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Eğitimde küresel vatandaşlık yayınlarındaki eğilimlerin belirlenmesi: Bibliyometrik bir analiz[1,2]

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ÖZET

Küresel vatandaşlık üzerine çok sayıda eğitim çalışması yapılmış olmasına rağmen, **eğitimde küresel vatandaşlık araştırmalarının kapsamlı bir şekilde anlaşılması için var olan çalışmalardan daha kapsamlı ve güncel bir bibliyometrik analiz yapılarak literatürdeki önemli boşluğun doldurulması gerekmektedir.** Bu nedenle, bu çalışma eğitimde küresel vatandaşlık konusundaki akademik üretimi analiz etmek için bibliyometrik bir yöntem kullanmayı amaçlamaktadır. Bu amaç doğrultusunda, 2000-2022 yılları arasındaki veriler Web of Science veri tabanından elde edilmiş ve yıllık bilimsel üretim, atıf yapılan araştırmalar, kaynaklar, yazarlar, bağlantılar, ülkeler, anahtar kelimeler, araştırma eğilimleri ve kavramsal yapıyı kapsayan bir analiz gerçekleştirilmiştir. Ayrıca, küresel vatandaşlık araştırmalarının geleceğine ilişkin öngörülerde bulunulmuştur. Analiz, RStudio aracılığıyla Biblioshiny arayüzü kullanılarak gerçekleştirilmiştir. Küresel vatandaşlık araştırmalarının 2008 yılından bu yana güçlü bir yükseliş eğilimi gösterdiği sonucuna varılmıştır. Özellikle Amerika Birleşik Devletleri ve Birleşik Krallık, küresel vatandaşlık alanında merkezi katkı sağlayan ülkeler olarak ortaya çıkmıştır. Küresel vatandaşlık araştırmaları, küresel vatandaşlık eğitimi boyutuna doğru evrilmektedir. Özellikle, küresel duyarlılığı geliştirmek için müfredatın içselleştirilmesine odaklanılmaktadır. Gelecekte yapılacak araştırmalarda, küresel vatandaşlığın alt temaları farklı yapay zekâ araçları kullanılarak test edilebilir.

ANAHTAR KELİMELER

Küresel vatandaşlık; bibliyometrik analiz; eğitim araştırması; biblioshiny, Web of Science veri tabanı.

Determining the trends in global citizenship publications in education: A bibliometric analysis

ABSTRACT

Although numerous educational studies have been conducted on global citizenship, a significant gap in the literature needs to improve a comprehensive understanding of global citizenship research in education. Therefore, this study aims to employ a bibliometric method to analyze the academic production of global citizenship in education. In line with this purpose, the data from 2000 to 2022 were obtained from the Web of Science database, and an analysis encompassing annual scientific production, cited documents, sources, authors, affiliations, countries, keywords, research trends, and conceptual structure was conducted. Furthermore, predictions were made regarding the future of global citizenship research. Analysis was performed by using the Biblioshiny interface via RStudio. It is concluded that global citizenship research has shown a strong upward trend since 2008. Notably, the United States and the United Kingdom have emerged as central contributors in the field of global citizenship. Global citizenship research is evolving towards the global citizenship education dimension. In

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particular, the focus is on internalizing the curriculum to foster global sensitivity. In future research, sub-themes of global citizenship can be tested using different artificial intelligence tools.

KEYWORDS

Global citizenship; bibliometric analysis; educational research; biblioshiny, Web of Science database.

Introduction

In recent years, there has been a growing interest in the concept of global citizenship (GC) in education, as researchers and educators have sought to prepare students for the complex challenges and opportunities of an increasingly interconnected world (Goren & Yemini, 2017; Pashby et al., 2020). The world's growing political, economic, social, and cultural interconnectedness requires individuals to be more sensitive to global issues (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2015). Strengthening this perspective requires adapting the understanding of citizenship to cosmopolitan structures. In short, GC should be brought to the forefront (Myers, 2010; Yemini & Furstenburg, 2018). GC includes skills such as critical thinking, global competency, global consciousness, decision-making, curiosity, cooperation, and healthy communication (Morais & Ogden, 2011; Dill, 2013; Celume & Maoulida, 2022). Thus, individuals are inspired to respect variety, think about others' perspectives, and take action to change the world for the better. GC is considered essential for the world's alignment with the Sustainable Development Goals (SDGs) of the United Nations (UN) and is increasingly attracting the attention of educational researchers. As a guide to creating the ideal global community, the SDGs have made it necessary to make GC effective in addressing today's world challenges (Franch, 2020). In the consensus adopted by the UN, the educational dimension of GC is emphasized in solving problems such as gender inequalities, poverty, environmental issues, human rights, and climate change (UN, 2015). Therefore, global citizenship education (GCE) is included in the United Nations' SDG 4, Target 7 for the 2030 agenda. Similarly, UNESCO emphasizes GC in creating global belonging and developing an inclusive, peaceful, and sustainable understanding of humanity (UNESCO, 2018). These international interests demonstrate that GC is important for developing transnational sensitivity and competence. However, despite its current status, the GC took the backseat in scientific production before the UN efforts.

Research on GC in education has remained scarce for many years (Kim, 2023). This is likely due to various factors, including the fact that the concept of GC is relatively new and still evolving. For many years, global citizenship has been perceived as anti-patriotic in educational settings and a threat to national identity (Rapoport, 2010). The emergence of different model designs for GC and GCE after the 2000s has delayed the deepening of the literature and unfolding of different perspectives. In addition, GC was considered an ambiguous design due to the lack of an authority that could control transnational citizenship (Oxley & Morris, 2013). Also, organizations such as the UN, UNESCO, and OECD (Organisation for Economic Co-operation and Development) have recently focused on this issue. It is thought that mobility in academic studies may have increased with global institutions' attention drawn to this issue. In the last quarter of the 20th century, researchers focused on individuals' knowledge, attitudes, and behaviors related to global interaction (Scheunemann, 2021). However, as mentioned above, the prominence of GC has come to the forefront with an international influence. The work carried out by the UN brought GC into scientific production. In 2012, the UN General Secretariat launched the Global Education First Initiative (GEFI) process and promoted global citizenship (United Nations, 2012). Subsequently, the process continued with the Sustainable Development Goals (SDGs). As a result of international initiatives, GC literature in education has been revitalized, and the number of scientific studies has increased. In addition to determining the increasing popularity of GC in the literature, revealing how the focus of studies has evolved and how it may evolve in the future is necessary to increase the effectiveness of GC research. While

there has been growing interest in GC, little is known about the trends in research publications in this field. This bibliometric analysis can contribute to identifying the development of GC in education, research foci, influential authors, countries, and collaborations, and future research directions.

Theoretical Background

Global Citizenship: The Need for an Interconnected World

Although GC has recently come to the forefront of the scientific literature, it is difficult to draw its boundaries due to the different approaches to the concept. Criticism of the concept because it is a product of the Western thought system has made it ambiguous (Andreotti, 2006). The GCE has also been affected by this situation. Thus, GC and GCE have been theorized in the context of many models (neoliberal, radical, critical, and others) of the globalization process (Aktas et al., 2017; Pashby et al., 2020; Shultz, 2007). For example, Dill (2013) emphasized that the main objectives of GC are the development of global competencies for the global economy and global consciousness of the future of humanity in the global world. Shultz (2007) discussed GC in the context of three different models conceptualized as neoliberal, radical, and transformationalist, depending on the approach to the globalization process. Andreotti (2006), on the other hand, distinguished between "soft global citizenship education" and critical global citizenship education in his model and placed power relations at the center. In other words, GC and GCE were evaluated within the scope of different models in terms of questioning power relations or contributing to their reproduction (Pashby & Costa, 2021). Despite the different models, the benefits of GC have been a focus area for researchers. Originating from the effects of globalization, GC has emerged as a transnational fighting force in areas where nations alone are insufficient to solve problems such as migration, poverty, discrimination, and environmental destruction (Myers, 2006). GC is becoming one of the focal points of education systems because of its power to solve today's world problems and create global awareness. It is emphasized that through GCE, students can develop their knowledge and understanding of social justice, equality, diversity, human rights, etc.; gain skills such as empathy, self-awareness, and problem-solving; and strengthen their values and attitudes such as beliefs in change, attitudes towards sustainable development, sense of identify and self-esteem (Oxfam, 2015). Whether solving contemporary world problems or engaging individuals in the global competitive environment, GC is now an essential curricular component that aims to enrich individuals' transnational awareness and influence. Recently, educational researchers have recognized the importance of GC and GCE. There is a growing belief that GC is not a threat to nation-states and national identity but rather contributes to an interconnected world. This process has led to gradually diversifying GC and GCE research across different countries. Over time, researchers have shown interest in extending citizenship competencies beyond national borders (Moon & Koo, 2011; Myers, 2006). As a result, researchers have focused their research on GC as a transnational type of citizenship.

