

Parental Involvement in Mathematics Learning in Multicultural School Communities in Australia

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This paper explores how parents in multicultural primary school communities describe their involvement in their children's mathematics learning in and across home and school spaces. Drawing on Bourdieu's concepts of field and capital, the analysis focuses on the practices parents enact rather than institutional rules. Using focus group data from two Australian schools, the study examines how parents organise routines at home, communicate with teachers, and decide when to intervene or step back. Findings highlight parental involvement as dynamic and negotiated, shaped by time, confidence, and access to relational resources across interconnected spaces of mathematics learning.

Parental involvement is an important influence on children's mathematics learning; however, less is known about how such involvement is enacted within the everyday realities of family life (Civil & Bernier, 2006; Hill & Tyson, 2009; Wu et al., 2022). In multicultural communities, parents often support learning while navigating diverse educational histories, expectations, and resources (Al-Mahdi, 2010; Civil, 2014; Yaro, 2023). These forms of involvement are shaped not only by school expectations but also by family routines, time constraints, confidence with mathematics, and children's responses (Bosire et al., 2025; Murphy et al., 2023). This study responds to the need for closer examination of how parental involvement is enacted in everyday practice, particularly beyond formal school spaces, by examining parents' own accounts of supporting mathematics learning between home-based routines and school-related expectations. It addresses the following research question: How do parents describe their involvement in their children's mathematics learning in and across home and school spaces?

Literature Review

Research has consistently established parental involvement as positively associated with children's mathematics achievement, engagement, and attitudes toward learning (Bosire et al., 2025; Hill & Tyson, 2009). At the same time, scholars have noted ongoing debate about how parental involvement is conceptualised and operationalised (Fiskerstrand, 2022; Hill & Tyson, 2009). Much of the literature has focused on parents' participation in school-based activities or their alignment with institutional expectations, privileging forms of engagement that are most visible within the school context (Fiskerstrand, 2022; Hornby & Lafaele, 2011).

Within mathematics education, this emphasis has been increasingly questioned, particularly in relation to culturally and linguistically diverse communities (Al-Mahdi, 2010; Civil & Bernier, 2006). Scholars have argued that parental involvement often takes informal, culturally embedded forms that may not align with dominant school norms but play an important role in supporting learning (Dediwalage et al., 2025; Yaro, 2023). Research demonstrates that immigrant parents draw on a range of resources, experiences, and relational networks to support their children's mathematics education, highlighting the significance of context and cultural histories in shaping involvement (Nicholas & Fletcher, 2017; Planas & Civil, 2013).

Recent research increasingly distinguishes between parental participation and parental practice in children's learning (Fiskerstrand, 2022; Yaro, 2023). *Parental participation* typically refers to visible forms of involvement in school contexts, such as attending meetings, volunteering, or assisting with school activities. In contrast, *parental practice* emphasises the

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everyday ways families support learning within their own contexts. This includes routines, conversations, shared activities, and informal problem-solving that occur in daily family life (Bosire et al., 2025; Civil, 2014; Leyva et al., 2023). In this study, parental involvement is understood as parental practice, focusing on how families support learning through everyday interactions rather than through formal school participation. In mathematics learning, parents often engage in everyday conversations, decision-making, encouragement, and emotional support rather than direct instruction or the replication of school teaching (Al-Mahdi, 2010; Nicholas & Fletcher, 2017). Focusing solely on school-based participation can therefore obscure the substantial ways parents support mathematics learning at home.

The relational and distributed nature of parental involvement has also been highlighted, demonstrating that parents frequently mobilise relational resources, including siblings, extended family, and community networks, to support mathematics learning (Cahoon et al., 2024; Hunter et al., 2016). Such practices challenge individualised models of involvement that locate responsibility solely with parents and instead point to involvement as shared and negotiated across people and spaces. Hunter et al. (2016) and Al-Mahdi (2010) show that parents' social networks play a key role in shaping their engagement with schooling.

