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Teachers' and Parents' Roles in Shaping Children's Learning Behavior in the Digital Era at the Indonesia–Malaysia Borderland

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ABSTRACT

This study examines the roles of teachers and parents in shaping children's learning behavior in the digital era within the Indonesia–Malaysia borderland. A qualitative case study approach was employed in Entikong, West Kalimantan, involving an experienced elementary school teacher as the primary informant. Data were collected through a semi-structured interview and analyzed using thematic analysis. The findings indicate that digital technology functions as both a learning resource and a source of distraction. Children's learning behavior is influenced by parental supervision, teacher guidance, school regulations, and broader social environments. While digital platforms provide opportunities for accessing information and supporting independent learning, challenges related to excessive technology use, declining learning discipline, and changing social behavior remain evident. The study highlights the importance of collaboration between families and schools in promoting responsible technology use and positive learning habits. These findings contribute to understanding children's learning behavior in digitally connected borderland communities.

Penelitian ini bertujuan mengkaji peran guru dan orang tua dalam membentuk perilaku belajar anak pada era digital di wilayah perbatasan Indonesia–Malaysia. Penelitian menggunakan pendekatan studi kasus kualitatif yang dilaksanakan di Entikong, Kalimantan Barat, dengan melibatkan seorang guru sekolah dasar berpengalaman sebagai informan utama. Data dikumpulkan melalui wawancara semi-terstruktur dan dianalisis menggunakan analisis tematik. Hasil penelitian menunjukkan bahwa teknologi digital berfungsi sekaligus sebagai sumber belajar dan sumber distraksi. Perilaku belajar anak dipengaruhi oleh pengawasan orang tua, bimbingan guru, regulasi sekolah, serta lingkungan sosial yang lebih luas. Meskipun platform digital menyediakan peluang untuk memperoleh informasi dan mendukung pembelajaran mandiri, tantangan berupa penggunaan teknologi yang berlebihan, menurunnya disiplin belajar, dan perubahan perilaku sosial masih ditemukan. Penelitian ini menegaskan pentingnya kolaborasi antara keluarga dan sekolah dalam membangun penggunaan teknologi yang bertanggung jawab serta perilaku belajar yang positif pada komunitas perbatasan yang semakin terhubung secara digital.

Keywords: children's learning behavior, digital era, teacher–parent roles, borderland education

Introduction

The continuous development of digital technology has brought profound changes to the ways children access information, communicate, and participate in learning activities. The widespread availability of smartphones, internet connectivity, social networking platforms, and various digital applications has transformed children's daily experiences and expanded the environments in which learning occurs. Unlike previous generations whose educational experiences were largely centered on schools and printed materials, contemporary children increasingly encounter knowledge through diverse digital channels. These technological developments have created new possibilities for exploration, interaction, and information acquisition that extend beyond traditional educational settings. Previous studies have

highlighted that digital technologies have fundamentally reshaped learning processes by providing children with broader opportunities to engage with information, collaborate with others, and construct knowledge across formal and informal contexts (Sinclair & Baccaglini-Frank, 2016; Torres, 2021). Consequently, digital technology has become an influential element in shaping children's educational experiences and learning behavior.

The increasing integration of technology into children's lives has generated significant educational opportunities. Through digital devices and online platforms, children can access a vast range of learning resources, educational content, and interactive materials that support independent exploration and knowledge development. Digital environments provide learners with opportunities to investigate topics of interest, acquire information beyond classroom instruction, and participate in learning experiences that are no longer limited by geographical or temporal boundaries. Research has demonstrated that technology-enhanced learning environments may encourage engagement, facilitate collaboration, and contribute to the development of important cognitive and social competencies (Soyoof, 2024; Torres, 2021). These developments suggest that digital technology can function as a valuable educational resource when used in ways that support children's learning needs and developmental goals.

