

Article

From Contradictions to Solutions: An Expansive Learning Analysis of Culturally and Linguistically Diverse (CALD) Parents Navigating Digital Exclusion in Western Sydney

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Abstract

Digital exclusion compounds the challenges that migrant and refugee parents already face in supporting their children's education. As schooling becomes increasingly digitally mediated, this shift can intensify existing inequalities, particularly when the school and home systems present contradictions that these parents must navigate simultaneously. Grounded in expansive learning theory, this study examines the experiences of 18 migrant and refugee parents in Western Sydney, Australia. It draws on interview data to illuminate the contradictions encountered when supporting their children's home learning. Through this theoretical lens, we highlight how parents take agentic actions and work to develop solutions tailored to their families' specific needs and circumstances. The findings identify three broad types of contradictions and the strategies parents employed to overcome barriers to supporting home learning. We argue for a co-construction approach in which schools, parents, and community actors collaborate to promote expansive learning, positioning migrant and refugee parents as active participants in the redesign of school-home-community partnership systems.

Keywords: digital exclusion; contradictions; modelled solutions; expansive learning; parental engagement

1. Introduction

Migrant and refugee parents in many parts of the world tend to face compounding challenges in supporting their children's education. Forced displacement, conflict, economic migration, and interrupted schooling often limit familiarity with the host country's education systems. Language barriers are amongst the most pervasive challenges; parents who lack proficiency in the host country's dominant language struggle to communicate with teachers, understand school policies, assist with homework, or advocate for their children's needs. These barriers can be seen as linguistic exclusions that may reduce parental involvement, subsequently leading to poorer educational outcomes for children (OECD, 2018). Additionally, cultural dissonance can further amplify these barriers (Suárez-Orozco et al., 2008). Educational systems in Western countries often emphasise parent-school partnerships, digital communication, and self-directed learning. However, these systems may differ significantly from those in migrants' countries of origin (Epstein, 2011). Furthermore, various socioeconomic stressors such as insecure employment, hous-

Academic Editor: Daniel Muijs

Received: 19 February 2026

Revised: 29 May 2026

Accepted: 27 July 2026

Published: 29 July 2026

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ing instability and displacement-related trauma can restrict the time, emotional capacity, and resources that parents are able to dedicate to their children's education. In addition, systemic discrimination and experiences of marginalisation can erode trust in institutions, further discouraging parents from actively engaging with schools (Suárez-Orozco et al., 2008).

In Australia, digital exclusion exacerbates these educational challenges, particularly in more *culturally and linguistically diverse* (CALD) regions, such as Western Sydney. Despite Australia's reputation as a highly connected nation, access to digital technologies remains uneven. The term culturally and linguistically diverse (CALD) carries specific policy and demographic significance within the Australian context. In Australia, CALD is commonly used in education, health and social policy to describe individuals and communities from non-English speaking, migrant, refugee and diverse cultural backgrounds (Australian Institute of Health and Welfare [AIHW], 2025). However, the term is also contested, as it can homogenise highly diverse communities and obscure differences in migration histories, language practices, socioeconomic positioning and lived experiences (Abdi et al., 2025; Australian Public Service Commission [APSC], 2024).

The Australian Digital Inclusion Index (ADII) consistently demonstrates that individuals from low-income households, recent migrants, refugees, and those with limited English proficiency experience significantly lower levels of digital access, affordability, and digital skills (Thomas et al., 2023). For many CALD families, the costs associated with devices, data, and internet plans compete directly with essential living expenses whilst limited digital literacy constrains confidence in using the online platforms schools increasingly rely on for homework, communication, and reporting (OECD, 2020). Language barriers further intensify this issue as most platforms operate in English with limited multilingual support. As a result, many parents find themselves becoming peripheral to their children's education (Goodall & Vorhaus, 2011) and often rely on their children or the community for support. This shift can disrupt traditional family roles and contribute to increased household stress (Orellana, 2009).

These intersecting barriers, including educational marginalisation, language exclusion, socioeconomic disadvantages, and digital inequality, necessitate culturally responsive and digitally inclusive approaches to parental engagement. This study addresses this need by exploring how CALD migrant and refugee parents in Western Sydney navigate digital exclusion. It examines their experiences through the lens of contradictions and modelled solutions, focusing on their efforts to support their children's education. The analysis is grounded in Engeström's (1987) expansive learning theory as a guiding framework (see Section 3 below).

2. Literature Review

2.1. Parental Engagement

Goodall and Montgomery (2014) distinguished between *parental involvement* and *parental engagement*. Parental involvement is primarily school-directed, characterised by a one-way flow of information with parents assuming a largely passive role in activities initiated and managed by the school. In contrast, parental engagement is child-centred, with parents actively participating as partners who share their insights, collaborate with educators, and take responsibility for supporting their child's learning both in school and at home.

Parental engagement is widely acknowledged as a crucial factor impacting children's academic success, well-being, and long-term educational paths (Coleman, 1988; OECD, 2018). However, contemporary research highlights that parental involvement is not merely a reflection of parents' attitudes or aspirations; rather, it is significantly influenced

by structural factors such as socioeconomic status, language proficiency, institutional responsiveness, and access to digital resources. As schooling systems increasingly rely on digital platforms for communication, instruction, and assessment, digital inequality has emerged as a key determinant of parents' capacity to engage effectively in their children's education (Thomas et al., 2023).

Gannon et al.'s (2024) research provides important insights into how these dynamics unfolded within culturally and linguistically diverse (CALD) communities in Western Sydney. Their study showed that digital exclusion extended beyond access to devices and internet connectivity, encompassing language barriers, limited digital literacy, overcrowded housing and difficulties engaging with school communication systems. These intersecting challenges reduced families' capacity to support children's learning during remote schooling. Similarly, Naidoo et al. (2022) in their study of young people's experiences of online learning during COVID-19 lockdowns, documented how digital schooling was shaped by family resources, parental confidence with technology and household stress. The study highlighted that parental involvement encompassed not only academic support but also the management of children's motivation, emotional well-being, and social connections during lockdowns. These studies demonstrate how digitally mediated schooling can unintentionally marginalise families already experiencing social exclusion (Naidoo et al., 2025; OECD, 2018).