Bibliometric Analysis and Global Citizenship Research

The increase in the theoretical depth of GC in the field of education, the removal of the concept from the position of a threat to national identities, and its association with SDGs have increased the diversity of research. Despite this, systematic reviews, meta-reviews, and bibliometric analysis studies are conspicuous because of their scarcity. Among these studies, the ones by Goren and Yemini (2017), Chiba et al. (2021), and Kolleck and Yemini (2020) are particularly noteworthy. Goren and Yemini (2017) examined the trends in empirical studies on GCE at primary and secondary school degrees between 2005 and 2015. Chiba et al. (2021) investigated how to improve education for sustainable development and GC with a review of the literature systematically. In the research conducted by Kolleck and Yemini (2020), a review of the scientific literature on environment-related education topics in global citizenship education was conducted, and social network analysis was performed. Differently, Pashby et al. (2020)

presented GCE typologies through meta-review research. Ahmed and Mohammed (2021) examined the effectiveness of GCE programs implemented in the USA. Similarly, different studies have examined the place of GC and cosmopolitanism in the programs and textbooks used in citizenship education (Moon & Koo, 2011; Bromley, 2009; Myers, 2006). Existing research contributes to the literature by focusing on micro-areas in terms of theoretical or practical focal points. There is a bibliometric study on global citizenship in education in Turkey (Palaz, 2021). However, it is thought that the realization of this research supported by more up-to-date data will make a significant contribution to the literature. Additionally, a meta-synthesis study on global citizenship exists but does not address global citizenship in education and is limited in terms of the studies it covers (Toy, 2023). Furthermore, there is a bibliometric study directly focused on citizenship education (Karaca & Akbaba, 2021). Nonetheless, this research is restricted to citizenship education and does not encompass global citizenship. There is still a need for research that provides a broader picture of GC in educational research. Because it is necessary to present the current state of GC research and predict future directions. This study can reveal the developmental trajectory of GC research and prevent the reproduction of outdated research by identifying the focus of current perspectives and future research trends. Therefore, we conducted a bibliometric analysis of GC research in education. In this way, we aimed to reveal how the field has evolved by conducting a holistic analysis of GC studies in education. To this end, we sought answers to the following research questions;

1. What are the current status (annual scientific production, influential authors, countries, etc.), research trends, and prevalent topics in global citizenship studies in recent 22 years?
2. What is the conceptual structure of global citizenship studies in education, and what could future directions be predicted?

Method

Bibliometric Analysis

This study used bibliometric analysis to examine effective research on GC in education. Bibliometric research has been used frequently in education in recent years to easily reveal trends in a wide range of research and provide information about the characteristics of publications (Gumus et al., 2018). Although researchers can easily access the effectiveness of journals (e.g., from Clarivate Analytics), bibliometric analysis is needed when more specific analysis of researchers and journals is desired (Aparicio et al., 2021). This is because bibliometric analysis reveals the characteristic structures of research in the focused research area. Our literature review revealed that many studies on GC have been conducted in education. However, a gap was found in revealing the general characteristics of these studies. For example, the research conducted by Palaz (2021) makes an important contribution to global citizenship in education. However, the study did not include analyses such as Bradford's law, Lotka's law, trending topics, thematic maps and thematic evolution. Therefore, this study conducts a bibliometric analysis to shed light on the broader picture of GC research in education. Biblioshiny was used to perform the bibliometric analysis. Biblioshiny is a web-based interface (Aria & Cuccurullo, 2017). To access the Biblioshiny interface, the researchers first installed the R Studio program on their computers. Then, they added the "bibliometrix" package required to access Biblioshiny to the R Studio library. Finally, the biblioshiny interface was activated through the bibliometrix package in the R Studio library, and access to the interface was provided through the Google Chrome browser. Ethics committee permission was obtained from Kırıkkale University Social Sciences and Humanities Ethics Committee on 18.04.2023

Data Source

The starting point of bibliometric research is to determine the data set. We first accessed the Web of Science (WoS) database. Since GC is a multidimensional concept studied by many disciplines, we chose only the WoS database as a limitation to conduct our research in detail.

We then searched the WoS database using the "OR" operator with three keywords to retrieve the data. We performed a detailed examination by searching each keyword in the dimensions of "Title," "Abstract," and "Author keywords". The combination of "global citizenship (Title) OR global citizenship (Abstract) OR global citizenship (Author Keywords) OR world citizenship (Title) OR world citizenship (Author Keywords) OR world citizenship (Abstract) OR cosmopolitan citizenship (Title) OR cosmopolitan citizenship (Abstract) OR cosmopolitan citizenship (Author Keywords)" was used to obtain the data. Although there is no consensus in the literature on whether the three concepts have the same meaning, we chose to avoid data loss and examined the relationship of the studies with GC in detail. We conducted this search on October 20, 2022. As a result of the initial search without filtering, we reached 2013 studies. Then, we shaped the dataset by filtering within the scope of our inclusion and exclusion criteria.

Data Extraction

After the search, "article" and "review article" publications were filtered under the "Publication type" heading. Since the scientific production on GC in education started in the 2000s, the dataset was filtered between 2000 and 2022. Global citizenship research in education has shown stability since the 2000s. Therefore, the studies included in the research were limited to the years 2000-2022. Although GC has been studied by various social science disciplines, this study focuses on educational research. Therefore, the "Educational Research" filter was applied to the data set obtained as the research field. Afterward, under the Web of Science Core Collection, the Social Science Citation Index (SSCI), Emerging Science Citation Index (ESCI), Science Citation Index Expanded (SCI-Expanded), and Arts & Humanities Citation Index (A&HCI) were preferred. The English language, which the researchers had sufficient command of, was preferred as the publication language. The data were stored after the transactions on the WoS database were completed. The researchers reviewed the dataset. All studies were reviewed for full text, early access, year of publication, and relevance to the research topic. Inappropriate studies were removed from the dataset. After extraction, the dataset was retrieved from the WoS database in Bibtext format and imported into the Biblioshiny interface. Once again, the data was filtered by year and document type. After all the procedures, 545 studies were stored to be used in the analysis. For more details about the data extraction process, see Figure 1.
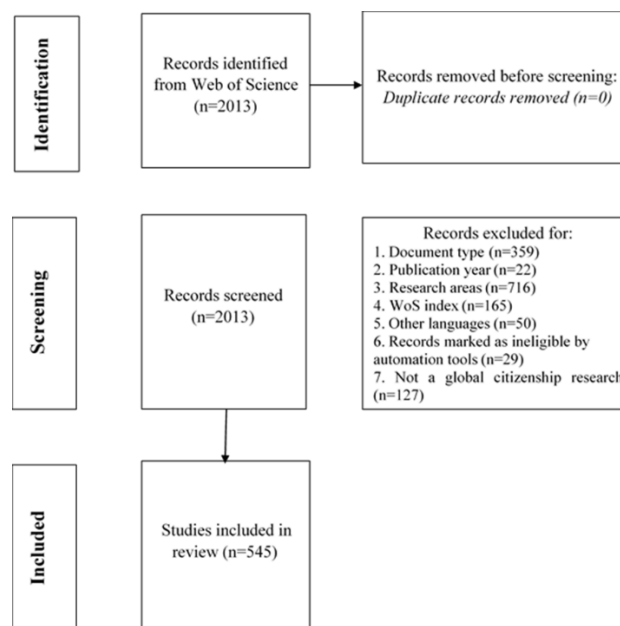

Figure 1 Identification of studies[3]

Results

Development of Global Citizenship Research in Education

Table 1 Main information about the data

Description	Results	Description	Results
Timespan	2000-2022	*KEYWORDS*	
Journals	194	Author's Keywords (DE)	1317
Documents	545	Keywords Plus (ID)	422
Annual growth rate %	19.88	*AUTHORS*	
Document average age	6.75	Authors	926
Average citations per document	13.77	Authors of single-authored documents	217
References	20797	*AUTHORS COLLABORATION*	
DOCUMENT TYPES		Single-authored documents	249
Article	528	Co-authors per documents	2.02
Review article	17	International co-authorship %	19.08

The main information about the data is presented in Table 1. It was found that the 545 studies conducted between 2000 and 2022 were published in 194 journals, and the studies received an average of 13.77 citations. It is seen that 17 review articles were also published in the dataset dominated by research articles. In addition, the annual growth rate of GC research is almost 20%.
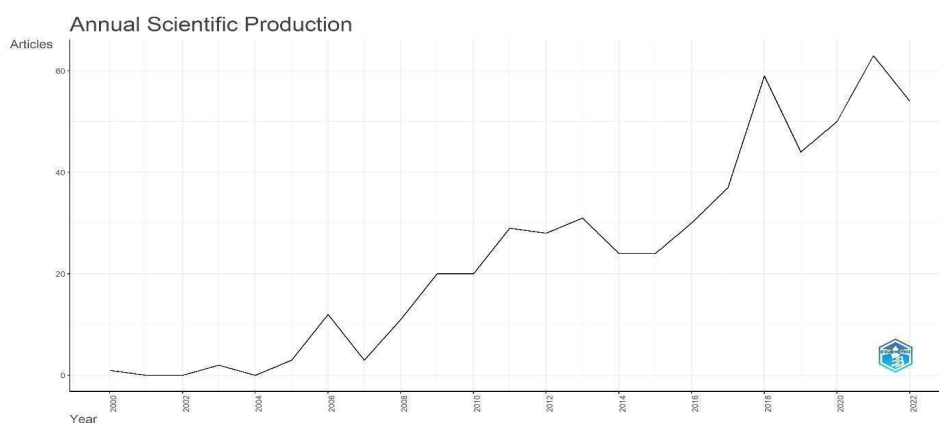