Despite these benefits, concerns regarding the educational consequences of digital technology have also received considerable attention. The increasing amount of time children spend interacting with digital devices has raised questions about potential effects on concentration, discipline, social interaction, and academic engagement. Scholars have noted that excessive or poorly regulated technology use may expose children to distractions that interfere with learning activities and may contribute to behavioral challenges in educational settings (Soyoof, 2024; Vossen, 2024). In addition, children are frequently exposed to a wide range of online content that may not always support positive learning outcomes. These concerns indicate that the relationship between technology and children's development is not inherently positive or negative but is influenced by how technology is used, supervised, and integrated into everyday learning experiences.

Within this rapidly evolving digital landscape, the involvement of parents and teachers has become increasingly important. Although technology provides access to information on an unprecedented scale, children often require support in developing the skills necessary to navigate digital environments responsibly and effectively. Previous research has consistently demonstrated that parental mediation influences children's online experiences, technology-related behaviors, and educational outcomes (Collier, 2016; Giovanelli, 2025; Shin, 2022). Parents therefore play a critical role in guiding children's technology use, establishing boundaries, and encouraging productive digital habits. At the same time, teachers contribute by helping students use technology in meaningful ways, promoting critical thinking, and facilitating the development of digital literacy competencies that are essential for contemporary learning.

The role of teachers is particularly significant because effective technology integration requires more than simply providing access to digital devices. Educational technologies can support learning only when accompanied by appropriate pedagogical strategies and meaningful instructional guidance. Previous studies have emphasized that teacher support remains a key determinant of whether digital tools contribute positively to educational outcomes (Li, 2025; Sinclair & Baccaglini-Frank, 2016). Teachers not only assist students in accessing information but also help them evaluate information quality, interpret digital content critically, and apply knowledge in constructive ways. Consequently, the educational impact of technology is closely

connected to the capacity of schools and teachers to create learning environments that balance technological opportunities with educational objectives.

Children's learning behavior itself represents a complex phenomenon that extends beyond academic achievement. It encompasses motivation, engagement, responsibility, participation, discipline, and other behavioral characteristics that influence how children approach learning activities. Existing research suggests that digital technologies may affect several dimensions of learning behavior, including self-regulation, problem-solving abilities, collaboration, and decision-making processes (Torres, 2021). Moreover, children's behavior is increasingly shaped by interactions that occur across multiple social environments, including families, schools, peer groups, online communities, and digital media platforms. As a result, understanding children's learning behavior in the digital era requires a broader perspective that considers the interconnected influences of social, educational, and technological contexts.

The Indonesia–Malaysia borderland provides a particularly important context for exploring these issues. Borderland communities often experience unique educational conditions shaped by geographical location, cultural diversity, uneven access to resources, and ongoing social change. Recent improvements in digital infrastructure and internet accessibility have increased children's exposure to technology throughout many border regions, creating new opportunities for educational participation while simultaneously introducing challenges related to supervision, digital literacy, and responsible technology use. Although a growing number of studies have examined digital literacy, parental mediation, technology integration, and children's digital experiences, relatively limited attention has been given to how teachers and parents jointly shape children's learning behavior within borderland settings. Consequently, there remains a need for research that explores how educational actors respond to the opportunities and challenges of digital technology in socially and geographically distinctive environments. Responding to this gap, the present study examines the roles of teachers and parents in shaping children's learning behavior in the digital era within the Indonesia–Malaysia borderland, with the aim of contributing to a more contextualized understanding of children's educational experiences in digitally connected communities.

Methods

This study employed a qualitative case study approach to explore the roles of teachers and parents in shaping children's learning behavior in the digital era within the Indonesia–Malaysia borderland context. A qualitative approach was selected because the study sought to gain an in-depth understanding of educational experiences, social interactions, and the meanings attached to children's use of digital technology in their everyday lives. Rather than measuring causal relationships or testing predetermined hypotheses, the study focused on understanding how educational actors interpret and respond to changes brought about by digitalization in a specific social setting. The case study design was considered appropriate because it enabled an intensive examination of a contemporary educational phenomenon within its real-life context, where the boundaries between the phenomenon and its surrounding environment are closely intertwined (Creswell & Poth, 2018; Yin, 2018). The Indonesia–Malaysia borderland was selected as the case because it represents a unique educational environment characterized by geographical challenges, sociocultural diversity, uneven access to educational resources, and increasing exposure to digital media.

