Digital Technology and Young Children's Well-Being: A Bibliometric Mapping of Global Research Trends (2020–2025)

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ABSTRACT

Digital technology is now part of many young children's everyday lives, bringing both learning opportunities and concerns about developmental well-being. Although research in this area has expanded quickly, it is spread across fields such as developmental psychology, educational technology, and public health, and there is still limited integration of how children's well-being is represented within this broader literature. To address this gap, this study mapped the structural and thematic development of research on digital technology and young children's well-being from 2020 to 2025 by analysing 599 peer-reviewed journal articles indexed in Scopus. The analysis was conducted using VOSviewer version 1.6.20 and included annual publication trends, keyword co-occurrence mapping, country co-authorship analysis, and source co-citation analysis. The findings show that annual output increased from 64 publications in 2020 to 158 in 2025, with the most noticeable growth occurring after 2023. Keyword co-occurrence analysis revealed two clearly different strands of research, one focused on risks, especially mental health, social media, and parent-child interaction, and another focused on opportunities, particularly educational technology, game-based learning, and emerging tools such as virtual reality. Country analysis showed strong dominance by Western countries, led by the United States, the United Kingdom, and Australia, while smaller but visible Asian clusters included Malaysia and Hong Kong. Source co-citation analysis showed that the field draws mainly from developmental psychology, educational technology, and public health journals. Overall, this study offers an updated and integrated picture of the field, highlights conceptual and geographical gaps, and lays the groundwork for a more coherent framework for sustainable digital practices in early childhood education.

Keywords: Bibliometric analysis, digital technology, early childhood, educational technology, young children's well-being

INTRODUCTION

Digital technology has become deeply embedded in young children's everyday routines, shaping the ways they play, communicate, and learn (Chaudron et al., 2018). Early and repeated exposure to smartphones, tablets, and online media has also raised concerns about possible effects on cognitive, social, and emotional development. A growing body of research points to risks linked with excessive or poorly managed screen use, including attention problems, emotional stress, lower physical activity, sleep disruption, and weaker social interaction (Vedechkina & Borgonovi, 2021; Borges et al., 2025). Longitudinal studies also suggest that heavier digital immersion may gradually weaken socio-emotional well-being, especially in newer cohorts of children (Bohnert & Gracia, 2021). In addition, extended use of social media has been associated with increasing symptoms of depression and anxiety over time, suggesting possible cumulative mental health effects (Coyne et al., 2020). At the same time, recent reviews also show that digital technologies can support personalised learning and widen access to educational resources, which makes it important to examine both the benefits and risks in early childhood (Adeyemi, 2025).

These issues can be understood well through Bronfenbrenner's bioecological model of human development, which places the child within a set of nested systems that interact over time (Bronfenbrenner & Morris, 2006). In this view, digital technology influences children through the microsystem of family interactions, the mesosystem connecting home, preschool, and peers, and the broader exosystem and macrosystem shaped by policy, culture, and digital infrastructure. This model is especially useful for studying young children's digital lives because it captures both immediate influences, such as parental mediation and classroom practice, and wider forces such as national policy and cultural attitudes toward screen use. Children's digital experiences are also strongly shaped by the family environment. Parents' digital literacy, monitoring habits, and awareness of online risks all play an important role in children's online behaviour and well-being (Nikken & Schols, 2015). However, many parents still find it difficult to manage digital use at home, and differences in culture and socio-economic background can lead to uneven outcomes across households (Syukur et al., 2024).

In Southeast Asia, including Malaysia, the rapid post-pandemic adoption of digital learning tools in preschool and early primary settings has made questions about children's well-being even more urgent. Many Malaysian early childhood educators now use tablets, learning apps, and online platforms, yet local research still trails behind global studies on the longer-term developmental effects of these practices. As a result, mapping the international evidence base is an important step toward developing research and policy responses that are better suited to local needs. The period from 2020 to 2025 was selected because the COVID-19 pandemic accelerated the use of digital tools in early childhood settings around the world, leading to a sharp increase in scholarly attention to children's digital engagement and well-being.