Figure 2 Annual scientific production

Figure 2 shows the distribution of studies published on GC according to years. When the WoS database is analyzed, it is seen that a total of 545 articles on GC have been published. There is no continuity in the studies between 2000-2008. Since 2008, studies on GC have been conducted every year. In 2008, it can be said that the issue of GC gained a place in the academic field. The period of steady rise that started with 11 studies in 2008 extended until 2021, when 63 studies were conducted. In 2021, Karen Pashby contributed significantly to the literature with her productivity and effective research. For example, studies such as Mobilising global citizenship education for alternative futures in challenging times: an introduction (Pashby et al., 2021) and Interfaces of critical global citizenship education in research about secondary schools in 'global North' contexts (Pashby & Costa, 2021) have been published by the researcher. Although there has been a decline in the number of studies published on the subject in some years, the momentum is generally on the rise.
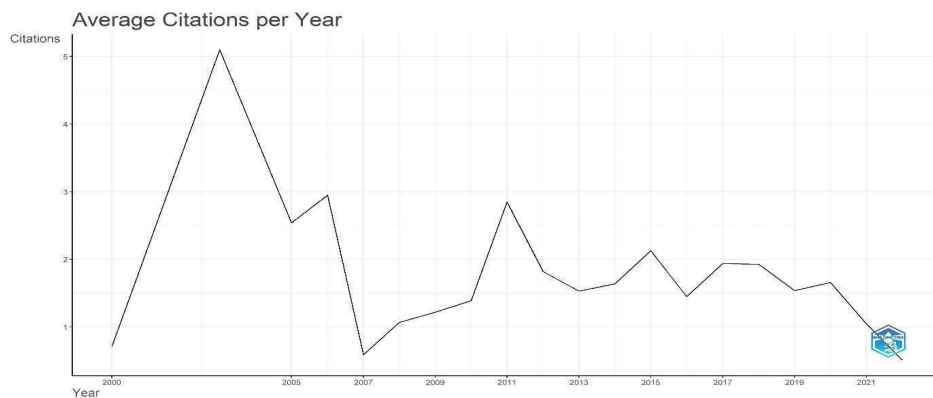
Analysis of Cited Documents

Figure 3 Average article citations per year

Figure 3 shows the average annual number of citations of the studies. When the annual citation numbers are analyzed, it is seen that there is a downward trend, although there are differences between years. It is seen that the highest annual citation was received in 2003. With this downward trend, the annual number of citations reached its lowest level in 2022. The main reason for this may be the presence of articles published in the early 2000s in the literature for many years. In addition, the reason for the decline in recent years may be that it takes time to cite newly published articles. Despite these assumptions, the citation levels of some articles published more recently are higher than those of previously published studies. The reason for this may be the impact of the studies on the literature and the quality of the researchers. The study Initial development and validation of the global citizenship scale (Morais & Ogden, 2011) and Global citizenship education redefined - A systematic review of empirical studies on global citizenship education (Goren & Yemini, 2017) are examples of highly cited studies.

Table 2 Most cited papers

Authors	Title	Research Foci	Journal	GC	LC
Andreotti, Vanessa de Oliveira (2006)	Soft versus critical global citizenship education	How critical global citizenship can be an effective way to support students	Policy & Practice - A Development Education Review	269	75
Osler, Audrey; Starkey, Hugh (2003)	Learning for cosmopolitan citizenship: Theoretical debates and young people's experiences	Limitations of national citizenship education, reconceptualized education for cosmopolitan citizenship	Educational Review	201	25
Davies, Lynn (2006)	Global citizenship: abstraction or framework for action?	Abstractness of the concept of 'global citizenship' in guiding curriculum policy and active citizenship for students	Educational Review	182	61
Huckle, John & Wals, Arjen E.J. (2015)	The UN decade of education for sustainable development: Business as usual in the end	Global education for sustainable citizenship and the rationale for the Decade	Environmental Education Research	146	3
Oxley, Laura & Morris, Paul (2013)	Global citizenship: A typology for distinguishing its multiple conceptions	Create a typology to identify and distinguish different conceptions of global citizenship	British Journal of Educational Studies	146	62
Davies, Ian; Evans, Mark & Reid, Alan (2005)	Globalising citizenship education? A critique of 'global education' and 'citizenship education'	From an English perspective, globalisation, global citizenship and two forms of education relevant to those developments (global education and citizenship education)	British Journal of Educational Studies	127	45
Andreotti, Vanessa de Oliveira (2011)	(Towards) decoloniality and diversity in global citizenship education	Generating alternatives to liberate global citizenship education from a Eurocentric perspective	Globalisation, Societies and Education	119	25
Morais, Duarte B. & Ogden, Anthony C. (2011)	Initial development and validation of the global citizenship scale	Report on the development of a scale to measure global citizenship	Journal of Studies in International Education	118	25
Goren, Heela & Yemini, Miri (2017)	Global citizenship education redefined - A systematic review of empirical studies on global citizenship education	Systematic conceptual review of empirical studies addressing global citizenship	International Journal of Educational Research	117	41

Osler, Audrey (2011)		Teacher interpretations of citizenship education: national identity, cosmopolitan ideals, and political realities	Citizenship curriculum for England and of the curriculum and their students' needs as learner-citizens	Journal of Curriculum Studies	93	7

*GC: Global citations, LC: Local citations; ** Ranking is based on global citation.

In the analysis of the most cited articles, global citations and local citations in the dataset were taken into consideration. Global citation numbers refer to the total number of citations in Web of Science, while local citation numbers refer to the number of citations in the dataset. The most influential study is the titled Soft versus critical global citizenship education published by Andreotti (2006). This research is followed by Osler & Starkey (2003) Learning for cosmopolitan citizenship: Theoretical debates and young people's experiences, and Davies (2006) Global citizenship: abstraction or framework for action? It is noteworthy that all three studies are early studies in GC research. In addition, since these three studies focus on the conceptual dimension of GC, it can be said that they provide direction for future research and thus reach a high number of citations. The article titled The UN Decade of Education for Sustainable Development: Business as Usual in the End by Huckle and Wals (2015) has likely maintained its popularity in recent years due to its relevance to sustainability. Similarly, the publication titled Global Citizenship Education Redefined: A Systematic Review of Empirical Studies on Global Citizenship Education by Goren and Yemini (2017) may have been included among the most cited studies, despite being relatively recent, because it offers a comprehensive perspective on the subject.
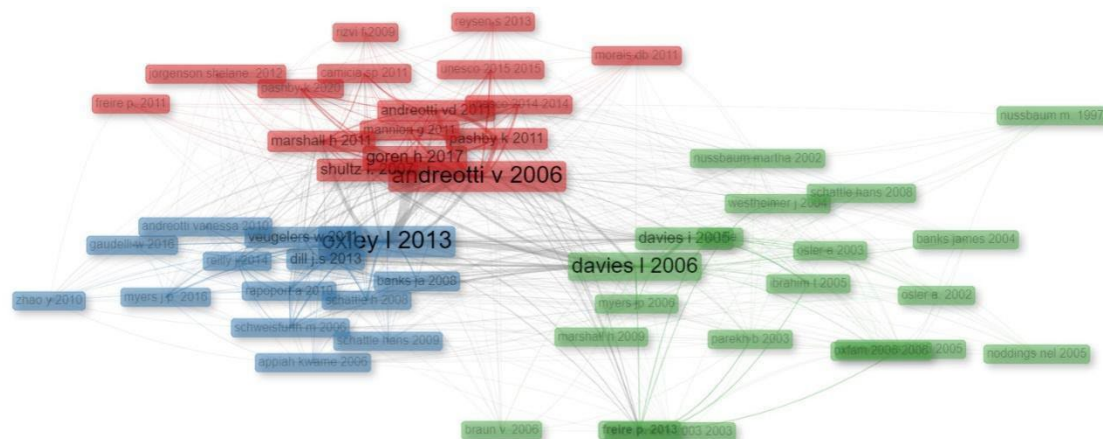

