

Quality Assurance in Distance Higher Education: A Bibliometric Study of Scopus-Indexed Publications Between 1993 and 2024

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Abstract: This bibliometric study investigates the evolution and trends in quality assurance in distance higher education (QADHE) through a comprehensive analysis of Scopus-indexed publications spanning from 1993 to 2024. The research aims to address several critical aspects, including publication trends, international collaboration networks, influential authors, primary sources, emerging themes, and keywords within the field of QADHE. Utilizing PRISMA methods, a total of 193 relevant documents were identified, reflecting a growing interest in QADHE over the past three decades. The findings reveal distinct phases in the publication trend, indicating an increasing focus on quality assurance practices in distance higher education. Notably, the significant contributions come from Anglophone countries, underscoring the influence of English-speaking nations in shaping the discourse surrounding QADHE. Furthermore, the collaboration networks highlight a global interest in QADHE, with notable contributions from countries in Asia. This collaborative effort illustrates the importance of cross-border partnerships in advancing research and practices related to quality assurance in distance education. The analysis of influential authors and institutions underscores the diverse geographical distribution of research contributions, featuring prominent figures from both developed and developing nations. This diversity enriches the body of knowledge in QADHE and fosters a more inclusive understanding of quality assurance challenges and solutions across different contexts. The study also identifies key themes within QADHE, such as the integration of technology, methodologies for quality assurance (QA), implementation strategies, and regional perspectives. These themes reflect the dynamic nature of the field and the evolving landscape of distance education, which has been significantly impacted by technological advancements and changing educational paradigms. Additionally, an analysis of co-occurrence keywords indicates a growing emphasis on "open" principles and the utilization of Open Education Resources (OER) to enhance distance higher education (DHE). This shift towards openness suggests a transformative approach to education that prioritizes accessibility and collaboration. Overall, this study provides valuable insights into the evolution and current state of QADHE, highlighting areas for future research and the importance of continuous quality assurance efforts. The findings not only contribute to the existing literature but also serve as a foundation for understanding the implications of quality assurance practices in distance education. As the field continues to evolve, ongoing research is essential to address emerging challenges and to promote effective quality assurance frameworks that can adapt to the needs of diverse educational contexts.

Keywords: Quality assurance, Distance higher education, Bibliometric analysis, Open education, Online learning

1. Introduction

Over the past decades, distance higher education (DHE) programs have gained significant prominence as viable alternatives for students seeking university degrees, moving away from traditional offline learning (Martin, Sun and Westine, 2020). These programs can be offered by brick-and-mortar universities or as fully virtual institutions (Moore, Dickson-Deane and Galyen, 2011). According to Garrett (2020), in 2019, out of approximately 225 million students globally enrolled in higher education, about 17 million were engaged in DHE, with nine million participating in online provision.

Several drivers have contributed to the rise of DHE, with technological advancements being a key factor. The widespread availability of the Internet allows students to enhance their education without needing to attend classes in person (Keržič *et al.*, 2021). DHE offers flexibility that traditional universities often cannot, creating an

ideal learning environment for many (Ferrer *et al.*, 2022). The COVID-19 pandemic has further accelerated this shift toward online education, significantly impacting future educational delivery methods (Zhao and Watterston, 2021). Additionally, innovative technologies like artificial intelligence are enhancing the virtual learning experience (Ouyang, Zheng and Jiao, 2022).

Within DHE in particular, prior scholars have also paid their attention on the topic of quality assurance (Stella and Gnanam, 2004; Belawati and Zuhairi, 2007; Scull *et al.*, 2011; Darojat, 2018; Hannache-Heurteloup and Moustaghfir, 2020; Saritaş, Börekci and Demirel, 2022). This is because it encompasses the development and creation of learning materials, the design of academic programs, the provision of services and support, as well as the setting and maintaining of student learning standards (Zawacki-Richter and Anderson, 2014). Nevertheless, to the best of our knowledge, there has yet been any systematic work which may provide a comprehensive view on the state of current literature on QADHE. Therefore, this study aims to address this research gap by attempting to answer the following research questions.

RQ1: What are the publication trends in the field of QADHE over the period from 1993 to 2024?

RQ2: What does the network of international collaboration in this topic look like?

RQ3: Who are the most influential authors in terms of the number of publications and citations, and what does the research community in the field of QADHE look like?

RQ4: What are the primary sources of publications in this field, and what are the most influential documents in the literature of QADHE?

RQ5: What are the main themes in the field of QADHE, and what new research orientations are emerging?

Furthermore, it is important to note that this study specifically focuses on DHE, which entails learning exclusively from a remote location, distinct from blended learning models combining online and offline components or online learning as a part of conventional educational programs (Moore, Dickson-Deane and Galyen, 2011).

2. Literature Review

Quality assurance in distance higher education has been a topic of growing interest and importance over the past few decades, paralleling the rapid expansion of distance and online learning modalities.

Initial research on QADHE mainly centered on comparing the quality of distance education with traditional in-person instruction. Scholars like Berge and Mrozowski (2001) and Zawacki-Richter, Baecker and Vogt (2009) conducted extensive reviews of distance education studies, underscoring the need for stronger quality assurance practices. As technology advanced, researchers shifted their focus to specific elements of distance education. For instance, Lockhart and Lacy (2002) proposed a framework stressing the significance of student support, course design, and faculty development in distance settings. Meanwhile Rovai (2003) explored factors such as student outcomes, costs, technology, and satisfaction for both students and faculty.

The integration of e-learning technologies into distance education and the surge of open education brought new challenges and opportunities for quality assurance (Ossiannilsson, Williams and Brown, 2015). Stella and Gnanam (2004) addressed concerns from stakeholders, including governments and quality assurance agencies, regarding how to ensure best practices, with differing opinions on how to conduct assurance processes and which criteria should be used in online settings. The rapid growth of Massive Open Online Courses (MOOCs) in the 2010s also sparked new debates and research directions in QADHE. Scholars like Lowenthal and Hodges (2015) and Xiao, Qiu and Cheng (2019) examined quality assurance challenges specific to MOOCs, such as scalability, learner engagement, and credential recognition.

