

Global Trends in Digital Islam Learning Research with Bibliometric Mapping

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Abstract

Today's educational landscape is dominated by media, with a shift away from traditional lecture-based teaching approaches and toward more hands-on, interactive learning through the use of learning media. Learning media play a crucial role, particularly in educational activities that prioritize competences associated with process skills. The importance of media in facilitating students (learners), its presentation is adjusted to the learning objectives set. The purpose of this study is to track the evolution and trajectory of digital learning research in Scopus-indexed articles. This research examined every article indexed in the Scopus database using bibliometric analytic tools of Global Trends in Digital Learning Research a Bibliometric Mapping from 2020 to 2024. Data analyzed using Excel and R/R-Studio. VOSviewer is used to perform visual analysis of the simultaneous occurrence of keywords and document citations. The authors found 2,154 publications that fit the function, subject, and criteria set. The results of this study show an annual growth rate of 9.26%, with publications on Global Trends in Digital Learning Research a Bibliometric Mapping the most in 2023. China became the country that contributed the most publications with affiliations from the Ministry of Education. Zhang Y became the most prolific writer on the theme of Education Learning. The scope of the bibliometric study was restricted to data from Scopus. The study did not account for other national and international databases. This study offers suggestions for further research by giving a succinct summary of the literature available to education and technology researchers.

Keywords: Digital Learning, Global Trends, Learners, Bibliometric.

Introduction

Bibliometric mapping of global trends in digital learning research involves analyzing and visualizing the publication patterns, citations, and interconnections among scholarly articles in the field(1–4). Researchers use bibliometric techniques to identify key themes, influential authors, and emerging areas of study(5–10). This process helps to map the intellectual structure of the research landscape. Everything happens extremely fast and dynamically in the age of the industrial revolution 4.0, and widespread access to technology causes significant advancements in many facets of daily life. (11–13). Time and distance limitations are readily surmountable with technology. This trend was particularly evident during the COVID-19 pandemic, which compelled global society to innovate more quickly in order to increase productivity in crucial areas. (14–17). If we can't keep up with the rapid advancement of technology, we'll fall behind. (18).

In recent decades, there has been a significant evolution in the domain of Islamic-based education driven by advances in digital technology (19–24). This phenomenon not only reflects adaptation to the digital age, but also reveals how Islam can integrate with modern technological developments(25). Global trends in Islamic digital

learning show an increasing use of online platforms, mobile applications, and other digital resources to facilitate religious understanding and practice(26). With easier and more inclusive access, Islamic digital education has created new opportunities for Muslim communities around the world, enabling them to access, analyze, and practice Islamic teachings in contexts relevant to today's times. Through this approach, we can witness how tradition and technology coexist, creating space for innovation, discussion, and reflection in the context of Islamic learning in the digital age(27). In an era that continues to grow rapidly, the use of digital technology has changed the landscape of Islamic education globally(28). This phenomenon not only reflects adaptation to the technological revolution, but also becomes an integral part of deep efforts to integrate Islamic values with the sophistication of the digital age(29–31). The journal aims to investigate and analyze global trends in Islamic digital learning, outlining significant shifts in technology-inspired learning approaches, resources, and teaching practices(32). By understanding the impact and implications of this trend, we can explore the enormous potential offered by Islamic digital education in providing access, strengthening religious understanding, and facilitating the intellectual growth of Muslims in different parts of the world(33). When in-person instruction is replaced by online instruction, both students and instructors must become more creative, analytical, and tech-savvy in order to present information more effectively and seem more current. They must also study independently of assigned duties. Online lectures may potentially have an impact on students' psychological well-being.(34). This distance learning teachers are guided to prepare learning as well and creatively as possible in providing a material, in this distance learning process not only involving teachers and students only but parents are also led to be involved in this distance learning process(35).

One of the instruments used to evaluate scientific research outcomes is the use of bibliographic indicators. These indicators can be used to map out scientific domains, map out the relationship between science and technology, track the advancement of new knowledge in specific fields, and serve as a guide for future strategic planning. (7,9,36). This research aims to examine development trends and related research on "Global Trends in Digital Islam Learning Research with Bibliometric Mapping" among works that the Scopus database has indexed from 2019 – 2024. The year 2019 as a starting point for this research is based on the fact that it marks the first relevant publication recorded on this theme in the Scopus database.