Despite these advances, comparatively less attention has been given to how parents themselves describe their involvement across interconnected home and school spaces, particularly in contemporary Australian multicultural primary settings (Dediwalage et al., 2025). Much of the existing literature prioritises barriers, expectations, or outcomes, offering limited insight into how parents organise, adapt, and negotiate involvement in their everyday lives over time (Fiskerstrand, 2022; Leyva et al., 2023). Addressing this gap requires closer attention to parents' own accounts of involvement as it is enacted in practice, rather than inferred through institutional measures or externally defined indicators.

In response, this study examines how parents in multicultural primary school communities describe their involvement in their children's mathematics learning in and across home and school spaces. Rather than evaluating involvement against predetermined standards, the analysis foregrounds parents' accounts of what they do, how they decide when to intervene or step back, and how involvement is sustained through relational engagement (Cahoon et al., 2024; Civil & Bernier, 2006). This study conceptualises involvement as situated practice to extend understandings of parental engagement beyond visible school participation.

Theoretical Framing

Bourdieu's concepts of *field* and *capital* (Bourdieu, 1977; Bourdieu & Passeron, 1977), inform this study and are used to sensitise attention to context and practice rather than to regulate behaviour. The concept of *field* highlights that parental involvement occurs across multiple spaces, including home, school, and the relational connections between them. Each space offers different possibilities for action, shaping how parents engage with mathematics learning. The concept of *capital* is used to understand the resources parents draw upon when supporting mathematics learning. These resources include embodied capital, such as parents' mathematical knowledge and confidence; social and relational capital, including support from siblings, extended family, tutors, and peer networks; and temporal capital, such as time availability and flexibility. Importantly, the analysis does not assess whether these forms of capital align with institutional expectations but rather examines how they shape parental practices and decisions.

Methodology

Research Design and Context

This study adopted a qualitative case study design to examine parents' experiences of supporting children's mathematics learning in multicultural primary school contexts. A case

study approach was appropriate because it enabled in-depth exploration of a phenomenon within its real-life context and supported investigation of the “how” and “why” underlying participants’ experiences (Simons, 2009; Thomas, 2020). In this study, the phenomenon of interest was parental involvement in mathematics learning, examined across four Year 5 classrooms situated within two multicultural primary schools in Melbourne, Australia.

Schools were identified using publicly available data from the My School website (MySchool, 2024), which provides information on school demographics, including the percentage of students classified as English as an Additional Language (EAL) learners. Schools with an EAL percentage exceeding 75% were considered eligible. As the My School website provides limited information on cultural or linguistic diversity beyond EAL classification, school principals were consulted to confirm the cultural composition of their communities and their willingness to participate.

Participants, Data Generation, and Analysis

Data were generated through four parent focus group interviews conducted across the two participating schools. Each focus group consisted of three parents of children enrolled in Year 5, resulting in a total of 12 parent participants across the four focus groups. Participants represented a wide range of cultural and linguistic backgrounds (Table 1), with most born outside Australia. To maintain anonymity, parents were invited to select their own pseudonyms, while the two schools were assigned pseudonyms by the researcher.

Focus group discussions explored parents’ experiences of supporting mathematics learning at home, their interactions with school mathematics practices, and the challenges they encountered across home and school. Parents reflected on their experiences through questions such as, “*What sort of mathematics-related activities do you do at home?*” and “*Are there any challenges when trying to help your child with mathematics?*” All focus group interviews were audio-recorded, transcribed verbatim, and analysed using reflexive thematic analysis (Braun & Clarke, 2019). Analytic attention focused on identifying patterns in how parents described practices of involvement as they were enacted within home and school spaces, rather than evaluating their engagement against school expectations or institutional norms.

