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The Digital Divide in Education: A Bibliometric Analysis

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ABSTRACT

This study conducts a bibliometric analysis to investigate research trends in the digital divide in education, focusing on the development of academic works, the most prominent authors and institutions, and core themes. The analysis relies on data from the Scopus database, providing an extensive scope of academic sources across various fields. The search process retrieved studies from 1999 to 2025, focusing on keywords related to the digital divide, access to technology, and educational inequalities. The study indicates a significant increase in publications since 2016, with a pronounced growth following the COVID-19 pandemic, reflecting the heightened concern for digital education disparities. The study highlights leading authors and institutions, particularly those in recognised scholarly communities, and emphasises the cross-field scope of the research, with research covering various academic disciplines. Additionally, the analysis traces changes in themes of the digital divide, with a growing focus on the socio-cultural, gender, and policy-related dimensions of digital inequality. The co-citation network indicates an interconnected research landscape, with leading researchers influencing discussions on digital inclusion and equity in education. The findings suggest the necessity of varied academic lenses, particularly in examining the prolonged effects of the digital divide and the impact of policy efforts aimed at reducing disparities.

1.0 INTRODUCTION

The issue of the digital divide in education has received growing attention within the global academic field in recent years. The increasing use of technology in educational systems has highlighted disparities in access to digital tools, resources, and connectivity, influencing the ability of students and educators to adapt to modern educational methods. Although the growth of digital technology presents new possibilities for learning, it can reinforce disparities and create challenges for disadvantaged groups, including low-income families, rural communities, and marginalised populations. This growing technological disparity has broad effects on individual academic success, community involvement, economic mobility, and social inclusion (Iivari Et Al., 2020).

The importance of addressing the digital divide in educational contexts has been broadly recognised across academic research and public policy discussions. Nonetheless, considerable gaps exist in the literature, particularly concerning a detailed understanding of the digital divide's overall extent, the

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underlying reasons for disparities, and its prolonged consequences on educational outcomes. Literature has often focused on descriptive analyses; however, the growing demand for more comprehensive studies is apparent. The interrelationship of various factors, such as socio-economic status, geography, gender, and disabilities that influence accessibility to education should be analysed (Deursen & Dijk, 2018). Previous studies have suggested that socio-demographic and cultural factors, such as age and gender, contribute to differences in technological engagement, yet a full understanding of their combined effects on learning challenges is still lacking (Liu et al., 2020; Yang & Ma, 2024). It is significant to highlight that, while research has emphasised the role of technological infrastructure, fewer works have examined the sociocultural and policy-related dimensions that contribute to differences in access (Agormedah et al., 2020; Yersel et al., 2023).

One notable area that requires additional study is the long-term effects of the digital divide on educational outcomes. Most existing studies emphasise short-term implications, while the sustained consequences on education and long-term success have received limited attention. Understanding these long-term impacts would provide useful knowledge into the impact of policies addressing the digital divide (Kumi-Yeboah et al., 2023).

Moreover, the role of policy in addressing the digital divide requires more studies. Although many studies discuss difficulties related to digital inequality, limited research has been conducted in assessing the effectiveness of specific governmental and institutional policies to reduce these inequalities (Kuo-Hsun et al., 2018; Adeleye et al., 2024). Studies on the impact of educational policies are important for understanding how educational systems can implement structured plans to reduce the digital divide and provide necessary digital tools to marginalised populations.

1.1 Research Questions

This study intends to examine the digital divide in education through a comprehensive bibliometric analysis. By examining trends in academic research, identifying key authors and main institutions, and outlining topic progression, a detailed perspective of the present research landscape is provided. It not only intends to add to existing research but also aims to suggest practical directions for research that could contribute to reducing disparities in education. The following are the research questions of this study.

i. What are the research trends in the digital divide in education according to the year of publication?
ii. Who are the most prolific authors in the field of the digital divide in education?
iii. Which institutions contribute the most to the digital divide in education?
iv. What are the leading journals publishing on the digital divide in education?
v. Which country contributes the most to the digital divide in education?
vi. What is the dominant subject area published on the digital divide in education?
vii. What are the most frequently used keywords in research on the digital divide in education?
viii. What are the main citation clusters of the digital divide in education?

2.0 LITERATURE REVIEW

The digital divide has evolved from being understood merely as a technological gap to a multidimensional issue encompassing economic, social, and cultural inequalities that affect participation in the digital era. Within education, this divide extends beyond the physical availability of devices or internet access to include disparities in digital skills, learning opportunities, and institutional support. With technology becoming integral to teaching and learning, unequal access and usage have been shown to reinforce existing educational and social inequalities rather than reduce them (Deursen & Dijk, 2018; Iivari et al., 2020).