2.2. Digital Inclusion, Parental Agency and Digitally Mediated Parental Engagement

Research on migrant and refugee parents increasingly foregrounds parental agency as a critical lens for understanding how families engage with schooling in host countries. This signifies a point of departure from earlier studies which often framed migrant and refugee parents as "hard to reach" or disengaged, attributing limited school involvement to language barriers, unfamiliarity with education systems and socioeconomic disadvantage (Crozier & Davies, 2007; Harris & Goodall, 2008; Zaidi et al., 2021). More recent scholarship challenges this deficit framing, arguing that such perspectives obscure the active, strategic, and relational ways in which parents support their children's education (Bergset, 2017; Molla, 2024). Whilst promoting an asset-based framing of parental agency, a central concern is identifying the structural conditions that constrain parental agency, and the conditions under which CALD migrant and refugee parents can exercise that agency, rather than questioning whether they possess agency.

Extant research addresses this concern by conceptualising agency as socially and structurally mediated, rather than as an individual attribute (Edwards, 2005; Emirbayer & Mische, 1998). In digital schooling contexts, this means parents' capacity to act is shaped by access to devices, connectivity, digital literacy, language, platform design and the quality of school communication (OECD, 2018). Digital inclusion is therefore not only about access, but also about whether families can meaningfully use technologies to participate in their children's education (van Dijk, 2020). This reframing is entangled in an ongoing debate about the conflicting role of digital technologies: are they "equalisers of opportunities" (Opertti, 2021, p. 14) or magnifiers of existing inequalities (Selwyn, 2024).

What distinguishes inclusive uses of digital technologies is captured by Illich's (1973) notion of conviviality whereby tools are convivial when they are accessible and empower individuals to use them purposefully to meet shared goals in a broader environment of networked learning. Australian research similarly emphasises that effective engagement with CALD, migrant and refugee communities depends on culturally responsive, accessible and relationship-based practices (AERO, 2021; Barker & Harris, 2020). Inclusion, on this view, is enabled when digital technologies are embedded in convivial, relational and locally grounded practices; in their absence, the same technologies can just as readily widen exclusion (Peruzzo & Allan, 2024).

Naidoo et al. (2025) situate this argument within digital inclusion and convivial technologies by foregrounding the concept of *relational agency*. The study shows how migrant and refugee parents' engagement with digital learning in Western Sydney was shaped by relationships with schools, technologies, and institutional structures. Their study argues that the digital divide can limit parental agency and deepen educational inequalities, particularly when school systems assume universal access, English-language confidence and familiarity with digital platforms. Thus, parental agency is not absent; rather, it is constrained or enabled by the inclusivity of digital systems through which CALD parents are expected to use. Linking digital inclusion to agency, therefore, highlights the need for schools to shift away from a focus on motivating disengaged parents and instead to create the conditions for digitally mediated parental engagement that is meaningful, relational, and inclusive.

3. Theoretical Perspectives of Expansive Learning

Grounded in cultural–historical activity theory, Engeström's (1987) expansive learning theory has been widely applied to illuminate how people learn across diverse disciplines. Notably, this theory offers a powerful lens for understanding how learners develop communities naturally to “learn something that is not yet there” (Engeström & Sannino, 2010, p. 2), thereby generating new knowledge and cultural practices. We found this theory promising for elucidating how digital technologies facilitate the formation of parent communities that collectively navigate the Australian education system and support home learning. Critics of cultural–historical activity theory argue that broader social contexts related to power dynamics, including language exclusion and systemic inequality, have been under-theorised in studies of expansive learning (Avis, 2009). This study responds to this critique by foregrounding the experiences of CALD migrant and refugee parents whose parental engagement with their children's schooling has been shaped by various barriers to digital inclusion by approaching structural tensions as indicators of unequal sociopolitical conditions. Instead of focusing on single institutional sites, as many studies of expansive learning do, this study situates itself at the school–home boundary by examining how CALD parents themselves move between school and home practices. This focus demonstrates *boundary crossing* as a learning mechanism between activity systems (Akkerman & Bakker, 2011). In doing so, it pays attention not only to structural tensions but also to relational agency through which CALD parents generate solutions to resolve tensions and create new practices for themselves and their communities.

Central to Engeström's (1987)'s expansive learning theory is the concept of an *activity system*, comprising an *object* (a motivation or a goal for the activity, e.g., a child's school achievements), *community* (e.g., family, school and stakeholders), *division of labour* (roles of teachers, parents and students), *rules* (e.g., school norms and policies), *subject* (e.g., teachers, parents and students), and *instruments* (e.g., digital technologies). The activity system operating within schools to support student learning and achievement is expected to differ substantially from that in the home environment.

In Engeström's (1987) framework, *contradictions* are understood as structural tensions, gaps, or mismatches that generate disturbances and conflicts. There are four inter-related levels of contradiction: *primary*, *secondary*, *tertiary*, and *quaternary* (Engeström, 2019). In this context, the disparities between school-based and home-based activity systems become key contradictions that can trigger new forms of learning, adaptation, and collaboration. During the COVID-19 lockdowns, these contradictions became particularly pronounced as parents were required to assume pedagogical responsibilities typically undertaken by teachers, thereby disrupting the established division of labour between institutional schooling and home support.

Primary contradictions lie within a single node of an activity system and express the inner tension of that node (Engeström, 2019). Within the node of instruments (also known as tools or mediating artefacts), for example, the digital technologies used in schools embody a primary contradiction between *exchange value* (commercial worth) and *use value* (pedagogical usefulness in educational contexts). As commodities produced for the educational technology market, they are designed to maximise marketability and scalability, for instance, through a standardised, default English-language interface that suits the largest possible user base. Yet the very design choices that enhance their exchange value can diminish their *use value*, that is, their pedagogical worth as learning tools. This tension is intrinsic to the tool itself, prior to its use by any learner: a digital technology is at once a marketable product made for profits and a pedagogical tool; these dual purposes create internal conflict within the single node. By contrast, *secondary* contradictions are located between nodes of an activity system (Engeström, 2019). For instance, a secondary contradiction emerges between the subject and the instrument when a digital app (the tool) intended for CALD students with low English proficiency (the subjects) requires a high level of English proficiency to operate. The tension lies in the mismatch between what the instrument or tool demands and what the subjects bring as the app presupposes a linguistic competence that these students lack, thereby preventing them from mediating their pursuit of learning (the object).