Previous Research

The results of this study brought to light challenges that educators have while implementing online and remote learning, and they indicated that it would be beneficial to provide them with assistance in becoming acquainted with online and remote assessment tools and techniques (37). Thus, high school students assess how the application is used during the learning process (38). One of the essential technologies for enabling the effective use of digital twins in unmanned combat is online battlefield learning (39). Because electronic learning, or e-learning, is used in higher education (HE) almost exclusively these days, it is imperative that both professors and students possess the necessary digital literacy abilities (40). The number of online classrooms has increased in recent years, and there has been a significant change in the way mathematics is taught (41). The use of digital instructional games in the classroom is growing. Nonetheless, there are still many unanswered problems about the efficiency of educational games in terms of their impacts on cognition and non-cognition (42). The connectivity of people, things, and virtual space will be made possible by 6G mobile communications technology. The Internet of Things (IoT) has surged in a level never seen before because to the emergence of digital twins (DTs) and 6G. Edge intelligence (EI) and digital technologies (DTs) work together to create a strong digital realm that is synced with the real world and is built in the intelligent edge. This allows for the delivery of real-time and adaptive IoT services (43). We introduce a machine learning technique for building digital emulators that can replicate the closed architecture MTC dynamics. The suggested approach consists of asking the controller questions using a collection of production recipes (like G-codes) and utilizing the controller's answer to determine a low-dimensional parameterization of the underlying architecture (44). In an inquiry-based, science learning environment, this study looked at the tactics used by undergraduate student instructors taking part in web-based reciprocal peer evaluation and how they related to learning outcomes (45). Gaining some prior understanding of digital educational platforms and technologies might facilitate the transition to better managed AIS (46).

Methodology

In this study, bibliometric analytic techniques were applied. Data was extracted from the Scopus database between 2013 and 2024 by use of a Boolean search engine. The search was conducted on December 1,7, 2023 o'clock.00 WIB. Researchers used R and Rstudio, VosViewer and Microsoft Excel tools to analyze citations, document content and networking. When processing datasets, researchers go through three steps.

In the first stage, researchers will conduct a literature review on related themes to ensure relevant research is carried out with bibliometric topics. In addition, literature review is useful for determining appropriate keywords and is considered to represent the scope of research.

In the second stage, at this stage researchers use boolean operators TITLE-ABS-KEY (digital AND learning) 4,642 Furthermore, filtration is carried out with boolean operators TITLE-ABS-KEY (digital AND learning) AND PUBYEAR > 2019 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE, "ar") AND (LIMIT-TO(EXACTKEYWORD, "e-learning") AND (LIMIT-TO(SUBJAREA, "comp") AND (LIMIT-TO(SRCTYPE, "j")) AND (LIMIT-TO(LANGUAGE, "english") to limit articles to article document types only, document sources are journal only and English articles only, resulting in a final document of 2,154.

The third stage, analysis is carried out on the final document search using Scopus analyzer and R and Rstudio to find out the number of documents per year, documents by journal, author, affiliation, country and subject / field. Furthermore, analysis of the document network level was carried out with visualization through VOSviewer and Microsoft Excel data processing.

The steps of the study are presented visually on the attached figure:

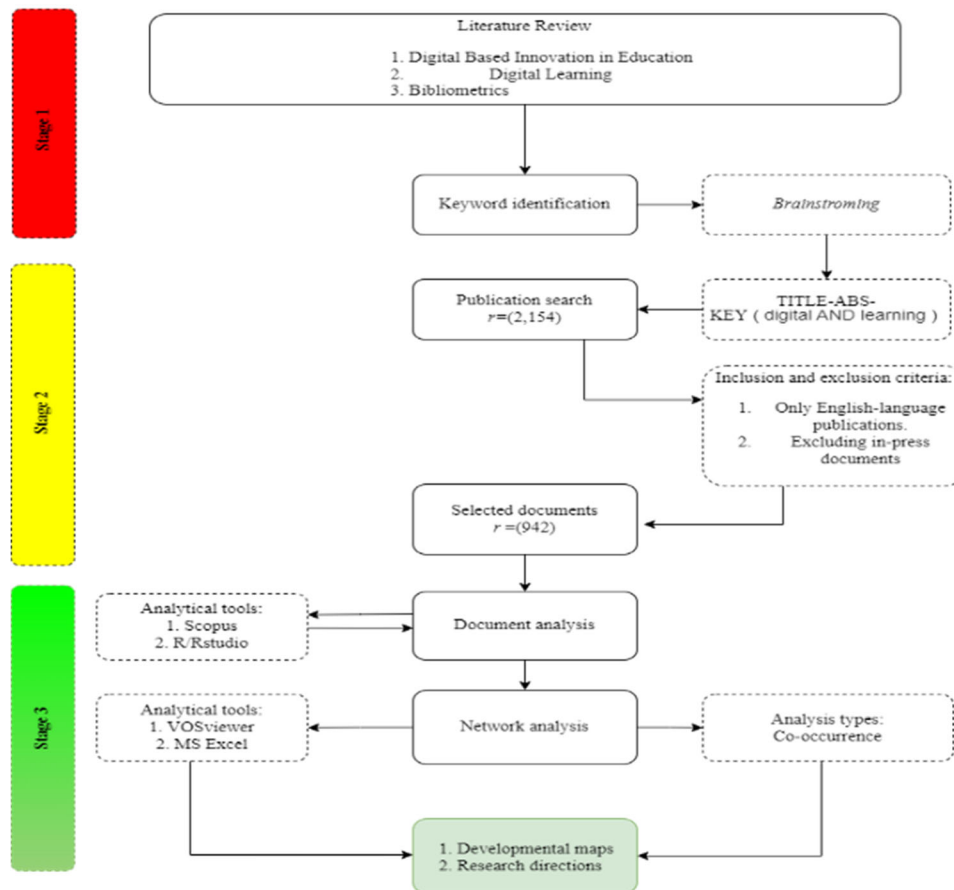


Figure 1. Research Workflow

Results and Discussion

Document Analysis

An overview of the 2,154 documents gathered during a 4-year period is given in Table 1. includes 98355 references, 6596 authors, 222 solo authors, 26,79% international authorship collaboration, and an average of 8,866 citations per document.

Description	Result
KEY INFORMATION ABOUT DATA	
Timespan	2020:2024
Sources (Journals, Books, etc.)	473
Document	2154
Annual Growth Rate %	-28.56
Average Age Document	0.906
Average citations per document	8.866
Reference	98355
DOCUMENT CONTENTS	
Keyword Plus (ID)	13667
Author Keyword (DE)	6191
WRITER	
Writer	6596
Single authored document author	222
AUTHOR COLLABORATION	
Single authored document	244
Co-author by Doc	3.88
International co-authoring %	26.79
DOCUMENT TYPES	
Article	2154

Table 1. Play Information Data

Documents By Year

Under the heading "Global Trends in Digital Learning Research," Figure 2 displays the publication's development through a bibliometric mapping based on 2020. Documents started to appear in 2013, but I examined those from 2020 as well as those that were thought to be stagnant in 2020 and 2023.

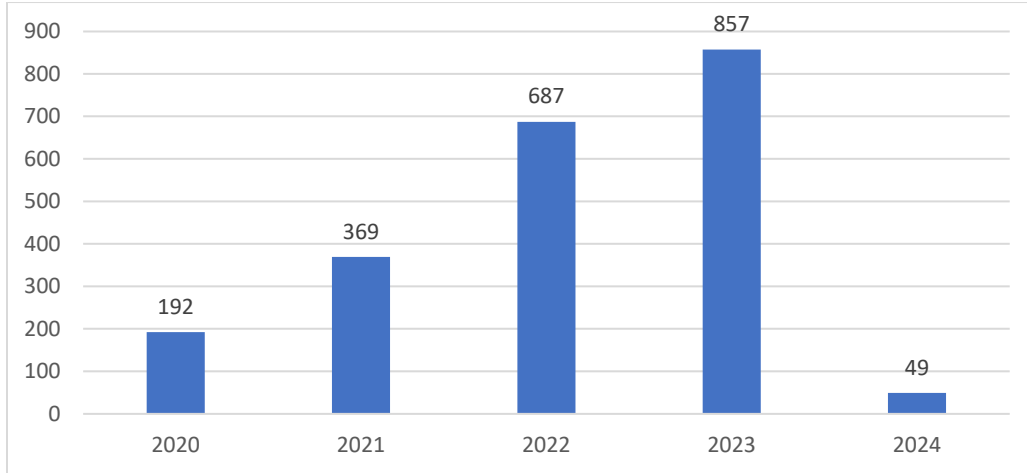


Figure 2. Document Publication Chart By Year
Most Relevant Authors

In a study titled Global Trends in Digital Learning Research a Bibliometric Mappingi, Figure 3 features ten prominent writers. With 13 publications, Zhang Y is in the lead, followed by Lev, H, and Liv Z, each with 9 documents.

