

«مقاله پژوهشی»

از سنتی تا دیجیتال: مطالعه علم‌سنجی ۳۹ ساله آموزش آنلاین تاریخ

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چکیده

آموزش آنلاین تاریخ با حذف محدودیت‌های جغرافیایی و تطبیق با طیف وسیعی از برنامه‌ها و ترجیحات یادگیری، راحتی، سازگاری و کار گروهی را فراهم می‌کند. واقعیت مجازی و چندرسانه‌ای تعاملی، نوآوری‌های فناوری هستند که آموزش را بهبود می‌بخشند و یادگیری مادام‌العمر را در زبان آموزان در تمام سنین تشویق می‌کنند. هدف این مقاله علم‌سنجی، آموزش تاریخ آنلاین و یافتن شکاف‌ها و روندهای دانشگاهی است. روش این تحقیق، روش علم‌سنجی است که با نرم‌افزار آماری انجام شده است. این مطالعه با استفاده از پایگاه داده Scopus و نرم‌افزار VOSviewer 1.6.18 و Bibliometrix 4.1.4، انتشارات مربوط به آموزش آنلاین تاریخ از سال ۱۹۸۵ تا ۲۰۲۳ را پوشش می‌دهد. تجزیه و تحلیل سالانه، افزایش قابل توجهی در تعداد مقالات را نشان می‌دهد. نویسندگان اصلی ایالات متحده، چین، بریتانیا، اسپانیا و اندونزی هستند. طبق مجله کامپیوتر و آموزش، هوانگ جی-جی فعال‌ترین نویسنده بوده است. علاوه بر این، روندهای تحقیقاتی، نقاط داغ و گفتگوها در این زمینه بر اساس نتایج تحقیق مورد بحث و تجزیه و تحلیل قرار گرفته است. تحقیقات بعدی ممکن است کاربرد بازی‌وارسازی را در محیط‌های یادگیری معاصر مانند متاورس، واقعیت مجازی، واقعیت ترکیبی (XR)، هوش مصنوعی و واقعیت افزوده گسترش دهد. این مطالعه با ارائه اطلاعات به‌روز در مورد آموزش تاریخ آنلاین به دانشگاهیان، به ایجاد حوزه‌های مهم و شناسایی مسیرهای تحقیقاتی نویدبخش کمک می‌کند.

واژه‌های کلیدی

یادگیری آنلاین، آموزش تاریخ، علم‌سنجی، کتاب‌سنجی، VOSviewer.

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ORIGINAL ARTICLE

From Traditional to Digital: A 39-Year Scientometric Study of Online History Education

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ABSTRACT

Online History Teaching provides convenience, adaptability, and teamwork by eliminating geographical constraints and accommodating a range of schedules and learning preferences. Virtual reality and interactive multimedia are technological innovations that improve education and encourage lifelong learning in learners of all ages. This scientometric article aims to teach online history and find academic gaps and trends. The method of this research is a scientometric method that was conducted with statistical software. Using the Scopus database and the VOSviewer 1.6.18 software and Bibliometrix 4.1.4, the study covers publications on Online History Teaching from 1985 to 2023. The annual analysis shows a significant increase in the number of articles. The main contributors are the United States, China, the United Kingdom, Spain, and Indonesia. According to the *Journal of Computers and Education*, Hwang G-J was the most active author. Additionally, Research trends, hot spots, and chats in this field were discussed and analyzed based on the research results. Subsequent investigations may broaden the application of gamification in contemporary learning environments like the Metaverse, VR, XR, AI, and AR. By giving academics up-to-date information on Online History Teaching, this study helps to create important areas and identify research avenues that show promise.

KEYWORDS

online learning, history teaching, Scientometric, bibliometrix, VOSviewer.



1. Introduction

After the outbreak of COVID-19 and Over the past two years, several events for the international historical community have taken place in Russia at once, in which, based on the principles of science diplomacy, a new impetus was given to the modernization of school curriculum in history and methods of teaching history, taking into account the study of international experience. Based on the results of the international conference "History Textbook for the Future, A New Look", with the participation of the authors of history textbooks from around the world, A significant choice was taken to establish an international working group, whose initial task would be to provide methodological guidelines for secondary school instructors worldwide on how to teach particular global history subjects (Osipov, 2022). In the meantime, popular media can be used to develop students' historical literacies - their ability to engage with past societies vastly different from their own (Evans & Midford, 2022a).

Teaching history is a tough and challenging task for teachers because most students usually consider history boring. Many studies indicate that students are uninterested in learning History (Nair & Narayanasamy, 2017). Also, there are different approaches to how knowledge is characterized in each country (for example, teachers in the UK emphasize contextual historical interpretation; teachers in Japan emphasize content and expertise). contextual awareness) (Fearn-Davies et al., 2022). According to Kelly (2013), Today, a student searching for information on any historical topic will find more primary sources than they can cope with. Moreover, the amount of primary source material that is now readily available will have significantly expanded if this student waits a day

or two. As a result, online education has included history instruction in the past ten years.

