



Exploring Rural Education in 5.0 Era: Trends, Challenges, and Future Research

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ABSTRACT

This study aims to explore the research landscape of rural education in the Society 5.0 era. The method employed was a bibliometric study, which included performance analysis and science mapping. We analyzed publication growth, the most productive countries, and the most prolific and influential authors in this field. In addition, using science mapping techniques, we identified emerging research themes, evolving trends, and potential directions for future studies. The data were retrieved from the Scopus database. The findings indicate that publication growth in rural education has increased significantly, particularly since 2019. Although fluctuations were observed in the earlier period, the overall trend suggests growing scholarly attention to this topic. Publication productivity is dominated by developed countries such as the United States and Australia, while India, Brazil, and China represent major contributors from developing countries. The most productive author was Nguyen, Trung Thanh from Gottfried Wilhelm Leibniz Universität Hannover, Germany, followed by Grote, Ulrike from the same institution. Keyword analysis revealed that rural education, China, rural areas, education, students, teaching, rural population, rural schools, e-learning, and child were the ten most frequently occurring keywords. However, keywords such as engineering education, science education, equity, household income, and mobility remain underexplored and offer promising avenues for future research. This study is expected to serve as a reference for a comprehensive mapping of the rural education research landscape, to identify existing research gaps, and to provide recommendations for future research priorities, particularly in underexplored areas.

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1. INTRODUCTION

Over the past decade, the world has witnessed significant transformations in technology and in the ways people interact, communicate, and learn. These developments are closely associated with the emergence of the Society 5.0 era, which is characterized by the integration of digital technologies and artificial intelligence (AI) into various dimensions of human life. First introduced in Japan, the concept of Society 5.0 envisions a human-centered society in which advanced technologies, such as AI and the Internet of Things (IoT), are used to improve quality of life and address social challenges more effectively (Deguchi, 2020; Fukuda, 2020). In education, this concept provides a relevant framework for understanding how technological innovation can support more inclusive, adaptive, and meaningful learning environments, particularly in underserved contexts such as rural areas.

Rural areas continue to face persistent challenges in terms of educational access and quality. Limited resources, less relevant curricula, and insufficient exposure to modern technologies remain common barriers for students in these settings. As a result, the educational gap between rural and urban communities continues to widen. Rural education also has distinctive characteristics that differentiate it from urban education, including stronger dependence on local communities, contextualized curricula, and learning practices that are often shaped by informal interactions (Mfum-Mensah, 2009; Zimmerman & Weible, 2017). In many rural contexts, schools function not only as educational institutions but also as centers of community life, where relationships among teachers, students, and parents tend to be closer than in urban settings. At the same time, these conditions are often accompanied by structural disadvantages, particularly in relation to educational quality and equitable access to learning opportunities (Arendse, 2019; Boutte & Johnson, 2013; Shi & Sercombe, 2020).

The urgency of addressing rural educational disparities is reflected in global data. According to UNESCO (2021), approximately 258 million children and adolescents worldwide remain out of school, and a substantial proportion of them live in rural areas in developing countries. Recent studies also indicate that students in rural areas tend to have lower school participation rates than their urban counterparts, which contributes directly to disparities in learning outcomes (Betancur et al., 2024; Ma et al., 2024; Xiang & Stillwell, 2023). These patterns suggest that discussions of educational transformation in the Society 5.0 era should not focus solely on technological optimism, but also on how digital change intersects with geographic inequality and unequal educational opportunities.

Several previous studies have contributed to the literature on rural education. Li et al. (2023) conducted a bibliometric study to examine research trends in rural education in China over the past two decades. In the United States, Thier et al. (2021) mapped the literature on rural education and highlighted issues related to definitions, location types, sectors, and the role of communities. Thier and Beach (2019) further reported that many educational studies in the United States have not sufficiently considered geographical context, particularly rural settings. More recently, Wang et al. (2024) explored rural teachers' perspectives on the use of extended reality (XR) technologies in education, emphasizing their potential to improve educational quality in resource-constrained settings. Similarly, Mangione et al. (2024) examined the relationship between artificial intelligence and teachers' professional development in small and rural schools. Through a scoping review, they identified three major subthemes: the use of intelligent environments for teacher training, teachers' perceptions of AI-based solutions, and the development of intelligent agents to support teaching.

Although these studies have provided an important foundation, several gaps remain. Existing research tends to focus on specific countries or particular technologies, resulting in a fragmented understanding of the broader rural education research landscape in the Society 5.0 era. There is still limited bibliometric evidence that systematically maps publication growth, identifies the main contributing countries and authors, and reveals emerging themes as well as underexplored areas in this field. Such a gap is important because rapid digital transformation requires a more comprehensive understanding of how rural education research is evolving and where future inquiry should be directed.

To address this gap, the present study employs a bibliometric approach to examine the research landscape of rural education in the Society 5.0 era. Specifically, it combines performance analysis and science mapping to analyze publication growth, identify the most productive countries, and determine the most prolific and influential authors in the field. In addition, science mapping is used to uncover major thematic clusters, emerging trends, and potential directions for future research. By doing so, this study aims to provide a clearer understanding of the intellectual structure of rural education research and its future trajectory.

A more comprehensive understanding of this research landscape is important for both scholarly and practical reasons. Academically, it can help researchers identify dominant themes, influential contributors, and underexplored topics. Practically, it can inform policymakers and educators in designing more targeted strategies to improve educational quality and access in rural areas. In the context of the Society 5.0 era, technological transformation should be seen not only as a matter of innovation adoption but also as an opportunity to reduce longstanding inequalities in education.