Another key area of research has concentrated on creating and applying quality assurance models specifically designed for distance education. Various methods and tools have been introduced to maintain quality in distance learning programs, such as course evaluations, self-assessments, external reviews, and stakeholder satisfaction metrics (Gaftandzhieva, Doneva and Jagatheesaperumal, 2023). Recent research has also established benchmarks for external QA systems in distance education, with slight adjustments based on local requirements. However, technological advancements may require updates to existing standards and practices (Bukhari, Shah and Arif, 2021)

Although the literature on QADHE has expanded, there are still several gaps and areas that require further exploration. These include the need for more empirical research on the long-term effects of quality assurance

measures on student learning outcomes in distance education; comparative studies of QADHE practices across diverse cultural and institutional settings (Mkwizu and Junio-Sabio, 2024); investigation into quality assurance methods for newer forms of distance education, including competency-based education and micro-credentials (Brown and Duart, 2024). Additionally, the impact of artificial intelligence on QADHE is a particularly important area for future research.

This bibliometric analysis aims to contribute to the existing literature by providing a comprehensive overview of the research landscape in QADHE, highlighting trends, key publications, and emerging themes. By tracing the development of scholarship in this area, the study aims to uncover potential directions for future research in quality assurance for distance higher education.

3. Method

Bibliometric analysis is a powerful method proposed by Pritchard (1969). This method is used for examining the quantitative aspects of research literature, provides a comprehensive overview of the academic landscape, highlighting trends, collaboration networks, key contributors, influential works, and emerging topics. Scopus was chosen due to its extensive coverage of global research literature across various disciplines (Falagas *et al.*, 2008) ensures a more inclusive and representative sample for this study on QADHE.

The literature search utilized the keywords "quality assurance," "distance education," and "distance learning." Initially, a total of 378 documents were identified. Subsequently, a more detailed screening process was implemented, which included criteria based on subject area, document types, and publication stage. Papers published in 2023 were excluded due to the incomplete count of papers for that year, as the search query was conducted on June 14, 2023, at 17:00. After applying these criteria, 136 documents were excluded, leaving 242 documents that met all the above criteria. The search query used was as follows:

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TITLE-ABS-KEY ( "quality assurance" AND ( "distance education" OR "distance learning" ) ) AND ( LIMIT-TO ( PUBSTAGE , "final" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) OR LIMIT-TO ( DOCTYPE , "cp" ) OR LIMIT-TO ( DOCTYPE , "ch" ) OR LIMIT-TO ( DOCTYPE , "bk" ) ) AND ( EXCLUDE ( PUBYEAR , 2023 ) ) AND ( LIMIT-TO ( LANGUAGE , "english" ) ) AND ( LIMIT-TO ( SUBJAREA , "soci" ) OR LIMIT-TO ( SUBJAREA , "busi" ) OR LIMIT-TO ( SUBJAREA , "agri" ) OR LIMIT-TO ( SUBJAREA , "deci" ) OR LIMIT-TO ( SUBJAREA , "arts" ) OR LIMIT-TO ( SUBJAREA , "econ" ) OR LIMIT-TO ( SUBJAREA , "psyc" ) OR LIMIT-TO ( SUBJAREA , "mult" ) )
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The content of each record was then examined to ensure relevance to QADHE. After eliminating 43 non-relevant documents (e.g., Vrasidas, 2003; Booker *et al.*, 2011; Wyk, 2018), the first dataset for analysis consisted of 173 documents.

To incorporate the most recent data, a second extraction was performed on December 31, 2024, at 19:30, using the same query. This process identified 34 records from 2023 and 2024. After screening, 8 publications were excluded, leaving 26 records. These were cross-checked against the existing dataset, identifying 6 duplicates. Consequently, 20 unique records were added, yielding a final dataset of 193 documents for analysis.

The selection processes adhered to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method, which is a widely used and transparent approach for conducting systematic reviews and meta-analyses (Moher *et al.*, 2010). The PRISMA flow diagram is shown in Figure 1.