Although scholarly interest in young children's digital engagement is growing, the research remains spread across developmental psychology, educational technology, media studies, and public health. A previous bibliometric review by Aliaño-González et al. (2022) mapped educational technology research in early childhood and found a strong focus on classroom-based applications, with limited attention to children's well-being as a separate construct. The present study extends that work in three ways. First, it focuses on the post-pandemic period from 2020 to 2025, when digital adoption in early childhood expanded substantially. Second, it places well-being alongside educational use, creating a more integrated view of risk and opportunity. Third, it examines the geographical distribution of research and the journals that anchor the field, offering a structural map that earlier reviews did not provide. A bibliometric analysis is suitable for this fragmented literature because it maps what has already been studied and points to directions for future work (Donthu et al., 2021; Zupic & Čater, 2015).

Accordingly, this study addresses two research questions:

> RQ1: How have scholarly output and international collaboration on digital technology and young children's well-being evolved between 2020 and 2025?
>
> RQ2: What dominant themes, conceptual gaps, and emerging directions characterise this body of research?

METHODOLOGY

Study design

Bibliometrics uses statistical techniques to identify the structural and quantitative characteristics of publications within a specific field (Pritchard, 1969). This study adopted a bibliometric research design guided by established methodological frameworks for bibliometric analysis (Donthu et al., 2021; Zupic & Čater, 2015). The analysis focused exclusively on peer-reviewed journal articles indexed in Scopus, as these publications represent a reliable source of scholarly communication in the social sciences. Scopus was selected as the sole database because it provides broad international coverage of peer-reviewed journals, consistent bibliographic metadata, and strong compatibility with bibliometric software such as VOSviewer (Pranckutė, 2021). Comparative studies of major academic databases show that Scopus-indexed journals are more active than those indexed by Web of Science, especially in education and the social sciences. The two databases also overlap substantially, with shared coverage in peer-reviewed literature estimated at 70 to 80 percent (Baas et al., 2020; Pranckutė, 2021).

This indicates that the core literature on digital technology and children's well-being is likely well captured in the present dataset, even without using a dual-database search. Bibliographic records were retrieved from Scopus, exported as a CSV file containing full bibliographic metadata, and subsequently analysed using VOSviewer version 1.6.20. Previous bibliometric studies in education and the social sciences have similarly relied on Scopus to map research trends and scholarly structures.

Search strategy

The search strategy was developed through an iterative process in which several keyword combinations were tested and refined to improve precision and recall. The final search string combined terms related to early childhood, digital technology, and child development outcomes. This combination kept the focus on young children's digital engagement and well-being while reducing overlap with unrelated literature. Data were extracted from Scopus on 15 October 2025. Table 1 presents the final search string.

Table 1: Search string used in the Scopus database

Database	Search String
Scopus	TITLE-ABS-KEY = ("child*" OR "young learner*" OR "early childhood" OR preschool OR "young children") AND (technology OR "digital technology" OR "digital media" OR ICT) AND ("child development" OR "learning outcomes" OR wellbeing OR "well-being")

Inclusion and exclusion criteria

The initial search in Scopus yielded 2,948 records. The publication period from 2020 to 2025 was selected because preliminary inspection indicated a notable increase in studies related to young children's technology use and well-being during and after the COVID-19 period. To maintain a focused and manageable dataset, additional filters were applied to include only English-language articles, peer-reviewed journal publications, and records classified under the Social Sciences subject area. The Social Sciences category was selected because it is the most relevant Scopus classification for research in early childhood education, developmental psychology, and family studies, although this decision necessarily excludes literature indexed primarily under Health Professions or Medicine. After the application of these criteria, 599 articles remained for analysis and were exported as a CSV file containing full bibliographic metadata. Duplicate records were removed during the export process.

Table 2: Inclusion and exclusion criteria

Criteria	Inclusion Criteria	Exclusion Criteria
Literature type	Peer-reviewed journal articles (primary studies)	Conference proceedings, book chapters, book series, editorials, theses, review articles, systematic reviews
Language	English	Non-English
Timeline	2020–2025	Published in or before 2019
Subject area	Social Sciences	Other subject areas
Geographic scope	Worldwide	None

Data analysis

The final dataset was analysed using VOSviewer version 1.6.20, a bibliometric software tool designed for the construction and visualisation of scholarly networks (van Eck & Waltman, 2017). Four complementary analytical techniques were employed on the 599 records, namely annual publication trend analysis, keyword co-occurrence analysis, country co-authorship analysis, and source co-citation analysis. Full counting was applied in the construction of the networks unless otherwise indicated, while fractional counting was used for keyword co-occurrence analysis to minimise the disproportionate influence of articles with a large number of keywords. Both author keywords and indexed keywords were included in the keyword analysis, as the use of author keywords alone produced networks that were too sparse under the selected threshold. Default association strength normalisation and a clustering resolution of 1.00 were applied in accordance with the standard settings of VOSviewer. Minimum occurrence thresholds were set at 5 for keywords, 5 publications per country, and 7

citations per source. These thresholds were chosen to preserve the readability of the maps while ensuring that the most meaningful and emerging terms remained visible in the analysis.