History as a school subject faces the challenge of organizing itself to serve modern students better, going beyond simply reciting facts. Historically, history education has focused solely on storytelling, primarily on forming an individual's national identity (Sung, 2020). Thus, opportunities and new advances beyond digitization are needed to change how history is taught and approached. The new curriculum aims to improve teaching by organizing learning outcomes and promoting higher cognitive and conceptual knowledge levels. However, it is overloaded with content that hinders skill development and creativity (Hajdarović, 2023).

Meanwhile, modeling for teaching history is also a new field. According to Rickberg (2023), three kinds of historical pedagogy modeling systems are analyzed - myth-type modeling, scientific modeling, and play-type modeling - based on Juri Lotman's semiotics of culture theory. Three different strategies are then discussed for history education: avoiding uncertainty with the collective memory approach, addressing uncertainty with the disciplinary approach, and accepting uncertainty with the post-modern approach to teaching history. This has shown the discovery of new teaching techniques and attitudes to school teaching.

New approaches and methods have been introduced to identify history education in recent years. Modeling Time (Martin, 2022), History Learning Media with Gis Web Based (Birsyada et al., 2023), Brainstorming Techniques (Trang, 2022), Augmented Reality (Carrascosa et al., 2022), informational history picture books (Forsyth, 2022), pedagogical content knowledge (PCK) (Oattes et al., 2022), multiperspectivity in history texts (Kropman et al., 2022), Virtual

Simulation (Oota et al., 2019), using graphic organizers (Wangzom, 2019), Custom-Built Board Games (Hoy, 2018), historical sources (Potočnik, 2017), Futurology methods (Hajdarović, 2023), and concept map according to Nair & Narayanasamy (2017) Research, has shown that using the concept map method significantly improves student achievement and interest in history.

These phrases signify introducing a novel idea, "Online History Teaching," to history education via the electronic world. Based on the research, it seems that electronic education is a suitable field for history education. According to Gomes et al. (2023), although virtual reality is still underrepresented in most architecture courses, especially in teaching history, studies have shown some benefits of adopting this tool.

When students pursue their lines of inquiry, they embark on unmediated intellectual quests, free from the control of faculty, textbook publishers, or others who might have controlled their inquiries in prior years (Harris et al., 2020; Joe, 2021; Zabiianov, 2021). The ability for students to freely explore and inquire about historical information fundamentally changes the traditional dynamic between teachers and students. As students now have virtually limitless access to beneficial and potentially detrimental historical data, they no longer rely on their teachers as the sole gatekeepers of knowledge previously disseminated to them in a controlled manner (Kelly, 2013). Even if we assume that in prior decades, students could go to the library and browse the stacks as a means to pursuing their lines of inquiry, now, those libraries where so many historians found a home in their student years could not rival the abundance now available on students' computer screens.

Even if they decide not to major in history, many students are eager to spend time in one or

more of our seminars because they are just interested in the subject. Whether or not we teach them again will depend, at least in part, on how well we can connect our subject to the worlds they already inhabit and want to occupy after graduation (Kisida et al., 2020; Nuttall, 2021). We can also count on the number of available digital historical sources that will continue to increase rapidly (Evans & Midford, 2022b). With the increasing digitization and accessibility of national cultural and historical collections worldwide, the vast amount of historical content that will be accessible to individuals, including students, will be so immense that attempting to comprehend its entirety will be a profound and overwhelming experience, similar to standing on a beach and trying to understand the vastness of the world's oceans.

It will be impossible to think about or rationally consider dealing with the billions of historical sources available for us to engage with, more and more of which will be marked up with XML coding. It used to be commonplace to talk about trying to get a drink from the fire hose that is on the Internet (Guberman, 2021). The rise of online courses has brought about a new era of learning and teaching. While video lectures and crowd-sourced grading have their place, there is a need for new models to teach history and promote historical thinking online. We can develop alternative paths and encourage thoughtful conversation by exploring different ways to engage students in analyzing primary and secondary sources asynchronously. These lessons also apply to face-to-face and hybrid learning models and meet the needs of teachers who seek to learn about the past and new strategies for teaching about it in their classrooms.

One of the key factors in creating a quality online learning experience is ongoing human

interaction and feedback. Teachers build relationships with course instructors and each other in these courses, taking advantage of the inherent flexibility of the online model (Hongsuchon et al., 2022; Park & Kim, 2020; Zheng et al., 2022). As online learning expands, particularly for general education requirements like introductory history survey courses, it is essential to continue experimenting and asking difficult questions about what works and what doesn't, while imagining new possibilities. Ultimately, good history teaching engages students in critical thinking and inquiry, regardless of the format in which it takes place (Santiago, 2019; Santiago & Dozono, 2022).

Modern history classes should not be limited to the classroom, but should also include learning through direct experiences in the field (Potočnik, 2017). E-learning has revolutionized the way children learn, and this is particularly true when it comes to history. With interactive digital platforms and multimedia resources, e-learning has enabled children to learn about history more engagingly and interactively.

One of the most significant benefits of e-learning is that it provides children access to a wide range of resources they may not have had otherwise. This includes primary source documents, videos, images, and interactive maps, all of which can help children better understand historical events and figures (Schrum & Sleeter, 2013). Another advantage of e-learning in history is that it can be personalized to the needs and interests of individual children. E-learning platforms can provide children with tailored learning experiences to meet their needs and learning styles. This can help keep children engaged and motivated, leading to better learning outcomes. Overall, e-learning has transformed the way children learn about history. By providing access to a wealth of resources and personalized learning experiences,

e-learning has made history more accessible, engaging, and interactive for children of all ages.