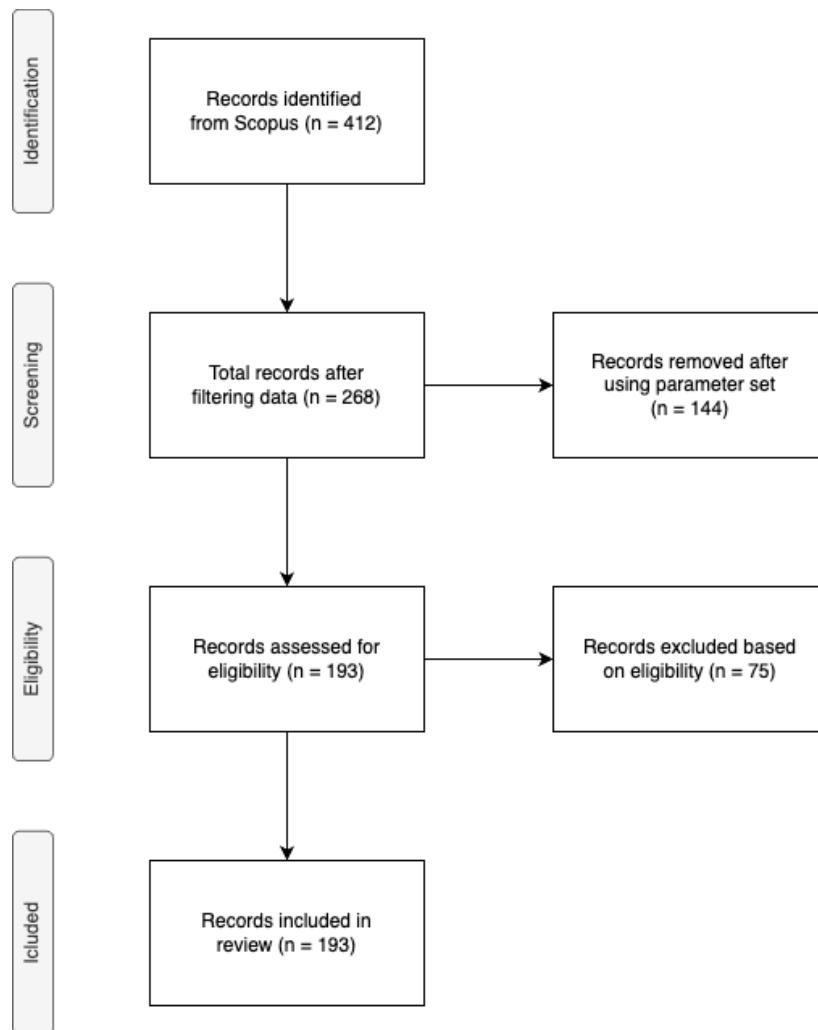


Figure 1: Selection flow diagram for the studies

All data management and initial processing were done in Microsoft Excel, including data cleaning, author name standardization, and removal of duplicates. Descriptive analysis was utilized to examine publication trends, document types, and geographical distribution. VOSviewer software, which is a common software in bibliometric analysis, was used to construct and visualize bibliometric networks. Co-authorship data were analyzed to map international collaboration at country and institutional levels, while influential authors and institutions were identified using publication and citation metrics. The analysis of main publication sources considered document quantity and citation impact. Co-citation analysis is also utilized to identify clusters of related documents, and keyword co-occurrence analysis captures evolving trends in QADHE.

4. Results and Discussion

4.1 Publication Trend and Type

QADHE has emerged as a new research topic in the last three decades. The publication trend of this topic shows a strong growth, but also a high fluctuation in the yearly document counts (see Figure 2). The trend can be divided into three phases:

- Phase 1 (1993-1999): This phase represents the initial stage of research on QADHE, with very few publications. Only one study was published each year in 1993, 1994, and 1995. No publications were recorded in 1996, 1997, and 1999. The only exception was 1998, which had three publications.
- Phase 2 (2000-2015): This phase marks the rapid development of research on QADHE, with an increasing number of publications. The number of documents rose from one in 2000 to two in 2001, three in 2002, and reached a peak of 13 studies in 2004 and 2013. However, the growth was not consistent, as the number of studies varied greatly from year to year, with a low of two studies in 2008, and a range of five to 12 studies per year for the rest.

- Phase 3 (2016-2024): This phase shows a more stable pattern of research on QADHE, with a relatively high number of publications and no sharp declines. The number of documents fluctuated between eight and 12 studies per year. The years 2021 and 2022 saw a slight decrease in the number of publications, which could be attributed to the pandemic that partly affected research activities.

The observed trend aligns with previous findings in distance education (Amoozegar, Khodabandelou and Ebrahim, 2018; Ndibalema, 2022), educational technology (Rodríguez Jiménez, Sanz Prieto and Alonso García, 2019; Shen and Ho, 2020), and quality assurance (Khuram *et al.*, 2023), suggesting an interconnection among these fields. This synergy, especially evident in the early 21st century, likely stems from technological advancements driving DHE growth and necessitating stronger QA mechanisms (Uvalić-Trumbić and Martin, 2021). However, the fluctuation in the number of publications on QADHE highlights a unique characteristic of this field. Compared to the mentioned topics, the number of research in QADHE is relatively low, making even slight changes in the publication count lead to significant fluctuations in the overall trend. As a review by Martin, Sun and Westine (2020), QA remains one of the least researched topics in research on online teaching and learning, highlighting the need for more scholarly focus on QADHE.

In terms of publication types, journal articles comprise the largest portion of the dataset, accounting for 55.44% (107 publications) of the total count. Following closely, book chapters contribute 25.91% (40 publications), while conference papers and books constitute 10.88% (21 publications) and 7.77% (15 publications), respectively. This pattern is not unique to QADHE but can also be observed in other areas of educational research, such as lifelong learning (Do *et al.*, 2021), learning management systems (Thi Phan *et al.*, 2022), education leadership and management (Hallinger and Kovačević, 2021).