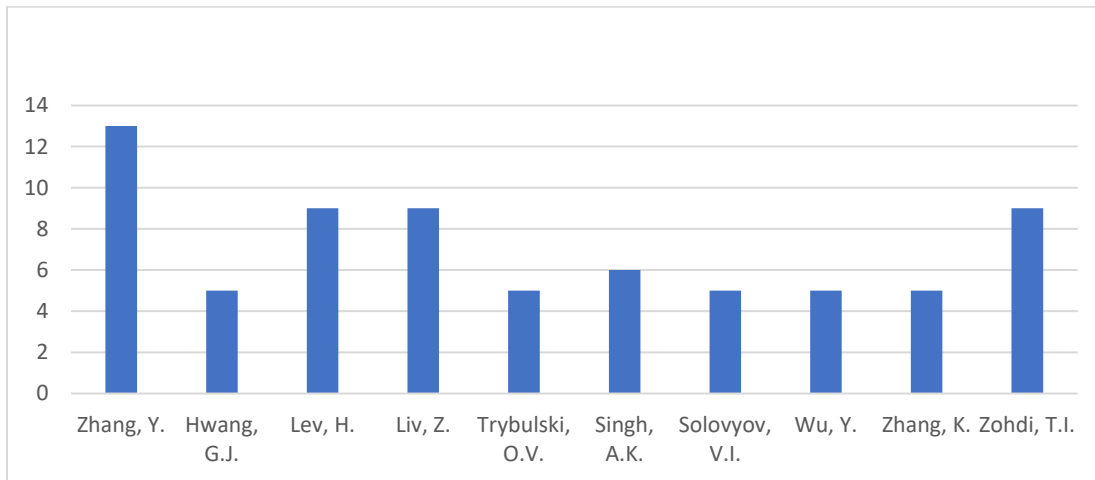


Figure 3. Chart Ppublish Author

Documents by affiliation

In a bibliometric mapping of the Ministry of Education, Figure 4 displays the 10 most significant affiliates in publications on Global Trends in Digital Learning Research. Beijing University of Post comes in first with the most papers, followed by Midian University.

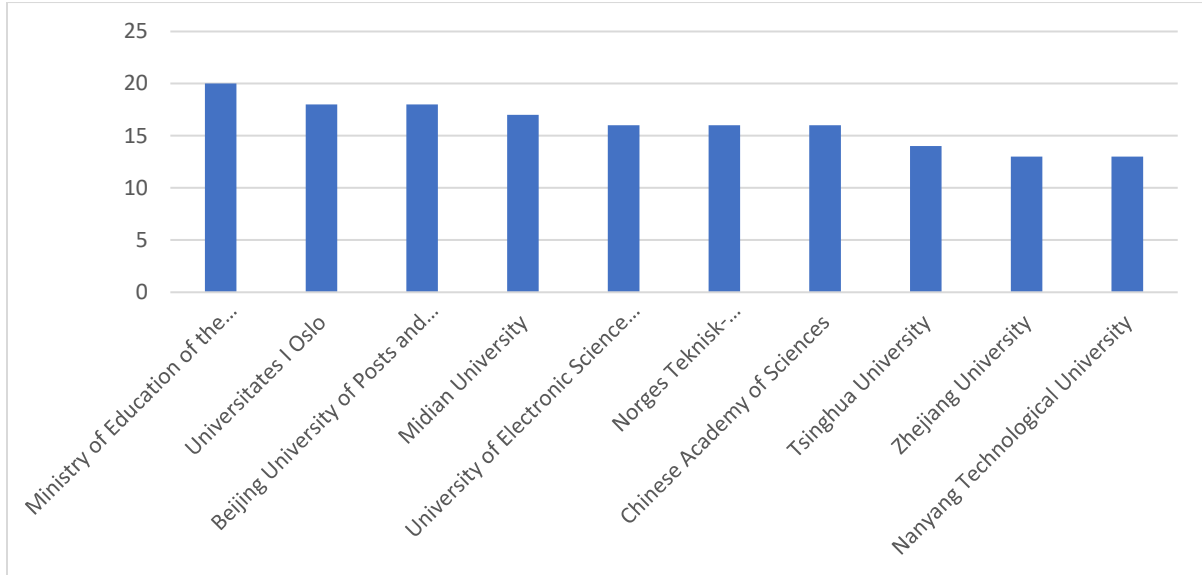


Figure 4. Publishing Chart By Affiliation

Documents by Country

The papers grouped by nation under the heading "Global Trends in Digital Learning Research a Bibliometric Mappingi" are displayed in Figure 5. With 612 publications overall, China is the publication leader. We came next with 298 documents. With four countries, Asian countries lead the continent; the American countries come in second. This illustrates the theme Global Trends in Digital Learning Research, a Bibliometric Mappingi, which is frequently conducted by Asian countries.