Earlier studies primarily conceptualised the digital divide in terms of access, commonly referred to as the "first-level divide." However, subsequent research expanded this notion to include the "second-

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level divide," which concerns differences in skills and usage, and the "third-level divide," which focuses on the outcomes or benefits derived from technology use. This progression reflects a broader recognition that the digital divide is not only technological but also social in nature, shaped by factors such as income, gender, education level, and geography (Liu et al., 2020; Yang & Ma, 2024).

The integration of digital technologies in educational settings has expanded learning opportunities while simultaneously exposing persistent structural inequalities. Studies across both developed and developing countries demonstrate that students from low-income families, rural areas, or marginalised groups face considerable barriers in accessing online learning platforms and acquiring essential digital competencies (Agormedah et al., 2020; Pietro, 2021). The COVID-19 pandemic intensified these inequalities, as the abrupt transition to remote learning exposed deficiencies in digital readiness and accessibility. This period saw a growing scholarly interest in digital inclusion, resulting in an increasing number of studies focused on educational access, equity, and resilience within digital environments (Kumi-Yeboah et al., 2023; Tahmasebi, 2023).

The discussion on digital inequality has broadened to include policy, institutional, and cross-sectoral perspectives. Scholars have increasingly examined how government initiatives, school leadership, and community partnerships can mitigate digital disparities through targeted programs, teacher training, and infrastructure development (Kuo-Hsun et al., 2018; Yersel et al., 2023). According to Kuo-Hsun et al. (2018), higher national income and greater political freedom are associated with increased investment in research, development, and education, which in turn helps narrow digital divides. Numerous studies highlight the absence of consistent policy efforts, especially in developing countries constrained by limited infrastructure and financial resources (Garçon et al., 2024). Nonetheless, there is still limited evidence on the long-term effectiveness of these interventions and on how contextual factors influence their outcomes.

Recent literature reflects a noticeable shift toward greater interdisciplinarity in examining issues related to the digital divide. Publications are no longer confined to education or information technology but increasingly intersect with public health, social sciences, and sustainability studies (Yang et al., 2022). For example, researchers have begun exploring the impact of digital inequalities on student well-being, mental health, and community resilience during crises (Iivari et al., 2020; Tahmasebi, 2023). The integration of sustainability perspectives reflects a growing recognition of digital inclusion as a dimension of sustainable development. The co-citation and keyword analyses in this bibliometric study are therefore essential in mapping how these thematic areas converge and evolve over time.

In summary, the literature highlights that although the digital divide in education is widely recognised as a global issue, existing research remains dispersed across various disciplines and regions. Hence, a comprehensive bibliometric analysis is timely to synthesise existing knowledge, identify key contributors and emerging themes, and offer clearer insights into how scholarship in this field has developed.

3.0 METHODOLOGY

The study's methodology involves analysing bibliometric data from scientific publications dealing with the digital divide in education. The analysis utilises bibliometric mapping to analyse trends in the publication of this topic.

3.1 Literature Search

This study used the Scopus database, which is one of the largest abstract and citation databases of peer-reviewed literature. A literature search was performed on March 10, 2025, to find publications that discuss the digital divide in education.

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3.2 Search Term

The search term was chosen to cover a wide range of the digital divide in education. As a result, the following Boolean search string was employed in the systematic review process:

TITLE-ABS-KEY (("digital divide" OR "technology gap" OR "digital inequality" OR "access to technology" OR "technology access") AND ("education" OR "learning" OR "schools" OR "students" OR "teachers" OR "classrooms") AND ("inequality" OR "disparities" OR "access barriers" OR "e-learning" OR "digital inclusion")) AND PUBYEAR > 1999 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (OA , "all"))

4.0 DATA ANALYSIS

This section describes the data analysis methods used in the study, including the search strategy, data selection criteria, descriptive statistics, and visualisation techniques.

4.1 Search Strategy and Data Selection Criteria

A systematic search strategy was employed using Scopus to identify the relevant publications. It was based on a comprehensive Boolean search string that combined terms such as "digital divide," "technology gap," and "digital inequality" with education-related keywords like "learning," "students," and "teachers." The search was conducted with specific selection criteria to focus on scholarly publications published between 1999 and 2025, and the language was limited to English-language texts. This approach helped include studies from diverse sources across various disciplines, including social sciences, technology, and education, and offered a comprehensive dataset for subsequent analysis.

4.2 Descriptive Statistics

The first phase of data analysis involved descriptive statistics to provide an overview of the bibliometric landscape. The publications retrieved from Scopus were grouped by publication date, allowing for an analysis of research trends over time. In addition to publication trends, the data was also analysed to identify influential scholars, institutions, leading journals, and countries contributing to the field.