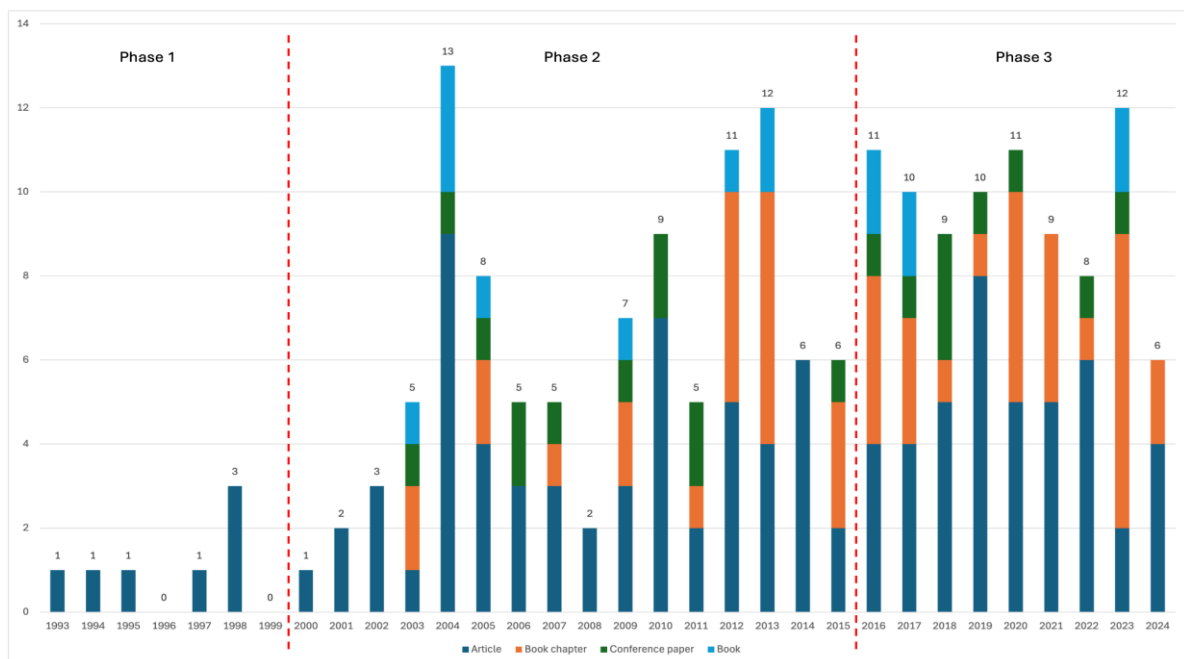


Figure 2: Annual publications related to QADHE from 1993 to 2024

4.2 Network of International Collaboration

Analyzing the landscape of collaboration among countries in the realm of QADHE reveals a global interest in the subject. However, there exist notable disparities in the levels of contribution, impact, interconnectivity, and collaborative endeavors across nations.

The scientific map generated by VOSViewer depicts global scientific collaboration, showcasing clusters of countries with varying extent of research ties (see Figure 3). Larger nodes signify countries with significant research output, while thicker lines connecting nodes indicate closer collaboration and the number of lines reflects the extent of connections with other countries. Node color reflects the average publication year, indicating each country's active research period.

As shown in Figure 3, Anglophone countries like the United States, the United Kingdom, and Australia are significant contributors to QADHE research, with publication counts of 29, 23, and 21 documents respectively

(see Table 1). These nations also lead in citations, indicating their influence and robust international collaboration, reflected in their strong connections on the scientific map. Their central roles stem from established distance learning systems (Brown, 2011), which provide conducive environments for research on DHE and QA. Moreover, they lead in offering numerous MOOCs courses and platforms, such as Coursera, edX, FutureLearn, Open2Study (Baturay, 2015), contributing significantly to research on ensuring quality in these areas.

South Africa, alongside the US, UK, and Australia, is a leading player in QADHE research (23 publications), and holds a central position in the collaborative network, reflecting its strong international connectivity. South Africa is also home to the world’s oldest dedicated DHE institution, the University of South Africa (UNISA) (Tait, 2018; UNISA, n.d.), which has significantly shaped the country’s academic landscape and contributed to its growing scholarly presence. However, despite its publication volume, South Africa ranks tenth in citations with 61, indicating a gap between output and influence. This could be because South African studies often focus on practical, context-specific challenges (Bornman, 2004; Matlakala and Maritz, 2019; Naidoo and Kemlall, 2019; Zawada, 2019). The emphasis on practicality may result in a narrower scope of applicability beyond the local context, leading to fewer citations from researchers operating in diverse international contexts.

The expanding network of QAHDE, shown by the diverse colors from blue to yellow, includes notable contributors like India, Japan, Canada, Finland, Indonesia, Brazil, Germany, Nigeria, Malaysia, and China, which enrich the field with various perspectives. Many of these countries rank among the top 10 in publications or citations, emphasizing their influence in shaping QADHE. As they increasingly rely on DHE to address infrastructure challenges and diverse student needs (Darojat, Nilson and Kaufman, 2015; Zuhairi, Raymundo and Mir, 2020), the demand for effective QA of these emerging programs intensifies, fueling a surge of interest and investment in this area (Wright, Dhanarajan and Reju, 2009).

In contrast, countries like Turkey, Egypt, and Vietnam appear as isolated nodes on the scientific map, indicating their early-stage involvement in the collaborative network. Vietnam faces challenges such as inadequate infrastructure, lack of program accreditation, and low societal awareness (Nguyen, Ta and Nguyen, 2022). However, these challenges are not unique to Vietnam but are shared by both developing and developed nations (Uvalić-Trumbić and Martin, 2021). Moreover, the recent impetus from the COVID-19 pandemic has heightened attention towards DHE in these countries (Hebebcı, 2021; Pham and Ho, 2020), indicating potential for growth and the opportunity to join the international network, underscoring the need for further integration and collaboration in research efforts.

Table 1: Top 10 countries sorted by number of documents and number of citations in knowledge base of QADHE from 1993 to 2024

Rank	Country	Number of Documents	Rank	Country	Number of Citations
1	The United States	29	1	The United States	745
2	South Africa	23	2	The United Kingdom	320
3	The United Kingdom	21	3	Australia	271
4	Australia	16	4	Japan	137
5	India	13	5	India	123
6	Canada	10	6	Germany	118

Rank	Country	Number of Documents	Rank	Country	Number of Citations
7	Turkey	10	7	Nigeria	86
8	Japan	8	8	Malaysia	85
9	Indonesia	7	9	Indonesia	71
10	Brazil	5	10	South Africa	61