Publication Chart By Country

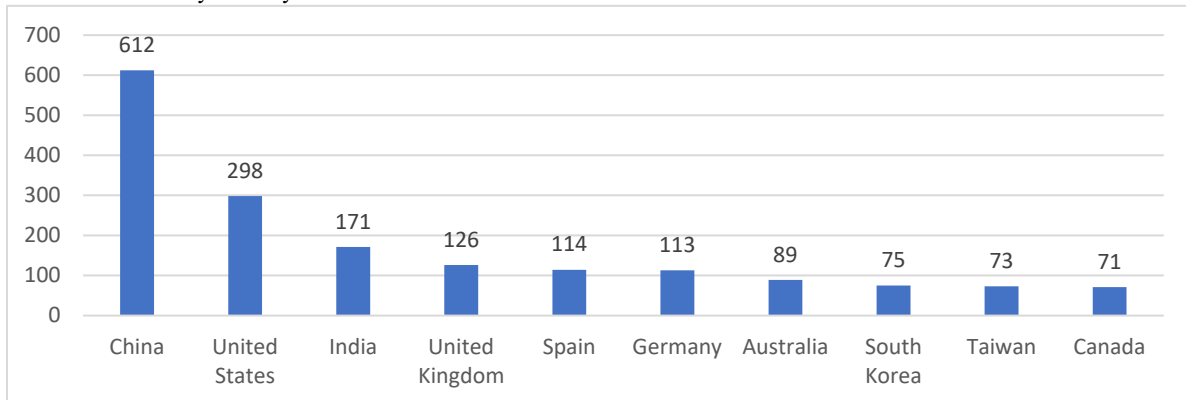


Figure 5.

Three-Field Plot

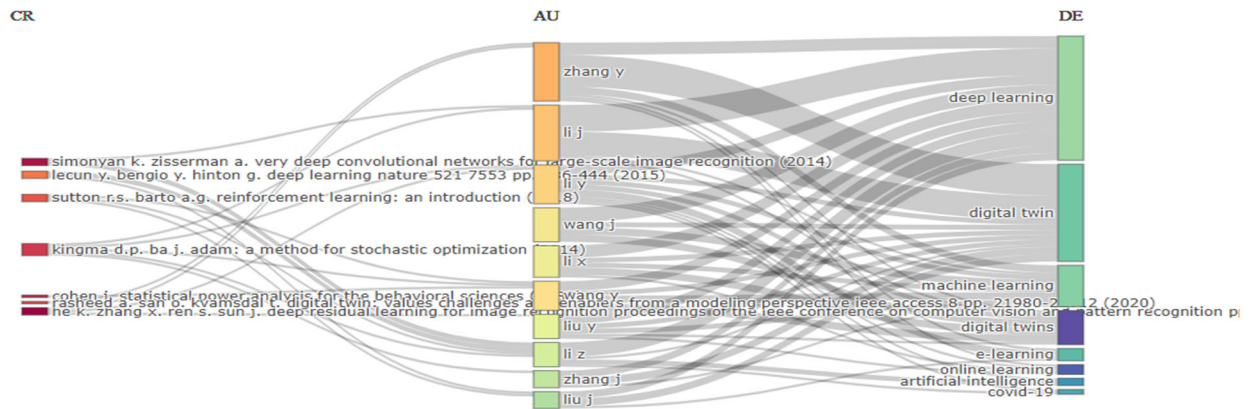


Figure 6. Plot Three Fields (References, Authors, And Keywords)

Three elements are shown in Figure 6: the name of the journal article, the author's name, and the issue or topic that was covered are the first three items. Next, gray plot lines are used to connect the three items with one another. Every journal lists the writers who contribute to their publications most frequently based on the name of the journal, particularly for those with the theme Global Trends in Digital Learning Research a Bibliometric Mapping. The plot's measurement in the second element indicates how closely the publication adheres to the subject. According to the image above, there are seven journals. The dark red-colored publication that publishes the most study on learning education is associated with multiple writers, including Zhang Y, Lij, Liy, and Wang J. Each study topic is linked to authors who frequently write on the subject of ict literacy in the third component. Digital twin ranks first among the ten deep learning keywords according to the analysis's findings. This demonstrates how closely the term is associated with ict literacy research.

Corresponding Author's Countries

The distribution of publications in the field of motivated learning strategies by nation is shown in the figure below. China has more documents than any other country (612), whereas the US has 298 documents. The quantity of Single Country Publications (SCPs) is more important than that of Multiple Country Publications (MCPs) from their respective points of view. China tops the world in MCP publications with a total of eighteen, followed by the US with seven, the UK and the Netherlands with six, and the United States with seven. But still with 146 documents overall, the US leads the world in SCP publications, a far greater amount. With 41 documents, Turkey comes in second, followed by the UK in third place with 39 documents. In terms of continents, Europe comes in second with five countries, and Asia leads with nine.