In particular, the COVID-19 epidemic has ushered in a new age for history education. The necessity for various adjustments in the field of history teaching has been brought to light by the epidemic. For students to attend courses that are not in session, it is first required to modify the strategy by incorporating digital resources, active learning techniques, and developing technologies. Second, the idea of superiority is displaced by the necessity of teaching history, society, and gender equality via a cross-cultural lens. The way that educators perceive the necessity of teaching history must alter. The COVID-19 epidemic has made it even more necessary to combat hate speech by using critical thinking, source analysis, and learning knowledge of the evidence to steer clear of fake news (Gómez-Carrasco et al., 2022). The pandemic's backdrop made the requirements and challenges of the students and their families even more pressing by drawing attention to issues with connectivity to online learning, low motivation, and a gloomy future outlook. Nonetheless, as an alternative to a novel instructional situation, this healthcare environment has enabled engaged instructors to integrate historical empathy and topics like the teaching of democratic citizenship and student involvement (Marolla Gajardo et al., 2022).

According to the discussed information and the increasing number of articles in the last few years, the necessity of scientific evaluation of online education in history education is felt, and the purpose of this research is to provide a scientific analysis of the mentioned subject. Based on this, the research questions are: (1) How do authors, nations, and resources work together in online history education? (2) Regarding trends and hot research topics, how does the research illustration map for gamification and history teaching fare? In addition, there is a dearth of

resources and examples for analyzing online history education. Then, this scientometric article aims to teach online history and find academic gaps and trends.

1.1 Literature Review

Scholarly publications on historical education published in journals indexed in the Web of Science databases' Core Collection between 2007 and 2017 were examined by Rodríguez-Medina et al. (2020). They discovered little international and intranational cooperation among academics, with most researchers and countries producing most of the scientific output.

Using the Web of Science database, Gómez-Carrasco, Rodríguez-Medina, López-Facal, and Monteagudo-Fernández (2022) examined the growth and direction of the history education sector between 2000 and 2019. They discovered five subject clusters related to history instruction, with historical consciousness and thinking at the center of each.

Using the CNKI database, Huang, Ali, Noor, and Shaari (2022) investigated history curricular reform in the Chinese setting. Nine sub-thematic clusters were identified, including the following: teaching, Bauhaus, teaching materials and techniques, history of art and design, design history in China, teaching reform, industrial design history, and design history.

A review of the literature revealed that citation analysis and scientific mapping are valuable methods for researching a topic; nevertheless, scientometric and bibliometric approaches to history teaching have not been well-researched or have not had a detailed and extensive review of online education and have limited their research scope, although all of them have been published in the last three years.

2. Methodology

2.1. Bibliometric Analysis

A cluster of research networks was subjected to bibliometric and thematic analysis as the study methodology (Paliwal et al., 2023; V. Singh et al., 2023). The purpose of the thematic analysis of publications throughout the years has been to shed light on research trends and make sense of the study groups working in Online History Teaching. The processes carried out for data collecting, sampling, and other tasks are detailed in the following sections. It is essential to note that scientometrics typically employs quantitative methodologies. This approach is characterized by the systematic measurement and analysis of scientific literature and citation patterns, utilizing statistical tools to assess the impact and development of research fields. Key characteristics of this research methodology include the use of bibliometric indicators, such as citation counts and impact factors, the application of data mining techniques to large datasets, and the focus on objective metrics to evaluate scholarly output and collaboration networks (Yazdi et al., 2024; Maryani et al., 2024; Aidosemani et al., 2024).

2.2. Sampling

The research formula consists of:

- History Education: "Teach* histor*" OR "Histor* education*" OR "Histor* teach*" OR "histor* class*" OR "histor* lesson*" OR "Histor* teacher*" OR "Histor* train*" OR "histor* course*" OR "histor* student*" OR "histor* learn*" OR "histor* curriculum*" OR "histor* instruct*" NOT "histor* of education*"
- E-learning: "online learning*" OR "virtual learning*" OR "distance education*" OR "digital* education*" OR "blended learning*" OR "remote learning*" OR "mobile learning*"

OR "Electronic training*" OR "electronic learning*" OR "E-learning*"

2.3. Data Collection and Processing

These keywords were entered into the search engines, and Scopus returned 2548 publications, respectively (12 Sep 2023). Since the paper was exploratory, there were no restrictions on the search (such as language or publishing type).

2.4. Software Package and Bibliometric Analysis

Tools for quantitative bibliometric and scientometric research are available in the bibliometrix package (Wei & Jiang, 2023). It makes it possible to apply statistics and quantitative analysis to publications, including citation counts and journal articles (A. K. Singh et al., 2023; Wiseman et al., 2023). This instrument is used in many scientific domains to

assess trends, leading writers, growth, and maturity (Dzogbewu et al., 2023). Bibliometrics is also utilized by policymakers, research directors, administrators, information experts, librarians, and academics to evaluate research performance, especially in government and university labs. The package for scholars supports three study steps: creating and visualizing matrices for co-citation, coupling, cooperation, and co-word analysis; bibliometric analysis of a publishing dataset; and data importation and conversion to R format.