The study was conducted in Entikong, West Kalimantan, an area located along the Indonesia–Malaysia border that has experienced significant social and technological changes in recent years. The primary participant was an elementary school teacher who has been teaching in the borderland region since 2008 and has extensive experience observing changes in children's learning behavior across different periods of technological development. The participant was selected purposively based on her long-term engagement with the local educational environment and her direct involvement in students' academic and social development. Data were collected through a semi-structured, in-depth interview, allowing the researcher to explore predetermined themes while remaining open to emerging issues and unexpected insights during the conversation. The interview focused on children's learning behavior, patterns of smartphone use, parental supervision, classroom discipline, character development, and the challenges faced by teachers in responding to the growing presence of digital technology. To enrich contextual understanding, interview data were complemented by field observations of the surrounding educational and social environment, including school conditions, community characteristics, and everyday learning practices within the borderland setting (Sugiyono, 2023; Suhirman et al., 2026; Tisdell et al., 2025).

The collected data were analyzed using thematic analysis to identify recurring patterns, meanings, and relationships across the participant's narratives. The analytical process involved several stages, including repeated reading of the interview transcript, initial coding of significant statements, categorization of related codes, and the development of broader themes that captured the central issues emerging from the data (Braun & Clarke, 2019). The themes were subsequently interpreted through the lenses of ecological and sociocultural perspectives to understand how children's learning behavior is shaped by interactions among family environments, school practices, community influences, and digital technologies. To enhance the trustworthiness of the findings, the researcher conducted careful data interpretation, maintained consistency between empirical evidence and thematic conclusions, and continuously compared emerging themes with field observations and relevant scholarly literature. The purpose of the analysis was not statistical generalization but the development of a contextually grounded understanding of how teachers and parents negotiate children's learning behavior in a borderland community experiencing rapid digital transformation (Lincoln & Guba, 1985; Miles et al., 2014).

Result

1. Children's Learning Behavior in the Digital Era

The findings indicate that the presence of digital technology has significantly influenced the learning behavior of children living in the Indonesia–Malaysia borderland. According to the informant, smartphones and internet access have become increasingly common in children's daily lives, allowing them to interact with information beyond the boundaries of the classroom. Unlike previous generations who relied primarily on teachers, textbooks, and school libraries, contemporary students are exposed to a wide range of digital content through online videos, social media, educational applications, and search engines. This situation has altered the way children acquire knowledge and engage with learning experiences both inside and outside school. The informant explained that digital media has contributed positively to children's access to information. Some students were reported to possess prior knowledge about classroom topics because they had previously encountered similar content through YouTube

videos or internet searches. As a result, children often demonstrate curiosity and are able to connect information obtained from digital platforms with lessons delivered by teachers. In this regard, digital technology functions as an additional learning resource that expands educational opportunities, particularly in borderland areas where access to conventional educational resources has historically been limited.

Despite these advantages, the findings also reveal challenges associated with children's use of digital technology. The informant observed that many students tend to use smartphones primarily for entertainment purposes rather than educational activities. Digital games, online videos, and other recreational content often occupy a substantial portion of children's screen time. Consequently, some students experience difficulties maintaining concentration during lessons because their attention remains focused on activities previously undertaken through digital devices. This condition was perceived as affecting classroom engagement, learning discipline, and students' responsiveness to instructional activities.

The findings suggest that digital technology should not be viewed solely as either beneficial or harmful for children's learning behavior. Rather, its influence depends largely on the context in which it is used and the guidance provided by adults. The same technology that facilitates access to knowledge may also become a source of distraction when used without clear educational objectives and appropriate supervision. Therefore, children's learning behavior in the digital era is shaped not merely by technological access itself, but by how digital resources are integrated into their everyday learning environment.