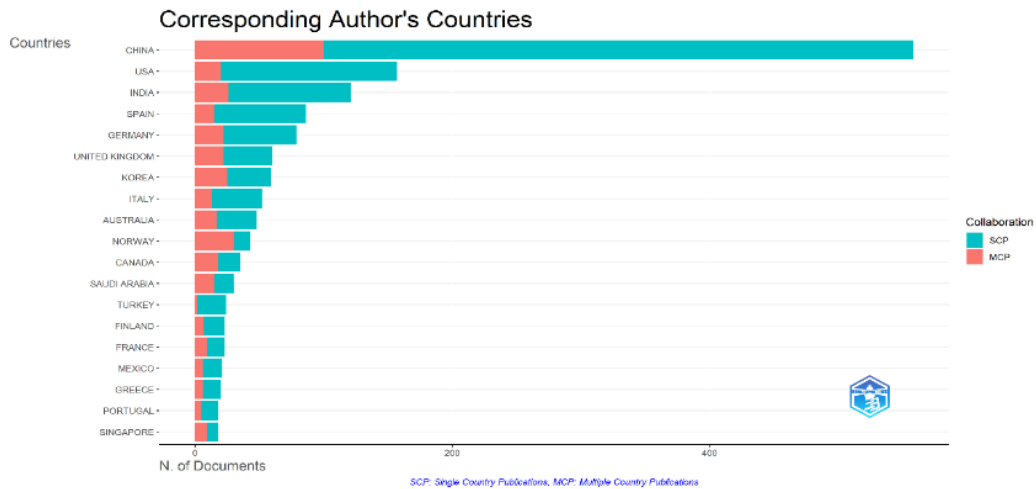


Figure 7. Related Author Country Chart

Most Global Cited Document

The US tops the globe in SCP publications with 146 documents overall—a considerably higher number. Turkey is in second place with 41 records, and the UK is in third place with 39 documents. With five countries, Europe is ranked second among continents, whereas Asia has nine.

Paper	Total Citations	TC per Year	Normalized TC
Radianti J, 2020, Comput Educ	963	240.75	27.08
Rieke N, 2020, Npj Digit Med	702	175.50	19.74
Iivari N, 2021, Int J Inf Manage	460	115.00	12.93
Lu Y, 2021, IEEE Trans Ind Inf-A	193	64.33	11.84
Loey M, 2020, Neural Comput Appl	161	40.25	4.53
Al-Antari Ma, 2020, Comput Methods Program Biomed	144	36.00	4.05
Alexopoulos K, 2020, Int J Computer Integr Manuf	139	34.75	3.91
Xia K, 2021, J Manuf Syst	136	45.33	8.34
Li X, 2022, Future Gener Comput Syst	130	65.00	18.31
Zhao Y, 2021, Comput Educ	130	43.33	7.98