2. METHOD

2.1 Research Design

This study employed a quantitative approach using bibliometric analysis to examine research trends and intellectual patterns in the field of rural education. Bibliometric analysis is widely used to identify the structure, evolution, and performance of scientific literature through the application of quantitative techniques to publication data, making it particularly suitable for mapping a research domain systematically and objectively (Donthu et al., 2021; Mukherjee et al., 2022). In this study, bibliometric analysis was divided into two main components, namely performance analysis and science mapping (See figure 1). Performance analysis was used to examine the productivity and impact of the literature, while science mapping was used to visualize relationships among keywords, authors, and thematic patterns within the dataset. The analytical procedure adopted in this study followed the stages proposed in bibliometric research guidelines, including dataset identification, data filtering, performance analysis, and knowledge mapping (Donthu et al., 2021).

2.2 Data Source and Search Strategy

The database used in this study was Scopus, which is widely recognized as one of the most reputable and comprehensive sources of scientific literature for bibliometric research due to its high-quality indexing standards and broad disciplinary coverage (Rullyana & Triandari, 2025; Pranckutė, 2021). The search strategy was designed to retrieve documents specifically related to rural education. To ensure relevance, the search query was limited to document titles containing the keywords “rural education” OR “rural school” OR “rural schools.” In addition, several inclusion parameters were applied. First, only documents written in English

were included. Second, only documents at the final publication stage were selected. Third, the dataset was restricted to documents published in journal sources and conference proceedings. Fourth, the publication period was limited to 2017–2023. This time frame was selected because the discourse on Society 5.0 began to gain relevance from 2017 onward, making this period appropriate for capturing recent developments in the literature.

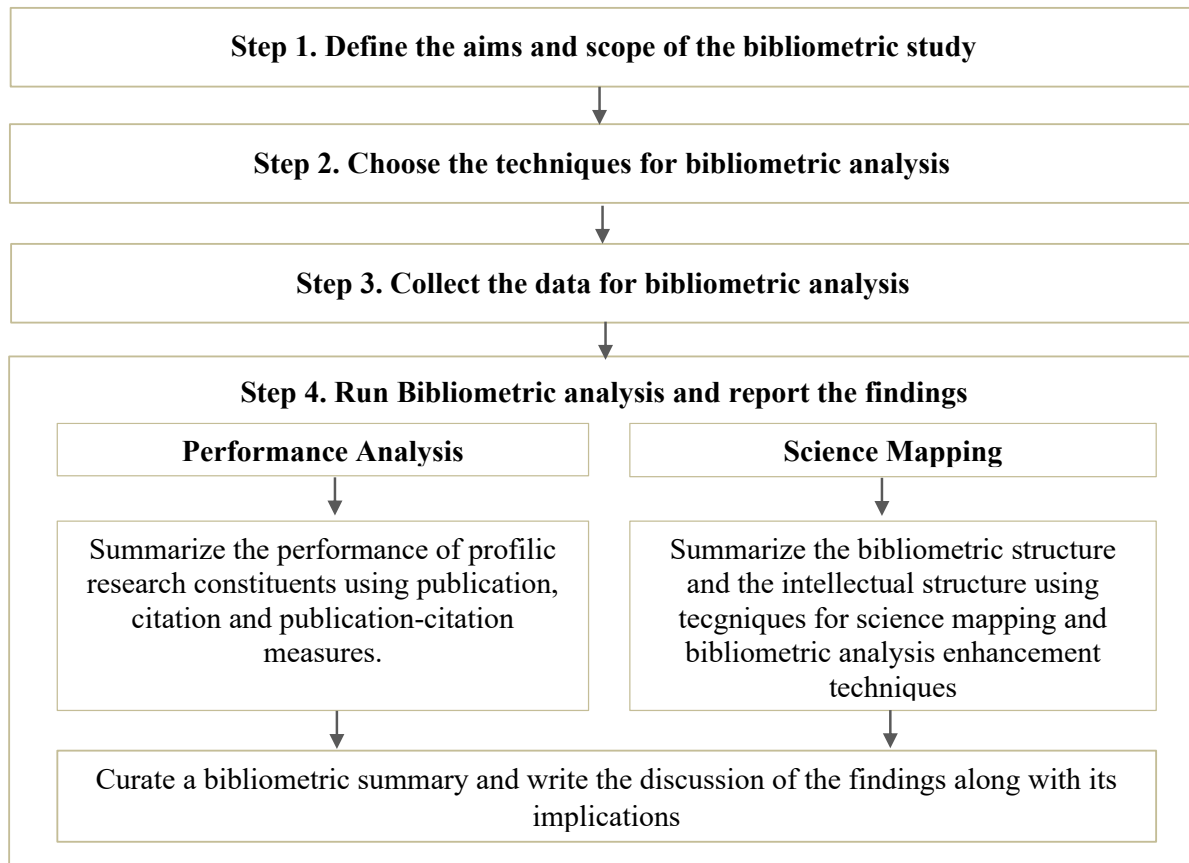


Figure 1. Analysis Procedures in Bibliometric Research (Donthu et al., 2021).