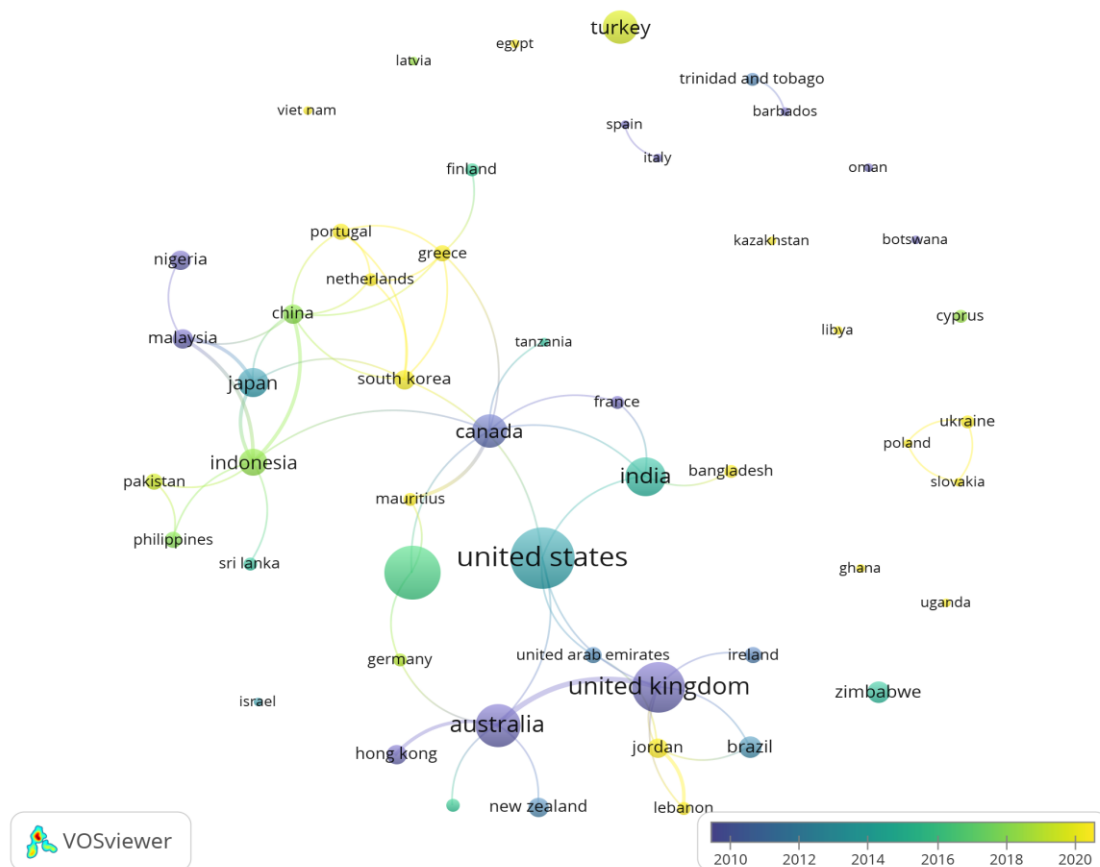


Figure 3: Countries' collaborations in knowledge base of QADHE from 1993 to 2024

Upon closer examination of the institutions spearheading research on QADHE, a consistent pattern emerges. The engagement of numerous distance universities worldwide underscores the global interest in the topic and the pressing need for tailored QA measures to accommodate their unique delivery modes.

UNISA, a longstanding leader in distance education, continues to rank first globally with 13 publications (see Table 2). As the sole distance education university in South Africa, formed through a merger in the 2000s (Prinsloo, 2019), its prolific output reflects its prominent role in advancing DHE development. However, similar to previous assessments, UNISA does not feature among the top institutions by citation count. This discrepancy highlights a persistent challenge: while the institution remains committed to traditional correspondence education—leveraging radio and television for distance learning—it has been slower to integrate contemporary

technologies like the internet. This lag in innovation, as noted by Qayyum and Zawacki-Richter (2019), has contributed to the reduced global influence and relevance of South African research in the field, as evidenced by lower citation numbers.

Significant contributions continue to emanate from universities across the globe, reflecting the widespread interest in QADHE. Notable participants include institutions from Japan, the United Kingdom, New Zealand, and regions in the Global South, such as Nigeria, Indonesia, Zimbabwe, and India. Five of the listed institutions specialize exclusively in distance learning, emphasizing their internal need to improve quality assurance processes, which in turn drives substantial scholarly output on QA in DHE.

Interestingly, institutions from English-speaking countries dominate the list of affiliations with the highest citation counts. American, British, and Australian universities occupy leading positions, suggesting that research originating from these regions may emphasize theoretical contributions that resonate broadly within the academic community. In contrast, institutions with a stronger focus on practical applications and case studies—often situated in the Global South—exhibit fewer citations due to their less theoretical nature.

International Christian University in Japan represents a standout case. Despite producing only seven publications, it achieves the highest citation count (134), underscoring the significant influence and scholarly recognition of its contributions. This phenomenon, along with other notable trends, will be explored further in the subsequent section.

Table 2: Top 10 affiliations sorted by number of documents and number of citations in knowledge base of QADHE from 1993 to 2024

No	Affiliation, Country	Documents	No	Affiliation, Country	Citations
1	University of South Africa, South Africa (*)	13	1	International Christian University, Japan	134
2	International Christian University, Japan	7	2	National Open University of Nigeria, Nigeria (*)	84
3	The Open University, the United Kingdom	6	3	Wawasan Open University, Malaysia (*)	75
4	Universitas Terbuka, Indonesia (*)	5	4	Universitas Terbuka, Indonesia (*)	70
5	Anadolu University, Turkey	5	5	The Open University, the United Kingdom	58
6	Zimbabwe Open University, Zimbabwe (*)	5	6	University of Sydney, Australia	48
7	Indira Gandhi National Open University, India (*)	4	7	Beijing Normal University, China	43
8	National Open University of Nigeria, Nigeria (*)	3	8	RMIT University, Australia	33
9	University of Nottingham, the United Kingdom	3	9	Indira Gandhi National Open University, India (*)	25
10	Victoria University of Wellington, New Zealand	3	10	University of Nottingham, the United Kingdom	23

Note: (*) denotes universities only offering distance learning programs

4.3 Influential Authors and Research Community

When examining the list of authors with the highest number of publications and citations, a similar pattern emerges as when analyzing the list of authors or countries with the highest number of publications and citations.

This pattern highlights the contributions of authors from diverse geographical regions worldwide. However, authors from institutions in the United State consistently lead in this regard.

Specifically, Jung I. stands out as the foremost author in terms of document count with eight documents (see Table 3), representing International Christian University in Japan. Additionally, their citation count is noteworthy, ranking third with 134 citations, further highlighting the impact of their research. The author’s prominence significantly contributes to the high ranking of both their institution and Japan overall in terms of documents and citations.