2. Parents' Role in Supervising Smartphone Use

The findings indicate that parents occupy a central position in shaping how children interact with digital technology outside the school environment. According to the informant, most children's exposure to smartphones occurs at home, where parental supervision varies considerably from one family to another. While many parents provide digital devices to support communication and learning, not all of them actively monitor how those devices are used. As a result, children's digital experiences are often influenced by the extent to which parents establish rules, provide guidance, and supervise online activities. The informant explained that some parents perceive children's ability to operate smartphones as evidence of intelligence and technological competence. However, such perceptions are not always accompanied by efforts to regulate the duration or content of smartphone use. In several cases, children were allowed to access digital media independently without clear limitations regarding screen time or online activities. This condition creates opportunities for children to spend more time consuming entertainment content than engaging in educational activities.

Another finding relates to differences in parental awareness regarding the educational implications of digital technology. The informant observed that parents who place strong emphasis on education tend to monitor their children's digital activities more closely. These parents often encourage learning-oriented uses of technology, remind children to complete school assignments, and establish boundaries regarding smartphone use. In contrast, limited supervision may lead children to prioritize recreational activities over learning responsibilities, particularly when digital devices are readily available throughout the day. Overall, the findings suggest that parental involvement is not limited to providing access to technology but extends to guiding children in developing responsible digital habits. The quality of parental supervision appears to influence how children balance educational and recreational uses of digital media.

Consequently, parents function not only as caregivers but also as important mediators who shape children's learning behavior within increasingly digital home environments.

3. Teachers' and Schools' Roles in Regulating Smartphone Use

The findings reveal that teachers and schools play an essential role in managing the integration of digital technology into children's educational experiences. In response to the growing availability of smartphones among students, schools have developed regulations intended to minimize distractions while preserving the educational potential of digital devices. According to the informant, smartphone use during school hours is generally restricted, particularly for younger students who may have difficulty regulating their own technology use. The informant explained that smartphones are permitted only when they directly support instructional objectives. Teachers occasionally incorporate digital tools into classroom activities, such as educational quizzes, information searches, or learning applications. By limiting smartphone use to specific educational purposes, schools seek to ensure that technology contributes positively to learning rather than disrupting classroom activities. This approach reflects an effort to balance technological innovation with the maintenance of academic discipline.

Beyond implementing regulations, teachers also serve as guides who help students navigate the vast amount of information available through digital platforms. The findings indicate that children frequently encounter information online without possessing the critical skills necessary to evaluate its relevance or accuracy. Consequently, teachers assume responsibility for helping students interpret digital content, distinguish reliable information from misinformation, and connect online knowledge with formal curricular objectives. The findings further demonstrate that teachers view character development as inseparable from academic learning. While technology may enhance access to information, teachers remain concerned with fostering responsibility, discipline, and respectful behavior among students. Therefore, their role extends beyond knowledge transmission to include the cultivation of attitudes and values that support productive learning behavior. In this context, schools function as important spaces where technology is guided by educational goals and supported by clear behavioral expectations.

4. Changes in Character, Manners, and Learning Discipline

One of the most frequently discussed issues during the interview concerned changes in children's character, manners, and learning discipline. Drawing upon extensive teaching experience in the borderland region, the informant reflected on noticeable differences between students in earlier periods and those growing up in a more digitally connected environment. These observations suggest that educational changes are not limited to learning methods but also involve transformations in children's social interactions and behavioral patterns. The informant reported that some students appear less attentive during classroom activities and more likely to challenge advice or instructions from teachers. Although such behaviors are not exhibited by all students, they were described as becoming more visible over time. The teacher associated these developments with broader social changes, including increased exposure to digital media, shifting family dynamics, and evolving patterns of communication among children and adolescents.