2.3 Inclusion Criteria and Data Selection

To ensure consistency and relevance, the study applied a set of explicit inclusion criteria during the data selection process. Documents were included only if they met all of the following conditions: the title explicitly referred to rural education or rural schools; the publication was written in English; the publication status was final; the source type was either a journal article or a conference proceeding; and the year of publication fell within the period from 2017 to 2023. These criteria were established to produce a focused dataset that reflected recent scholarly attention to rural education within the selected time horizon. By restricting the corpus to final English-language publications indexed in Scopus, the study aimed to ensure data quality, comparability, and reliability for subsequent bibliometric analysis. The final dataset of 502 documents was then exported and prepared for further examination.

2.4 Data Analysis and Visualization

The analysis consisted of two complementary stages. The first stage, performance analysis, was used to identify the productivity of the literature, including publication output

across years and other descriptive indicators relevant to the dataset. The second stage, science mapping, was used to uncover the intellectual and thematic structure of the field. For this purpose, the study employed VOSviewer, a software package specifically designed for bibliometric visualization and network analysis. VOSviewer was used to generate network visualization, overlay visualization, and density visualization, which enabled the study to examine relationships among terms and themes more clearly and systematically. In addition to visual representation, the software also provided information related to network metrics and clustering structures, which helped identify dominant themes and the relative connectedness of topics within the literature (Majidah & Rullyana, 2024; Rullyana et al., 2024). Through this combination of performance analysis and visual science mapping, the study aimed to provide a comprehensive overview of the development and intellectual landscape of research on rural education.

3. RESULT AND DISCUSSION

3.1 Result

This bibliometric analysis used the Scopus database to explore research trends in rural education during the 2017-2023 period. The study adopted two main approaches. First, through performance analysis, it aimed to measure publication productivity, identify the most productive countries and authors, and determine the most influential authors during this period. Second, through science mapping, it sought to map the relationships among keywords in order to identify major themes and emerging trends in rural education research from 2017 to 2023.

Figure 2 presents the annual growth of scientific publications on rural education indexed in Scopus. During the period from 2017 to 2023, fluctuations can be observed in the number of publications, reflecting the dynamic development of research in this field. In 2017, the number of publications reached 54 documents. However, in 2018, this figure declined significantly to 39 documents, suggesting a temporary decrease in scholarly attention or possible challenges in conducting research on rural education during that period.

Documents by year

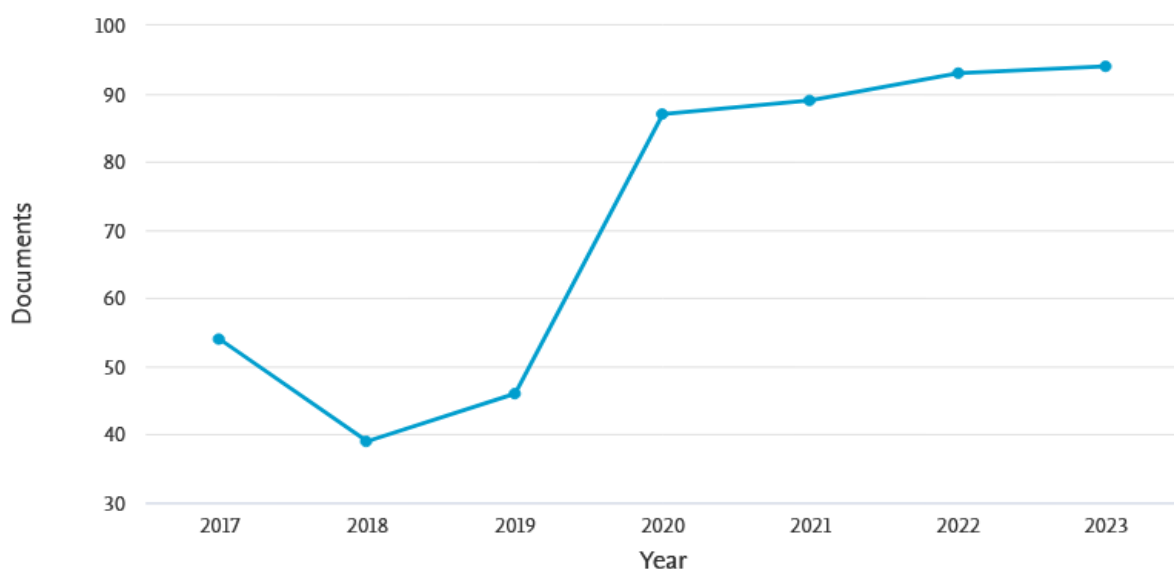


Figure 2. Publication Growth by Year

In 2019, there was a modest recovery, with the number of publications increasing to 46 documents, although this remained below the 2017 level. A more notable development occurred in 2020, when publications rose sharply to 87 documents. This increase may be associated with growing global awareness of the importance of rural education, particularly in response to the challenges posed by the COVID-19 pandemic, which intensified concerns regarding educational access and quality in remote areas.

In the following years, the number of publications remained relatively stable, with slight annual increases: 89 documents in 2021, 93 documents in 2022, and a peak of 94 documents in 2023. This upward trend suggests a growing and sustained interest in rural education research, as well as increasing attention from both the academic community and policymakers to educational issues in rural areas.

Overall, these findings reflect an increasing interest in rural education research, particularly after 2019. Although some fluctuations occurred in the earlier part of the period, the overall trend indicates that this topic has become an increasingly important area of scholarly attention, in line with the challenges and needs faced by education systems in remote regions worldwide.