Table 2. Most Cited Documents Globally

Thematic Maps

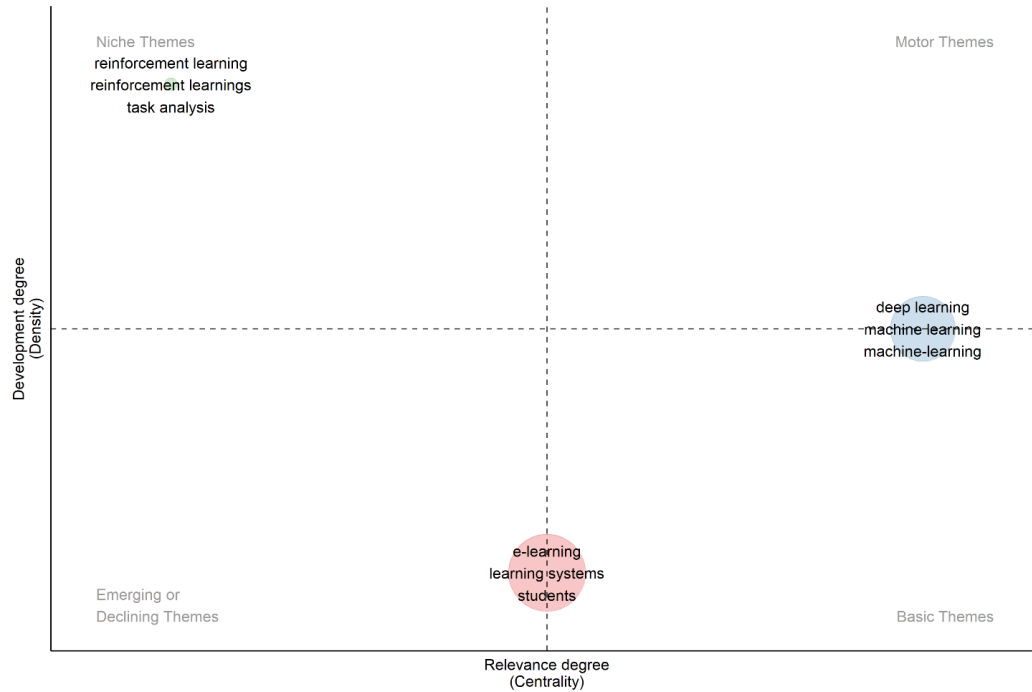


Figure 8. Thematic Map

Four categories make up the thematic map in Figure 8: Emerging and Descending Themes, Motor Themes, Niche Themes, and Basic Themes. Fundamental Themes: the research that has already been done falls into these areas. The "Learning" cluster exemplifies a fundamental topic within the provided data. Researchers frequently direct their attention toward the essential theme, which functions as the primary focus of their work. The Motor theme is one of these categories; subjects that propel or stimulate the advancement of research are included. Cluster 4 The thematic map in Figure 8 is divided into four categories: Basic Themes, Niche Themes, Motor Themes, and Emerging and Descending Themes. Essential Themes: these are the fields in which previous study has been conducted. The "Learning" cluster in the given data represents a basic subject. The key theme serves as the main focus of research, and it is often the subject of attention for investigators. One of these categories is the Motor theme, which includes topics that encourage or drive the advancement of research. "Deep Learning" is the fourth cluster is, though not to the same extent as themes like "Learning" (cluster 1) or "Deep Learning" (cluster 4), a theme that has emerged and is relevant in important research. However, some lower emerging themes, like "Machine Learning" (cluster 2) and "Student" (cluster 3), can be classified as decreasing themes because there are fewer academic projects or publications that address these themes.

Network Analysis

Network Visualization

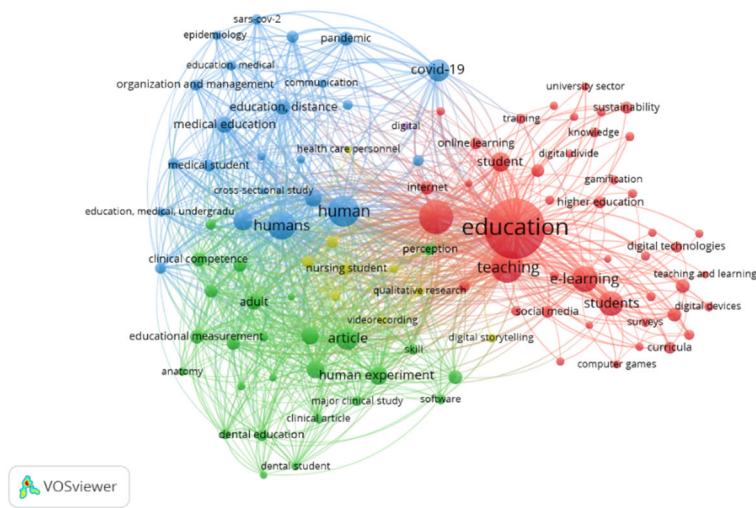


Figure 9. Event-Based Keyword Network Distribution

The minimum size of a cluster is one, and there are five clusters that are formed: cluster 1 has 47 items, cluster 2 has 2-6 items, cluster 3 has 2-3 things, cluster 4 has 9 items, and cluster 5 has 1 item. With a total link strength of 5740, "education" is the most popular term.