Another important finding is that children's behavior is shaped by multiple learning environments beyond the classroom. The informant emphasized that children learn not only from teachers and parents but also from peers, online personalities, social media content, and

digital entertainment platforms. These various influences contribute to the formation of attitudes, language use, and behavioral norms that children may bring into school settings. Consequently, schools increasingly face the challenge of responding to values and behaviors acquired outside formal educational institutions. The findings suggest that learning behavior encompasses more than academic achievement or classroom performance. It also includes respect for teachers, compliance with school regulations, responsibility toward learning tasks, and appropriate social interaction. Therefore, concerns regarding learning discipline cannot be separated from broader discussions about character development. In the digital era, fostering positive learning behavior requires attention not only to cognitive outcomes but also to the social and ethical dimensions of children's educational experiences.

5. Educational Challenges in the Borderland Context

The findings indicate that the Indonesia–Malaysia borderland provides a distinctive educational context in which technological development interacts with longstanding social and infrastructural challenges. According to the informant, the region has experienced substantial improvements in transportation, communication, electricity, and educational facilities over the past two decades. These developments have expanded opportunities for children to access information and connect with broader social networks through digital technology. The informant recalled that educational conditions were considerably different during the early years of her teaching career. Limited infrastructure and geographical barriers often restricted access to educational resources and communication networks. However, the gradual expansion of digital connectivity has transformed children's learning environments by increasing their exposure to information, entertainment, and communication technologies. This transformation has introduced new opportunities while simultaneously creating new educational challenges.

The findings also highlight changes in language use and communication practices within the borderland community. The informant noted that students today demonstrate greater familiarity with Indonesian and broader cultural references than previous generations. Increased access to digital media appears to have contributed to children's exposure to linguistic and cultural influences beyond their immediate local environment. At the same time, schools continue to promote conventional literacy practices through reading programs and library activities, reflecting efforts to balance digital and print-based learning experiences. A major challenge identified by the informant concerns the need to maintain collaboration between schools and families in supporting children's development. Teachers may establish rules and provide guidance within the classroom, but children's daily interactions with technology occur largely at home. Consequently, the effectiveness of educational efforts depends upon the consistency of expectations and supervision across both school and family environments. The findings therefore suggest that the successful development of children's learning behavior in the digital era requires collective engagement from teachers, parents, and the wider community within the unique social conditions of the borderland.

Discussion

The findings of this study demonstrate that digital technology has become an increasingly influential element in shaping children's learning behavior within the Indonesia–Malaysia borderland. The results indicate that smartphones, internet access, and digital media have transformed the ways children access information and engage with learning activities both inside and outside formal educational settings. These findings are consistent with previous

studies suggesting that digital technologies expand children's opportunities to obtain knowledge beyond conventional classroom environments. Livingstone et al. (2018) argued that digital platforms have become important sources of information and informal learning, while OECD (2019) reported that technology broadens educational participation and supports independent learning. Similarly, Lin and Dong (2021) found that online technologies provide children with greater access to educational resources and enable them to acquire prior knowledge before classroom instruction occurs. The present study supports these observations, as teachers reported that some students entered classroom discussions with information previously obtained from YouTube, online videos, and internet searches. These findings suggest that digital technology has reconfigured traditional learning pathways by allowing children to interact with diverse sources of knowledge beyond textbooks and teacher-centered instruction.

The findings concerning parental supervision, teacher guidance, and children's learning discipline are likewise consistent with previous research emphasizing the importance of adult involvement in children's digital experiences. Studies on parental mediation have demonstrated that parents play a significant role in shaping children's digital behavior through supervision, communication, and rule-setting practices (Livingstone et al., 2018; Nikken & Schols, 2015). In educational contexts, UNESCO (2023) and Ng (2021) highlighted the importance of teachers in guiding students' digital literacy development and helping them navigate increasingly complex information environments. The findings of the present study similarly reveal that children's learning behavior is influenced not only by technological access but also by the quality of support provided by teachers and parents. Furthermore, teachers' concerns regarding declining concentration, reduced learning discipline, and changing social behavior correspond with previous studies indicating that prolonged exposure to digital environments may influence children's socialization processes, interpersonal relationships, and behavioral development (George & Odgers, 2015; Twenge & Campbell, 2018). These similarities suggest that the educational experiences observed within the borderland context reflect broader challenges emerging in digitally connected societies.