Figure 3 presents the most productive countries in terms of scientific publications on rural education indexed in Scopus. Out of a total of 502 publications, the United States was the most dominant contributor, with 150 publications, accounting for 29.88% of the total. China ranked second with 103 publications, or 20.52%, indicating a substantial contribution to research on rural education. Australia followed in third place with 61 publications, representing 12.15% of the total output.

Documents by country or territory

Compare the document counts for up to 15 countries/territories.

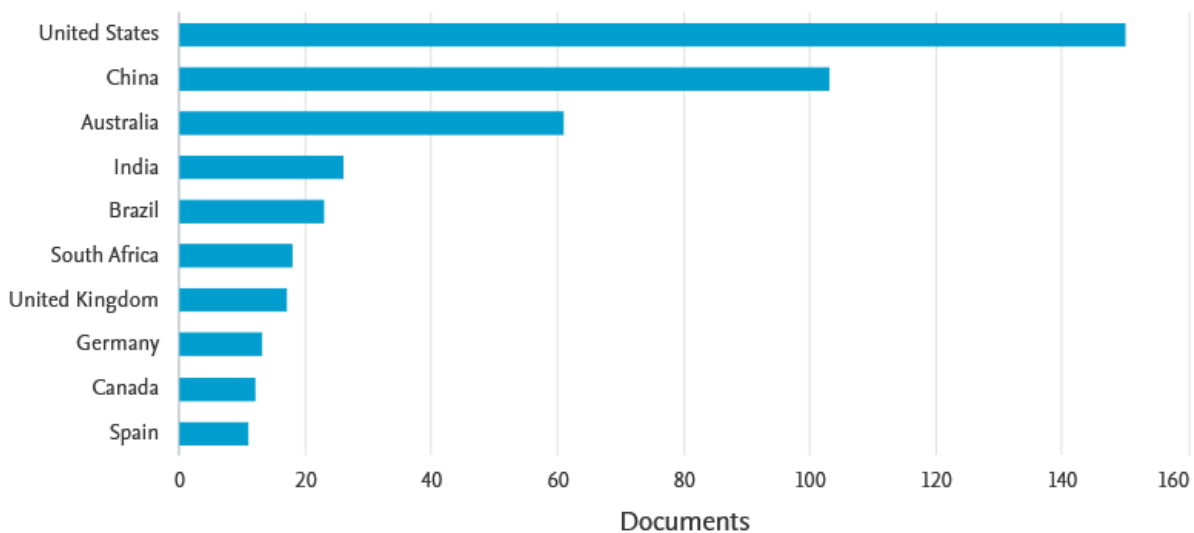


Figure 3. Top 15 Most Productive Countries in Rural Education Publications, 2017-2023

Other countries such as India and Brazil contributed 26 and 23 publications, accounting for 5.18% and 4.58%, respectively. South Africa produced 18 publications (3.59%), followed by the United Kingdom with 17 publications (3.39%). Germany, Canada, and Spain contributed fewer publications, with 13, 12, and 11 documents, representing 2.59%, 2.39%,

and 2.19% of the total, respectively. These data show that the United States and China were the two most dominant countries in rural education research, reflecting strong academic interest in rural educational issues in both contexts. The productivity trend also suggests that rural education has attracted significant attention in countries with large and diverse populations, as well as in countries facing geographical challenges that affect access to education.