Whilst secondary contradictions situate between constituents within an activity, tertiary contradictions focus on one activity at two developmental stages between an established and an emerging form of the same activity (Engeström, 2019). Put differently and simplistically, it is a clash between the old and the new way of doing things. Extending the example above, a tertiary contradiction emerges when a more culturally advanced solution (i.e., a redesigned app offering multilingual support) is introduced to promote equitable participation (object). The contradiction lies between this new object and the object of the dominant form of the activity, namely English-mediated learning, which remains sedimented in the curriculum, assessment and classroom practices. It is this clash of objects (motives) between the emerging aim of equitable, multilingual participation against the entrenched aim of monolingual, English-proficiency-based learning that constitutes the tertiary contradiction.

Finally, quaternary contradictions extend beyond the central activity system to its neighbouring systems (Engeström & Sannino, 2010), arising in the interplay between, for example, household, school, community language services, and resettlement support. Distinguishing these levels matters analytically because each implies a different scale of response, ranging from individual adjustment to inter-institutional redesign. The present study applies these levels of this typology to the collected interview data with CALD migrant and refugee parents to identify the tensions they navigated, and to inform the subsequent discussion of which contradictions were resolved through household-level adaptive strategies, resulting in expansive learning across school–home–community boundaries.

Vasilyuk (1988) used the term “*experiencing*” to describe workarounds that human beings devised when faced with situations of impossibility; it refers to undoing double binds to overcome the odds and achieve their goals. Although double binds may be expressed as mental states of helplessness or desperation for help, they can also serve as seeds for transforming current practices of parental involvement into parent engagement through digital technologies; this requires a high level of agency in developing new ways of acting (Naidoo et al., 2025).

4. Methodology

This qualitative study explores the perceptions of eighteen parents from migrant or refugee backgrounds, whose children attend schools in Western Sydney, Australia. It focuses on their views regarding digital technologies and how these technologies support their children's online learning. The 14 female and 4 male participating parents came from Afghanistan (3), India (6), Indonesia (4), Saudi Arabia (2), and 1 each from China, Nepal, and South Korea. Public primary and secondary schools in Western Sydney assisted with parent recruitment by uploading a digital flyer to their school websites that provided information about the research project. The 18 participating parents met the study criteria outlined in the flyer: they were either migrants or refugees who arrived in Australia between 2019 and 2023 and had a child or children attending a public primary and/or secondary school in Western Sydney.

When the study was undertaken in 2023, six of the participating parents were employed in the IT sector, five were undertaking PhD studies, and seven were engaged in full-time English-language study, home duties, or employment. The participants had one, two, or three children, ranging in age from kindergarten through high school, with most in the primary years. Despite their diverse countries of origin, professions, and family circumstances, the participating parents shared experiences of managing their roles and responsibilities in different environments.

A significant number of participants possessed strong academic backgrounds and were engaged in higher education. For instance, Fulu from China, Ali from Saudi Arabia and Hadi from Indonesia were pursuing doctoral degrees and had experience in teaching or academia. Likewise, Sumarni and Hasna from Indonesia were completing PhD studies while also caring for several children. Abdullah from Afghanistan was enrolled in English language studies at TAFE, complementing his earlier qualification in Economics. Other participants were working in skilled or professional roles. Ana from South Korea and Aarya from India were employed in information technology (IT), Surya from India worked in IT production support, Amir was a network engineer and Deepna from Nepal balanced her role as a data analyst with ongoing IT studies.

Some women, including Maya and Soraya from Afghanistan, Farah from Indonesia, Mirza from India, and Aisha from Saudi Arabia, primarily managed household responsibilities although several had previously held professional positions. For example, Farah had prior work experience and Jaya from India was actively seeking employment after completing training as an accountant.

The cultural and linguistic diversity of the research participants reflects the broader demographics of Western Sydney. In a New South Wales case study of digital equity and education, Dastyari et al. (2024) report that 40.6 per cent of students come from households where a language other than English is spoken which is nearly 15 per cent higher than the rest of Sydney. This diversity is widely regarded as one of Western Sydney's greatest strengths as evidenced in the level of educational attainment in the region. It has been reported that a higher proportion of residents who speak a language other than English at home hold a Certificate III or above (52.6 per cent) in Western Sydney, a finding that challenges the narrative that migrants lack the skills and capacity to contribute to the economy (Centre for Western Sydney, 2023). Although these data indicate that the demographics of the research participants broadly mirror those of the general population of Western Sydney, the proportion of the regional population holding a bachelor's degree or higher is unknown. As the comparable figure for the regional population was not available to us, we could not determine the extent to which the sample is representative with respect to educational attainment.

The research team conducted individual semi-structured interviews with 18 recently arrived migrant and refugee parents at times convenient for each participant. These inter-

views were conducted in English via Zoom, typically lasting about one hour and were audio-recorded, with video included where participants agreed. Participants who shared a home language with the interviewer were allowed to speak in that language or alternate between languages, in accordance with the study's ethics approval.

The interview transcripts were then translated using Google Translate which offered a helpful starting point for capturing participants' responses. Thereafter, the research team read through the translated transcripts to check for clarity of expression. There was a precise phrase-by-phrase translation of any sections of the tapescript that contained ambiguity until the meaning was captured, utilising contextual information. The research team also listened to the original audio recordings to check that affective markers, such as hesitancy or emphasis, reflected the participants' voices. Finally, the transcript was checked against points included in the interviewer's summary of each interview to ensure consistency. Although utmost diligence was exercised in checking the accuracy of the translated transcripts, automated translation tools have limitations, including the potential loss of nuance, affect, or culturally embedded expressions.