Keyword co-occurrence analysis

Keyword co-occurrence analysis was conducted to identify the dominant themes and conceptual patterns within the literature. This technique examines the frequency with which particular keywords appear together across the dataset, thereby revealing the underlying intellectual structure of a field. The relationships among frequently used keywords were mapped and interpreted in order to identify the major thematic groupings that characterise research on young children's digital engagement and well-being. The resulting clusters provide insight into the extent to which the literature is organised around distinct conceptual conversations, including both risk-oriented and opportunity-oriented perspectives.

Country co-authorship analysis

Country-level co-authorship analysis was undertaken to examine patterns of international collaboration and geographical distribution in the research field. This approach identifies how often authors from different countries collaborate in producing scholarly work and highlights the principal countries contributing to the literature. Mapping co-authorship links at the country level also makes it possible to identify established research hubs, emerging contributors, and the broader geographical structure of global scholarship on young children's digital lives. In this study, the analysis was used to assess the extent to which the field is shaped by concentrated centres of production or by more widely distributed international participation.

Source co-citation analysis

Source co-citation analysis was used to identify the journals that are most frequently cited together within the dataset. Co-citation patterns help reveal the intellectual base of a research field by showing which sources are commonly relied upon in combination. This technique is particularly useful for identifying the disciplinary traditions that inform current scholarship and for locating the journals that anchor the field conceptually. In the present study, source co-citation analysis was employed to determine which journal communities most strongly shape research on young children's digital engagement and well-being, and to clarify the multidisciplinary foundations of the literature.

RESULTS

The bibliometric analysis provides an overview of publication trends, thematic clusters, country-level collaboration, and the journals that anchor research on young children's digital engagement and well-being. The findings are organised into four subsections that correspond to the analytical techniques used.

Publication trends

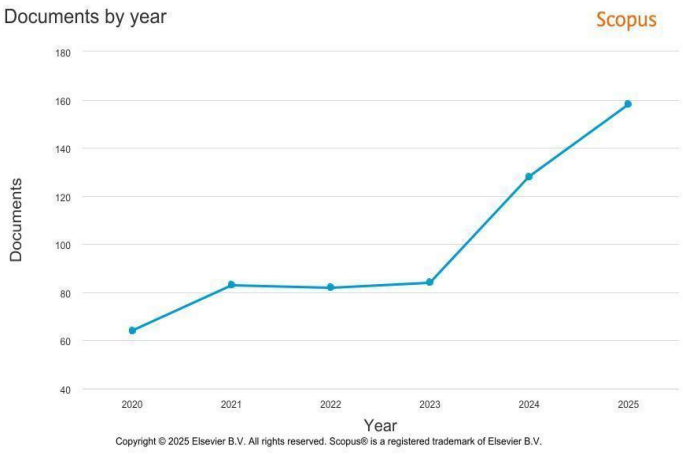

Figure 1: Annual distribution of publications, 2020–2025.

Figure 1 presents the annual distribution of publications from 2020 to 2025. The trend demonstrates a steady increase in scholarly output over the five-year period. In 2020, 64 documents were published, and this number rose to 83 in 2021. The output remained relatively stable in 2022, with 82 publications, and 2023, with 84 publications, indicating sustained scholarly attention during the post-pandemic period. A more pronounced increase emerged in 2024, when the number of publications rose sharply to 128, followed by the highest annual output in 2025 at 158 publications. Overall, the pattern reflects a 2.4-fold increase across the study period, suggesting that research on young children's digital engagement and well-being has attracted progressively greater academic attention in response to broader global discussions surrounding children's digital lives.