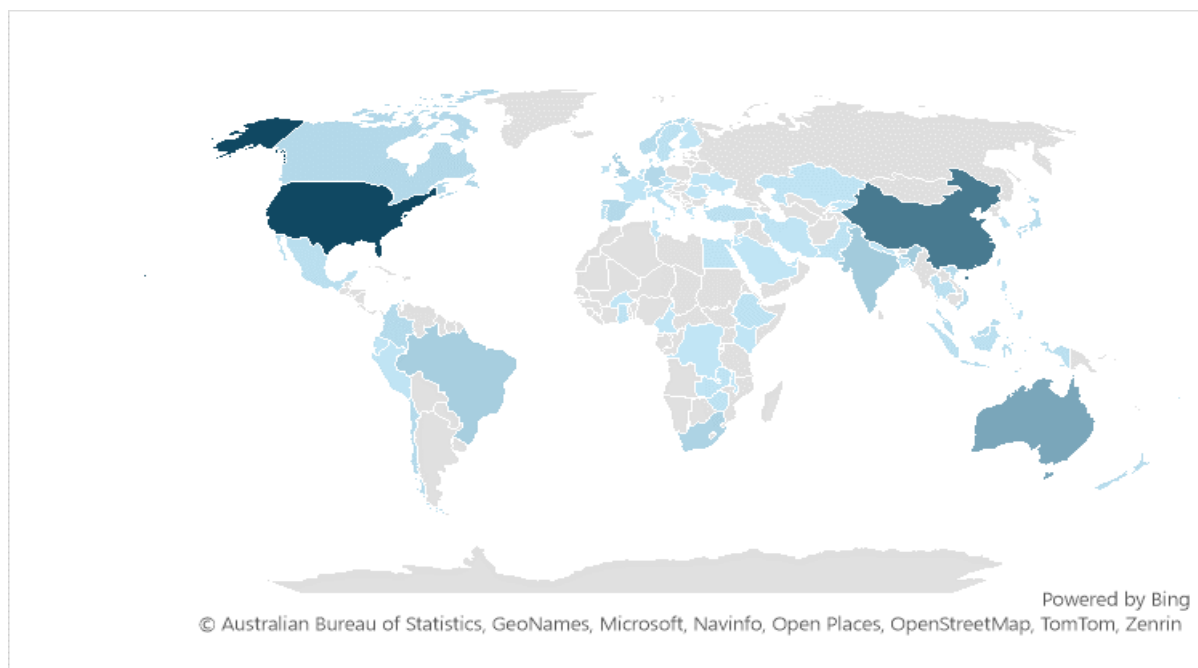


Figure 4. Global Distribution of Publications on Rural Education, 2017-2023

These findings highlight that although several countries are highly productive in this field, there remains a substantial gap in research contributions across countries. This underscores the need for stronger international collaboration and more equitable support to advance research and policy development in rural education globally. With the continuing increase in publications from different countries, rural education research is expected to generate broader and deeper impacts in efforts to improve educational quality in remote areas worldwide.

Figure 5 presents the 15 most productive authors in rural education research. Out of the 502 publications analyzed, Nguyen, Trung Thanh from Gottfried Wilhelm Leibniz Universität Hannover, Germany, was the most productive author, with 11 publications, representing approximately 2.19% of the total output. The second position was occupied by Grote, Ulrike, also from Gottfried Wilhelm Leibniz Universität Hannover, with 9 publications, or 1.79% of the total. Scott D. Rozelle from Stanford University, United States, contributed 6 publications, equivalent to 1.19% of the total. Hernán I. Cuervo from the University of Melbourne, Australia, and Jian Li from Beijing Normal University, China, each produced 5 publications, accounting for 0.99% of the total. Other authors, such as Truonglam Lam Do from Vietnam National University of Agriculture, Steve Murphy from La Trobe University, Australia, and Eryong Xue from Beijing Normal University, China, each contributed 4 publications, representing 0.79% of the total output. J.C. Anglum, whose institutional affiliation was not clearly identified, contributed 3 publications, or 0.60%.

Documents by author

Compare the document counts for up to 15 authors.

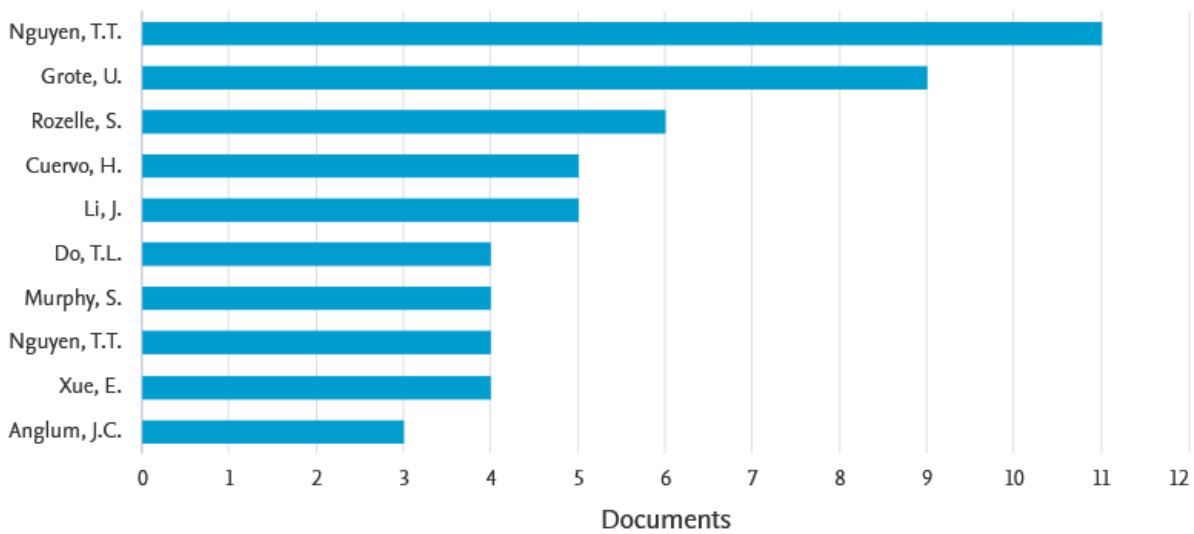


Figure 5. Most Productive Authors

Overall, authors from developed countries made a significant contribution to rural education research, although scholars from developing countries are also increasingly demonstrating an important role. This finding reflects the growing research capacity of developing countries, in line with global efforts to address educational inequality and improve educational quality in remote areas. Contributions from authors across both categories of countries indicate a shared global commitment to advancing rural education and underline the importance of cross-national collaboration in this field.

Table 1 presents the most influential authors in rural education research. The results reveal a range of interrelated concerns, including the impact of educational policy on rural communities, educational disparities between urban and rural areas, and broader processes of social and economic transformation in rural settings.

Table 1. Most Influential Authors in Rural Education Research, 2017-2023

Author(s)	Article Title	Year	Source	Citations
Kaden, U.	Covid-19 school closure-related changes to the professional life of a K-12 teacher	2020	<i>Education Sciences</i> , 10(6), pp. 1-13, 165	227
Chen, Y., Fan, Z., Gu, X., Zhou, L.-A.	Arrival of young talent: The send-down movement and rural education in China	2020	<i>American Economic Review</i> , 110(11), pp. 3393-3430	142
Leng, C., Ma, W., Tang, J., Zhu, Z.	ICT adoption and income diversification among rural households in China	2020	<i>Applied Economics</i> , 52(33), pp. 3614-3628	131

Cluster 1 in this visualization displays a group of keywords closely related to the core of the educational process, especially in modern learning and professional development. Keywords such as "education," "learning," "students," "teaching," and "curriculum" are at the center of this cluster, indicating that this cluster focuses on fundamental aspects of the educational process. An interesting point is the presence of several keywords related to technology, such as "e-learning," "educational computing," and "ICT." This indicates a strong trend in integrating technology into learning, especially in rural areas. This technology integration is expected to improve education access, quality, and relevance.