Interview questions explored participants' perceptions of digital technologies and how these parents support their children's online learning. After participants shared brief background details about their family, education and employment, the interviewer asked questions about access to digital devices and the Internet, including affordability and reliability, such as "In what ways do you think the affordability and reliability of your internet connection has an impact on your child's learning at home?" Thereafter, questions related to school-home communication, such as "To what extent do you feel confident in checking the school online platforms and portals?" Parents were also asked to elaborate on their capacity to support their children's online learning at home, such as "finding and downloading useful websites and apps", as well as their confidence in troubleshooting computer issues. The interviews concluded with questions that enabled parents to reflect on their experiences supporting their child(ren) during the COVID-19 pandemic, such as "What did you find was the best way you could support your child ... while learning at home?"

The research team comprised academic researchers at Western Sydney University with expertise in language and literacy education, digital literacies, and CALD communities. We approached the study with an awareness of the linguistic, cultural, and institutional asymmetries shaping the interview context, in which recently arrived CALD parents were interviewed in English by university-based researchers about an unfamiliar education system. Our methodological choices described above were intended to support participants' agency and mitigate perceived power relations. However, we recognise that such measures could not fully address underlying power dynamics or the research team's interpretive influence. The reliance on English for analysis, alongside machine translation, may have shaped how participants' meanings were represented with the potential loss of linguistic nuance and culturally embedded meanings.

As described in the theory section above, Engeström's (1987) expansive learning theory is grounded in cultural-historical activity theory and a sociocultural epistemology. Engeström and Sannino (2010) explained that Vygotsky's (1978) concept of the zone of proximal development is an important root of expansive learning, where the zone of proximal development is "the space for expansive transition from actions to activity" (Engeström & Sannino, 2010, p. 4). From this framing, learning and development occur within collectively, culturally, and historically situated activities, mediated by semiotic and material tools. Therefore, the interview data are treated as discursive manifestations of participants' engagement in activity systems, expressing the tensions or contradictions encountered in their practice. Nevertheless, the interview data in the study capture dis-

cursive traces of contradictions as articulated at one point in time, rather than their full historical development.

Coding was conducted in Excel spreadsheets in two stages. In the first stage, the third author read all transcripts and developed an initial set of thematic codes capturing participants' reported experiences of how digital technologies support their children's learning. The first and second authors independently reviewed the coded excerpts and the code allocations with discrepancies discussed in team meetings until consensus was reached. Although the first and second authors come from culturally and linguistically diverse backgrounds, the team is cognisant that individuals' experiences might not map directly onto those of the participants. The research team remained sensitive to potential differences in country of origin, language, history, and personal circumstances that brought them to Australia.

In the second stage, the first author conducted a further thematic analysis based on Engeström's (1987) typology of contradictions. We applied the following criteria to categorise the type of contradiction. When the tension was internal to a single node of the activity system (e.g., within the subject), it was coded as a primary contradiction, whereas when it was between two nodes within the activity system (e.g., subject-tool), it was coded as a secondary contradiction. A tertiary contradiction was coded when the tension reflected a mismatch between an "old" and an emerging object (or motive) across two developmental stages of the same activity.

Contradictions emerged inductively through iterative engagement with the data and were then categorised according to the nodes involved in each contradiction (e.g., Tools-Rules). Cross-checking within the research team was conducted, and where a tension could plausibly be read at more than one level, the research team made analytic judgments to decide which category would be most representative by reviewing the interview transcript. The team also acknowledges that the theoretical framing is the researchers' interpretive lens rather than the participants' own. Hence, care was taken in coding to preserve participants' framings of their own circumstances, particularly regarding their accounts of constraint, capability, or aspiration, and where they lay within the constituents of the activity system. Because the interviews centred on parents' home experiences and their parental engagement with school-based digital learning, the interview data did not have substantial evidence about these adjacent activity systems. The team therefore agreed to omit quaternary contradictions to avoid unsubstantiated or overstated claims about tensions across the wider network of activity systems in which CALD families were situated.

The analysis was conducted through the seven actions of expansive learning (Engeström, 2001):

- (i) The first action was that of questioning, criticising or rejecting some aspects of the digital learning experiences in Australia.
- (ii) The second action was that of analysing the situation for disturbances, tensions, double binds or contradictions. Specifically, we sought to explain the digital learning experiences of CALD parents and their children by identifying differences between cultural practices rooted in their home countries and the emerging practices they observed in Australia.
- (iii) The third action was that of modelling the new solutions to the problematic situation or contradictions.
- (iv) The fourth and fifth actions were those of examining and implementing the modelled solutions to fully grasp their potential and limitations.
- (v) The sixth and seventh actions focused on the reflection and evaluation of the process and consolidation of its outcomes into a new practice.

In this paper, we focused solely on contradictions and on the modelled solutions developed by the research participants. The activity system comprised interconnected elements evident in the interviews: subjects (CALD parents), tools (digital technologies), object (supporting children's learning), rules (school expectations and policies), community (other parents, teachers, family networks), division of labour (role distributions), and outcomes (children's educational success).

5. Findings

5.1. Primary Contradiction

Primary contradictions represent the most fundamental level of tension, existing within individual components of the activity system, primarily within the subject: CALD parents themselves.

Within the Subject: CALD Parents Themselves

CALD parents experienced profound internal contradictions regarding their own perceived capabilities and responsibilities. Many simultaneously lacked confidence in their digital and linguistic capabilities, yet felt compelled to engage in their children's learning despite these limitations. Hasna powerfully expressed this tension when she acknowledged her lack of digital competence: "I'm afraid if I don't do those things (able to fix computer issues), then my daughter will be left behind." This fear-driven engagement created psychological stress and revealed the internalised pressure CALD parents experienced.