4.3 Visualisation Techniques

Various visualisation techniques were applied to gain deeper insight into the data. One of the key tools was the use of publication trend graphs, which visually represented the growth in scholarly articles over time. Additionally, keyword co-occurrence network maps were used to highlight common topics within the research. Another key visualisation employed was the co-citation network, which mapped citation relationships. These visualisations not only provided insights into the primary research trends but also offered a more detailed understanding of how the field has evolved.

5.0 FINDINGS

The bibliometric analysis reveals several key findings that illustrate the evolution and scope of research on the digital divide in education. Overall, findings reveal a marked growth in scholarly publications from 2016 onward, with a notable surge after the COVID-19 pandemic, highlighting heightened global concern about technology-related educational inequalities. The findings also identify influential authors, institutions, journals, and countries that have made substantial contributions to this area of research. Furthermore, the analysis highlights the interdisciplinary nature of the field, with contributions spanning social sciences, medicine, computer science, and public policy. Keyword and co-citation network analyses further reveal thematic concentrations around digital inclusion, policy development, and the socio-demographic factors influencing educational disparities.

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5.1 Publication Trends Over Time

The diagram presented in Figure 1 illustrates the notable growth in scholarly publications related to the digital divide in education.

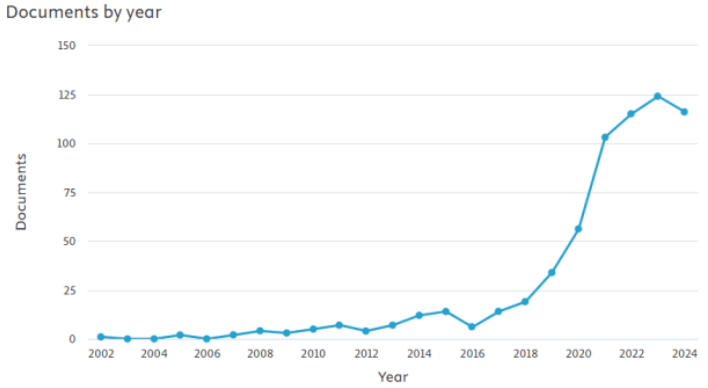

Fig. 1. Publication trends over time

Initially, the number of publications remained relatively low, with fewer than 10 documents per year until around 2015. However, from 2016 onward, a noticeable growth was observed in the number of publications, with a pronounced increase observed in the years following 2020. This rise in scholarly activity is especially evident in 2022 and 2023, where the number of documents exceeds 125 per year. The upward trend can be attributed to increasing academic and policy interest in the digital divide, especially during the COVID-19 pandemic, which worsened disparities in digital access for educational purposes. This trend demonstrates an increased attention to the importance of addressing digital inequalities in education, encouraging researchers and institutions to focus on understanding and reducing these challenges.

5.2 Prolific Authors

Figure 2 presents a chart of the most prolific authors in the field of the digital divide in education, showcasing the publication counts for the top 10 authors.

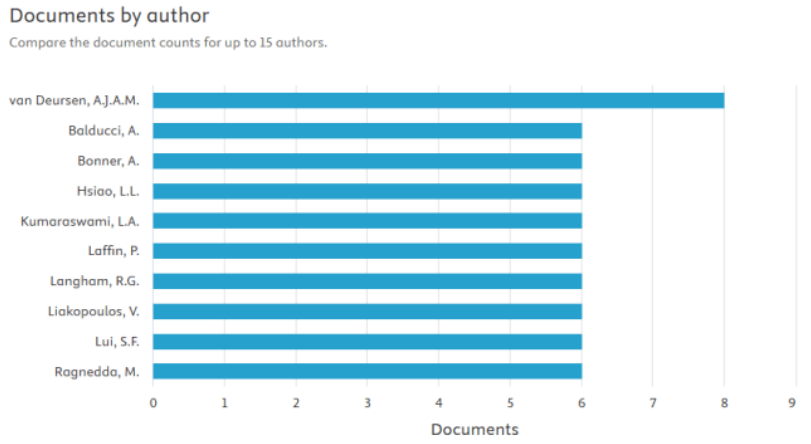

Fig. 2. List of prolific authors with publication counts and total publications

The chart reveals that van Deursen is the top author, with 8 publications. The next group of authors, including Balducci, Banner, Hsiao, and Kumaraswami, with 6 documents each, indicates a significant and steady presence in the field. This trend of multiple authors contributing a similar number of publications

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is also observed in other names, such as Langham, Liakopoulos, Lui, and Ragnedda, who have all made considerable contributions.

5.3 Contributing Institutions

Figure 3 illustrates the top contributing institutions to research on the digital divide in education, based on publication counts.