Table 1

Participant information

School	Group	Participant	Born	Country	Home Language
Green Lakes Primary School	1	Kain (father)	Overseas	Vietnam	Vietnamese
	1	Mia (mother)	Overseas	Portugal	English
	1	Samantha (mother)	Australia	Mauritius	English
	2	Susan (mother)	Overseas	Sri Lanka	Sinhala
	2	Emily (mother)	Overseas	Serbia	Serbian
	2	Sarah (mother)	Overseas	South Sudan	Nuer
Blue Trees Primary School	3	Izzy (mother)	Overseas	India	Punjabi
	3	Kelly (mother)	Overseas	Romania	Romanian
	3	Lee (mother)	Australia	Lebanon	Lebanese
	4	Mark (father)	Overseas	Sri Lanka	Sinhala
	4	Betty (mother)	Overseas	South Korea	Korean
	4	Amy (mother)	Overseas	Samoa	Samoa

Researcher Positionality

This study was informed by my positioning as a researcher and former primary school mathematics teacher in multicultural communities. My experience supporting students and families from culturally and linguistically diverse backgrounds shaped my interest in how parents describe their involvement in children's mathematics learning across home and school contexts. Drawing on Bourdieu's theory of practice, I recognise that my own habitus informs my approach to the research process. Consistent with reflexive thematic analysis (Braun & Clarke, 2019), I maintained a reflexive stance throughout data generation and analysis to ensure parents' perspectives remained central.

Findings

Parents described involvement in mathematics learning as active and responsive rather than fixed or uniform. They reflected on different ways of supporting their children and how they adjusted them depending on what felt appropriate or helpful at the time. Although participants came from diverse cultural and linguistic backgrounds, many described similar forms of involvement. Parents commonly supported learning through everyday routines, informal activities, and efforts to align home practices with school expectations. Three overarching themes were identified.

Organising Mathematics Learning at Home

Parents described the home as a primary site of involvement, where mathematics learning was organised through routines and everyday activities. Many parents emphasised short, regular practices rather than extended instructional sessions. Betty described establishing a daily routine focused on developing habits of concentration, explaining, "I just want them to have a habit of sitting on the chair, concentrating on any question regarding the maths. So it takes about 10 to 15 minutes every day." This brief, routine-based approach was framed as a manageable way to support learning, particularly in the absence of formal homework.

Mathematics was frequently embedded in everyday activities. Mia and Emily described using cooking to support measurement, while Kain, Samantha, and Susan discussed shopping trips where children calculated spending and change. Others, including Izzy and Kelly, referred to games such as UNO or Monopoly as ways to reinforce number sense. These practices allowed parents to remain involved even when they felt uncertain about formal school methods and reflected deliberate choices about integrating mathematics into family life.

Parents' own mathematical confidence influenced how they structured involvement. Those who described themselves as "not good at maths," such as Lee, Amy, and Samantha, often focused on encouragement, repetition of basic skills, or creating opportunities for practice, rather than explaining formal procedures. Rather than withdrawing, these parents adjusted their involvement to align with what felt manageable and meaningful, demonstrating awareness of both their own limits and their children's learning dispositions.

Engaging with School Mathematics

Parents' involvement at school centred on communication and monitoring rather than direct participation in classroom activities. Many parents reported limited visibility of day-to-day mathematics instruction and relied on parent-teacher interviews, reports, or standardised assessments to understand their children's progress. These practices enabled parents to stay informed while reflecting on translating school information into support at home.

Several parents expressed a desire for clearer communication about what was being taught, not to challenge teaching approaches but to better support learning at home. Samantha suggested brief topic outlines or guidance "for the parents," while Kelly and Izzy said they wanted to know which topics were being covered so they could decide how to help at home.

Parents framed these requests as enabling alignment between home and school, indicating thoughtful consideration of their role in relation to teachers' expertise.

Opportunities to participate in school-based mathematics events were viewed positively when available. Lee, Izzy, and Kelly recalled school mathematics events they had attended and described them as valuable. However, parents such as Mark and Sarah noted that work commitments and scheduling constraints influenced whether they could attend. Involvement at school was therefore closely linked to time availability and flexibility rather than willingness, requiring parents to weigh possibilities for engagement.