Sumarni articulated the psychological stress resulting from this primary contradiction when describing her experience learning Microsoft (MS) Teams: *"I wasn't really familiar with the MS Teams...my daughter...taught me how to use it...She's just tries browsing and explore...but for me as a parent, the stress was...to learn how to use it."* The role reversal in which her daughter became the teacher created internal confusion about her parental authority and her competence. She positioned herself as both a parent-educator and a student-learner, articulating an imperative for parents to keep pace with the technologies their children used at school.

CALD parents also struggled with the tension between wanting to support their children's learning at home and feeling constrained by their limited English proficiency. For example, despite Soraya's low level of English proficiency and limited technological skills, she repeatedly emphasised the value of supporting her son's online learning and learning literacy and numeracy alongside him.

These primary contradictions, manifested in role ambiguity (Were they parent-teachers or learners themselves?) and emotional stress (including fear and anxiety about their children "falling behind" because they felt unable to support them adequately), could undermine their parental self-efficacy (Waid et al., 2025).

5.2. Secondary Contradictions

Primary contradictions can be exacerbated by secondary contradictions. The latter arises between the different elements of an activity system. In this study, we identified several such tensions or gaps primarily between subject and tool, tools and rules, object and outcome, subject and division of labour, rules and division of labour.

5.2.1. Between Subject and Tools: The Affordability Gap

Financial constraints create a distinct contradiction between CALD parents as subjects and the digital tools required for their children's learning. They directly limit access to Internet connectivity and digital resources, creating a barrier to participation. Never-

theless, not all families can afford reliable internet connectivity for home learning. The impact of inadequate Internet connectivity is captured in Abdulla's interview responses:

We don't have Wi-Fi internet at home, only our mobile internet...it is expensive. I don't work...it has negative effect on child's learning. We cannot download the educational video. We only have 20 gig, so it is limited. We can't afford it.

Australian families typically require at least 500 GB per month, with many households now approaching or exceeding 1 TB, making low-cap plans (e.g., 20–100 GB) unsuitable for contemporary family life (Tech Business News Editorial Desk, 2025). For families with limited income, this contradiction between subject and tools limited their children's digital learning opportunities. Similarly, Soraya described how affordability issues constrain access:

I don't have Wi-Fi, Internet, for example, sometimes it is very weak. I have to look for a hotspot...Sometimes it is not working properly...The price was difficult to pay...If we don't have it (Wi-Fi), it can affect learning negatively.

These parents clearly recognised the value of providing their children with Internet connectivity for their learning. The gap between the cost of reliable connectivity and parents' financial resources produced a recurring set of workarounds across the dataset, including limiting children's online learning time to conserve data, seeking public hotspots with unreliable connections, and printing teaching materials at the family's own expense to avoid sustained online use, as Hadi reported during the COVID-19 lockdowns.

Whilst schools increasingly integrate technology into classroom practices and expect digital engagement, CALD families may lack reliable digital devices, Internet connectivity or financial resources to meet these expectations. During COVID, the contradiction intensified for some CALD parents.

5.2.2. Between Subject and Tools: The Capability Gaps

Language barriers also create fundamental access issues, rendering certain tools entirely unusable for some parents. Although this tension can be a primary contradiction, suggesting self-awareness of one's limitations and internalised perceived inadequacy, it is also a secondary contradiction when there is incompatibility between parents and the digital tools used by schools. For instance, Maya's interview response illustrates this distinctly: *"my language is not very good. I asked them (referring to the school) not email or using app,"* leading her to rely instead on face-to-face communication with a Persian-language teacher who spoke her home language. This secondary contradiction points to a disjuncture between her linguistic capacity and the school's digital communication channels, which presume English proficiency she lacks. Other parents, such as Hadi, Abdulla, and Amir, relied on Google Translate as a support tool, particularly when navigating messages containing unfamiliar educational or technical terminology. As Abdulla explained, *"If I do not know words, I can use Google Translate ... English is our problem."*

For other parents, the secondary contradiction was intensified when multiple learning demands were placed on them. For instance, Maya reported that she has been learning English and using computers since arriving in Australia. Her learning curve was steep: digital apps required both linguistic and technical capabilities beyond her reach, and she felt she had to master the medium before she could use it to support her children's learning. This interview response suggests that digital tools often require a level of readiness that many CALD parents, as subjects, have yet to achieve. For Maya, conducting Google searches for *"material to support learning"* is *"complicated"* due to her limited English. Search engines such as Google assume a degree of linguistic fluency among users to access and comprehend the information they retrieve; these digital capabilities are not readily available to CALD parents with limited English proficiency. Kimaya captured how what ap-

appears to be a straightforward search task for many parents becomes considerably more effortful for her: *"I wouldn't say that we don't find it (information), but it's like that search time is more because we need to find the right content and it takes some time."* This gap stems from English-dominant digital systems which require parents to undertake additional interpretive and translation work to engage in their children's home learning.

5.2.3. Between Tools and Rules: Dual Use and Monitoring Challenges

School expectations are rules that presume parents' responsibilities to monitor their children's online activity and ensure the appropriate use of digital tools. However, for digital tools to be used for educational purposes only, constant parental vigilance is required. This presents a challenge to parents, as described by Aarya:

either one of us is going to...sit next to him and monitor him...we don't leave him alone with the system because he might work five minutes...immediately shift to YouTube and start watching some other cartoon videos.

This concern about online safety, especially in relation to protecting their children from unknowingly downloading something harmful, was highlighted by Amir:

... we are very, very particular that he doesn't download anything. So, we made it clear to him that he has to ask. So, we have also set the passwords and everything so that if he wants to download, he needs our password, so he'll come to us.

The same physical tool (the computer) that mediates children's access to educational opportunities simultaneously affords entertainment and distraction. This dual functionality constitutes a contradiction between tools and rules within the activity system. Whilst schools position digital technologies as learning tools, institutional expectations and norms impose an onerous surveillance burden on parents. As a result, parents are required to continuously monitor and regulate tool use to ensure it serves educational rather than recreational purposes.

This regulatory burden is unevenly distributed. Not all parents possess the digital literacy required to evaluate online content, and CALD parents in particular expressed concern not only about online safety but also about the credibility and trustworthiness of digital information. Uncertainty about how to assess online content intensified the labour of monitoring what children were engaging with online.