Figure 4 Co-citation analysis of papers

The co-citation analysis of the studies is presented in Figure 4. Co-citation counts are used in co-citation analysis to measure the similarity between articles, authors, or sources (McCain, 1990; Xin et al., 2021). A fundamental tenet of co-citation analysis is that two research are more likely to have linked contents if they are referenced together frequently. The figure shows authors in three different colors and in three different clusters. Louvain clustering algorithm was applied in the analysis, which was conducted over 50 nodes. Regarding nodes in social network analysis, it is seen that betweenness centrality and closeness centrality are effective. Concerning the blue cluster, Oxley and Morris's (2013) research is the most effective, with the highest betweenness centrality measure. This research was followed by Rapoport (2010), and Veugelers (2011). According to the red cluster, Andreotti (2006), Shultz (2007), and Goren and Yemini (2017) stand out. In terms of green cluster, Davies (2006), Davies et al. (2005), and Myers (2006) have also conducted influential research. Although influential studies are located in different colored clusters, they shape global citizenship research in the field of education.
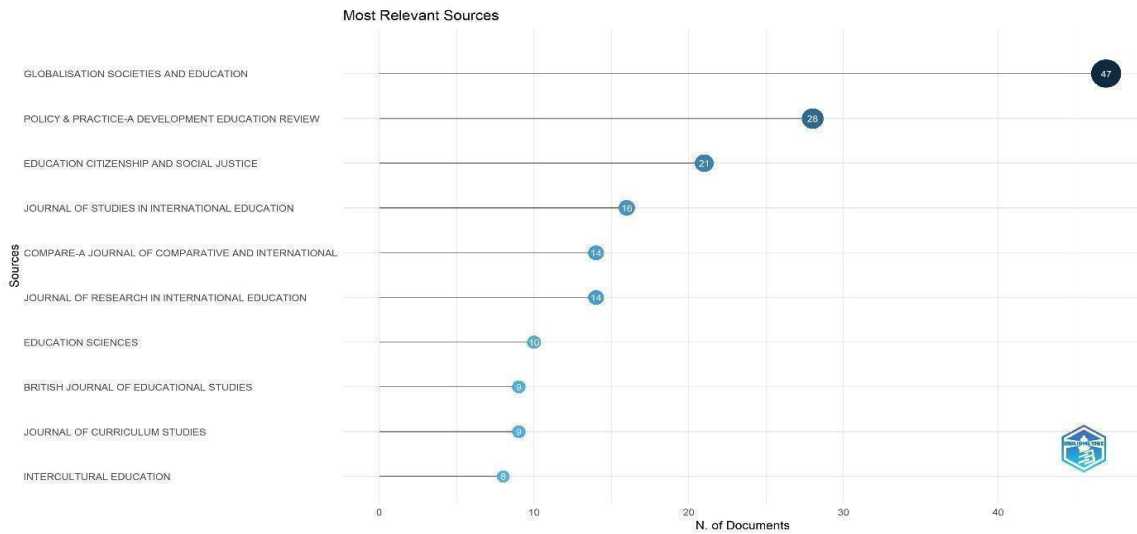
Sources

Figure 5 Most relevant sources

Figure 5 shows the 10 most relevant sources related to GC research in education. As a result of the review, it was determined that GC research was spread across 194 different journals. The journal with the highest number of publications on GC is Globalization Societies and Education, which published 47 articles in total. Globalization Societies and Education is followed by Policy and Practice: A Development Education Review, Education Citizenship and Social Justice, Journal of Studies in International Education, Compare: A Journal of Comparative and International Education, and Journal of Research in International Education. As an interesting finding, none of the journals in the first three ranks are indexed in the Social Science Citation Index. In this respect, it can be said that GC research in the field of education has not yet settled in journals with high index and impact factors. Nevertheless, when Globalization Societies and Education, which has the highest number of publications among the journals, is examined, it is seen that research that shapes GC research, such as (Towards) decoloniality and diversality in global citizenship education by Andreotti (2011) and The global dimension in education and education for global citizenship: Genealogy and critique by Mannion et al. (2011) are published in this journal.
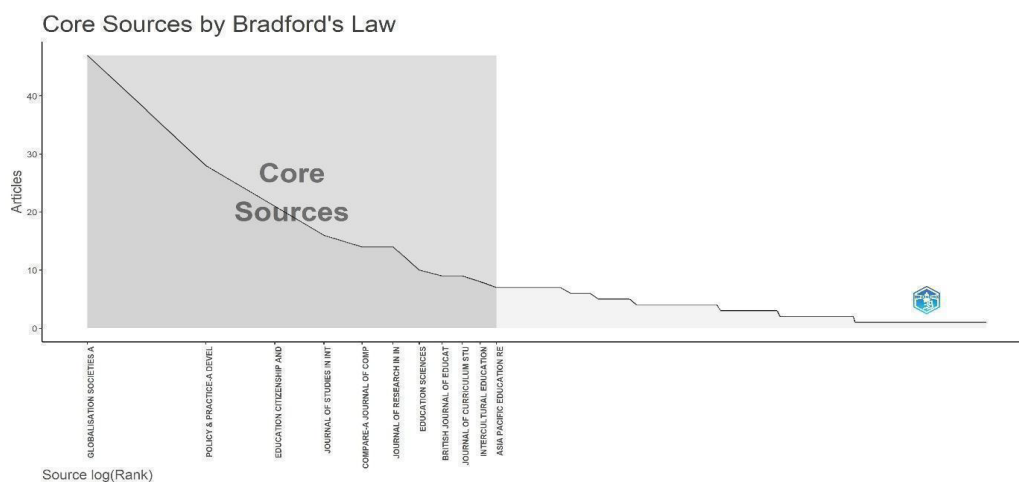

Figure 6 Bradford's law

Bradford's law was introduced into the literature by British Samuel C. Bradford, who worked in the fields of chemistry and philology. Bradford's law can be used to create a search list that ranks the most popular journals and the quantity of published articles in descending order (Chen

& Leimkuhler, 1986). According to the theory, journals devoted to a specific field are presented sequentially and are located in the "core zone", while journals that contribute less and less research are located sequentially in the "radiating zones". Regarding Bradford's law, 11 journals are in the core zone (See Figure 6). GC studies in education are concentrated in journals in the core zone. Globalization Societies and Education, Policy and Practice: A Development Education Review and Education Citizenship and Social Justice are the top three in the core zone. It is an expected finding that the top three journals in which the most research on the GC is published are also in the top three in the core zone. The journals in the core zone are leading GC research in education.
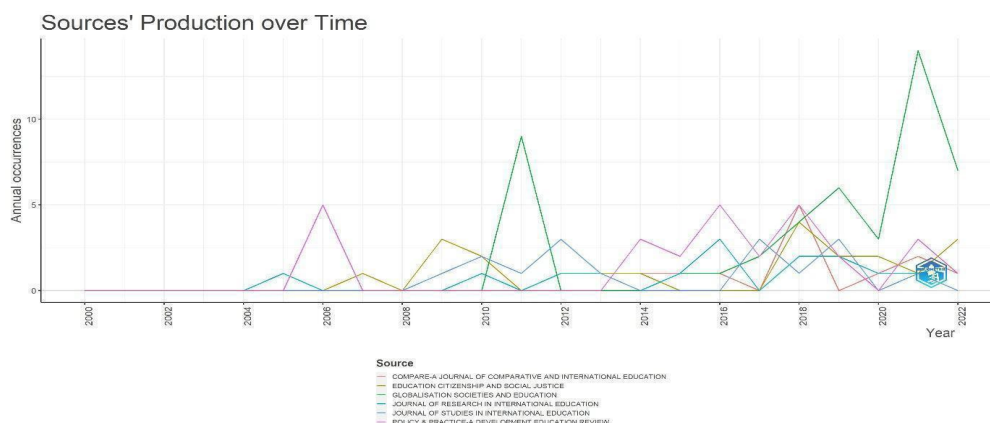

Figure 7 Source dynamics

Figure 7 displays the source dynamics for the top six journals and the number of articles from 2000 to 2022. When the publication process of the journals was analyzed, significant increases and decreases were observed in the publication performance of the majority of the top six journals. Despite this, the increase in the number of publications since 2005 shows that global citizenship research is positioned in the literature. The increases in the number of publications of Globalization Societies and Education in 2011 and 2021 are noteworthy. Policy & Practice: A Development Education Review reached its peak in terms of the number of publications in 2006, 2016, and 2018 and Education, Citizenship and Social Justice in 2018. Figure 7 shows that the increase in the number of journals with publications was in 2018, and the peak in the number of publications was in 2021. These results are in line with the distribution of publications by year (See Figure 2).

Authors, Affiliations, and Countries

Table 3 Most influential authors

Author	Institution	Profession	NP	H-Index	G-Index	M-Index	TC
Miri Yemini	Tel Aviv University	Comparative Education	12	8	12	1.000	296
Heela Goren	University of London	Global Citizenship	6	6	6	.750	262
Karen Pashby	Manchester Metropolitan University	Global Citizenship Education	9	6	9	.375	201
Vanessa de O. Andreotti	University of British Columbia	Critical and Cultural Studies/ Education	6	5	6	.385	218
Audrey Osler	University of Leeds	Human Rights Education and Citizenship	6	5	6	.238	355
Laura Engel	George Washington University	Globalization and Education Policy	4	4	4	.400	102
Edward Howe	Thompson Rivers University	Comparative and international education, Teacher induction	4	4	4	.267	59
Claire Maxwell	University of Copenhagen	Sociology	5	4	5	.667	34
John P. Myers	Florida State University	Innovative international education programs and inquiry-oriented curriculum and instruction	5	4	5	.222	142
Michael Tarrant	University of Georgia	Forestry and Natural Resources	5	4	5	.286	188

NP: Number of papers, TC: Total citation. (Note 1: Ranking is based on the H-index of authors)