Keyword co-occurrence

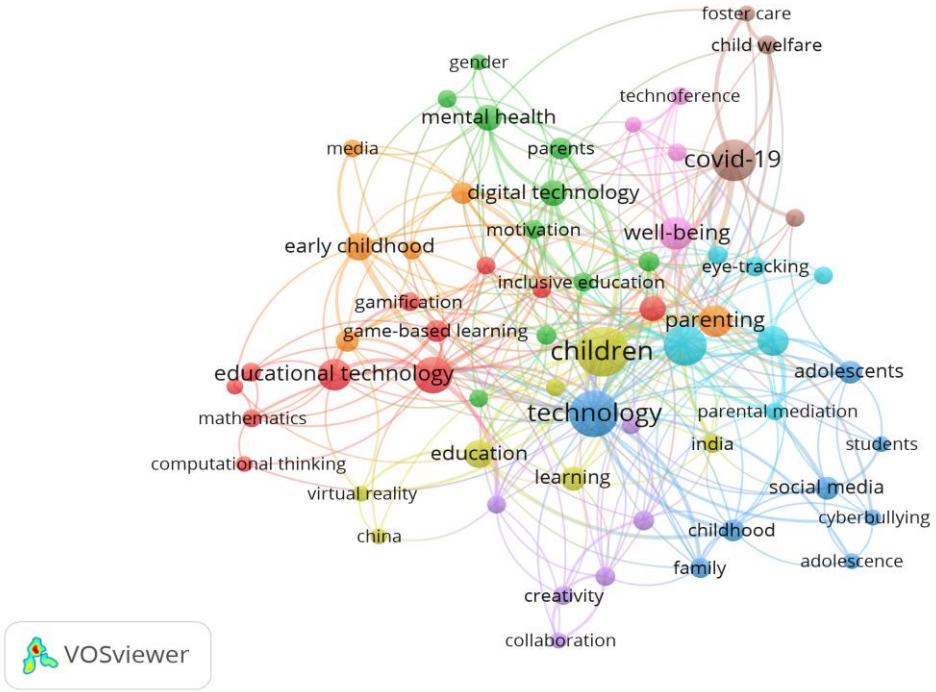

Figure 2: Co-occurrence network of keywords. Of 3,241 keywords, 62 met the minimum occurrence threshold of 5.

The keyword co-occurrence map identified 62 frequently used keywords that illustrate the conceptual development of research on young children's digital engagement and well-being during the period under review. Central terms such as children, technology, well-being, education, and learning occupied prominent positions in the network, indicating their foundational relevance across the literature. These keywords function as core connectors within the field, linking studies that address both educational and developmental dimensions of children's digital experiences. The clustering of terms further reveals that the literature is not organised around a single dominant perspective but instead comprises multiple thematic directions. As shown in Table 3, the keyword network generated several distinct but interrelated clusters, each reflecting a different conceptual emphasis within the broader research landscape.

Table 3: Thematic clusters identified in the keyword co-occurrence network

Cluster	Thematic Focus	Representative Keywords
Cluster 1 (Red)	Educational technology and digital learning	Educational technology, game-based learning, gamification, computational thinking, mathematics, inclusive education
Cluster 2 (Green)	Risk and mental health	Mental health, digital technology, parents, motivation, media, gender
Cluster 3 (Blue)	Social media and adolescent context	Adolescents, social media, parental mediation, cyberbullying, family, childhood

Cluster 4 (Yellow)	Learning and educational practice	Education, learning, virtual reality, creativity, collaboration, China
Cluster 5 (Pink/Brown)	Pandemic and family context	COVID-19, parenting, technoference, well-being, eye-tracking, child welfare, foster care

The clusters trace the conceptual breadth of the field, ranging from risk-focused psychological work (Twenge & Campbell, 2018) to opportunity-focused educational technology research (Neumann, 2018; Qian & Clark, 2016). The prominence of COVID-19 as a node in Cluster 5 reflects the post-pandemic acceleration of research interest in this domain, while the appearance of eye-tracking and technoference signals the emergence of more specialised methodological and conceptual directions.