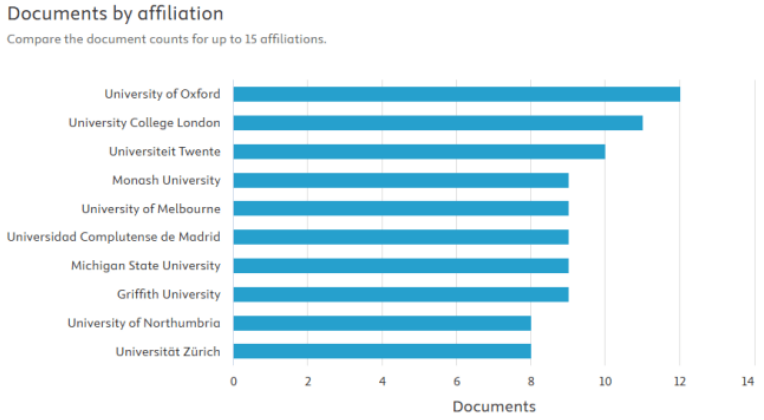

Fig. 3. Top contributing institutions with publication counts

The University of Oxford leads the chart with the highest number of publications, closely followed by the University College London, which also demonstrates notable scholarly activity in this field. Other major institutions, such as Universiteit Twente, Monash University, and the University of Melbourne, contributed between 8 to 10 publications, indicating their consistent contribution to digital divide research. Universities from various global regions, including Universidad Complutense de Madrid, Michigan State University, and Griffith University, also rank highly, reflecting the international scope of research on this issue.

5.4 Leading Journals

Figure 4 presents the publication trends over time for the top journals in the field of digital divide research, specifically highlighting the number of documents published per year by source.

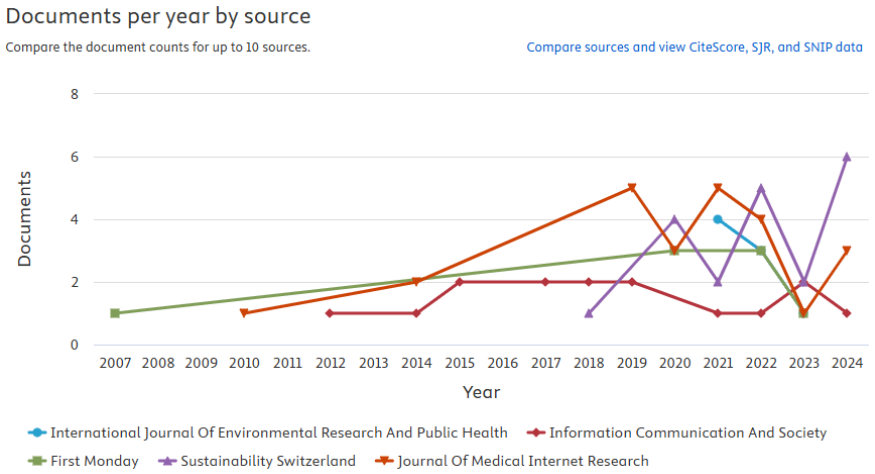

Fig. 4. Top journals with publication counts and years

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The publication trends across top journals in digital divide research reveal a marked increase in scholarly interest over time, particularly from 2015 onward. Early contributions were modest, with steady output from *First Monday* and *Information Communication and Society*. However, a significant surge occurred between 2020 and 2021, likely driven by the COVID-19 pandemic, which highlighted disparities in digital access. During this period, journals such as the *Journal of Medical Internet Research* and the *International Journal of Environmental Research and Public Health* published their highest number of articles. Notably, *Sustainability Switzerland* has emerged as a leading outlet in recent years, showing rapid growth and becoming the top contributor by 2024. This trend suggests a growing interdisciplinary focus, particularly linking digital equity with sustainability and public health concerns.

5.5 Country Contributions

Figure 5 provides an overview of the top contributing countries or territories to the body of research on the digital divide in education, based on the number of documents published.