Furthermore, the keywords "professional development" and "teacher training" show significant attention to teacher capacity development. This is very important, especially in education in rural areas where there are often challenges regarding teacher quality (Zheng et al., 2023). Continuous teacher professional development can improve the quality of learning and student learning outcomes (Maher & Prescott, 2017; Yang, 2020). The keywords "quality education" and "educational inequality" indicate that attention is being paid to the issue of quality education and educational inequality. This finding indicates that research in this area focuses on the technical aspects of education and broader issues such as equity and accessibility. Cluster 1 in this visualization highlights the importance of quality education, technology integration in learning, and teacher professional development in rural education. This group of keywords shows that research in this area is increasingly complex and involves various aspects, ranging from learning theory to education policy.

Cluster 2 in this keyword network visualization highlights the close relationship between education and health, especially in rural areas. Keywords such as "rural health care," "medical education," "health services," and "adolescent" are central to this group. This shows that research in this cluster focuses on aspects of public health in rural areas and how education can play a role in improving public health. The keyword "adolescent" shows that this research has exceptional attention to the health of adolescents in rural areas. This indicates that this research tries to understand the unique challenges faced by adolescents in rural areas related to health and the role of education in addressing these challenges.

The keywords "medical education" and "health education" indicate that health education is essential in improving public health in rural areas. Health education can cover various topics, from disease prevention to promoting healthy lifestyles (Lyle & Greenhill, 2018; Ghongdemath et al., 2016). The keywords "cross-sectional study" and "program evaluation" indicate that studies in this cluster often use qualitative research methods to understand the experiences and perspectives of rural communities regarding health. Cluster 2 highlights the importance of integrating education and health to improve rural communities' well-being. Research in this cluster makes essential contributions to understanding the unique health challenges faced by rural communities and the role of education in addressing these challenges.

Cluster 3 in this keyword network visualization highlights the relationship between education policy, sustainable development, and the socioeconomic context in rural areas. Keywords such as "education policy," "sustainable development," "rural economy," and "China" are central to this cluster. This suggests that research in this cluster focuses on how education policy can contribute to sustainable development in rural areas, particularly globally. The keywords "education policy" and "sustainable development" suggest that the research explores how education policy can be designed to support sustainable development goals, such as poverty alleviation, health promotion, and environmental protection. The keywords "China" and "United States" suggest that the research has a global dimension,

comparing education policy and sustainable development practices across countries. Cluster 3 highlights the importance of education policy in promoting sustainable development in rural areas. Research in this cluster makes essential contributions to understanding how education policy can be designed to address the complex challenges faced by rural areas, such as poverty, inequality, and climate change.

Cluster 4 in this keyword network visualization highlights the relationship between sustainable development, agriculture, and the socioeconomic context in rural areas. Keywords such as "agriculture," "rural development," "sustainable development," and "household income" are central to this cluster. This shows that research in this cluster focuses on how the agricultural sector can contribute to sustainable development in rural areas and how sustainable development can improve the welfare of rural communities. The emergence of the keywords "agriculture" and "sustainable development" indicates that this research explores the role of the agricultural sector in achieving sustainable development goals, such as poverty alleviation (Zhang & Liu, 2023), increasing food security (Do et al., 2019; Zidouemba & Gerard, 2018), and environmental conservation (Lowrie et al., 2022).

The keywords "household income" and "rural economy" indicate that this research also considers socioeconomic aspects in sustainable agricultural development. This indicates that agricultural development not only focuses on increasing production but also on increasing farmers' income and the welfare of rural communities. The keyword "information management" indicates an interest in applying technology and information in agricultural development. This indicates that this research tries to find innovative solutions to increase agricultural productivity and overcome challenges faced by farmers, such as climate change and market access (Ali et al., 2022; Long et al., 2022; Huy & Nguyen, 2019). Cluster 4 highlights the importance of the agricultural sector in sustainable development in rural areas. Research in this cluster makes essential contributions to understanding how the agricultural sector can be an engine of economic growth and improve the welfare of rural communities.

Cluster 5 in this keyword network visualization highlights the relationship between primary and secondary education and quality of life in rural areas. Keywords such as "primary education," "secondary school," "social justice," and "teacher education" are central to this cluster. This shows that research in this cluster focuses on how education can improve the quality of life of people in rural areas, both individually and collectively. The keywords "primary education" and "secondary school" indicate that this research focuses on the primary and secondary education stages. These stages of education are considered the foundation for individual and societal development.

The keywords "teacher education" and "social justice" indicate that this research also pays attention to the quality of education. Quality education requires competent teachers and an inclusive learning environment (Chavarro-Bermúdez et al., 2022; Gajardo et al., 2023). The keyword "social justice" indicates that this research links the quality of education to the concept of social justice. Quality education can provide equal opportunities for all individuals to reach their full potential, regardless of socioeconomic background. Cluster 5 highlights the importance of primary and secondary education in improving the quality of life of people in rural areas. Research in this cluster makes essential contributions to understanding how education can reduce inequality, increase social mobility, and build more just and prosperous societies.