Country co-authorship

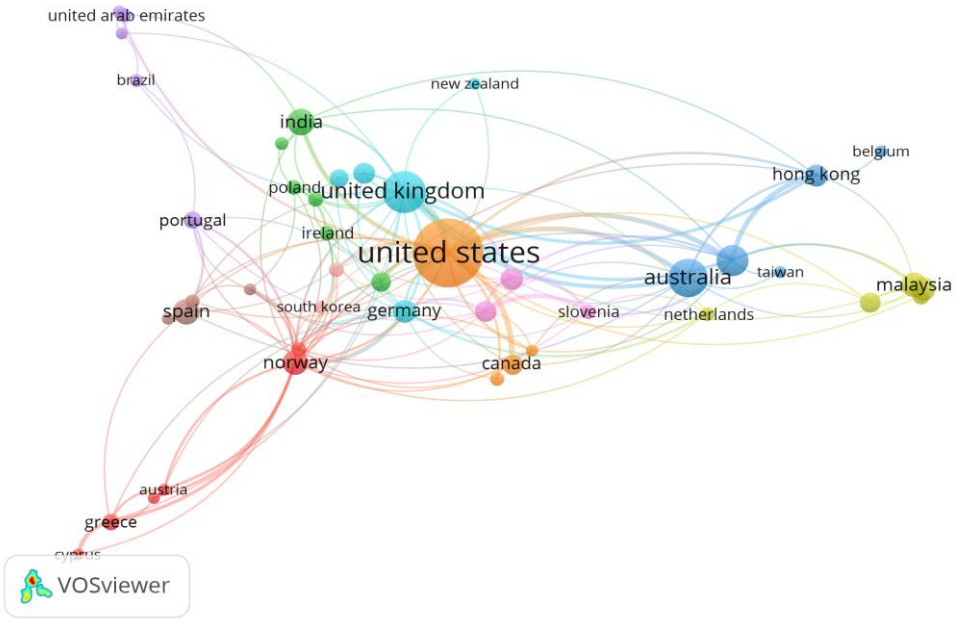

Figure 3: Co-authorship analysis by country. Of 91 countries, 47 met the minimum threshold of 5 publications.

Figure 3 presents the international co-authorship network by country. Out of 91 countries represented in the dataset, 47 met the minimum threshold of five publications. The United States occupies the most central position in the network, with the largest node and the highest number of collaborative links, indicating its leading role in both output and connectivity. Other strong clusters are formed around the United Kingdom, Australia, Germany, Norway, and Canada, all of which occupy prominent positions within the network. Asian countries, including Malaysia, Hong Kong, Japan, China, and South Korea, also form a visible cluster, reflecting increasing participation from the Asia-Pacific region. The density of links across regions suggests that the field is highly internationalised and that scholarly production in this area often depends on cross-national collaboration.

Table 4: Leading countries in the co-authorship network

Regional Cluster	Leading Countries	Network Position
North America	United States, Canada	Most central; largest node
Western Europe	United Kingdom, Germany, Norway, Spain, Portugal, Ireland	Highly connected; multiple sub-clusters
Oceania	Australia, New Zealand	Strong international links
Asia-Pacific	Hong Kong, Malaysia, Taiwan, South Korea, China, India	Emerging cluster; smaller nodes
Other regions	United Arab Emirates, Brazil, Greece, Cyprus, Austria	Peripheral; limited links