However, the findings should not be interpreted as evidence that digital technology inevitably produces negative educational consequences. Several previous studies have presented alternative and more nuanced perspectives regarding the relationship between technology use and children's learning outcomes. Torres et al. (2021) found that digital technologies can strengthen collaboration, increase student engagement, and enhance problem-solving abilities when integrated effectively into learning activities. Similarly, Garshi (2020) concluded that empirical evidence regarding the negative impact of technology on learning outcomes remains inconsistent across educational settings. Research on parental mediation also presents differing interpretations. Chiong et al. (2016) argued that the quality of interaction between parents and children may be more influential than the intensity of parental monitoring itself. Likewise, studies examining smartphone restrictions in schools have generated mixed results. Turhan (2026) reported that smartphone bans reduced device use but did not significantly improve academic achievement, whereas Modecki et al. (2022) and Goodyear et al (2025) suggested that excessive restrictions may unintentionally reduce students' opportunities to access beneficial information and social support. These contrasting findings indicate that the educational effects of digital technology are highly dependent on contextual conditions, educational practices, family environments, and the ways technology is integrated into children's everyday lives.

Several theoretical mechanisms may help explain why the findings emerged in the present study. First, the rapid expansion of digital information has fundamentally transformed how children acquire and process knowledge. Livingstone et al. (2018) argued that contemporary children grow up within information-rich environments where learning opportunities extend beyond schools, libraries, and textbooks. As a result, children frequently encounter information through digital platforms before formal instruction takes place. This mechanism helps explain why teachers observed that some students already possessed familiarity with classroom topics prior to learning activities. At the same time, findings concerning distraction, reduced concentration, and declining learning discipline can be understood through Cognitive Load Theory. Sweller et al. (2019) suggested that excessive exposure to multiple sources of information may increase extraneous cognitive load, reducing learners' capacity to focus on academic tasks. Digital platforms are often designed to maintain continuous engagement through rapidly changing content streams, potentially encouraging fragmented attention patterns that make sustained concentration more challenging during classroom learning. Furthermore, Self-Regulated Learning Theory proposes that children's ability to regulate their own learning behavior continues developing throughout childhood (Zimmerman, 2015). Consequently, students may struggle to balance educational and recreational uses of technology when adequate guidance and support are absent.

The findings regarding parental supervision can be further interpreted through Parental Mediation Theory and Social Learning Theory. According to Nikken and Schols (2015), parents function as mediators who shape children's digital experiences by establishing rules, selecting content, monitoring activities, and discussing online experiences. The quality of parental mediation influences whether technology becomes a meaningful learning resource or primarily serves as a source of entertainment. In addition, Social Learning Theory suggests that children acquire behaviors through observation and imitation of significant individuals within their social environments (Bandura, 2018). From this perspective, children's digital habits are not developed independently but are strongly influenced by behaviors modeled within the family environment. Children who observe responsible technology use and receive consistent guidance are more likely to develop productive digital practices, whereas limited supervision may increase the likelihood that technology is used predominantly for recreational purposes. These theoretical perspectives help explain why differences in parental involvement were associated with variations in children's learning behavior and digital engagement.