Cluster 6 in this keyword network visualization highlights the relationship between teacher quality, teacher retention, and the school environment in rural areas. Keywords such as "rural teachers," "teacher retention," "professional development," and "rural schools" are

central to this cluster. This shows that research in this cluster focuses on factors that influence the quality and sustainability of the teaching force in rural areas. The keywords "teacher quality" and "teacher retention" indicate that this study pays close attention to the importance of having quality teachers who can stay in rural schools for the long term. Good teacher quality is essential for improving student learning outcomes (Liu et al., 2024; Ziyi, 2024). The keyword "professional development" shows that this study recognizes the importance of continuous professional development for teachers. Professional development programs can improve teachers' competency and motivation to continue teaching in rural areas (Kurniati et al., 2020; Şahin et al., 2024; Yan & Li, 2024).

The keyword "rural schools" indicates that this study considers the context of schools in rural areas, which often have unique challenges such as limited resources, limited accessibility, and lack of community support. Cluster 6 highlights the importance of teacher quality and teacher retention in improving the quality of education in rural areas. Research in this cluster makes essential contributions to understanding the factors that influence teachers' decisions to continue teaching in rural areas and designing programs that can improve teacher quality and the school environment.

Cluster 7 in this keyword network visualization highlights the relationship between education policy and learning achievement in rural areas. Keywords such as "educational policy," "achievement," and "policy" are central to this cluster. This indicates that research in this cluster focuses on how education policy can affect student learning achievement in rural areas. The keywords "educational policy" and "achievement" indicate that this research directly links education policy to student learning outcomes. This indicates that researchers are trying to understand how the design and implementation of education policy can affect student performance (Biriescu & Babaita, 2014; Thelma et al., 2024). The recurring keyword "policy" indicates that research in this cluster has a strong focus at the policy level. Researchers may be interested in evaluating the effectiveness of existing education policies or designing new policies that are more effective in improving student learning achievement. Cluster 7 highlights the critical role of education policy in improving student learning achievement in rural areas.

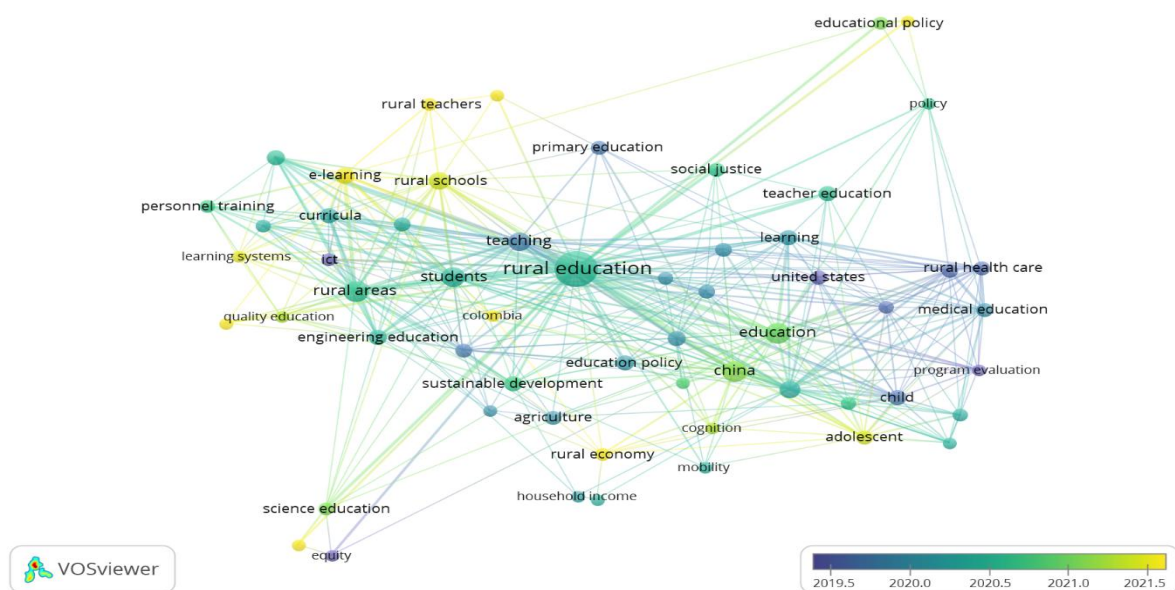


Figure 7. Overlay Visualization Map of Keywords' Co-Occurrence

The overlay visualization in Figure 6 helps detect emerging topics and research trends. Understanding how research focus changes over time and identifying emerging research areas is essential. The overlay visualization is also generated by analyzing metadata imported into Vosviewer. In this visualization, the color of a node represents a keyword, while the color indicates the publication year of the article containing the keyword. The darker the color of the node, the older the topic. The varying colors of the nodes indicate that research interest in a particular topic has changed over time. For example, suppose we see that the keywords "e-learning," "rural teacher," "quality education," "rural economy," and "teacher retention" have lighter colors (indicating newer publications).

In that case, we can conclude that interest in leveraging technology for education in rural areas has increased in recent years. The significant increase in publications after 2019 reflects a shift in attention from academics and researchers towards the challenges of education in rural areas. This coincides with the 5.0 era, where technologies such as artificial intelligence (AI) and e-learning have been increasingly used in education (Asad et al., 2021; Mani, 2022; Jiang, 2021). These technologies provide great opportunities to improve the accessibility and quality of education in remote areas, which previously experienced infrastructure constraints and resource limitations.