Table 3 reveals the most locally influential authors of GC studies in the field of educational research by presenting their document numbers, H-index, M-index, G-index, and total citations. The h-index is an author-level metric that measures both the productivity and citation impact of a scientist's publications. The M-index is a metric that assesses a researcher's productivity and citation impact. The M-index is the annual average of the h-index and provides a measure normalised by the length of a researcher's career. The G-index is a metric that measures the scientific impact of a researcher's publications based on the total number of citations, and takes a higher value than the H-index when the number of citations of publications is high. Miri Yemini is the most influential author with 12 articles, 8 h-index, and 296 total citations. Miri Yemini is followed by Heela Goren (H-index=6, TC=262), Karen Pashby (H-index=6, TC=201, and Vanessa de O. Andreotti (H-index=5, TC=218). Although the United States of America is the leading country in GC research in the field of education, the distribution of influential authors varies across countries. It is noteworthy that 7 of the 10 authors in Table 3 are located in countries other than the United States of America. For example, the 3 most influential researchers; are Miri Yemini in Israel, Heela Goren, and Karen Pashby in the United Kingdom.
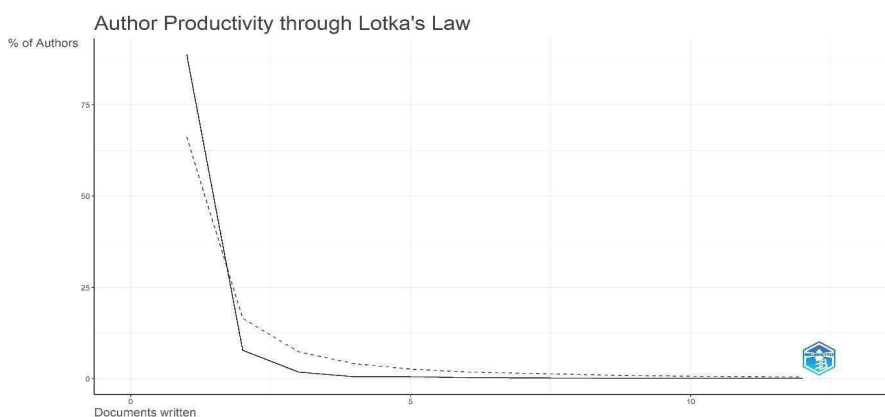

Figure 8 Lotka's law

Figure 8 illustrates the frequency distribution of scientific productivity according to Lotka's law which describes the distribution of authors in a certain study topic over a specified time period (Lotka, 1926). Accordingly, 822 out of 926 authors (88.7%) made only 1 publication in GC research in the field of education. In addition, there are 72 authors with 2 publications, 17 authors with 3 publications, 5 authors with 4 publications, 5 authors with 5 publications, 3 authors with 6 publications, and one author with 9 and one author with 12 publications. The fact that most of the researchers conducted research shows the scarcity of productive authors in GC research but also reveals the need for productive and representative authors in the field as an area of development. This finding also shows that researchers need to deepen their study focus in the field of GC.
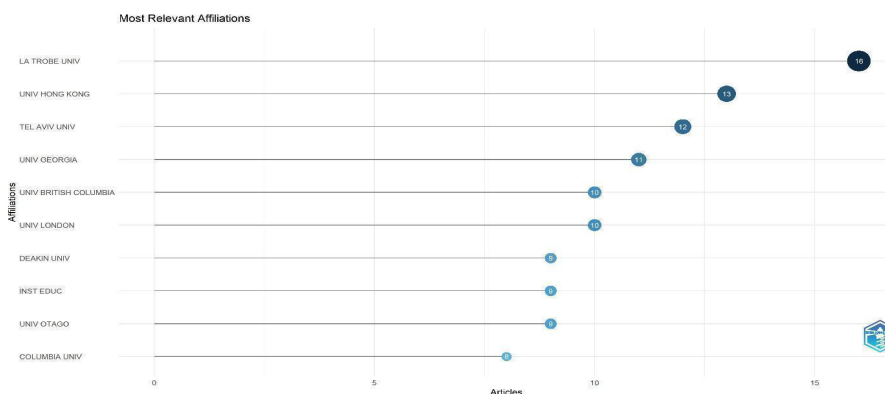

Figure 9 Most relevant affiliations

Figure 9 shows the most relevant affiliations in GC research. Australia-based La Trobe University (N. of documents=16) ranks first. It is followed by the University of Hong Kong (N. of documents=13), Tel Aviv University (N. of documents=12), University of Georgia (N. of documents=11), University of British Columbia (N. of documents=10) and University of London (N. of documents=10). It is noteworthy that none of the most prolific authors work at the top two institutions. However, Miri Yemini at Tel Aviv University, Michael Tarrant at the University of Georgia, Vanessa de O. Andreotti at the University of British Columbia, and Heela Goren at the University of London have conducted many influential studies.
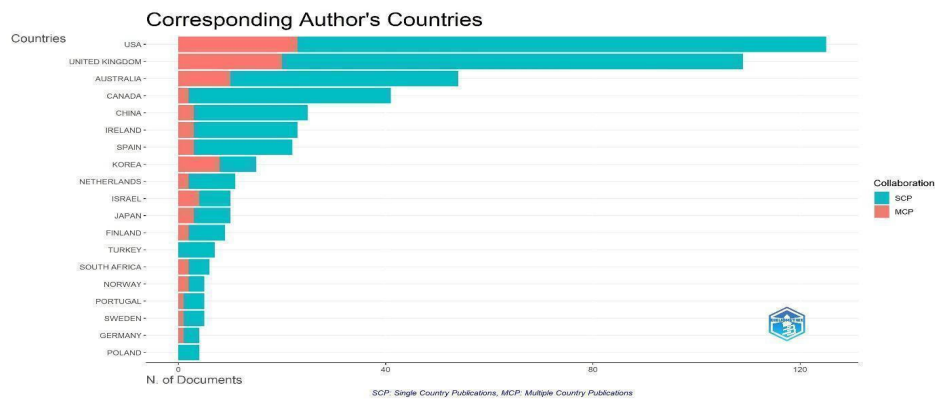

Figure 10 Corresponding author's countries

Figure 10 shows data on the corresponding author's countries. Two different classifications are used here: Single Country Publications (SCP) and Multiple Country Publications (MCP). SCP refers to the number of joint publications by researchers from the same country, while MCP refers to the number of publications conducted jointly by researchers from different countries. It is seen that GC research is generally conducted in the form of SCP. For example, Learning for cosmopolitan citizenship: Theoretical debates and young people's experiences by Osler and Starkey (2003), which examines young people's understanding of citizenship on a national and global scale and Global Citizenship: A Typology for Distinguishing its Multiple Conceptions by Oxley ve Morris (2013) are effective research conducted by authors from the same country. Although fewer in number, effective research has also been conducted within the scope of MCP. For example, the publication titled Globalising citizenship education? A critique of 'global education' and 'citizenship education' by Davies et al. (2005) is one of the remarkable studies in the literature.
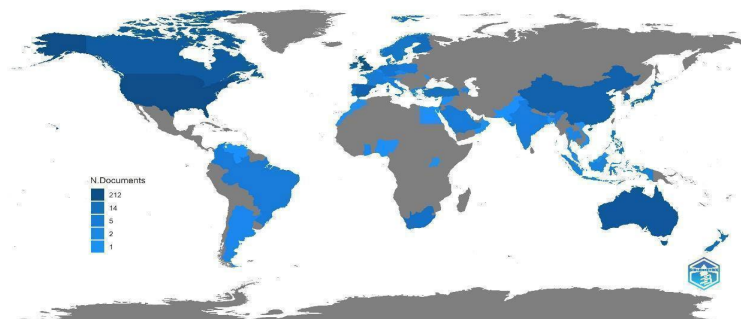

Figure 11 Countries' scientific production

When the distribution of articles on GC according to the country of publication is examined (See Figure 11), it is seen that the United States of America (USA) is the center of research with 212 studies. The United Kingdom (186), Australia (91), Canada (65), and China (42) follow the USA respectively. Based on this finding, it can be said that studies on global citizenship in the field of

education are more intensively studied in Western countries, while fewer studies are conducted in Asia and the Middle East. Although fewer studies exist in these two regions, China, Australia, and Israel stand out.
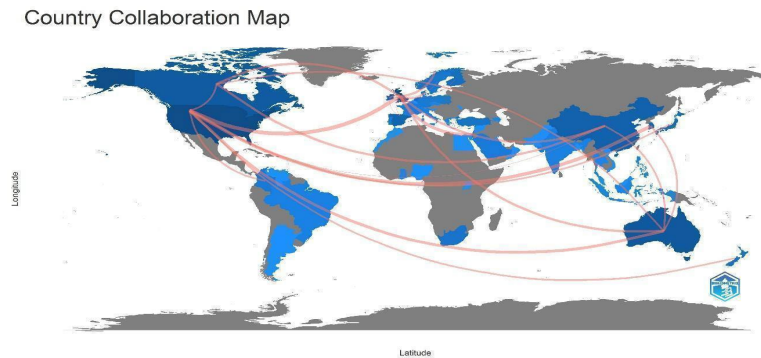