This tool is a quantitative research tool for bibliometrics and scientometrics that allows network development for co-citation, coupling, scientific cooperation, and co-word analysis, as well as the importing of bibliographic data from many databases for bibliometric analysis (Aria & Cuccurullo, 2017; Garfield, 2014).

Table 1. Main information about the collected documents

MAIN INFORMATION ABOUT DATA	
Timespan	1985:2024
Sources (Journals, Books, etc)	1260
Documents	2548
Annual Growth Rate %	19
Document Average Age	5.2
Average citations per doc	15.62
References	163405
DOCUMENT CONTENTS	
Keywords Plus (ID)	3360
Author's Keywords (DE)	5226
AUTHORS	
Authors	5842
Authors of single-authored docs	608
AUTHORS COLLABORATION	
Single-authored docs	665
Co-Authors per Doc	2.68
International co-authorships %	12.17
DOCUMENT TYPES	
article	1668
book	187

book chapter	323
conference paper	247
conference review	3
editorial	4
note	4
review	112

3. Results and Discussions

3.1. Performance Analysis

The descriptive information of the research data is given in the above table. Based on this, 1260 sources were reviewed, which included 1668 articles, 187 books, 323 book sections, 247 conference articles, 112 review articles, etc. The annual growth rate of sources in this field is equal to 20%, and the average age of each examined document was 5.2. Koch was cited on average 15.62 times per document. Five thousand eight hundred forty-two authors were

involved in writing the reviewed documents, of which 608 had only one document. The participation rate was equal to 2.68, and the international cooperation rate was equal to 12.17.

3.2. Trends in the Annual Number of Publications

Examining Fig. 1, related to the growth of articles in the history of electronic education, indicates an exponential increase, especially after the COVID-19 epidemic.

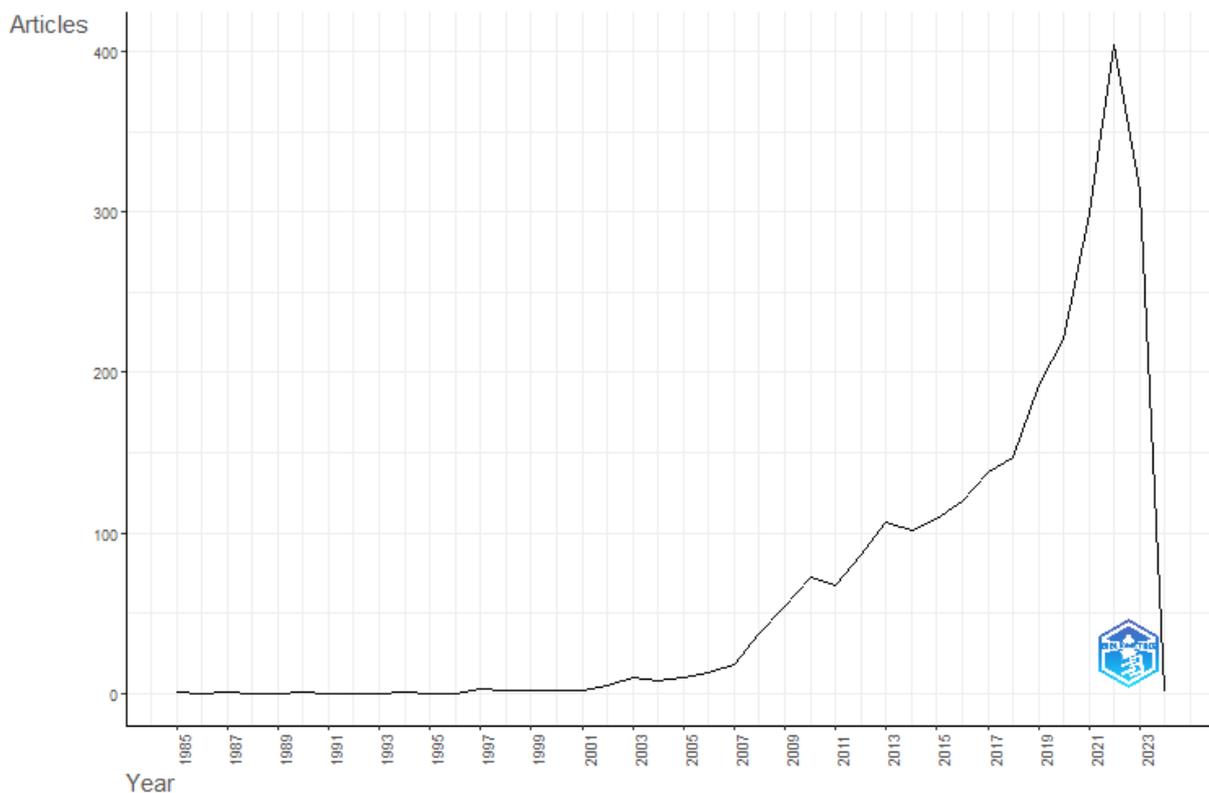


Fig 1. Distribution of the publications according to periods

Such growth is not unaffected by the COVID-19 epidemic, as Camargo et al. (2020) also showed in their meta-analysis article, many studies confirmed the positive effect of COVID-19 on the increase of electronic education. Many studies confirmed the positive impact of

COVID-19 on the rise of electronic education, and such growth can also be seen in the authors' works.