These concerns are illustrated in Mirza's account, where digital safety emerges as a key reason for preferring school-mediated access to online resources:

We can have all the restrictive things also like what they should watch, what they shouldn't watch Sometimes when he watches YouTube ... then in the night sometimes he gets you know like scared or something, so I don't want him to watch all these things. I guess it's more better if the school gives it to the child and then the child uses it for a ... reasonable time.

Although digital tools are introduced to expand learning, the absence of shared rules for evaluating and selecting online content, as well as support structures, constrains CALD parents' capacity to manage these tools effectively. Rather than enabling expansive learning across home-school boundaries, the misalignment between tools and rules produces additional affective and supervisory demands on CALD parents.

5.2.4. Between Object and Outcome: Competing Developmental Goals

Supporting children's learning (the object) requires digital engagement during the COVID-19 pandemic. Although the parents recognised the necessity of transitioning to online learning, some were concerned that this same digital engagement might undermine other valued developmental outcomes, as suggested by the contradiction between tools and rules. For instance, some parents felt that certain activities were better supported

by printed materials, such as books, rather than by online sources. For example, Mirza articulated this contradiction through her concerns about handwriting and reading skills and explained the value of focusing on handwriting and reading printed books:

When I'm teaching him concepts, I like to teach him from a book rather than reading it off the screen ... In this age of everything being online ... I feel like kids are lacking the liking to even write ... so we have this rule at home that every day you need to write one page just to make your handwriting better and legible because how much ever the laptops and the tablets take over ... writing is also equally important.

For Mirza, achieving the object (learning support) through exclusively digital means as potentially undermining valued outcomes like handwriting skills and deep engagement with text. This contradiction extends to the fundamental tension between screen-based and printed learning materials. Mirza's preference for print-bound books over school-recommended online reading programs reflects an ambivalence about the affordances of digital technologies as learning resources or substitutes for traditional learning methods. As a result, she created her own rules and activities (daily handwriting practice, purchasing physical books) to compensate for what she perceived as "developmental deficits" created by digital learning.

One parent (Aarya) was concerned that the time spent on screens for learning would displace time for outdoor activities and physical play. Like Mirza, she also created rules for her child. She explained:

... to reduce that [screen time], we have certain rules—that if you are going to study, then only you are allowed to have another screen time otherwise go and play either indoor or outdoor. Like that we encourage him to play more rather than sitting at one place and just looking at the screen.

These interview excerpts demonstrate that the contradiction lies in the fact that pursuing the object (academic learning or success) requires screen time, but the desired outcome (a healthy, physically active child) requires limiting that same screen time.

5.2.5. Between Subject and Division of Labour: Role Disruptions and Capacity Mismatches

Household divisions of roles between the parents in each family could complicate the subject-tool secondary contradiction. As Abdulla explained, his wife "cannot use the computer, and cannot look online to help" their son; although he himself was more technologically capable, he was often exhausted from work by the time he reached home: "when I come home at night I can help. Sometimes I am tired." For some parents, digital tools, including digital school-home communication platforms, require engagement that the family's distribution of capabilities and available time cannot reliably provide. This contradiction foregrounds how such tension between subjects and tools intersects with broader patterns of gendered roles, division of these roles, and family responsibilities.

Despite CALD parents' strong commitment to their children's educational success, their multiple roles placed demands on their finite time and energy, preventing them from providing the support they desired. Aisha articulated this structural constraint explicitly: "I think if I'm not studying or not working, if I had a lot of time, I could support them more. But now I only do the reading with them." For Aisha, the contradiction existed between her capacity and desire as a subject to support her children's learning and the division of labour in her life, with competing roles as a student, a worker, and a mother. The division of labour assumed her capacity to fulfil multiple roles simultaneously, but the practical reality is that time spent studying or working is time unavailable for supporting children's learning. This forces parents like Aisha into a position of triage, whereby they must prior-

itise certain forms of support (like reading with children) whilst abandoning others they might be able to provide if structurally possible.

The COVID-19 lockdowns surfaced a secondary contradiction between the subject (parents) and the division of labour (teaching assigned to teachers), intensified by limited access to tools (pedagogical strategies and learning resources) aligned with school practices. Parents were required to assume the role of teacher without pedagogical training during the lockdowns. This role disruption and capacity mismatch increased the cognitive and emotional labour experienced by both parents and the child. As Surya reflected:

Not being a teacher ... was very difficult for both of us because I did not know how to explain it properly possibly and I think it was a lot for her (her child) to pick up and understand as well.

For many parents, traditional parent–child roles sometimes reverse entirely. Children mediate their parents' engagement with their own education. Sumarni's daughter taught her mother how to use Microsoft Teams during the COVID lockdowns, whilst Hasna relied on her daughter to interpret school communication. These role reversals challenge traditional parent–child relationships and parental authority whereby children become mediators, translators, and technology teachers. These are roles that grant them knowledge and power typically held by parents. The traditional division of labour whereby parents guide, and the child learns, is disrupted, creating new forms of relationship that acknowledge children's capacity for expanded learning and agency whilst maintaining some parental oversight.

For CALD parents who were also students, the subject–division of labour contradiction intersected with a subject–tools contradiction as limited access became persistent, further restricting parents' capacity to participate in learning activities. For instance, Hasna shared insights into the sacrifices that some parents made to support their children's online learning during the pandemic lockdowns, namely

We have to spare the connections for our daughters' school ... also we haven't got enough device ... [Parents] we are students also here, but we have to manage doing everything at night because on the day ... the internet ... the device ... is for the children.

Although digital devices and Internet access were present in the household, their use was reorganised to prioritise children's schooling during the day, relegating parents' own learning to nighttime hours. This reallocation of learning time and resources reflects an unequal distribution of academic responsibility within households, in which parents' learning is compromised to meet institutional expectations for uninterrupted learning experiences for their children at home during the lockdowns. This subject-division-of-labour contradiction intersects with the rules-division-of-labour contradiction when the rules of school participation assume that families have adequate devices and internet capacity to support their children's learning at home.