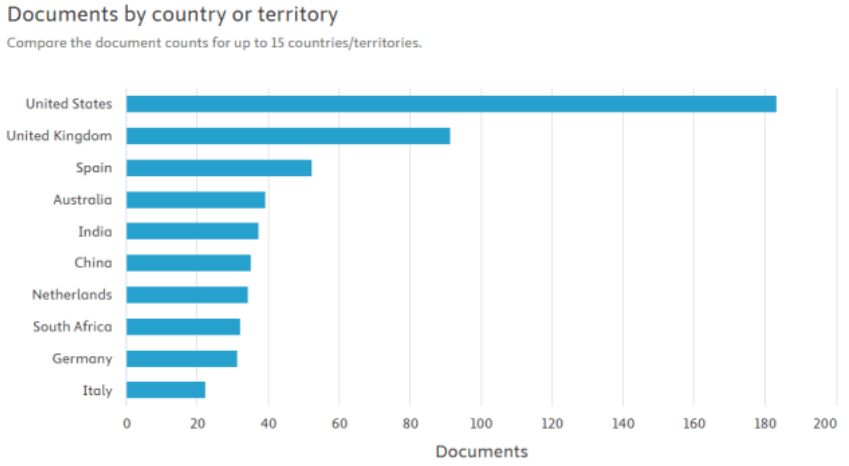

Fig. 5. Top contributing country/territory with publication counts

The United States dominates the field, with a significant lead in the number of publications, followed by the United Kingdom. The result indicates the high academic productivity and research activity in these two countries. Spain ranks third, showing a considerable role in the global discourse, while Australia and India follow with steady but consistent publication outputs. China, Netherlands, South Africa, Germany, and Italy contribute comparatively fewer publications, but their presence highlights the increased international involvement with the issue of digital inequality in education. This distribution suggests that while the majority of research on the digital divide is concentrated in English-speaking countries, there is also an emerging interest in this topic across Europe, Asia, and Africa. The variation in publication counts may reflect varying levels of research funding, institutional support, and socio-political factors influencing the digital divide in education in different regions.

5.6 Subject Area Distribution

Figure 6 illustrates the breakdown of documents on the digital divide in education across various academic subject areas.

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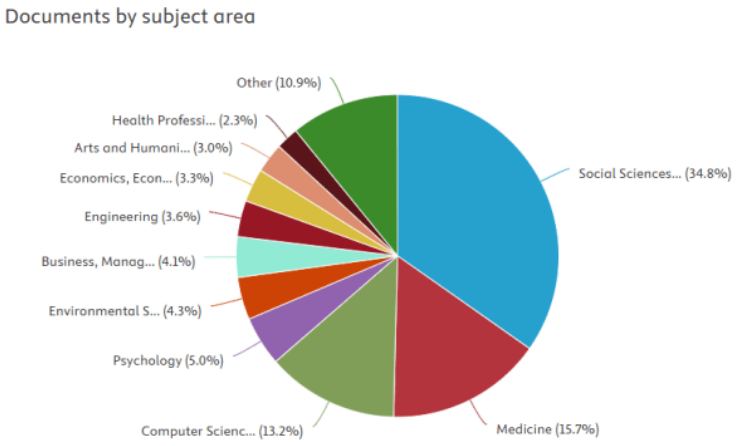

Fig. 6. List of subject areas

The largest proportion of publications, accounting for 34.8%, falls under the Social Sciences category, reflecting the notable concentration on socio-economic, policy, and educational aspects of the digital divide. Following this, Medicine emerges as the second-largest subject area, contributing 15.7% of the total documents, indicating an interdisciplinary interest in the health-related implications of digital inequality, especially concerning education. Computer Science, with 13.2% of publications, highlights the role of technological infrastructure and digital tools in addressing the divide. Other notable contributions include Psychology (5.0%), reflecting the cognitive and behavioural aspects of digital engagement, and Business, Management (4.1%), highlighting the institutional and organisational perspectives on bridging digital gaps. Smaller, yet noteworthy portions of the literature are dedicated to fields such as Engineering, Economics, and Arts and Humanities, each representing the intersection of the digital divide with infrastructure, economic factors, and human culture. This distribution reflects the interdisciplinary nature of research on the digital divide, with diverse academic fields contributing to a comprehensive understanding of the issue.

5.7 Keyword Co-occurrence Analysis

Figure 7 presents a network visualisation map of keyword co-occurrence in the literature related to the digital divide in education.