Source co-citation

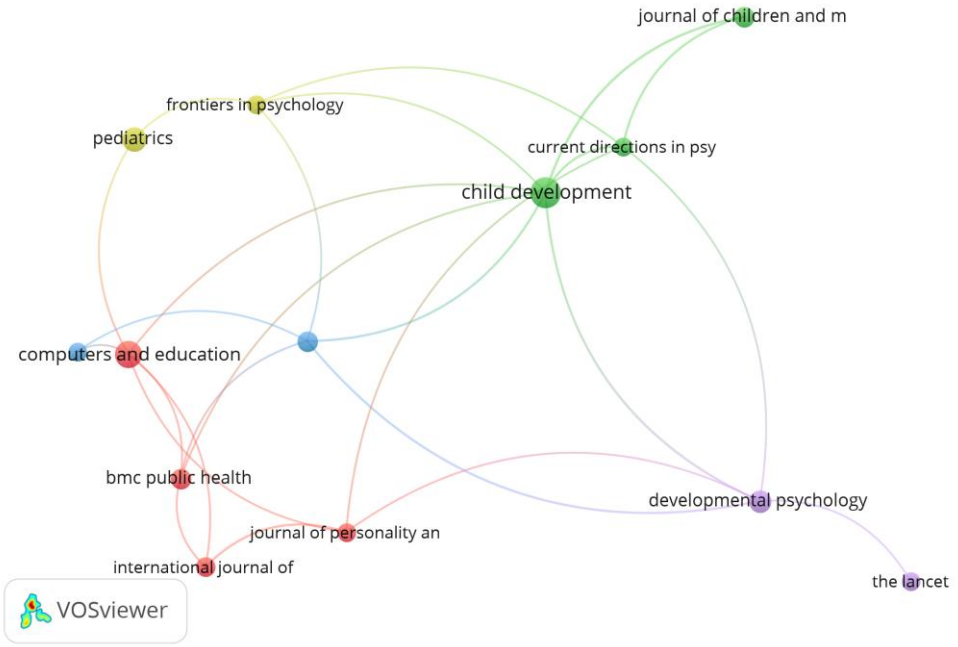

Figure 4: Co-citation network of source journals. Of 811 sources, 15 met the minimum citation threshold of 7.

Figure 4 maps the co-citation network of the journals that constitute the intellectual foundation of this research area. Of the 811 sources identified, 15 met the minimum citation threshold of 7 and were grouped into several interconnected clusters. Child Development emerged as the most frequently co-cited journal, reflecting its central role in framing children's digital experiences through developmental and psychological perspectives. It is closely linked with Developmental Psychology, Current Directions in Psychological Science, and Frontiers in Psychology, indicating that the literature draws heavily on psychological and developmental traditions. A second cluster is centred on Computers and Education, highlighting the influence of educational technology scholarship, and is connected to BMC Public Health and the International Journal of Environmental Research and Public Health. The inclusion of Pediatrics and The Lancet further demonstrates the multidisciplinary character of the field, which spans education, psychology, media studies, and public health.

DISCUSSION

The findings of this study reveal several important patterns that merit deeper interpretation. In particular, the discussion considers the coexistence of risk and opportunity narratives, the dominance of Western scholarship, the growing visibility of advanced digital tools, and the implications of these patterns for theory and practice. Taken together, the results suggest that research on young children's digital engagement and well-being is developing rapidly, but it remains conceptually divided and unevenly distributed across regions and disciplines.

Coexistence of risk and opportunity narratives

The keyword network shows a clear division into two structurally distinct regions. One region is primarily risk-oriented and centres on terms such as mental health, social media, parents, parental mediation, and cyberbullying. The other is more opportunity-oriented and focuses on educational technology, game-based learning, virtual reality, and computational thinking. The relatively limited number of direct links between these regions suggests that the literature still contains relatively little conceptual exchange between scholars studying harm and those examining educational potential. In other words, the field continues to be shaped by two parallel conversations rather than a single integrated body of knowledge.

This separation is significant because it reflects more than a difference in topic; it indicates a deeper conceptual divide in how digital technology is understood in relation to children's development. Research in the risk-oriented strand tends to emphasise the negative effects of screen exposure, including emotional strain, reduced sleep quality, and weaker social or behavioural regulation. In contrast, the opportunity-oriented strand tends to highlight the pedagogical value of digital tools when they are used intentionally and in developmentally appropriate ways. Although both strands are valuable, their limited interaction means that the field has not yet developed a shared framework capable of capturing the full complexity of digital childhood.

A bioecological interpretation helps clarify this issue. From this perspective, digital technology itself is neither inherently harmful nor inherently beneficial. Its effects emerge through the child's interactions with family members, educators, peers, and the broader social environment. This suggests that future research should move beyond simple binary judgments about technology and instead ask under what conditions, for whom, and in which contexts digital use contributes to or undermines well-being. Such a shift would make it possible to connect the risk and opportunity literatures more productively.

Western dominance and uneven global participation

The country co-authorship map indicates that this research area remains heavily concentrated in Western countries. The United States occupies the most central position in the network, followed by the United Kingdom, Australia, Germany, Norway, and Canada. Although countries in Asia-Pacific, including Malaysia, China, Hong Kong, Japan, and South Korea, are visible in the network, they occupy more peripheral positions. This pattern reflects a broader tendency in global scholarship, where research production and international collaboration are often dominated by institutions and countries in the Global North (Danell, 2025).