5.2.6. Between Rules and Division of Labour: Structural Mismatches

School communication systems and expectations (rules) frequently fail to align with CALD parents' actual capacity for engagement at home. Driven by privacy concerns, school communication platforms tend to be one-way, preventing parents from directly contacting teachers through the learning management system. As Sumarni explained, *"it's only information from the school to the parents."* This rule thus assumed parents could independently interpret and act on information without the ability to seek clarification. The division of labour in CALD families often involved relying on children to interpret communications or on other parents to provide translation and explanation.

Similarly, parent–teacher meetings were structured with time limits that did not match parents' information needs. Sumarni recalled that she had only ten minutes with

her son's teacher. The school system's time allocation rules reflected organisational efficiency but directly conflicted with CALD parents' need for substantive dialogue, detailed feedback, and opportunities to ask clarifying questions about their children's learning experiences.

Some parents highlighted the benefits of participating in online parent groups. For example, a mother referred to the benefits of being a part of a WhatsApp parents' group from her child's school:

I find it really ... helpful ... any questions or anything that you have in mind, you just post it. Within seconds, we get the answer from someone and someone else will back that up ... Mum's group.

School norms (rules) regulate the brevity of teachers' feedback and position parents as passive recipients of information rather than dialogic participants. For CALD parents, these rules conflicted with the labour they were expected to perform as parent-teacher, including the responsibility to interpret school expectations across linguistic and cultural differences. Being connected to a WhatsApp parent group demonstrates how parents re-configure the division of labour to address unmet needs, with parent-to-parent communication aiding the scaffolding of interpretation of information, instructions, and learning tasks beyond institutional constraints.

5.3. Tertiary Contradiction

Tertiary contradictions are visible in the tensions between home-based and school-based activity systems. Many CALD parents were familiar with an "old" activity system that complicated their children's schools' digital learning experiences during the COVID-19 lockdowns.

Traditionally, many CALD parents embodied the "old" parental role brought over in their home countries, where their primary roles centred on ensuring their children's school attendance, completing homework assigned by the schoolteachers, and deferring to teacher expertise. These are parental involvement roles. Nevertheless, drawing on Goodall and Montgomery's (2014) continuum, the tertiary contradiction required the CALD parents to shift from their anticipated traditional parental involvement with schools to meet the emerging expectation of active parental engagement as co-educators in children's learning. As highlighted in the secondary contradictions, the "new" parental role in Australian digital learning contexts requires both linguistic and digital capabilities and resources, such as reliable Internet access, for CALD parents to perform their multiple identities (parent-teacher, IT Helpdesk, co-learner).

The "old" activity system was characterised by textbook-based learning, handwritten work, and face-to-face instruction. As highlighted in the secondary contradictions, many participating parents expressed strong preferences for traditional methods. The tertiary contradiction between home-based learning and school-based learning was apparent in Ali's interview reflection:

...he was in grade one...start learning reading and writing -- it was so hard for us and for the kids as well to keep up with his education...He used to use the computer and the tablet and the phone only for fun and now he's using it for education.....it was the idea of like using the computer to study not to play...So I had to hire another teacher to come and teach him everything...

The "new" activity system demanded by Australian schools increasingly relies on digital platforms and online activities. This shift was accelerated by COVID-19 lockdowns, as one parent reflected: "I remember having to buy a laptop for her. And I'm like going 'why do you need a laptop at six years old?'" (Surya).

The tertiary contradiction exposes a fundamental difference in epistemological orientations toward learning. Several parents actively resisted full digital adoption by deliberately incorporating paper-based activities. For instance, Mirza explained how she and her husband prepared their son for the National Assessment Programme—Literacy and Numeracy (NAPLAN), an annual standardised test for students in Years 3, 5, 7 and 9 in Australia, as well as the Opportunity class (OC) test, a placement test to assess a Year 4 student's abilities in reading, thinking and mathematics: *"He does 95% offline and only 5% online... We bought him all of these books—the NAPLAN books, the OC test books, and I also print out a lot of sample tests from online on paper."* This resistance demonstrates how parents negotiated the tertiary contradiction by creating hybrid practices to adopt new digital learning requirements without compromising their traditional values.

6. Discussion

Migrant and refugee parents in Western Sydney experience layered educational exclusion shaped by disrupted educational histories, language barriers, cultural misalignment and socioeconomic precarity which are further intensified by digital exclusion. With the increased reliance on digital platforms for communication and learning at schools, these intersecting barriers risk systematically disconnecting parents from their children's education.

The study demonstrates the need for a co-construction approach in which schools, parents, and community actors can participate in expansive learning cycles that move beyond merely adapting parents to existing digital systems and instead foster the collective redesign of these systems. Operationalising this co-construction approach requires changes to both institutional structures and political conditions. Institutionally, it requires designated roles, such as school-based multicultural education coordinators, whose primary responsibility is to facilitate meaningful dialogue between schools and CALD families. The peer-mediated practices evident in this study, particularly the WhatsApp parent groups, demonstrate that the relational infrastructure for co-construction already exists within communities. The institutional challenge is to recognise, resource, and connect these emergent practices to school-level decision-making. Politically, this requires a shift in how schools conceptualise CALD families from recipients of digital inclusion programmes to active participants in their design. This process includes questioning established norms (e.g., English-only platforms, app-based communication), modelling new practices (e.g., multilingual interfaces, hybrid digital–offline communication) and implementing solutions that redistribute agency and power. Policy responses would need to reflect such a shift by moving beyond narrow digital inclusion metrics to support participatory design processes, provide funding for bilingual staff and community facilitators, and allow schools to adapt platforms in culturally responsive ways. At the systems level, collaboration among education, settlement services, and digital inclusion initiatives essential to ensure that locally co-constructed innovations are sustainable rather than fragmented.