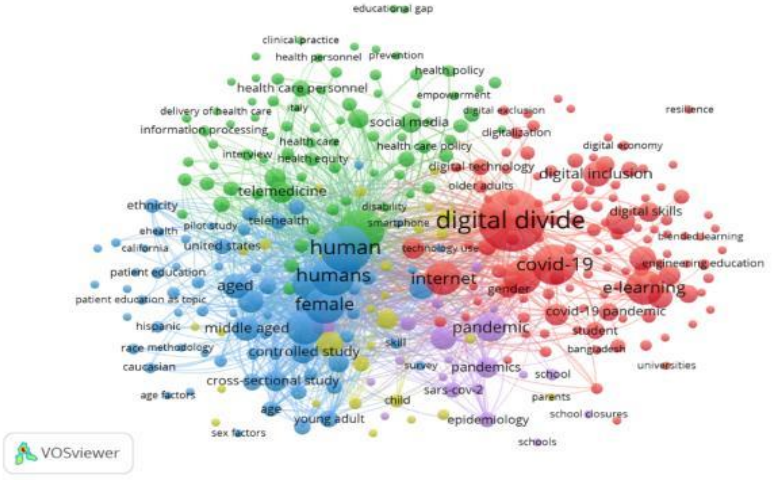

Fig. 7. Network visualisation map of keyword co-occurrence

The diagram uses colour-coded clusters to represent distinct thematic areas within the research. The largest cluster, shown in red, revolves around the core topic of the digital divide, with related keywords such as digital inclusion, digital skills, digital technology, COVID-19, and e-learning. This indicates a considerable emphasis on the technological and educational implications of the digital divide. The green cluster is centred around health and policy themes, highlighting keywords such as healthcare personnel, social media, health policy, empowerment, and telemedicine, emphasising the intersection of the digital divide with healthcare, public policy, and social factors. The blue cluster features keywords related to demographics and populations, suggesting that demographic factors (like age and gender) are commonly studied in relation to the digital divide, possibly revealing inequities in educational access across groups. Finally, the purple cluster emphasises pandemic-related keywords, notably COVID-19, pandemic, and internet access, reflecting the role of the digital divide in intensifying educational inequalities during the global health crisis through school closures and remote learning. The interconnectedness of these keywords reflects the diverse aspects of the digital divide, which spans technology, human experiences, global crises, and policy issues. This visualisation highlights the cross-disciplinary research efforts needed to understand and address the digital divide in education comprehensively.

5.8 Evolution of Research Themes

Figure 8 shows an overlay visualisation map of keyword co-occurrence, categorised according to the year of publication, with a colour gradient representing the period from 2019 to 2023.

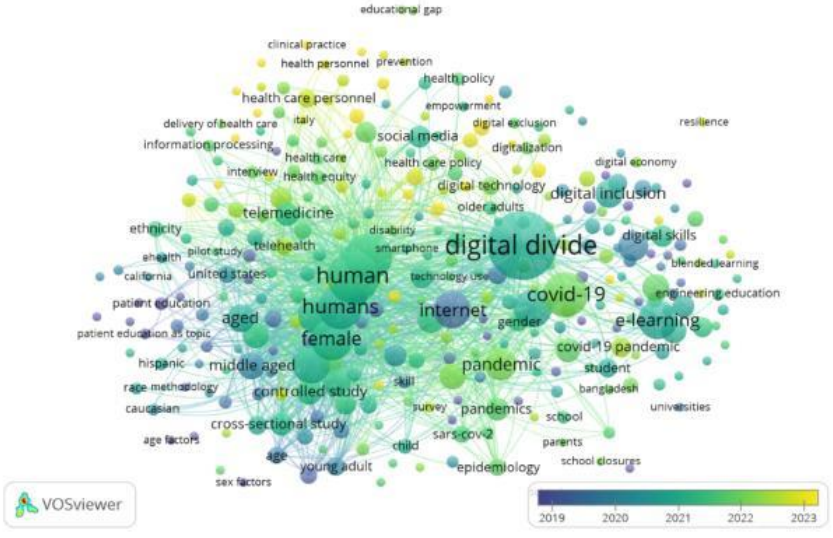

Fig. 8. Keywords co-occurrence overlay visualisation map according to year

The map highlights the evolution of research topics related to the digital divide, where keywords from earlier years (2019) are shown in blue, and more recent keywords (2023) are represented in yellow and green. The central cluster, related to the digital divide, remains constant, but keywords like COVID-19, pandemic, e-learning, and digital inclusion gain attention as the research focus shifts towards the pandemic's impact on education and technology access. This shift is particularly evident in the green and yellow areas, which dominate the map from 2021 to 2023, indicating growing academic attention to how the digital divide has been worsened by the global health crisis. Keywords such as internet access, school closures, and social media have appeared more frequently in recent years, reflecting the urgency of addressing educational inequalities amplified during the pandemic. The map illustrates how the discourse surrounding the digital divide has progressed, with a growing emphasis on digital education, technology

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skills, and the social and health-related dimensions of the divide, especially in response to the COVID-19 crisis.

5.9 Co-citation Network Analysis

Figure 9 presents a co-citation network of cited authors within the context of the digital divide in education, showcasing how frequently authors are cited together in academic literature.

