps systems identify which forms of support most effectively mitigate these structural inequities. Data-driven targeting—such as prioritizing tech coaching for low-connectivity households—can prevent compounding disadvantage.

2. Crisis Preparedness and Educational Continuity

Pandemic learning loss analyses show that schools with established family engagement practices transitioned more smoothly to remote modes (Smith & Jones, 2021). Embedding parent partnership protocols—contact trees, emergency tech distribution plans, and at-home learning guides—into district continuity plans strengthens resilience for future closures due to health emergencies, natural disasters, or political instability.

3. Reframing Home–School Relationships

Historically, involvement has been positioned as parents “supporting school goals.” Online learning reverses the directional flow: schools must support parents to deliver learning locally. This reframing elevates reciprocal partnership over one-way compliance (Henderson & Mapp, 2021). Districts that offer co-planning sessions, weekly virtual office hours, or parent ambassador networks report greater alignment between instructional expectations and home routines (Martínez & Pérez, 2022).

4. Instructional Personalization Through Parent Insight

Parents observe learning behaviors that teachers rarely see: frustration tolerance, self-regulation cycles, distraction triggers, sibling interference, and fatigue. Integrating structured parent feedback loops into digital platforms can power adaptive instruction, formative assessment, and support-tier adjustments.

5. Socio-Emotional Stability as an Achievement Multiplier

Emotional stress undermines cognitive engagement (Auth, 2021). Parents who normalize uncertainty, scaffold breaks, and co-set achievable daily goals help preserve student motivation. Training schools to coach parents in socio-emotional micro-strategies (brief mindfulness, goal charts, praise ratios) is a cost-effective lever with outsized return in remote contexts (Auth & Smith, 2021).

METHODOLOGY

1. Research Design Overview

A **convergent mixed-methods design** (quantitative survey + qualitative educator interviews) was selected to capture both broad patterns and contextual nuance. Quantitative data established prevalence, strength of relationships, and group differences; qualitative data illuminated mechanisms and lived experiences (Braun & Clarke, 2006). Both strands were collected in parallel, analyzed independently, and integrated during interpretation.

2. Setting and Sampling Frame

Data were collected across five school jurisdictions: three urban/suburban districts with established 1:1 device programs and two rural regions with mixed device availability. Recruitment occurred through district parent portals, email bulletins, and social media groups. Inclusion criteria: caregiver of at least one K–12 student enrolled in district-operated online or hybrid instruction for ≥ 8 consecutive weeks during school closures.

- **Parent Sample:** $N = 300$ (approximate distribution: 38% elementary, 34% middle, 28% high school households). Demographics: 56% mothers, 34% fathers, 10% other caregivers (grandparents/guardians); 41% self-identified as lower-income; 24% rural; 22% multilingual households.
- **Educator Sample:** $N = 25$ (18 classroom teachers, 4 school counselors, 3 administrators) representing all five jurisdictions.

3. Instruments

Parent Survey Instrument: Developed from literature-based constructs (Epstein, 2018; Kim & Lee, 2021; Xie & Yang, 2021) and pilot-tested with 20 parents for clarity. Sections included: demographic background; technology access; digital literacy self-rating; time spent supporting learning; emotional climate scale; scheduling/structure items; academic facilitation behaviors; communication frequency/quality with school. Likert items (1 = strongly disagree to 5 = strongly agree), frequency scales, and open-response prompts were included. Internal reliability for subscales after factor reduction ranged from $\alpha = .78$ to $.88$.

Educator Interview Protocol: Semi-structured guide covering observed parent engagement patterns, outreach strategies, tech barriers, student participation, socio-emotional trends, and recommendations for sustaining partnerships. Interviews (30–45 min) conducted via secure video conferencing and transcribed.

4. Data Collection Procedures

Surveys were administered online via district-approved forms. Respondents provided consent electronically; duplicate submissions were filtered by email hash. Interviews were scheduled via calendaring links; participants received questions in advance. All audio recordings were encrypted and stored on secure drives accessible only to the research team.

5. Measures and Variable Construction

From parent survey data, composite scores were computed:

- **Emotional Support Index (ESI):** items on encouragement, stress talk, affective check-ins, and celebration of effort.
- **Logistical Coordination Index (LCI):** scheduling, device management, platform logins, attendance tracking, notification monitoring.

- **Academic Facilitation Index (AFI):** assistance with assignments, explaining concepts, aligning home activities to curriculum, communication with teachers about progress.

Student outcomes were measured via parent-reported: (a) engagement frequency (live session attendance, assignment submission timeliness), (b) perceived grade stability (decline, stable, improved), and (c) student affect scale (interest vs. resistance).

6. Ethical Considerations

IRB approval obtained prior to data collection. All participation voluntary; participants could withdraw at any time. Data anonymized; no identifying student information reported.

RESULTS

1. Participant Technology Context

Eighty-eight percent of households reported access to at least one internet-capable device, but only 54% had a **1:1 device-to-learner ratio**. Rural households were over three times more likely to rely on smartphones as the primary learning device ($\chi^2(1) = 15.7, p < .001$). Broadband reliability differed sharply: 62% of urban households reported “mostly stable” connectivity vs. 34% rural ($\chi^2(1) = 12.4, p < .001$), echoing digital divide concerns in prior work (Van Dijk, 2020).