Figure 12 Countries' collaboration map

Figure 12 shows the cross-country collaboration network of GC research in education. The analysis reveals that the most productive country, the USA, has collaboration links with 31 different countries. The most important countries in the USA's network are the United Kingdom, South Korea, and Australia, with 8, 7, and 5 collaborations, respectively. The United Kingdom has a similarly strong network of collaboration, with the United States. After the US, the UK has the most links with Israel and Australia, with 6 studies each. Australia, on the other hand, collaborates primarily with the USA, but also with the United Kingdom, Canada, China, and South Korea. Excluding the USA and the United Kingdom, it can be said that Australia prefers cooperation with Asian countries. The USA and the United Kingdom are the countries with the most research (See Figure 11) and the largest network of cooperation. Cultural and regional proximity may have played a role in their cooperation. Despite all these, cooperation between countries needs to be improved.
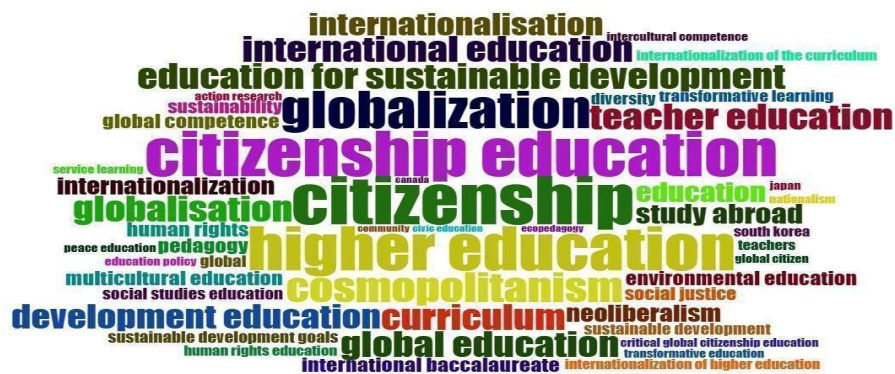
Keywords and Research Trends

Figure 13 Wordcloud

Keywords are an important research component affecting visibility. Therefore, keywords should be in line with the content of the research. Figure 13 shows the wordcloud of the 50 most frequently used keywords related to GC. The size of the keywords in the wordcloud is a representation of their recurrence frequency. The keywords of GC and GCE were excluded from the figure due to their high frequency of repetition. In the studies, it is seen that the concept of GC as a center has a frequency of 178. GC keyword is followed by GCE, citizenship, citizenship education, higher education, and globalization with 115, 34, 32, 31, and 26 repetition frequencies. Following these keywords, words such as cosmopolitanism, curriculum, and education for sustainable development also appear. The presence of both globalization and globalisation concepts in the figure is because most of the studies on the subject are conducted in the USA

and the United Kingdom. According to Figure 13, it is noteworthy that globalization has transformed into a type of citizenship and is positioned especially at the higher education level.
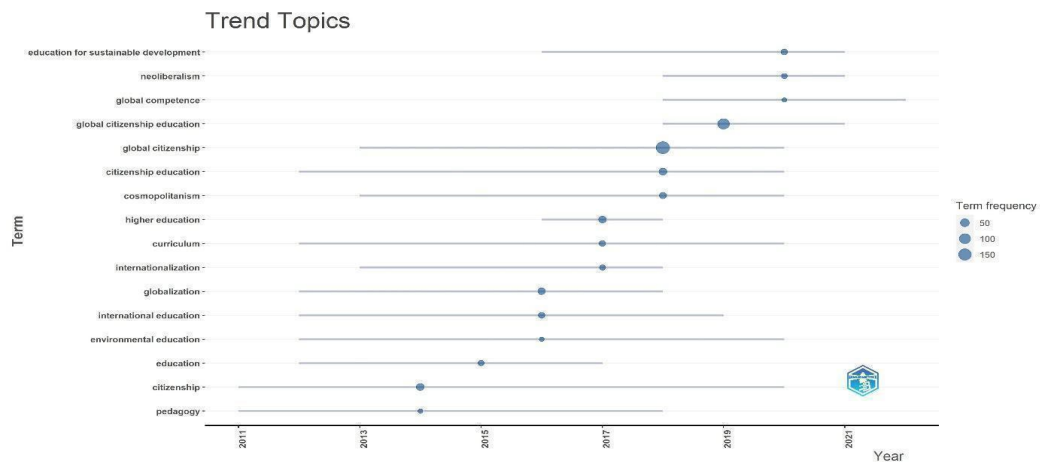

Figure 14 Trend topics

How often keywords are repeated in which years provides important clues about the future of the research area. Figure 14 presents the trending topics between 2010 and 2022. While creating the relevant figure, word minimum frequency was applied as 10 and the number of words per year as 3. It is seen that the concept of global citizenship was at the top in 2018 and repeated 178 times in total, while the concept of global citizenship education was at the top in 2019 and repeated 115 times. Again, the fact that education for sustainable development occupied an important position in 2020 and was repeated 18 times in total strongly supports that the educational dimension of global citizenship is increasingly coming to the forefront in the literature. When the 12-years change of keywords is analyzed, it is seen that global citizenship research, which started based on citizenship and pedagogy, has taken the form of global citizenship, especially as of 2018, and in the following process, it has been put into practice in the form of global citizenship education and education for sustainable development.
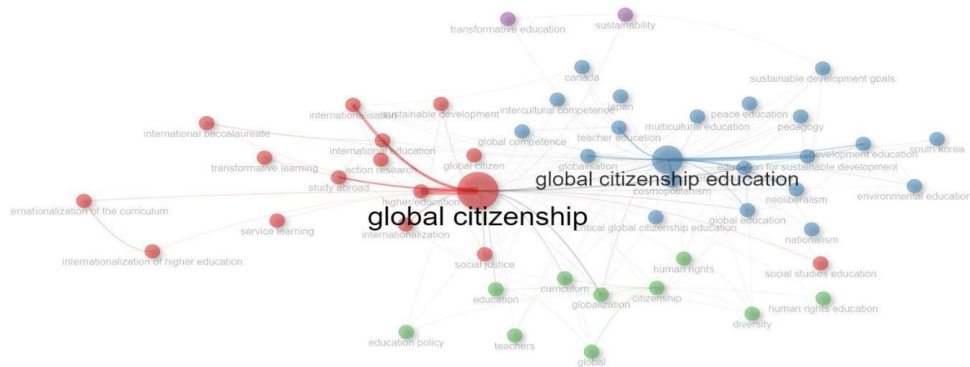
Conceptual Structure

Figure 15 Co-occurrence network

Figure 15 shows the co-occurrence network based on keywords. Louvain's clustering algorithm was used to create the figure. Automatic layout and normalization by association were applied. The figure shows three different clusters: red, blue, and green. In the red cluster, global citizenship is dominant, but higher education, international education, and internationalization are also important members of the cluster. In the blue cluster, global citizenship education is dominant, and education for sustainable development is an important component of the cluster. Although the green cluster does not have a dominant center, it consists of key concepts in the early stages of global citizenship research, such as citizenship, globalization, and curriculum.

Based on the findings, it can be said that global citizenship research has progressed in terms of the conceptual dimension of global citizenship and how it can be transferred to individuals in educational settings and has started to break away from the traditional theoretical perspective.
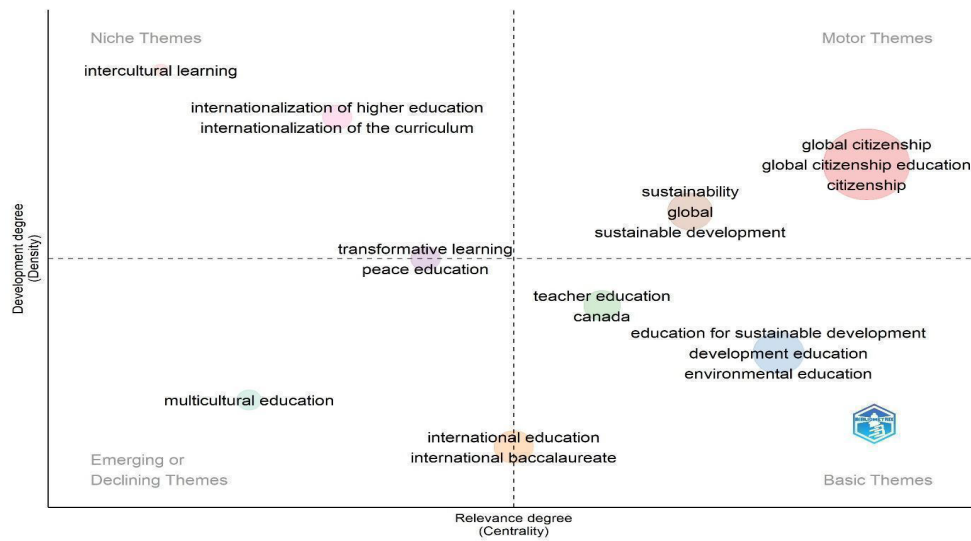