Table 2. The ten most influential journals

Title	Frequency
Computers And Education	57
Interactive Learning Environments	47
Education And Information Technologies	37
Education Sciences	31
Sustainability (Switzerland)	28
International Journal Of Emerging Technologies In Learning	25
Educational Technology Research And Development	24
Computers In Human Behavior	20
Frontiers In Psychology	20
Proceedings Of The European Conference On Games-Based Learning	19

3.3. Most Relevant Sources

As shown in Table 2, three magazines of Computers and Education (57), Interactive Learning Environments (47), and Education and Information Technologies (37) took the largest share in the publication of articles in the investigated field. All three magazines are considered to be part of Q1 magazines in terms of quartiles, with the difference that the first two magazines focus on the two fields of computer science and social science, and the third magazine focuses on the two fields of social science and library and information science, which This somehow shows that the journal of information and educational technologies has a

stronger aspect of humanities. The other two journals focus more on engineering issues.

3.4. Bradford's Law

In this research, the bibliometric analysis of the coefficients of Bradford's law was calculated for the products of philosophy in the humanities and social sciences. Based on this, three journals of Computers and Education, Cooperative Learning Environments, and Information Technologies and Education are among the core journals of this field. Such information can be very valuable for those researchers who are at the beginning of their research work and tend to get the most information with a little search.

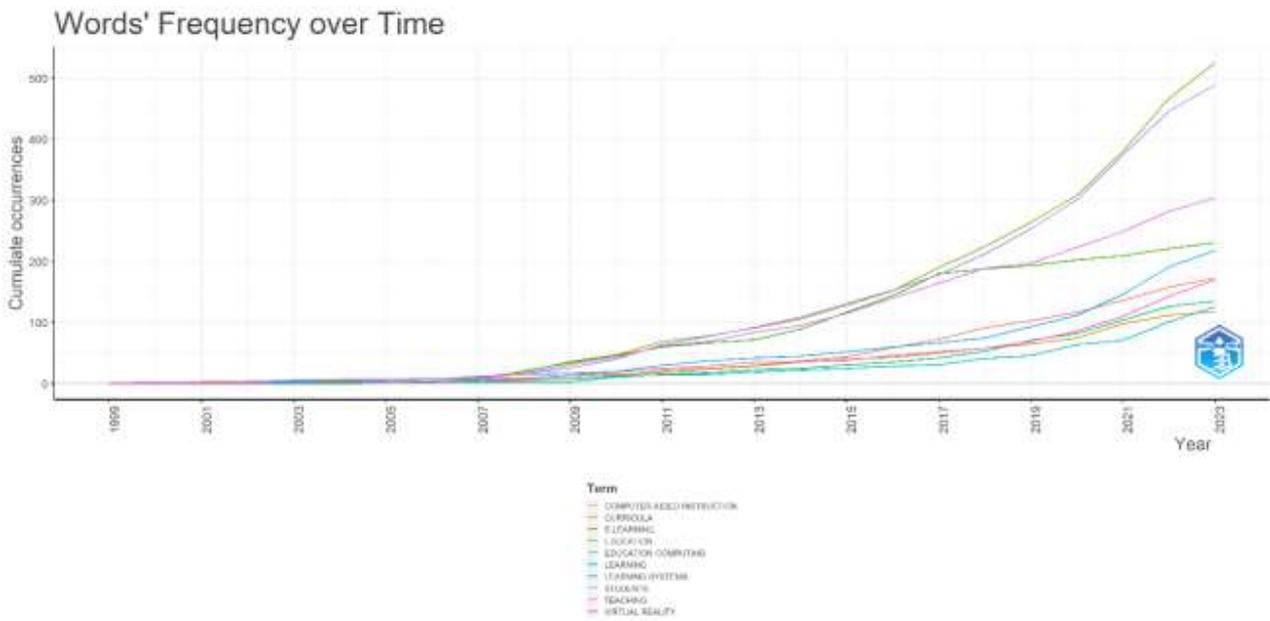


Fig 6. Word frequency over time

3.8. Trending Topics

The subject trend of this field is evidence for the claim that the COVID-19 epidemic has had a

positive effect on the increase of articles in this field, because this field has been at the top of the topics in recent years.