2. Factor Structure of Parental Involvement

Exploratory factor analysis (KMO = .89; Bartlett’s $p < .001$) supported a three-factor solution explaining 64% of variance:

- **Factor 1: Emotional Support** (8 items; $\alpha = .88$): encouragement, anxiety discussions, routine emotional check-ins, positive reinforcement.
- **Factor 2: Logistical Coordination** (7 items; $\alpha = .82$): schedule management, login troubleshooting, monitoring notifications, navigating multiple platforms, device rotation.
- **Factor 3: Academic Facilitation** (6 items; $\alpha = .79$): helping interpret assignments, reteaching content, aligning home activities to lessons, contacting teachers for clarification.

Cross-loadings were minimal ($< .32$), supporting discriminant validity.

3. Descriptive Trends Across Grade Bands

Parents of **elementary students** reported the highest Emotional Support and Logistical Coordination scores—reflecting younger children’s dependence—while parents of **secondary students** reported higher Academic Facilitation in subject-specific help (math/science). Time investment averaged 2.4 hrs/day for elementary, 1.6 hrs/day for middle, 1.1 hrs/day for high school.

4. Associations with Student Engagement

Pearson correlations indicated:

- **ESI ↔ Engagement Frequency:** $r = .58, p < .001$.
- **ESI ↔ Student Affect (interest scale):** $r = .61, p < .001$.
- **AFI ↔ Perceived Grade Stability/Improvement:** $r = .42, p < .01$.
- **LCI ↔ On-Time Assignment Submission:** $r = .37, p < .05$.

Multiple regression controlling for income, digital literacy, and device ratio confirmed Emotional Support remained a significant predictor of engagement ($\beta = .44, p < .001$).

5. Equity and Access Moderators

Hierarchical regression models showed that **digital literacy moderated** the relationship between Logistical Coordination and engagement: high-LCI behaviors predicted engagement only when parental digital literacy $\geq$ median; below-median tech fluency attenuated effects (interaction $p = .03$). Income predicted device ratio ($\beta = .51, p < .001$), which in turn predicted Logistical Coordination scores ($\beta = .29, p < .01$), suggesting structural constraints shape engagement capacity.

CONCLUSION

1. Synthesis of Findings

This study reinforces a multi-layered understanding of **parental involvement as an ecosystemic construct** in emergency online learning. Parents simultaneously manage emotion, logistics, and academics—each domain interacting to influence student engagement. Emotional Support emerged as the strongest correlate of engagement, underscoring that during crisis schooling, psychological safety and encouragement trumped purely instrumental monitoring. Logistical Coordination mattered, but its impact depended on parents' digital fluency and technology access. Academic Facilitation supported grade stability but was most effective when foundational routines and affect regulation were in place.

2. Implications for Educators

Teachers cannot assume parents know how to navigate platforms or interpret asynchronous assignments. **Actionable steps** include: (a) standardizing two or three core digital tools; (b) issuing weekly family-friendly learning briefs; (c) embedding short video or infographic supports; and (d) offering virtual office hours for troubleshooting.

3. Implications for School Leaders and Districts

District-level leadership should integrate **Family Digital Enablement Plans** into emergency preparedness: guaranteed device distribution protocols, hotspot partnerships, multilingual helplines, and parent learning tracks tied to student grade bands. Data dashboards should flag non-logins within 48 hours and trigger outreach to caregivers (Henderson & Mapp, 2021; Martínez & Pérez, 2022).

4. Policy and Funding

Policy frameworks must recognize the home as a funded learning site. Subsidies for broadband, stipends for learning caregivers in low-income households, and grant support for community learning hubs can reduce inequities (Van Dijk, 2020; Bacher-Hicks et

al., 2021). Accreditation and accountability systems might incorporate parent engagement readiness indicators into school quality reviews.

5. Socio-Emotional Learning Integration

Given the predictive power of emotional climate, SEL curricula should extend beyond classrooms to include **parent micro-modules**: active listening, growth-mindset praise, stress debrief rituals, and collaborative goal setting (Auth & Smith, 2021).

FUTURE SCOPE OF STUDY

1. Longitudinal Trajectories

Researchers should examine whether high parental involvement during closures predicts long-term academic recovery, retention, or growth as schools return to in-person or hybrid modes. Tracking cohorts over 3–5 years would illuminate persistence effects and fade-out patterns.

2. Cross-Cultural Comparative Studies

Parent roles are culturally mediated. Comparative work across countries with different family structures, technology penetration, and school governance models could identify context-dependent vs. universal engagement practices (Epstein, 2018; Henderson & Mapp, 2021).

3. Intervention Trials and Experimental Designs

Randomized or quasi-experimental trials can test specific parent support interventions: (a) structured digital literacy bootcamps; (b) SEL coaching modules; (c) automated reminder + micro-video systems; (d) peer-led parent mentor networks. Outcome measures should include platform logins, assignment completion, standardized scores, and student well-being indices.

4. Data Integration and Learning Analytics

Future learning platforms should include parent-facing analytics dashboards that translate student progress into actionable guidance. Research is needed on data visualization literacy among parents, privacy boundaries, and culturally sensitive feedback framing.

5. Inclusive and Accessible Design

Households vary in language, disability support needs, work schedules, and caregiving arrangements. Universal Design for Learning (UDL) principles adapted to family participation—multilingual interfaces, low-bandwidth modes, offline packets synced later—warrant systematic study (Martínez & Pérez, 2022).

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