The implications of this imbalance are important. Much of the evidence that informs discussions of children's digital use is based on Western family systems, school structures, and digital infrastructures. Yet these conditions do not necessarily reflect the realities of many other contexts, especially in Southeast Asia. In Malaysia, for example, children's digital experiences may be shaped by multilingual households, shared device use, extended family caregiving, and different parental expectations regarding screen use. As a result, conclusions drawn from Western research may not transfer directly to non-Western settings without adaptation.

This uneven participation also has implications for what kinds of questions are asked and what kinds of evidence are valued. When a field is dominated by a limited set of regions, it can overlook culturally specific forms of digital practice and underrepresent the needs of children in diverse social environments. The findings therefore support the need for more regionally grounded research that can capture the realities of children's digital lives in underrepresented contexts. A more balanced global research base would strengthen the field's relevance and improve the cultural validity of its recommendations (Chen & Carroll, 2024).

Emerging digital tools

The keyword analysis also shows the emergence of more advanced digital tools such as virtual reality, eye-tracking, and game-based learning. Their presence suggests that the field is moving beyond basic questions of screen use and beginning to engage with more sophisticated forms of digital interaction. This development reflects broader changes in early childhood education, where technology is increasingly being used not only for access to content but also for interaction, assessment, and adaptive learning (Hutchison et al., 2016).

The appearance of eye-tracking is especially notable because it points to a growing interest in how children process and respond to digital environments at a fine-grained level. This suggests that future research may increasingly rely on methods that capture attention, engagement, and cognitive processing in more precise ways. At the same time, the presence of virtual reality and related interactive tools indicates that the field is exploring immersive learning environments with possible applications in early childhood education. These technologies may offer new opportunities for learning, exploration, and motivation, but they also raise important concerns about suitability, accessibility, and ethical use.

The increasing visibility of these tools suggests that the field is becoming more technologically diverse. However, it also highlights the need for caution. Advanced digital environments should not be treated as automatically beneficial simply because they are innovative. Their value depends on how they are designed, introduced, and supported in real educational and family settings. This is particularly important in early childhood, where developmental appropriateness and adult mediation remain essential.

Theoretical implications

The study has several implications for theory. First, it shows that the field would benefit from stronger theoretical integration. At present, the literature on risk and the literature on opportunity largely operate as separate strands, each with its own assumptions, methods, and vocabulary. This fragmentation limits the field's ability to generate a more comprehensive understanding of children's digital lives. A more integrated theoretical approach would allow researchers to bring together psychological, educational, and social perspectives in a shared analytical framework.

Second, the findings reinforce the usefulness of the bioecological model as a conceptual lens. By placing the child within nested and interacting systems, this framework makes it possible to understand digital technology not as an isolated influence but as part of a broader developmental ecology. It also helps explain why the same digital tool may have different effects depending on the family environment, educational setting, and wider cultural context. In this sense, the bioecological model offers a more flexible and realistic way to interpret the field's findings.

Third, the recurring use of broad and sometimes generic keywords suggests that the field has not yet fully stabilised its conceptual vocabulary. Terms such as digital well-being, sustainable digital practice, and developmentally appropriate technology use appear inconsistently and are not always defined in a uniform way (Kaye et al., 2020). This lack of conceptual precision makes it harder to compare studies and build cumulative knowledge. Future theoretical work should therefore focus on defining core constructs more clearly and establishing greater consistency across studies.

Practical implications

The findings also have clear implications for practice. In early childhood settings, technology should be used as part of a structured and developmentally appropriate learning environment rather than as a stand-alone solution. Digital tools are most likely to be effective when they are integrated into play-based, interactive, and teacher-guided activities. This approach can help prevent passive consumption and instead support active engagement, communication, and learning.

For families, the results emphasise the importance of parental mediation. Parents play a central role in shaping children's digital habits through monitoring, co-use, and modelling appropriate behaviours. Strengthening parental digital literacy may therefore be one of the most effective ways to support healthy digital practices at home (Magdaleno-Palencia et al., 2025). This is especially relevant for younger children, whose online and screen-based experiences are often mediated by adults.

The rise of technologies such as virtual reality, artificial intelligence-supported learning, and eye-tracking also raises ethical and developmental concerns (Su et al., 2023). Practitioners should pay careful attention to data privacy, informed consent, and the developmental suitability of digital tools. Institutions should develop clear criteria for evaluating educational technologies so that decisions are based not only on novelty but also on pedagogical value, child safety, and long-term developmental appropriateness. In settings such as Malaysia, these practices should also be adapted to local cultural norms, infrastructure conditions, and family digital readiness.