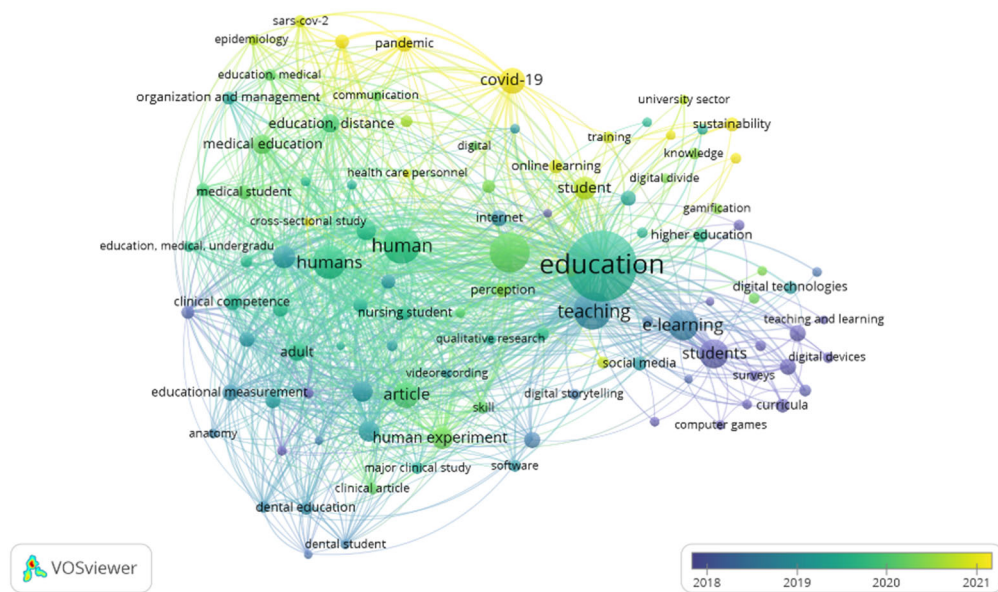


Figure 10. Keyword Network Distribution Based On Overlay

An overlay-based analysis of keyword networks is displayed in the image above. As may be observed, the terms pandemic, covid-19, and sustainability have significance in the current year. However, the terms "dental student," "anatomy," and "education technology" are occasionally used and have been since around 2018.

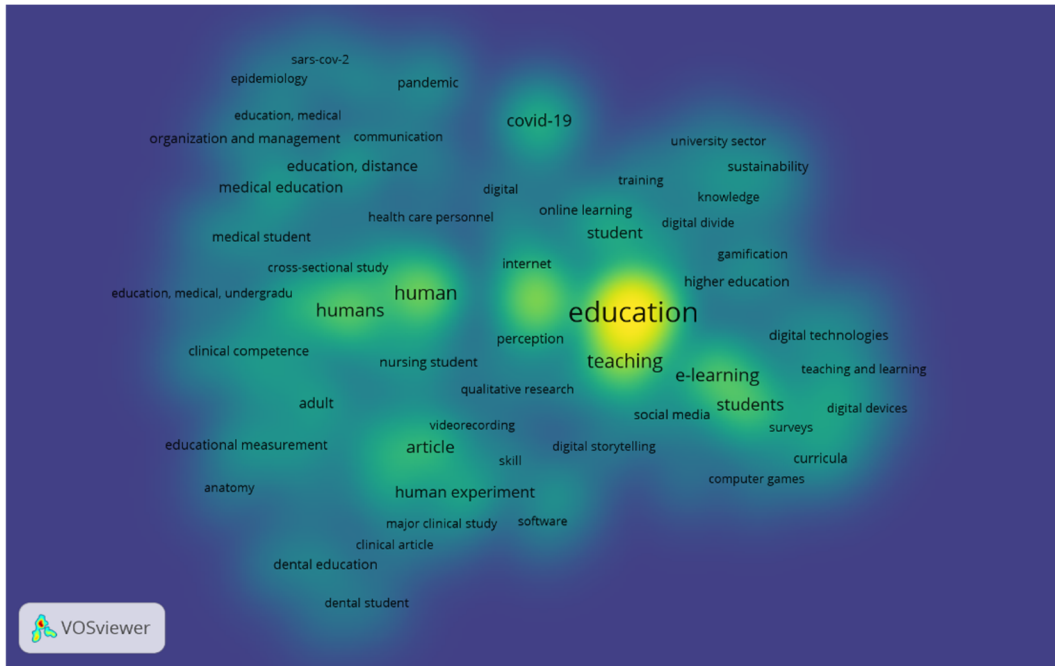


Figure 10. Keyword Network Distribution By Density

The events in each cluster that correspond to the main themes in the field of digital learning research are shown in the table below. The Internet and artificial intelligence is the first cluster's focus, while anatomy and comparative study is the second cluster's theme. Cross-section study and simulation is the theme of the fourth cluster, and blended learning and communication is the theme of the third. Digital is the fifth cluster's subject.

Keywords	Event	Group
1. Internet	62	1
2. Artificial Intelligence	27	
3. Computer Science	25	
4. Anatomy	22	2
5. Comparative Study	21	
6. Student, dental	20	
1. Blended learning	37	3

2. Communication	28	
3. Education, medical, undergraduate	26	
1. Cross-Section Study	22	4
2. Health Care Personnel	19	
3. Simulation	25	
1.Digital	22	5

Table 3. Keywords and Their Appearance in Each Cluster

Conclusion

2023 will see the peak of the publication with the title Global Trends in Digital Learning Research a Bibliometric Mapping. Zhang Y is the most relevant author, having published 13 documents. Up to 13 documents make up the association with the highest number of publications. China has 612 publications, making it the nation with the most. The document with the greatest citation, China 612, has the largest MCP and up to 20 citation papers. The primary focus of the research on global trends in digital learning research, as represented by a bibliometric mapping, is the keyword that predominates with 5740 links: pandemic, sustainability, and covid-19 with use in 2021. The five key themes are digital education, computer-assisted instruction, anatomy, Covid 19, and nursing education.

The study's limitations include its exclusive focus on datasets indexed by Scopus and its analysis of English-language journal article kinds; other worldwide indexation, languages, and document formats other than articles were not taken into account.

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