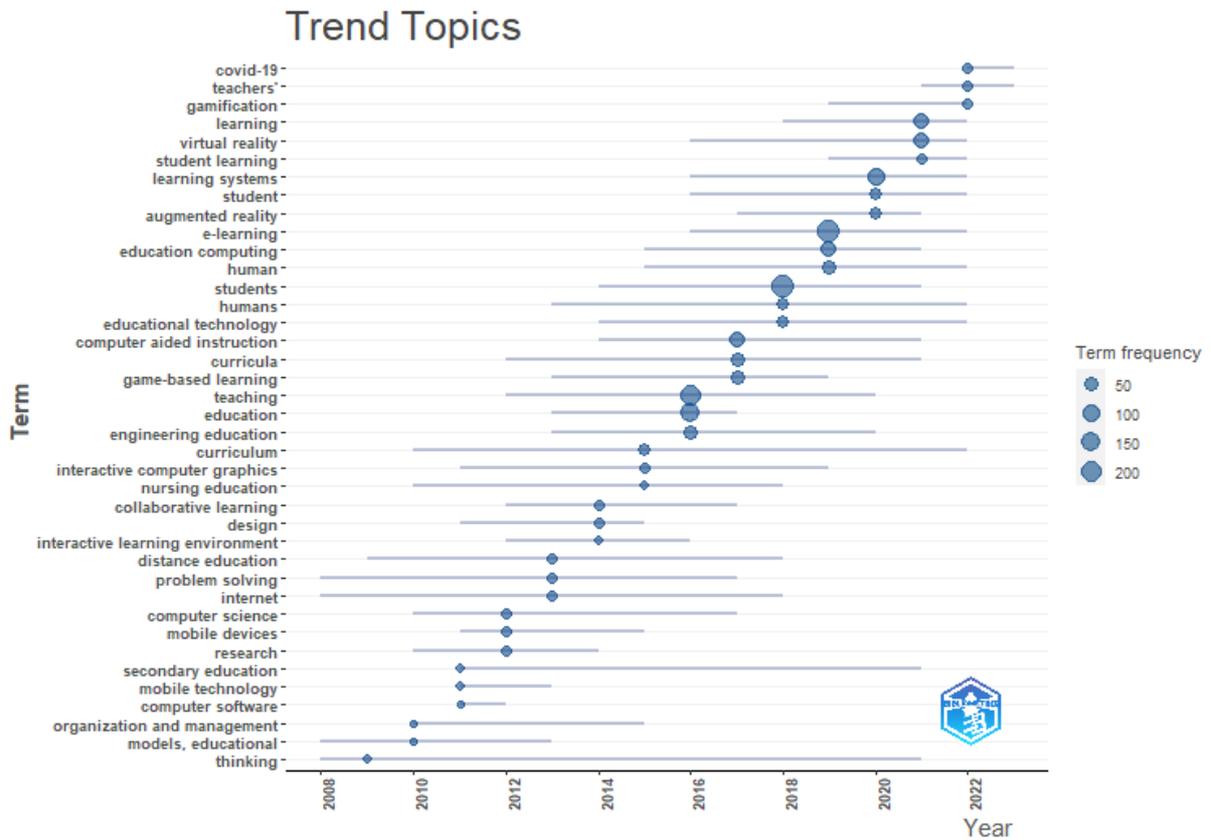


Fig 7. Trend Topics

The authors' geographical cooperation graph shows that the United States of America (749), followed by China (274), Spain (250), the United Kingdom (241), Indonesia (213), Taiwan (190), Australia (167), Turkey (158), Malaysia (148), Canada (106), Germany (91), and Greece (87) played the most significant role in the production of this field. The number of publications or research papers published by each nation in teaching history is displayed in the list. Nations possessing well-established research facilities, strong financial support, resilient academic networks, historical importance, and well-crafted curricula and educational systems have been key

players in this field. Research production has grown due to these nations' facilitation of knowledge sharing and research collaborations. The list, however, may not accurately represent the caliber or significance of the study, and significant contributions from other nations may also be included. Additionally, based on the overall visualization, the countries with the most linkages are the United States of America, China, the United Kingdom, Spain, and Australia. The authors believe Indonesia can be a major player in this sector because of its remarkable article count and average 2020 articles.