Supporting Learning Across Home and School Spaces

A key feature of parental involvement was decision-making around when to intervene or step back. Parents described situations where children resisted help, expressed frustration, or preferred school strategies over parental explanations. Mia, Mark, and Betty recounted moments where children rejected parental methods, prompting parents to reduce direct instruction to avoid confusion or conflict. These decisions reflected parents' attentiveness to children's emotional responses and learning progress. For some immigrant parents, understanding school mathematics involved differences between their own schooling and their children's experiences in Australian classrooms. Stepping back sometimes reflected recognition that classroom approaches differed from the methods they had learned.

Older siblings, extended family members, and private tutors were frequently described as sources of support when parents felt unsure, time-poor, or less confident with mathematical topics. For example, Kain and Sarah described relying on older siblings, while Samantha, Lee, and Izzy discussed private tutoring as providing one-to-one support that was difficult to achieve at home. Tutoring was positioned as a strategic extension of involvement rather than a withdrawal from responsibility, with parents investing financially in the service while continuing to engage through encouragement, organisation, and monitoring. These accounts highlight involvement as layered and distributed across people and learning spaces.

Across the findings, parental involvement occurred in multiple learning spaces. The home functioned as a space for routines, encouragement, and everyday mathematics practices, while the school served as a reference point for curriculum expectations and progress monitoring. Relational learning spaces, including family networks and tutoring, enabled Kain, Kelly, and Samantha to sustain involvement when direct engagement was challenging. Shifts between these spaces were shaped by time, confidence, and access to resources, illustrating parental involvement as dynamic and responsive. In navigating these shifts, parents demonstrated awareness of their own capacities and roles, adjusting their involvement in response to children's feedback, emotional cues, and changing learning demands.

Discussion

Parental Involvement In and Across Home and School Spaces

This study examined how parents in multicultural primary school communities describe their involvement in their children's mathematics learning across home and school. By foregrounding parents' accounts, the findings reframe parental involvement as dynamic and flexible practices enacted across learning spaces (Cahoon et al., 2024; Civil, 2014; Hunter et al., 2016). Rather than a stable attribute or response to institutional expectations, parental involvement was organised and adjusted in response to children's needs, time constraints, confidence, and relational resources. (Bosire et al., 2025; Fiskerstrand, 2022; Leyva et al., 2023). This perspective shifts attention away from evaluating whether parents are "involved enough" toward understanding how involvement is sustained in everyday contexts.

Given the multicultural context of the participating schools, analytic attention was given to whether parents' accounts differed across cultural and linguistic backgrounds. While some parents reflected on differences between their own schooling experiences and those of their children in Australian classrooms, many described similar everyday practices for supporting mathematics learning at home. Overall, involvement appeared to be shaped more by shared efforts to understand school expectations and support children's learning than by cultural background. From a Bourdieuan perspective, this suggests that families mobilise different forms of cultural capital within the field of schooling, navigating its structures and expectations rather than acting solely from individual motivation.

A key contribution of this paper is the articulation of parental involvement as situated practice. At home, involvement was rarely characterised by formal instruction aligned with school mathematics; instead, it was embedded in routines, everyday activities, and short engagements. Activities such as cooking, shopping, games, or brief daily practice allowed parents to remain involved even when uncertain about contemporary approaches. These findings extend research on informal and culturally embedded mathematics engagement (Civil & Bernier, 2006; Nicholas & Fletcher, 2017). Reflexive analysis prioritised parents' accounts of practice over institutional benchmarks, recognising that forms of capital mobilised within the home may not always be visible or valued within the school field.