The findings concerning teachers' and schools' roles may also be understood through Digital Literacy and Guided Learning perspectives. Although digital technologies provide unprecedented access to information, access alone does not guarantee meaningful learning outcomes. Students may possess technical skills for operating digital devices but still lack the ability to critically evaluate information quality, credibility, and relevance. Ng (2021) emphasized that digital literacy includes critical thinking, information evaluation, and responsible participation in digital environments. Similarly, Kirschner and Hendrick (2020) argued that effective learning requires structured guidance rather than unrestricted access to information. This perspective helps explain why schools in the present study adopted regulations governing smartphone use while simultaneously incorporating technology into learning activities. The findings regarding changes in children's manners, social interactions, and learning discipline may further be interpreted through Ecological Systems Theory and Social Cognitive Theory. Bronfenbrenner and Morris (2020) argued that children's development is shaped through interactions among multiple environmental systems, while Schunk and

DiBenedetto (2020) emphasized the role of observational learning in shaping attitudes and behavior. In contemporary digital contexts, children are increasingly exposed to behavioral models originating from peers, social media influencers, online communities, and digital entertainment content. Consequently, educational institutions must respond to a broader range of developmental influences than those traditionally associated with family and school environments.

The findings of this study generate several important theoretical and practical implications for understanding children's learning behavior in increasingly digital educational environments. From a theoretical perspective, the study extends Ecological Systems Theory by demonstrating that digital environments have become a significant component of children's developmental ecology, influencing learning experiences alongside family, school, and community contexts. The findings also enrich Parental Mediation Theory by illustrating that parental responsibilities in the digital era extend beyond controlling access to technology toward active guidance, communication, and digital literacy support (Nikken & Schols, 2015). Furthermore, the results reinforce the relevance of Self-Regulated Learning Theory in explaining children's ability to balance educational and recreational uses of digital technology (Zimmerman, 2015), while supporting Digital Inclusion Theory by showing that technological access alone does not automatically produce positive educational outcomes without adequate social and educational support structures (van Dijk, 2020). Practically, the findings suggest that schools should adopt balanced approaches that combine educational technology integration with clear behavioral expectations rather than relying solely on restrictive policies (Kirschner & Hendrick, 2020; UNESCO, 2023b). Teachers need to strengthen their roles as facilitators of digital literacy, critical thinking, and character development (Ng, 2021), while parents should be encouraged to engage in active digital parenting practices that promote responsible technology use at home (Nikken & Schols, 2015). Nevertheless, these findings should be interpreted in light of several limitations. The study was conducted within a specific borderland setting and relied primarily on the perspective of a single experienced teacher, which may not fully represent the experiences of parents, students, school leaders, or other educational stakeholders. In addition, the study focused on participants' perceptions and reflections rather than direct observation of children's digital practices. Future research should therefore involve a broader range of participants, employ longer periods of field engagement, and explore diverse borderland contexts in order to develop a more comprehensive understanding of how digital technology, family environments, and educational institutions interact in shaping children's learning behavior.

Conclusion

This study demonstrates that children's learning behavior in the digital era within the Indonesia–Malaysia borderland is shaped through the interaction of digital technology, family environments, school practices, and broader social conditions. Digital technology provides children with expanded opportunities to access information and acquire knowledge beyond formal educational settings; however, its educational benefits are not automatically realized. The findings indicate that the influence of technology on learning behavior depends largely on the quality of guidance and supervision provided by adults. Parents play a crucial role in regulating children's digital experiences at home, while teachers and schools function as important agents in directing technology toward meaningful educational purposes and maintaining learning discipline. Therefore, children's learning behavior in the digital era cannot

be understood solely through technological access but must be viewed as the result of interconnected relationships among digital environments, family support, and educational institutions.

This study contributes to the growing literature on digital learning and borderland education by highlighting the importance of collaborative efforts between schools and families in supporting children's development within increasingly digital environments. The findings suggest that educational responses to digitalization should move beyond concerns about technological access and focus more strongly on digital literacy, responsible technology use, character development, and active parental involvement. In the context of borderland communities, where technological transformation often progresses more rapidly than educational adaptation, strengthening partnerships among teachers, parents, schools, and communities becomes essential for fostering positive learning behavior. Future studies are encouraged to involve a wider range of participants and educational contexts to further explore the complex relationships among digital technology, parenting practices, and children's learning experiences.

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