South Africa is also well-represented through UNISA, with three authors—Letseka M., Mahlangu V.P., and Belawati T.—among the most prolific contributors. This reflects the country's sustained focus on advancing quality assurance in distance higher education. Additionally, authors from both developed and developing nations such as Australia, Indonesia, and Turkey are featured, highlighting the widespread global engagement in this field. However, the dominance of highly cited authors from the United States is evident. T.C. Reeves and Y. Woo from the University of Georgia topped the citation rankings with 294 citations each, followed by contributors from Regent University and other prominent American institutions. This concentration of highly cited authors highlights the centrality of U.S.-based researchers in shaping the theoretical and conceptual frameworks of QADHE, reinforcing a consistent trend observed across the research network.

Table 3: Authors with more than two publications and Top 10 author sorted by number of citations in knowledge base of QADHE from 1993 to 2024

No	Author	Affiliation, Country	Number of Documents	No	Author	Affiliation, Country	Number of Citations
1	Jung I.	International Christian University, Japan	8	1	Reeves T.C.	The University of Georgia, the United States	294
2	Latchem C.	Australian Catholic University, Australia	6	2	Woo Y.	The University of Georgia, the United States	294
3	Letseka M.	University of South Africa, South Africa	4	3	Downey J.R.	Regent University, the United States	175
4	Belawati T.	Universitas Terbuka, Indonesia	3	4	Rovai A.P.	Regent University, the United States	175
5	Bozkurt A.	Anadolu University, Turkey	3	5	Budhrani K.	University of North Carolina Charlotte, the United States	139
6	Mahlangu V.P.	University of South Africa, South Africa	3	6	Kumar S.	University of Florida, the United States	139
7	Ryan Y.	Australian Catholic University, Australia	3	7	Martin F.	University of North Carolina Charlotte, the United States	139
				8	Ritzhaupt A.	University of Florida	139
				9	Jung I.	International Christian University, Japan	134
				10	Zawacki-Richter O.	Carl von Ossietzky University of Oldenburg, Germany	118

Stepping back to observe the research community at large, Figure 4 provides an overview of the landscape within the field of QADHE. Each node represents a distinct group of authors who collaborate frequently.

The biggest clusters, which indicate the most prominent group, is led by Jung I., the author with the most published documents in the field. This group also includes or is closely associated with other prolific authors such as Latchem C., Ryan Y., and Belawati T., who are among the top 10 authors with the most documents. The prominence of this group underlines its significant role in shaping the discourse in this field. However, the average publication year for this group, which falls between 2010 and 2015, suggests a decline in its activity in recent years.

The map's significant number of yellow nodes, comprising nearly half, points to a growing cohort of researchers who have entered the field post-2016, marking a key milestone in the domain's development. This influx of newcomers with their fresh perspectives (Zuhairi, Raymundo and Mir, 2020; Mekky, 2021), research inquiries (Kocdar, Okur and Bozkurt, 2017; Littlefield, Rubinstein and Laveist, 2019; Andrade *et al.*, 2020), models and methods (Crisanto, 2018; Mystakidis, Berki and Valtanen, 2019) contribute to the evolving landscape of QADHE.