Relational, Distributed, and Responsive Forms of Involvement

The findings also illuminate the relational nature of parental involvement. Parents rarely acted alone; instead, they mobilised relational resources such as siblings, extended family members, tutors, and peer networks to support mathematics learning (Al-Mahdi, 2010; Cahoon et al., 2024; Hunter et al., 2016). These arrangements functioned as practical responses to constraints of time, confidence, and children's receptiveness. Rather than signalling disengagement, they represent strategic redistributions of involvement that allow learning to continue while preserving positive parent-child relationships. These relational arrangements highlight how parents draw on social and cultural capital to sustain involvement across contexts. When parents perceived limits in their own mathematical capital, they mobilised alternative resources that were more effective or better recognised within particular fields.

Parental involvement thus operated as a distributed practice across people and spaces, extending beyond the parent-child dyad. This challenges individualised models that locate responsibility solely with parents and aligns with sociocultural perspectives that view learning as relational and socially mediated. As a researcher with professional experience in primary mathematics education, I was attentive to how assumptions embedded within the school field might position such distributions as deficits. Reflexive analysis, therefore, focused on how parents themselves framed these decisions as purposeful and responsive.

Decision-making was a central dimension of involvement. Parents described navigating when to intervene or step back, and when to seek external support, particularly when children resisted help or experienced confusion. Stepping back reflected sensitivity to children's emotions and recognition that children also drew on different forms of capital across contexts. This complicates the linear assumption that increased intervention necessarily leads to better outcomes and aligns with research on autonomy-supportive parental engagement (Fiskerstrand, 2022; Hill & Tyson, 2009).

Understanding Home-School Spaces and Alignment

Parental engagement with school mathematics was primarily shaped through communication and monitoring rather than through direct classroom participation. Their desire for clearer information about topics or strategies reflected an orientation toward alignment rather than intervention. Parents did not seek to challenge pedagogical authority; instead, they

positioned themselves as supporters of learning at home in ways compatible with the school field. This suggests that involvement across home and school is mediated by information flows and relational trust, rather than by formal participation alone (Al-Mahdi, 2010; Dediwalage et al., 2025; Hunter et al., 2016).

Home, school, and relational spaces functioned as distinct but related fields through which parents adjusted their practices, mobilising different forms of capital in response to changing circumstances. Attending to how involvement is enacted across these spaces foregrounds continuity rather than fragmentation in families' support of mathematics learning. This invites reflexive consideration of how research itself may privilege forms of involvement that align more closely with the school field.

Implications for Practice

These findings have important implications for mathematics education within the Australian policy context, where strengthening partnerships between schools and families is recognised as a priority for improving student learning and equity. Although policy frameworks encourage family-school partnerships, school practices often privilege school-based involvement. The findings suggest the need to broaden institutional understandings of parental involvement by recognising how families support mathematics learning across home and community contexts, particularly within culturally and linguistically diverse communities.

For teachers and schools, this highlights the importance of making classroom mathematics practices more visible to families. Providing brief curriculum overviews, examples of strategies, or guidance through digital communication platforms may help parents understand classroom approaches. Such practices align with the Australian Professional Standards for Teachers (Australian Institute for Teaching and School Leadership, n.d.), which emphasise effective communication and collaboration with parents and carers while supporting connection without positioning parents as responsible for replicating classroom instruction.

Conclusion

This paper examined how parents in multicultural Australian primary school communities describe their involvement in their children's mathematics learning across home and school spaces. Drawing on focus group interviews and interpreted through Bourdieu's concepts of field and capital, the analysis foregrounded the practices parents enact rather than evaluating engagement through institutional measures. The findings show that parental involvement is dynamic and enacted across interconnected learning spaces, with parents organising support in response to school expectations and children's needs. Despite diverse cultural and linguistic backgrounds, parents described similar efforts to navigate schooling while supporting learning at home. Families mobilised everyday practices, relational networks, and external supports such as tutoring to sustain involvement across contexts. Recognising these practices broadens understandings of parental involvement and offers implications for strengthening home-school connections in mathematics education.

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