Figure 16 Thematic map

The thematic map, which is shown in Figure 16, highlights the discourse on global citizenship. The horizontal axis of a thematic map denotes the degree of relevance (centrality), and the vertical axis denotes the level of development (density). This theme map effectively depicts the thematic growth of global citizenship research over the previous 22 years and, to a certain extent, forecasts the direction of future trends. In the motor theme in the upper right quadrant, global citizenship and global education are important, but sustainability and sustainable development are also noteworthy. These are the leading topics of global citizenship research in the field of education. In the basics theme in the lower right quadrant, it is seen that sustainable development education is at the forefront, as well as teacher education and a Canada-centered orientation. The niche theme in the upper left quadrant includes intercultural learning, transformative learning, and internationalization in education. Finally, within the emerging or declining theme, multicultural education and peace education are seen to be at the center. The findings support that global citizenship research in the field of education is progressing based on global citizenship education, sustainable development, and education. These results also support the findings in Figure 14.
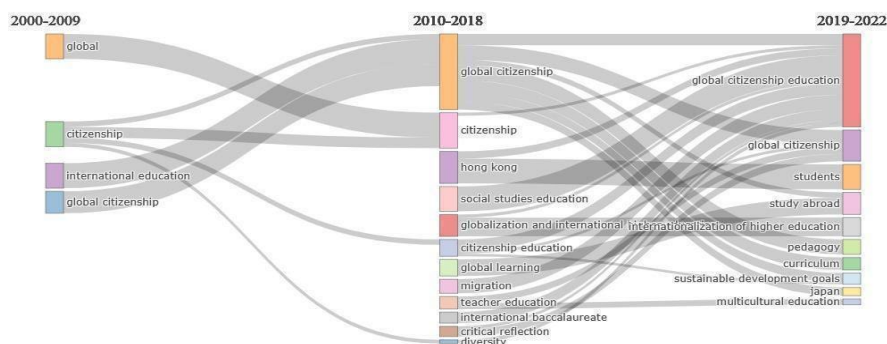

Figure 17 Thematic evolution

In Figure 17, the thematic evolution of global citizenship research in education is presented in three-time slices. The analysis was conducted with 250 words and five minimum cluster

frequencies. The time slices were cut in accordance with the years in which the annual scientific production experienced significant change (see Figure 2). Global citizenship, which was the central theme in the first and second-time slices, has evolved over time into themes such as global citizenship education, internalization of higher education, sustainable development goals, and multicultural education. In other words, global citizenship has evolved over time from academic knowledge to practices in the education of individuals. By the end of 2018, it is seen that the concept of global citizenship is clarified and analyzed in the literature, and after 2019, it is desired to implement educational approaches towards global citizenship. One of the strong reasons for this change may be the desire to make the sustainable development goals announced by the United Nations in 2015 effective (United Nations, 2015). For example, until 2019, Global citizenship: abstraction or framework for action? (Davies, 2006), Global citizenship: A typology for distinguishing its multiple conceptions (Oxley & Morris, 2013) and Global citizenship education redefined - A systematic review of empirical studies on global citizenship education (Goren & Yemini, 2017) published research on the concept of global citizenship and its different typologies. After 2019, with a strong background of academic knowledge, research aimed at deepening the GCE process such as 'So maybe I'm a global citizen': developing intercultural citizenship in English medium education (Baker & Fang, 2021) and Equipping teachers with globally competent practices: A mixed methods study on integrating global competence and teacher education (Kerkhoff & Cloud, 2020).

Discussion

This study has predicted the future directions of GC research in education based on the research findings. GC research has generally gravitated towards GCE after clarifying its conceptual structure through the influence of international organizations (Goren & Yemini, 2017; Pashby & Costa, 2021).Therefore, the field of citizenship education has been significantly influenced by global citizenship. Karaca and Akbaba (2021) found that global citizenship is the most frequently studied topic in the field of citizenship education. This is because, apart from citizenship education designed at the national level, the need to develop transnational awareness of individuals and their desire to influence the global sphere has contributed to the change in the direction of citizenship education (Moon & Koo, 2011; Myers, 2010). The increasing impact of globalization on states has accelerated the transformation process of the understanding of citizenship. At this point, the UN's SDGs and UNESCO's GCE Initiative are undoubtedly the most crucial driving forces popularizing GC and GCE (United Nations, 2015; Yemini et al., 2019). The desire of many countries to align their curricula with SDGs has strengthened the place of GC in educational policies and scientific research (Chiba et al., 2021). The bibliometric study conducted by Palaz (2021) revealed a similar result. In future directions, it is predicted that GCE research will be further strengthened at the higher education, primary and secondary levels, and even in non-formal education processes (Aktas et al., 2017; Atenas et al., 2015; Ng, 2012). Recently, this structure has been strengthened as a result of mobility movements within the scope of the calls of international institutions and organizations (e.g., Erasmus calls of the European Union) and bilateral and multiple collaborations of higher education institutions (Brown, 2009; Praetzel et al., 1996; Santoro, 2014). Thus, it is foreseen that research on developing individuals' global competencies to realize SDGs will come to the forefront.The frequent examination of the topic of GC at the higher education level brings up another issue. Keywords such as 'higher education' are often too broad to effectively narrow down research topics, necessitating the use of more specific terms (Huang et al., 2020).

One of the determinants of the future of GC research is how GCE will be designed and implemented because research suggests that the current GCE is not effective, and a new design is needed (Ahmed & Mohammed, 2021; Myers, 2006). It is seen that researchers have already started to turn the direction of research to address this problem (Celume & Maoulida, 2022). In this process, it is thought that the focus will be on designing different GCE models for different

levels of education. In this way, it is estimated that research will be conducted to create and implement curriculum-integrated GCE designs for different grades in national education systems and to focus on developing standard GCE modules for similar education levels in different countries. From another perspective, the focus will be on teacher education processes to train globally competent teachers (Kim, 2023; Rapoport, 2010; Santoro, 2014). For example, Kerkhoff and Cloud (2020) found that teachers have a positive view of integrating the global dimension into their teaching processes but have problems combining theory and practice. Thus, it is thought that the number of studies to strengthen teachers' understanding of GC and GCE skills in teacher training and in-service learning processes will increase. In short, designing the implementation process and enhancing the competencies of practitioners will be one of the core study areas in the future of GC research.

It is predicted that GC-multicultural education and GC-environmental education relations will have a say in shaping the future of GC research. External migration movements have recently intensified due to civil wars, environmental problems, economic inadequacies, etc. This process has confronted native cultures with a large population of immigrants, refugees, and temporary asylum seekers. Thus, it has become a global necessity for individuals to respect different cultures and eliminate their prejudices against differences. In GC research, it is predicted that the multicultural competencies of both native individuals and newcomers will be questioned, and GCE processes will be designed to improve them (Pashby, 2015; Yemini et al., 2019). From another perspective, it is predicted that GC research and GCE may come to the forefront to build a sustainable environmental order by reducing individual-induced environmental problems. It is anticipated that research will focus on designing environment-related education as an essential field of study within or with the help of global citizenship education (Kolleck & Yemini, 2020; Misiaszek, 2015). However, it is also emphasized in the GC literature that the world should be addressed more inclusively in future research. (Kim, 2023).

Conclusion

This study presents a broader picture of global citizenship studies in education using bibliometric analysis. Global citizenship studies were analyzed in terms of annual scientific production, cited documents, authors, sources, countries, affiliations, keywords, research trends, and conceptual structure. In this way, the development of GC research was presented, and future directions were predicted. Research and review article publications between 2000 and 2022 were retrieved from the WoS database, and 545 articles were included in the analysis. As a result of the research, three critical conclusions were reached regarding the characteristics of global citizenship research in education.

As a first result, it was found that GC research has been on a significant development trend in the scientific literature in recent years. As of 2018, GC research is in its most productive period in terms of annual scientific production. After intermittent productivity between 2000 and 2008, annual production peaked in 2021, albeit with minor zigzags. The reason why research has been kept in the background for many years can be considered as the fact that GC has been placed in an anti-patriotic position and seen as a threat by educational administrators, researchers, and educators, and today's world problems have remained behind the scenes for countries. On the contrary, the increase in research on GC in recent years proves that GC is now an inevitable competence for a sustainable world. The annual growth rate of 19.88% obtained in the study supports this. Especially as the effects of the climate crisis have become more pronounced, triggering different social, economic, and environmental problems (e.g., poverty, hunger, migration) and creating fear in societies, it has become necessary for states to bring their curricula to an international level. Thus, for states, the GC has shed the image of a threat to the nation-state and national identities.

The second result concerns authors, countries, and affiliations. Five countries are highly influential in shaping GC research. These countries are the United States of America, the United

Kingdom, Australia, Canada and China. In addition, Israel is also very influential in terms of author influence and collaborative work. It is seen that Eastern countries also have a say in Western-centered GC research. For example, GC studies have evolved towards overseas regions such as Japan in recent years. The need for sustainable development and peaceful social order has become a necessity for the whole world. For this reason, it is seen that GC research has spread over a wide geography. Moreover, the SDGs of the UN are not only for countries like the United States and the United Kingdom. The goals also emphasize regions such as Africa and Asia. Different countries, institutions, and researchers are studying GC to achieve these goals. It is thought that GC research will increase its importance worldwide soon. Although GC research is developing globally, collaborations in research are dominated by regional relationships. As required by global citizenship, research collaborations need to evolve to a global dimension. Another expectation from researchers is in-depth expertise in GC research. Because in this study, 88.7% of the researchers had only one study on GC. This data shows that GC research is an area of research that has not been explored in depth by many researchers.