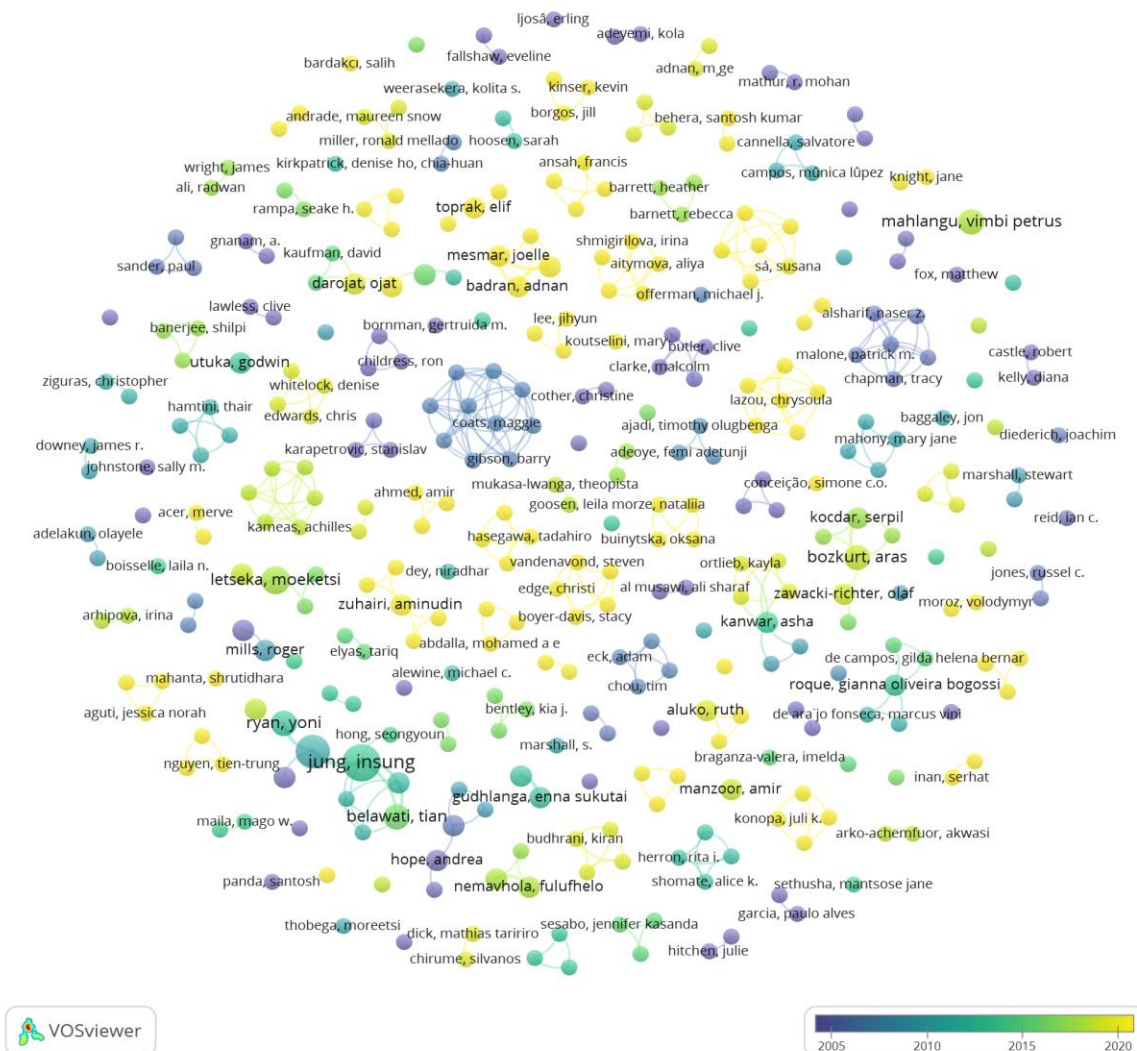


Figure 4: Scholars' communication in knowledge base of QADHE from 1993 to 2024

4.4 Primary Sources and Influential Documents

Considering the primary sources on the topic of QADHE, it is notable that most of the journals listed specialize in distance/online education, and a small portion is exclusively dedicated to QA (see Table 4). Given the rising trend in publications on this topic and the substantial influx of new research groups, there is a growing need for

a dedicated journal focusing exclusively on QADHE to become a primary source for research in this area. Moreover, edited books on this topic stand out as significant sources, with four ranking among the top in document volume and one notable for high citation counts.

Table 4: Top 10 sources sorted by number of documents and number of citations in knowledge base of QADHE from 1993 to 2024

Rank	Source	Scope	Number of Documents	Rank	Source	Scope	Number of Citations
1	Turkish Online Journal of Distance Education (Journal)	Online/distance education	13	1	Internet and Higher Education (Journal)	Higher Education	653
2	International Review of Research in Open and Distance Learning (Journal)	Online/distance education	11	2	International Review of Research in Open and Distance Learning (Journal)	Online/distance education	215
3	Asian Association of Open Universities Journal (Journal)	Online/distance education	8	3	Distance Education (Journal)	Online/distance education	136
4	Distance Education (Journal)	Online/distance education	7	4	Quality Assurance in Education (Journal)	Quality in Education	102
5	Quality Assurance and Accreditation in Distance Education and E-Learning: Models, Policies and Research (Book)	N/A	6	5	Higher Education (Journal)	Higher Education	79
6	Handbook of Open, Distance and Digital Education (Book)	N/A	5	6	British Journal of Educational Technology (Journal)	Educational Technology	78
7	Quality Assurance in Education (Journal)	Quality in Education	5	7	Distance and Blended Learning in Asia (Book)	N/A	65
8	Assuring Institutional Quality in Open Distance Learning (ODL) in The Developing Contexts (Book)	N/A	4	8	Asian Association of Open Universities Journal (Journal)	Online/distance education	57

Rank	Source	Scope	Number of Documents	Rank	Source	Scope	Number of Citations
9	Internet and Higher Education (Journal)	Higher Education	4	9	Open Learning (Journal)	Online/distance education	52
10	Research Anthology on Preparing School Administrators to Lead Quality Education Programs (Book)	N/A	4		Turkish Online Journal of Educational Technology (Journal)	Online/distance education	53

(N/A: Not available)

Table 5 showcases the top 10 most influential documents in QADHE, ranked by citation count. At the forefront is the study by Woo and Reeves (2007), offering a new view on online interaction through social constructivism. Following closely is the article authored by Rovai and Downey (2010), cited 175 times, examines factors affecting online program success, including planning, QA, and course design. Additionally, one book by Latchem and Jung (2009) is featured among the top 10, providing a regional perspective to the literature of QADHE. Notably, the majority of these publications are featured in the prestigious journal *Internet and Higher Education*, recognized in both the fields of online education and education in general. It is noteworthy that a significant portion of the highly cited works is authored by Western scholars, which reinforces previous observations regarding publication patterns between Western authors and those from developing countries.

Table 5: Top 10 documents sorted by number of citations in knowledge base of QADHE from 1993 to 2024

No	Document	Document Type	Author Keywords	Source	Citation
1	Woo and Reeves (2007)	Article	Authentic task; Meaningful interaction; Online interaction; Social constructivism; Web-based learning environment	Internet and Higher Education	294
2	Rovai & Downey (2010)	Article	Academic capitalism; Academic globalization; Global learning; Higher education; International strategic enrollment management; Online learning; Quality assurance	Internet and Higher Education	175
3	Martin et al (2019)	Article	Award-winning faculty; Course design; Evaluation facilitation strategies; Online assessment; Online teaching; Qualitative research	Internet and Higher Education	139
4	Zawacki-Richter and Naidu (2016)	Article	Content analysis; distance education; mapping trends; research and scholarship; text mining	Distance Education	108
5	Roffe (2002)	Article	Distance learning; Evaluation; Quality assurance	Quality Assurance in Education	91
6	Latchem and Jung (2009)	Book	N/A	Distance and Blended Learning in Asia	65

No	Document	Document Type	Author Keywords	Source	Citation
7	Stella and Gnanam (2004)	Article	Distance education; Distributed learning; E-learning; New forms of learning; On-line learning; Quality assurance of/challenges of	Higher Education	64
8	Ho and Swan (2007)	Article	Assessment; Asynchronous learning; Content analysis; Cooperative principle; Direct response; Learning outcome; Online discussion; Socio-cognitive process	Internet and Higher Education	45
9	Ajadi et al (2008)	Article	Distance education; E-learning; Information and communication technologies; National open university of nigeria; Quality assurance	Turkish Online Journal of Educational Technology	43
10	Okada et al (2019)	Article	N/A	British Journal of Educational Technology	42

(N/A: Not available)

4.5 Themes and Emerge Topics

The exploration of QADHE themes, using co-citation analysis, underscores the pivotal role of online distance education (ODE). Co-citation analysis operates on the principle that documents frequently cited together are likely to share thematic connections or address similar topics. The analysis reveals four major clusters (Figure 5) ranging from broad concepts to context-specific details.