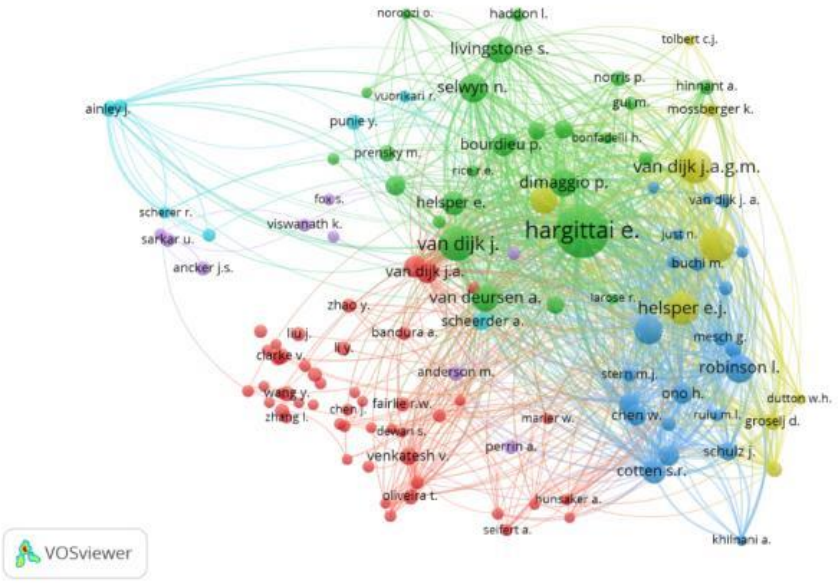

Fig. 9. Co-Citation Network of Cited Authors in the digital divide in education

The diagram uses colour-coded clusters to represent groups of authors whose works are frequently co-cited, indicating their interrelated contributions to the field. The green cluster, at the centre of the network, highlights influential scholars such as Van Dijk, Hargittai, and Selwyn, who have made important contributions to the theoretical foundations of the digital divide, particularly concerning access to technology and its socio-cultural implications. The blue cluster includes authors like Robinson and Helsper, whose work revolves around the intersection of digital technology and education, emphasising digital literacy, educational access, and socioeconomic factors. The red cluster includes scholars such as Zhao, Bandura, and Venkatesh, whose research focuses on the global dimensions of the digital divide and its impacts on educational policy and infrastructure. The yellow cluster highlights scholars such as Groselj and Dutton, who represent new or bridging researchers between different schools of thought. The varying network connections between authors reflect the collaborative nature of research in this field, with scholars often citing each other to build on shared themes and concepts. This co-citation network highlights the cross-disciplinary nature of research on the digital divide, which spans education, sociology, technology, and public policy, highlighting key thought leaders who shape the academic discourse on this important issue.

6.0 DISCUSSION

The findings of this study show significant insights into the development of studies concerning the digital divide in education, which has been a focal point of scholarly attention over the last two decades. Academic engagement significantly increased after 2016, especially during the COVID-19 pandemic, demonstrating a greater need to address disparities exacerbated by the crisis. This period demanded a

rapid shift towards online learning, making the issues of digital accessibility and socio-economic barriers to education crucial for researchers and policymakers alike. The literature suggests that addressing such disparities has become critical, as digital inclusion is now recognised as an indispensable aspect of educational equity and broader societal well-being (Yang et al., 2022; Tahmasebi, 2023).

The increase in research output during the pandemic corresponds with findings from Yang et al., who note that global crises often catalyse heightened interest in digital educational methods (Yang et al., 2022). Moreover, the studies emphasise that while the digital landscape presents opportunities for educational advancements, persistent disparities related to technology access continue to challenge equitable educational practices (Tahmasebi, 2023). This highlights the need for policy reforms and specific interventions aimed at bridging the digital divide, particularly for marginalised communities (Tahmasebi, 2023).

An analysis of author contributions reveals a concentration of scholarly output among a select group of researchers, with figures like van Deursen at the forefront. This trend could indicate the development of a core academic network which, while facilitating expertise, may also indicate a potential lack of diversity in scholarly perspectives within the field. The prominence of certain authors and institutions raises important concerns about the inclusivity of research agendas and the representation of various socio-economic contexts in the discourse surrounding digital equity (Western et al., 2021).

Institutional contributions indicate that leading research universities, such as the University of Oxford and University College London, play key roles in shaping the narrative surrounding the digital divide. This institutional landscape reflects the significant contribution of well-funded universities in addressing global challenges, yet it simultaneously reveals a hesitance to fully engage with the diverse geographic perspectives that the problem requires. Countries outside of the traditional research powerhouses, such as Australia and India, have begun to contribute to this discourse, indicating a gradual shift towards a more diverse global conversation on educational disparities.

Journals like the International Journal of Environmental Research and Public Health and Information Communication and Society have emerged as key platforms for expressing concerns over digital inequality in education. The persistence of key themes, including digital literacy and inclusion, reflects a growing recognition of the interconnectedness of educational pathways and public health outcomes (Rundel & Salemink, 2021). Thus, the cross-disciplinary nature of the digital divide is significant; the complexity of its implications extends beyond education, implicating health, sociology, and technology studies.