Finally, the research trend of GC in our study (e.g., thematic map, thematic evolution, trending topics) shows that GC is evolving towards the GCE dimension and SDGs rather than theoretical implications for GC. The focus is on the internalization of the curriculum. Priority is given to the evolution of global citizenship education into a new dimension with curricula and teaching methods appropriate to the international structure by incorporating sub-fields of global citizenship education, such as environmental education, multicultural education, human rights education, etc., as an umbrella. Higher education and study abroad are mainly at the center of this process. Universities are expected to engage in internalization, harmonize their understanding of GC teaching, and establish close cooperation with institutions in different countries. Although GC studies are important at the higher education level, the popularity of GC research at the primary and secondary school level is quite low. Improving the number of studies at the primary and secondary school levels will lay the foundation for a more robust literature on GC and GCE education.

Limitations and Suggestions for Further Research

This bibliometric analysis has several limitations. GC research's multidimensional and complex nature leads to many unrelated studies associated with GC in databases. For this reason, we made some selections based on the criteria we set. Although both researchers meticulously examined the data set, this may have created a limitation. In our database search, we searched titles, author keywords, and abstracts using the basic concepts in the literature, such as "global citizenship", "world citizenship", and "cosmopolitan citizenship". Nevertheless, we may have overlooked different concepts evoking GC, which may have limited our search results. To overcome this limitation, the dataset can be identified by including different concepts that evoke GC in the search. In addition, we included the indexes in the Web of Science Core Collection in the dataset and performed research and review article filtering. Different types of scientific publications and other databases were not analyzed. Future research should include databases other than WoS and different types of scientific publications in the analysis process. All scientific publications in the study are in English. GC research in other languages was excluded from the dataset. Researchers from different countries may collaborate in future research to reduce this limitation. The data of the research was obtained on October 20, 2022. In other studies, the latest GC research can be included in the dataset by going beyond the date of this research. Finally, the analysis was carried out through the "biblioshiny" interface within the scope of the "bibliometrix" package. In future research, this study's results can be tested using different artificial intelligence tools.

Author Contribution Rates

The 1st author 60%, and the 2nd author contributed 40% to the study.

Conflict of Interest Declaration

Our article entitled "Determining the Trends in Global Citizenship Publications in Education: A Bibliometric Analysis" has no financial conflict of interest with any institution, organization, or person. There is no conflict of interest between the authors.

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Genişletilmiş Özet

Son yıllarda, akademisyenler ve eğitimciler daha bağlantılı bir dünyanın karmaşık zorluklarına ve fırsatlarına öğrencilerini hazır hale getirmeyi amaçladıklarından eğitimde küresel vatandaşlık kavramına ilginin arttığı görülmektedir. Dünyanın artan siyasi, ekonomik, sosyal ve kültürel bağlantısı, bireyler arasında küresel sorunlara yönelik daha fazla farkındalık gerektirmektedir. Bu bakış açısını geliştirmek, vatandaşlık anlayışının kozmopolit çerçevelere uyum sağlamasını gerekli kılmaktadır. Bu süreçte, küresel vatandaşlık kavramı ön plana çıkmaktadır. Küresel vatandaşlık; eleştirel düşünme, küresel yeterlilik, küresel bilinç, karar verme, merak, iş birliği ve etkili iletişim gibi yeterlikleri kapsayan bir vatandaşlık tasarımıdır. Böylelikle bireyler çeşitliliğe saygı duymaya, başkalarının bakış açılarını dikkate almaya ve dünyayı iyileştirme çabalarına katılmaya teşvik edilirler. Küresel vatandaşlık, Birleşmiş Milletler'in Sürdürülebilir Kalkınma Hedefleri'ne küresel uyum için hayati öneme sahip olarak kabul edilmekte ve eğitim bilimcilerin ilgisini çekmektedir. Sürdürülebilir Kalkınma Amaçları, günümüz zorluklarıyla başa çıkabilecek etkili bir küresel toplum oluşturmak için bir çerçeve görevi görmektedir. Birleşmiş Milletler, cinsiyet eşitsizliği, yoksulluk, çevresel zorluklar, insan hakları ve iklim değişikliği gibi sorunlarla başa çıkmada küresel vatandaşlığın eğitimsel yönünü vurgulamaktadır. Sonuç olarak, küresel vatandaşlık eğitimi, Birleşmiş Milletler'in 2030 gündemi için Sürdürülebilir Kalkınma Hedefleri arasına dâhil edilmiştir.

Günümüzdeki önemli gelişmelere rağmen eğitimde küresel vatandaşlık üzerine yapılan araştırmalar uzun yıllar boyunca sınırlı sayıda kalmıştır. Bu durum, küresel vatandaşlık fikrinin nispeten yeni ve gelişmekte olan doğası da dâhil olmak üzere birçok faktöre atfedilebilir. Örneğin, uzun yıllar boyunca küresel vatandaşlığın eğitim bağlamlarında vatanseverliğe aykırı ve ulusal kimliğe bir tehdit olarak görülmesi etkili olmuş olabilir. Yine, 2000 sonrası küresel vatandaşlık ve küresel vatandaşlık eğitimi için çeşitli model tasarımlarının ortaya çıkması, literatürün ilerlemesini ve farklı bakış açılarının keşfini engellemiş olabilir. Tüm bu gerekçeler, küresel vatandaşlık araştırmalarının eğitim alanında kökleşmesini engelleyen nedenler olarak sıralanabilir. Bu nedenle, son yıllarda eğitim alanında küresel vatandaşlık üzerine çok sayıda çalışma yapılmış olmasına rağmen, eğitimde küresel vatandaşlık araştırmalarının kapsamlı bir şekilde anlaşılması için var olan çalışmalardan daha kapsamlı ve güncel bir bibliyometrik analiz yapılarak literatürdeki önemli boşluğun doldurulması gerekmektedir. Bu çalışma, eğitimde küresel vatandaşlık konusundaki akademik üretimi analiz etmek için bibliyometrik bir yöntem kullanmayı amaçlamaktadır.

Bu amaç doğrultusunda, araştırmada 2000-2022 yılları arasındaki veriler Web of Science veri tabanından elde edilmiş ve yıllık bilimsel üretim, atıf yapılan araştırmalar, kaynaklar, yazarlar, bağlantılar, ülkeler, anahtar kelimeler, araştırma eğilimleri ve kavramsal yapıyı kapsayan bir bibliyometrik analiz gerçekleştirilmiştir. Araştırma verilerinin elde edilmesinde, "küresel vatandaşlık", "dünya vatandaşlığı" ve "kozmopolit vatandaşlık" anahtar kelimeleri başlık, özet ve yazar anahtar kelimeleri boyutlarında sorgulanmıştır. Web of Science veri tabanı üzerinde gerçekleştirilen filtrelemelerin ardından veri seti Bibtext dosya formatında depolanmıştır. Veri seti, araştırmacılar ve otomasyon aracı tarafından incelenmiş ve ilgisiz araştırmalar ayıklanmıştır. Böylelikle 545 makale analiz sürecine dâhil edilmiştir. Analiz, RStudio aracılığıyla Biblioshiny arayüzü kullanılarak gerçekleştirilmiştir.

Araştırmada üç önemli ve temel sonuca ulaşılmıştır. İlk olarak, küresel vatandaşlık araştırmaları, son yıllarda bilimsel literatürde önemli bir gelişim trendi göstermektedir. 2018 itibarıyla, küresel vatandaşlık araştırmaları yıllık bilimsel üretim açısından en verimli dönemindedir. 2000 ile 2008 yılları arasında kesintili bir verimlilikten sonra, yıllık üretim 2021 yılında küçük dalgalanmalarla zirveye ulaşmıştır. İkinci sonuç, yazarlar, ülkeler ve bağlantılarla ilgilidir. Beş ülke, küresel vatandaşlık araştırmalarını şekillendirmede son derece etkilidir. Bu ülkeler; Amerika Birleşik Devletleri, Birleşik Krallık, Avustralya, Kanada ve Çin'dir. Ayrıca, İsrail de yazar etkisi ve iş birliği açısından oldukça etkili durumdadır. Doğu ülkelerinin de Batı merkezli küresel vatandaşlık araştırmalarında söz sahibi olduğu görülmektedir. Son olarak, çalışmamızdaki küresel vatandaşlık araştırma trendi (örneğin, tematik harita, tematik evrim, trend olan konular) küresel vatandaşlığın teorik çıkarımlarından ziyade küresel vatandaşlık eğitimi boyutuna ve Sürdürülebilir Kalkınma Amaçlarına doğru evrildiğini göstermektedir. Araştırmalardaki odak, müfredatın içselleştirilmesi üzerinedir. Araştırmalarda öncelik, çevre eğitimi, çok kültürlü eğitim, insan hakları eğitimi gibi küresel vatandaşlık eğitiminin alt alanlarını öne çıkararak müfredat ve öğretim yöntemleriyle uluslararası yapıya uygun olarak küresel vatandaşlık eğitiminin yeni bir boyuta evrilmesine verilmektedir. Gelecekte yapılacak araştırmalarda, küresel vatandaşlığın alt temaları farklı yapay zekâ araçları kullanılarak incelenebilir.