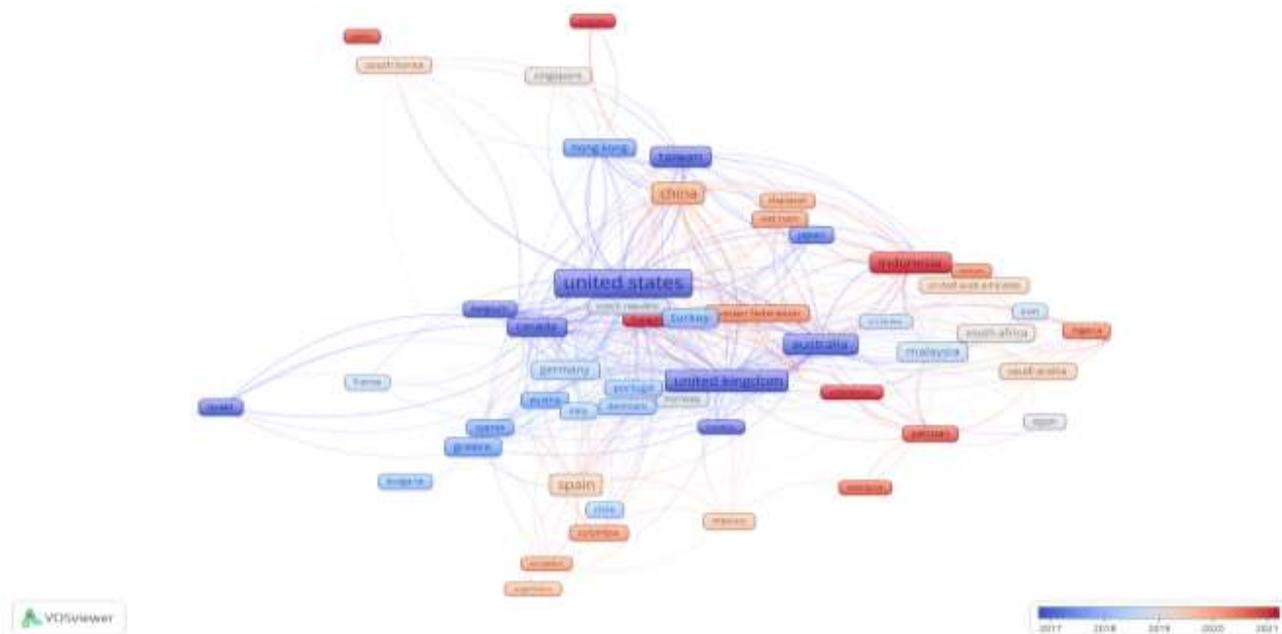


Fig 8. Overlay visualization map of countries in the articles

3.9. Thematic Analysis

The analysis of the thematic clusters of the study area based on the strategic diagram shows that out of the three clusters under investigation, the "human and education" cluster and the "electronic education" cluster are located on the border between the two areas. Based on this, the human cluster and education are central in one

direction and well-developed in another. Also, the e-learning cluster, which is located on the border of the second and third quadrants, is neither central nor able to attract much attention, and it is considered a marginal cluster. Finally, the third cluster of "educational motivations" is central, but it has not yet reached full maturity and needs more work.

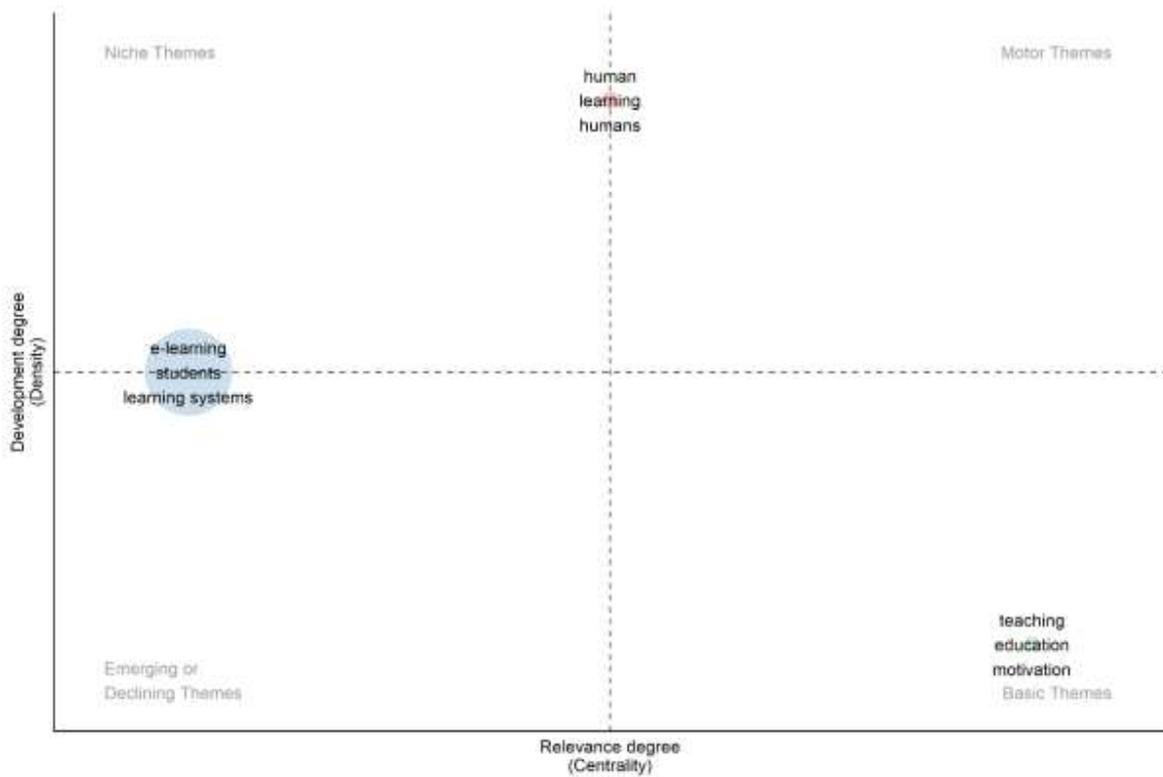


Figure 9. Thematic map

The analysis of the Sankey diagram shows that the researchers had different behaviors in dealing with the words and subjects under investigation in two periods, 1985-2019 and 2020-2024. As it is known, before 2020 and the widespread COVID-19 epidemic, electronic education, critical thinking, and integrated technologies

were considered more, but after 2020, with the closure of educational centers due to the outbreak of words and topics such as COVID-19, higher education, reality virtual, evaluation, etc. were inclined, which shows a significant change in the direction of research in this field.