Furthermore, the bibliometric analysis uses density visualization. This visualization allows us to identify areas that need to be explored further in research more efficiently. The visualization results in Figure 7 show that some areas have a higher density at one node than others. The density visualization generated by VOSviewer provides us with a very informative visual map of the research landscape in rural education. In this map, each keyword or key term is represented by a node, and the size and color of the node indicate the frequency of occurrence of the keyword in the scientific literature. The larger and brighter the node's color, the more frequently the keyword appears in relevant research.

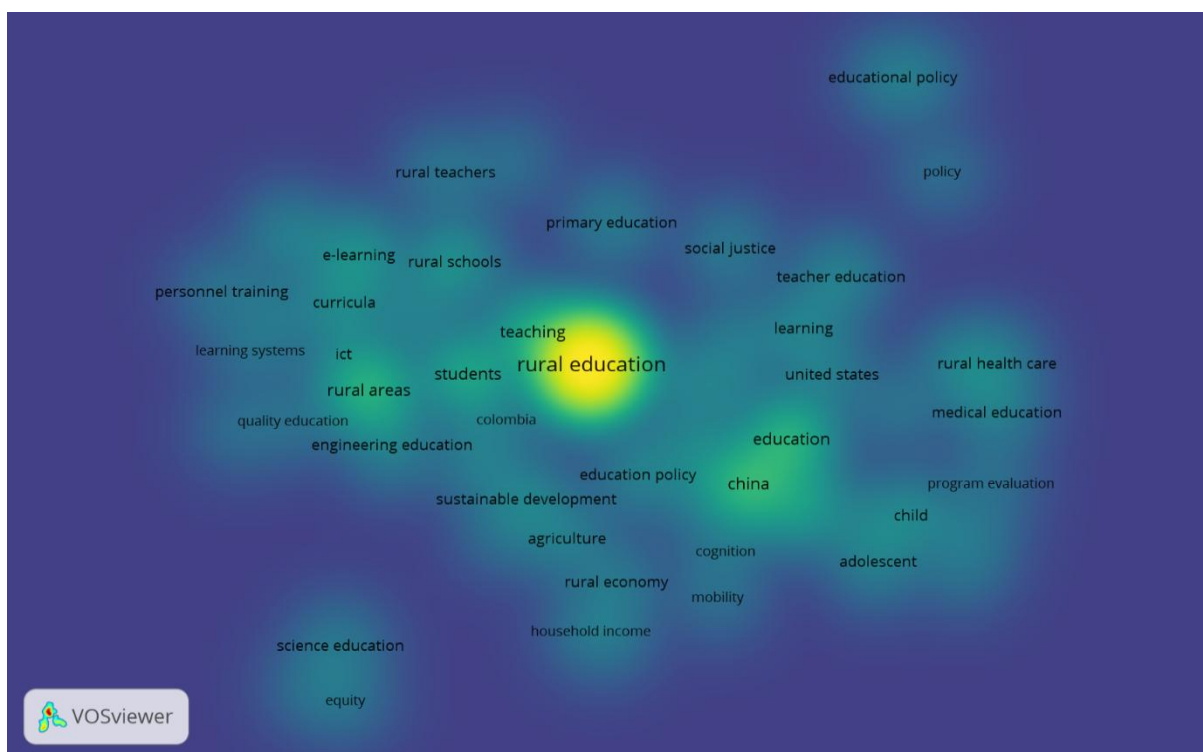


Figure 8. Density Visualization Map of Keywords' Co-Occurrence

In Figure 8, the bright yellow areas indicate the most popular and widely researched research topics in the Scopus database. In rural education, these high-density areas represent central issues that have been the focus of researchers' attention for some time. For example, the areas around the keywords "rural education," such as "teaching," "student," "and education," have a brighter color, so it can be concluded that these keywords represent topics that are very actively researched and attract much interest from academics. On the other hand, some keywords have low density and are located far from the center of the primary keyword, "rural education," such as "engineering education."

The combination of engineering education and rural areas shows attractive research potential, for example, related to the development of curricula relevant to the needs of industry in rural areas or the development of technical skills for rural communities. "Science education": Rural areas often face unique challenges. This keyword indicates the potential for further research on effective science teaching methods in rural areas or how science can be used to address problems rural communities face. "Equity", this keyword highlights the importance of justice and equality in rural education.

4. CONCLUSION

The study's findings indicate that interest in research in this area has increased significantly, especially after 2019. This is in line with the increasing challenges faced by the education sector in rural areas and the increasing global awareness of the importance of technology in education to bridge the gap in access. Developed countries such as the United States and Australia lead in publication productivity, followed by developing countries such as India, Brazil, and China. In addition, keyword analysis shows that topics such as e-learning and rural schools dominate research related to rural education. In contrast, topics such as engineering education, science education, and equity need to be explored.

This study has several important implications for developing education policy and practice in rural areas. First, the increasing interest in educational technology suggests that digital innovation can be a powerful tool for improving access and quality of education in remote areas. This can help policymakers and education stakeholders focus more on investing in technology infrastructure in rural areas, as well as developing curricula relevant to these technologies. In addition, this study provides academics with insights into emerging themes and under-explored research areas, which could be the focus of further research in the future. Although this study provides an overview of trends and themes in rural education research, some limitations must be considered.

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