The thematic analysis revealed that issues of gender, socioeconomic status, and rurality consistently surface within the educational digital divide literature. For instance, regional research found that school and community efforts alone might be insufficient to combat entrenched digital disparities (Tahmasebi, 2023; Zerrer & Sept, 2020). Therefore, comprehensive solutions necessitate collaborative initiatives that engage diverse stakeholders from policymakers to community organisations while leveraging talent across disciplines to address not only technical access but also social factors critical for effective digital engagement (Garçon et al., 2024).

Lastly, the co-citation network analysis highlights a collaborative academic network featuring influential scholars like Van Dijk and Hargittai, whose theories underpin much of the current literature (Reisdorf & DeCook, 2022). This interconnectedness fosters a cumulative approach to knowledge generation in the field, where nuanced discussions benefit from the incorporation of diverse academic traditions. Such collaboration is vital for deriving more holistic approaches to the complex digital divide, rendering it necessary that future research endeavours continue to cultivate these connections across academic disciplines and geographical boundaries.

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7.0 LIMITATIONS AND RECOMMENDATIONS

This study, while offering valuable insights into digital divide research in education through bibliometric analysis, has several limitations that future research should address. Relying solely on the Scopus database introduces potential bias, as it does not include all available journals, especially those from non-English speaking regions or those not indexed by Scopus. This could result in the underrepresentation of research published in journals from specific geographical areas or disciplines that do not meet Scopus's indexing criteria. Consequently, contributions from underrepresented regions such as sub-Saharan Africa, Latin America, or Southeast Asia may be overlooked. As the study focused solely on English-language publications, it shows a language bias. Several important studies addressing the digital divide may exist in other languages, yet they are excluded from this analysis. Future studies should include multiple databases and non-English publications to provide a more global and inclusive perspective and offer knowledge of how educational disparities develop in different socio-political contexts. Priority should also be given to developing countries, where the digital divide is often more noticeable due to limited infrastructure, resources, and access to technology.

Additionally, bibliometric analysis emphasises the quantity of publications and citations rather than the quality or impact of the research, and cannot capture the nuanced impact of individual studies or the broader social, political, and economic contexts shaping the digital divide. Furthermore, this study is entirely secondary, relying on existing publications. While bibliometric analysis offers useful information about trends, it does not provide primary data regarding the attitudes, experiences, or needs of individuals affected by the digital divide. To enrich current findings, future research should incorporate qualitative approaches such as interviews, surveys, and case studies that directly involve students, educators, and policymakers or particularly involving marginalised groups like rural populations, people with disabilities, and underprivileged communities. Such primary data would provide a clearer understanding of how the digital divide impacts educational systems and how it can be addressed.

Given that the study revealed increasing attention to policy and government influence in bridging the digital divide, future research should examine more deeply the role of governmental and institutional policies in alleviating these disparities. Investigating the effectiveness of specific policy interventions, such as subsidised internet access, digital literacy programs, and the distribution of digital devices, is important. Comparative studies that assess the outcomes of different national strategies or that evaluate the success of cross-border educational initiatives would provide a better understanding of the effectiveness of strategies.

Lastly, there is a lack of longitudinal studies that assess the long-term impact of the digital divide on educational outcomes. Future research could explore how disparities in access to digital technologies affect students' academic performance, engagement, and overall success in the long run. Such studies could also track the effects of interventions over time, allowing researchers to evaluate the sustainability of policy measures and the evolving nature of the digital divide. Understanding these long-term effects will be important in developing appropriate strategies for promoting equitable access to education.

8.0 CONCLUSION

This bibliometric analysis provided a comprehensive overview of the research landscape concerning the digital divide in education. Through examining publications retrieved from the Scopus database, the study identifies significant trends, prominent scholars, and evolving themes in this important field of educational research. The results demonstrate a marked increase in publications, particularly from 2016 onward, with the COVID-19 pandemic serving as a key driver for the growth in academic interest. The study highlights the significance of digital inclusion and recognises the growing focus on socio-cultural factors, gender, and policy-related aspects of the digital divide. The analysis also reveals the concentration of research contributions among a small group of prominent authors and institutions, reflecting the need for broader diversity in perspectives. Furthermore, the growing emphasis on policy interventions and interdisciplinary research emphasises the need for holistic solutions that address not

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only technological access but also the socio-economic and cultural dimensions of digital inequality. This study provides a basis for future research that can contribute to bridging the digital divide and ensuring equal educational opportunities for all learners.

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CONFLICT OF INTEREST STATEMENT

The authors confirmed that there is no conflict of interest in this article.

AUTHORS' CONTRIBUTIONS

Ida Murni Hashim conceptualised the study, developed the research methodology, performed the analysis, and wrote the findings and discussion. Razida Haneem Mohd Radzil wrote the recommendations and conclusion, provided critical insights, and contributed to improving the analysis. Both authors reviewed and approved the final version of the manuscript.

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