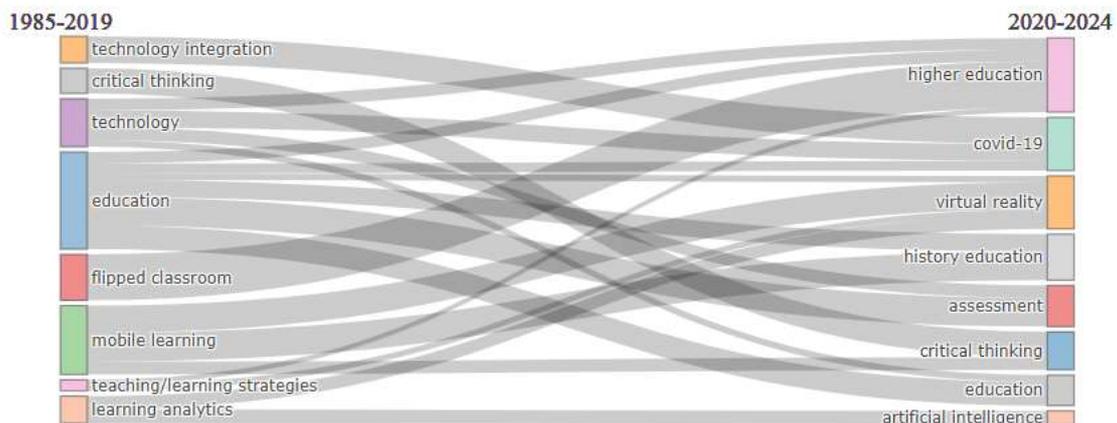


Fig 10. Sankey diagram

4. Conclusion

What we think is obvious sometimes looks pretty dark and ambiguous, especially when we are faced with the history of an issue or matter. Scientometric research helps researchers understand the path taken and what should be done. In this article, scientometrics was used to comment on the position of research related to online teaching of history courses and measure some aspects. The results indicated the growth of scientific works in this field. This growth is part of the nature of science. In the book *Little Science, Big Science*, a seminal work on information science, Price (1963) notes that the number of scientific papers doubles every fifteen years.

Three publications on computers and education, Collaborative learning environments, and information technologies and education, took the most part in the publication of articles in this field. Identifying core journals is essential because it is one of the constant interests of information systems (Chan et al., 2015) and is a necessary help to researchers to encompass a topic. Concerning the subject area of the identified core publications, it should be noted that it was not far-fetched that technology-related magazines significantly contribute to the publication of works in this field because of the idea of distance education without the use of communication and computer technologies. It seems impossible. As mentioned, many studies have pointed out the necessity of computer equipment in electronic education as a necessary condition, in many studies it has been pointed out that one of the conditions for the success of online educational programs is to have a minimum of It is computer literacy (Lupo and Warlich, 2001; Link and Marz, 2006; Li and Lee, 2016).

Huang, Hu, and Bombart were the three primary authors in this field. Suppose the identification of the core publications helps us to understand and recognize the most scientific works. In that case, the knowledge of the core authors allows us to more easily identify the new fields and knowledge boundaries in each field, because the core authors usually move within the limits of knowledge. The law of scientific fertility is also shown in this research, and a few authors contribute the most to scientific production. In addition, identifying the core authors helps in understanding the concepts of scientific collaborations and recognizing the characteristics of the co-authorship relationships of the core authors (Zhang and Zhou, 2020).

The analysis of thematic trends showed that this field was not unaffected by the COVID-19 epidemic, and the research in this field was significantly affected. Also, the analysis of authors' productions based on country and geographical location showed that America and England had the most scientific productions in this field. In most scientometric studies, America ranks first in scientific output (Bazm, Kalantar & Mirzaei, 2016).

If we accept that the keywords used by the authors are the most reflective of the research topics of a scientific field, the super-vocabulary analysis showed that topics such as virtual reality, augmented reality, and education were the most critical concerns of researchers in this field. Also, the machine lexical tree diagram assigned by the indexing databases showed that researchers are investigating teaching issues related to that subject. Keyword analysis also gives us other information about the subject trend of this field. Based on this, the emergence and rise of a keyword show the scientific concerns of that field. Vocabulary growth trend shows that since 2009, words such as computers

and tools, educational programs, and electronic education have appeared regularly in the texts of this field.

The COVID-19 epidemic was a subject that affected human life so much that it can be called a significant event for philosophers. Philosophers believe that sometimes some events are so substantial and influential that the members of the society will never become those people before that event, just as the Iranian society before the imposed war cannot be compared to the Iranian society after the war. There is no comparison. It can be safely said that the electronic education phenomenon was most affected by the COVID-19 epidemic. As the subject trend also shows, since 2019, the subjects of this field have been greatly affected by COVID-19.

This work contains limitations and presents fresh research possibilities despite the authors' best efforts. First, as all of the documents in this study were gathered only from Scopus, the study's guidelines may be found there. Future studies should get data from WOS and other sources. Gamification research in online education is expected to grow, and the use of network games and bibliometric analysis will be needed in the future, even if the study only covers research conducted up to September 12, 2023. Subsequent investigations may broaden the application of gamification in contemporary learning environments like the Metaverse, VR, XR, AI, and AR. Additionally, researchers may experiment with approaches to enhance learning in these settings.

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