Limitations

This study has several limitations that should be acknowledged when interpreting the findings. First, the analysis relied exclusively on Scopus-indexed journal articles. Although Scopus offers broad international coverage and

high-quality bibliographic metadata, the use of a single database may have excluded relevant studies indexed elsewhere. Therefore, a dual-database approach, such as combining Scopus with Web of Science, could have captured a broader and potentially more diverse body of literature.

Second, bibliometric analysis depends heavily on author-assigned and indexed keywords. While this approach is useful for identifying patterns across large datasets, it may also obscure more subtle conceptual developments and overemphasise broad or generic terms. As a result, some emerging ideas may not have appeared clearly in the network maps, especially if they were expressed through varied terminology across studies.

Third, the search strategy was limited to the Social Sciences subject area. This decision was appropriate for the focus of the study, but it also meant that some potentially relevant research classified under Health Professions or Medicine was not included. Because of this, the dataset reflects an intentional disciplinary scope rather than the entire field of research on children's digital technology use and well-being.

Fourth, country-level co-authorship analysis identifies geographical patterns of collaboration, but it does not reveal variation within countries or the influence of specific institutions, research centres, or research groups. This means that the map shows broad international structures rather than more detailed institutional dynamics. In addition, the reliance on publication counts and co-citation patterns means that the analysis captures the structural shape of the field but not the full depth of individual study designs, theoretical perspectives, or qualitative nuance.

Finally, the relatively limited presence of sustainability-related terms in the retrieved keywords suggests that the concept of sustainable digital practice is still not well established in this literature. This indicates both a conceptual gap and an opportunity for future work to develop this area more explicitly. For these reasons, the findings should be interpreted within the boundaries of the selected database, subject area, and analytical method.

Future research

Future studies could extend this work by incorporating additional databases such as Web of Science to provide a broader view of the literature. Further research could also examine related subject areas beyond Social Sciences, particularly Health Professions and Medicine, to capture a more comprehensive picture of children's digital well-being. In addition, longitudinal and mixed-methods studies are needed to deepen understanding of how digital technology influences young children's developmental outcomes over time. It could also focus on underrepresented regions, especially in Asia, Africa, and Latin America, in order to strengthen the global relevance of the evidence base. Future research should also combine bibliometric analysis with systematic literature reviews or qualitative review approaches to provide a deeper evaluation of research quality, theoretical foundations, and methodological patterns across studies. While bibliometric techniques are effective for mapping publication trends, collaboration networks, and thematic structures, unfortunately, they are less able to examine the depth, rigour, and conceptual consistency of individual studies. Integrating bibliometric mapping with systematic or qualitative evidence synthesis would therefore allow future scholars to identify not only dominant research themes, but also the strengths, limitations, theoretical frameworks, and methodological gaps that shape the field of young children's digital well-being research.

CONCLUSION

This bibliometric study mapped the development of research on digital technology and young children's well-being between 2020 and 2025. The findings show that scholarly output more than doubled over the study period, with particularly strong growth after 2023, reflecting expanding academic attention to children's digital engagement in the post-pandemic era. The analysis also revealed that the literature is shaped by two broad but somewhat separate strands, one focused on risk and mental health, and the other focused on educational opportunity and digital learning. At the same time, the field is marked by uneven global participation, with Western countries continuing to dominate scholarly production while Asian countries, including Malaysia, are becoming more visible.

The study contributes to the literature in three main ways. First, it provides an integrated bibliometric map of post-pandemic research on digital technology and young children's well-being. Second, it places well-being alongside educational use rather than treating the two as separate concerns. Third, it identifies both conceptual and geographical gaps that may help shape future scholarship. The findings suggest that the field would benefit from stronger theoretical integration, clearer conceptual definitions, and greater attention to culturally diverse settings.

Overall, the study highlights the need for a more coherent framework for understanding sustainable digital practices in early childhood. Such a framework should account for risk, opportunity, and developmental responsiveness across the different environments in which young children live and learn. It should also support more contextually grounded research, informed parental mediation, and ethical use of emerging digital technologies in early childhood education.

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