The contradictions experienced by CALD parents were historically and culturally constituted, shaped by prior educational systems with distinct epistemological orientations, and encountered within an Australian activity system that embodies assumptions about childhood, learning, technology and parental roles. These contradictions functioned as productive tensions, driving expansive learning and evidencing the relational agency in those CALD parents' modelled solutions. Nevertheless, it should be emphasised that the modelled solutions were not individual attributes of resourceful parents, but rather agentic capacities produced through and constrained by parents' relationships with schools, technologies, peer networks and the wider community services. Within expan-

sive learning theory, our attention has been shifted from the agentic subject to the activity system as the site at which agency is enabled, challenged or redistributed.

The majority of the modelled solutions were household-level workarounds such as daily handwriting and reading rules in the home, purchasing supplementary print materials, working late at night so that children could use the family device during the day, hiring a private tutor, and continuous parental supervision of online activity. These workarounds resolved immediate contradictions for the family; however, they left the rules, divisions of labour and tools of the school-based activity system substantively intact. In Vasilyuk's (1988) sense, these were acts of "experiencing", sustaining the possibility of action under conditions of structural constraint, rather than the collective transformations that Engeström (2001) identifies as the constitutive moments of an expansive learning cycle. The clearest signs of expansive movement in the dataset emerged in peer-mediated practices, most notably the WhatsApp parent groups, in which multiple parents jointly reconfigured the division of labour beyond the household, generated new shared rules of mutual assistance and translation, and produced an emerging community of practice that began to function as a parallel activity system alongside the school. That such collective moves were comparatively rare is itself a finding: under the conditions of resettlement, linguistic exclusion and economic precarity, expansive learning was more frequently arrested at the level of individual adaptation than carried through to system-level transformation.

Constant supervision of children's online activities, the financial sacrifice of internet plans, devices and private tutoring, and the relegation of parents' own English-language and postgraduate study to nighttime hours represent coerced exercise of agency under conditions of structural absence. Where the school-based activity system did not provide reliable multilingual communication channels, accessible digital literacy support, or affordable connectivity, the labour of addressing that absence was effectively transferred to families.

The relational agency visible in parents' modelled solutions is also a form of redistribution of institutional labour onto households already navigating linguistic exclusion, economic precarity and the demands of resettlement. This formulation extends Avis's (2009) critique of activity theory's under-theorisation of power by treating the semblance of household creativity not only as evidence of resilience but also as evidence of system-level offloading. Guarding against a celebratory framing of parental agency in structurally constrained contexts is vital, as policy responses that rely on continued household compensation for institutional shortfalls are unlikely to be sustainable or equitable.

The study revealed considerable heterogeneity in how parents navigated the contradictions. This heterogeneity was likely attributable to the academic and digital resources parents brought to their Australian schooling experiences. Participants undertaking doctoral studies, working in the information technology sector, or holding prior professional qualifications readily drew on these resources to generate workarounds, including purchasing supplementary print materials and standardised-test preparation books, recruiting a private tutor, and actively participating in parent WhatsApp groups where English-medium school information could be jointly interpreted. Participants with more limited English proficiency and more constrained digital experience, such as Maya, more frequently encountered contradictions that could not be unilaterally resolved at the household level, and their accounts tended to surface the structural contradictions rather than illustrate the modelled solutions described above. The modelled solutions reported here, therefore, disproportionately reflect the practices of parents with comparatively higher academic and digital capital. Notably, the capacity to generate modelled solutions was unevenly distributed across the sample. This uneven distribution shows that a straightforward application of Engeström's (2001) expansive learning cycle cannot sufficiently ac-

count for how differences in various forms of capital shape which subjects are able to move from contradiction to solution.

While these data suggest that the demographics of the research participants broadly mirror those of Western Sydney, caution is warranted in extending the findings to CALD families across Australia. First, our sample was small and second, Western Sydney represents a unique context characterised by high levels of linguistic diversity alongside relatively strong educational participation, which may not reflect patterns in other regions where CALD populations experience different socio-economic conditions and access to resources. Furthermore, because comparable regional data on bachelor's degree attainment were unavailable, the sample's representativeness with respect to higher education levels could not be established. These factors suggest that the study's findings should be interpreted with greater caution when considering CALD communities in different settings.

A key limitation of the present study is its reliance on interview data which captured meaningful reflections but could not provide ethnographic evidence of expansive learning in action or identify a clear starting point or endpoint within an expansive learning cycle. Future research should adopt participatory and longitudinal methodologies grounded in expansive learning cycles to examine how co-constructed digital practices reshape parental engagement and institutional culture over time. Positioning migrant and refugee parents as co-researchers can contribute to the analysis of contradictions and the modelling of new activity systems.

Author Contributions: Conceptualisation, L.T. and L.N.; methodology, S.W., L.T. and L.N.; formal analysis, L.T., S.W. and L.N.; investigation, L.T., L.N. and S.W.; data curation, L.T., L.N. and S.W.; writing—original draft preparation, L.T., L.N. and S.W.; writing—review and editing, L.T., L.N. and S.W.; supervision, L.T.; project administration, L.T., L.N. and S.W.; funding acquisition, L.T. and L.N. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Centre for Western Sydney and the School of Education, Western Sydney University, in 2023, funding number is 20141.83472.

Institutional Review Board Statement: This qualitative study expands upon the findings of a Western Sydney University (WSU) research project on Human Rights and Digital Inclusion in Western Sydney on 20 October 2023 (HREC approval number H14291).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. Written informed consent has been obtained from the research participants to publish this paper using pseudonyms.

Data Availability Statement: The data underlying the findings of this study are available from the second author upon request. However, they are not publicly accessible due to ethical restrictions. For further details, see: (Tan & Naidoo, 2025).

Acknowledgments: We acknowledge the use of Claude Opus 4.7 to support the final editorial refinement of this manuscript, including enhancing concision, improving cohesion across sections, clarifying the presentation of arguments and methodological descriptions, and checking consistency between in-text citations and the reference list. Grammarly was also used for surface-level proof-reading. All intellectual content and analysis remain the work of the authors.

Conflicts of Interest: The authors declare no conflicts of interest.

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