The yellow cluster investigates the role of technology in enhancing the quality and accessibility of remote learning experiences. As technology continues to play an increasingly prominent role in education, understanding its impact on and how it would change the QA process in distance higher education becomes paramount (Uvalić-Trumbić and Martin, 2021). Meanwhile, the red cluster sheds light on methodologies and frameworks aimed at quality assurance in ODE, addressing the varied needs of learners and guaranteeing the effectiveness of these educational programs.

While these two clusters provide a theoretical contribution to the literature, the green cluster examines strategies and approaches adopted by various institutions. This topic is of particular importance as institutions strive to maintain quality and relevance in an increasingly digital and remote learning landscape (Stella and Gnanam, 2004), also providing examples and insights for other institutions to adopt. Meanwhile, blue cluster zooms in on the landscape of QA in ODL within the Asian context, considering regional perspectives, challenges, and advancements. Asia has experienced significant growth in DHE programs and institutions in recent years (Tait, 2018).

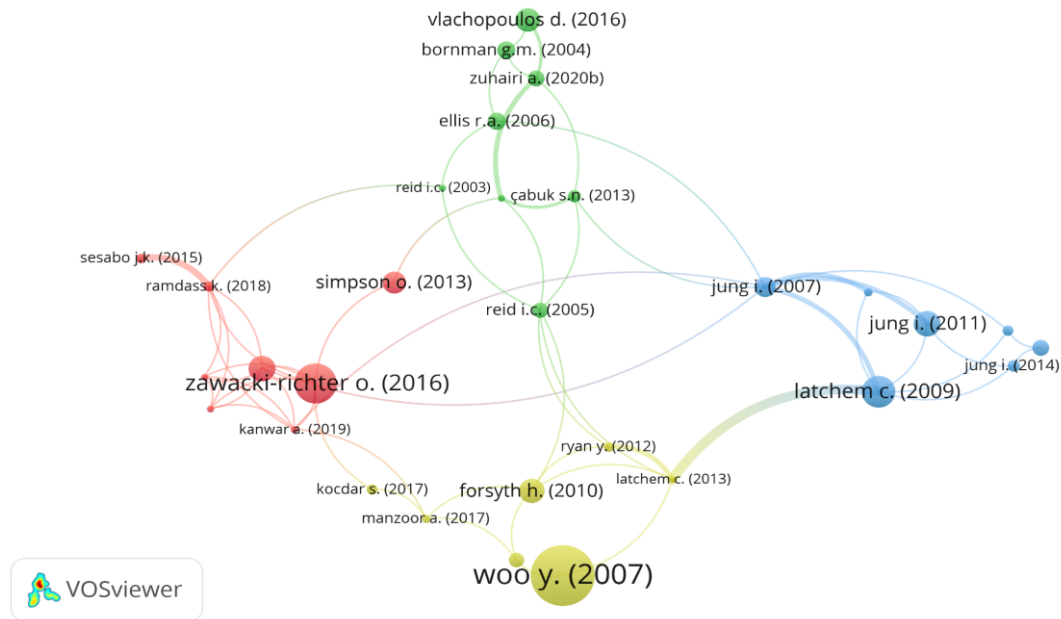


Figure 5: Science mapping of bibliographic coupling documents in knowledge base of QADHE from 1993 to 2024 (30 documents, each had at least a citation)

The examination of co-citation patterns reveals important themes, with frequently encountered keywords providing insights into notable topics, especially those that are emerging. Additionally, there is growing interest in newer themes linked to "open" concepts. Table 6 outlines keywords according to their frequency, while Figure 7 visually represents the changing trends and occurrences of these keywords over time, with colors representing their chronological progression.

It's evident that key keywords in this field include "quality assurance," "distance education," and "distance learning," reflecting their longevity and widespread use in the discourse on QADHE. Early keywords such as "assessment," "evaluation," "teaching," "globalization," "administration," and "curriculum development" indicate that the early discourse on QADHE mirrored discussions around traditional programs (Jung and Latchem, 2012). One of the main concerns during this period was whether DHE should be evaluated similarly to traditional programs, and whether their quality was comparable (Jung, 2022). Consequently, the topics prevalent during this stage remain rooted in conventional themes.

Subsequent keywords such as "online learning," "MOOCs," "quality management," and "total quality management" indicate a shift in research dynamics, driven by the rise and proliferation of the internet. While online learning and MOOCs have democratized access to DHE, they have also posed significant challenges to the QA process (Uvalić-Trumbić and Martin, 2021). This may necessitate the introduction of innovative management theories tailored to address emerging complexities.

Recently, keywords highlighting "open" principles, such as "open university," "open education," and "open and distance education," have gained significance, indicating a shift towards more inclusive educational paradigms. Notably, Open Education Resources (OER) are receiving increasing recognition in academic circles, despite being mentioned earlier in the discourse. OER, along with other aspects of "open" education, is a key driver of DHE advancement (UNESCO and Commonwealth of Learning, 2015), alongside digital innovation. However, this advancement also presents notable challenges (Uvalić-Trumbić and Martin, 2021), and underscores the need for further research to understand the frameworks and mechanisms of this new dimension of QADHE.

Table 6: Top 20 keywords in knowledge base of QADHE from 1993 to 2024

No	Keyword	Frequency	No	Keyword	Frequency
1	quality assurance	52	11	assessment	6
2	distance education	34	12	evaluation	4
3	distance learning	24	13	open learning	3
4	higher education	19	14	accreditation	3
5	open and distance learning	17	15	content analysis	3
6	e-learning	16	16	course design	3
7	online learning	16	17	globalisation	3
8	quality	10	18	information and communication technologies	3
9	open and distance education	8	19	learner support	3
10	open university	7	20	moocs	3

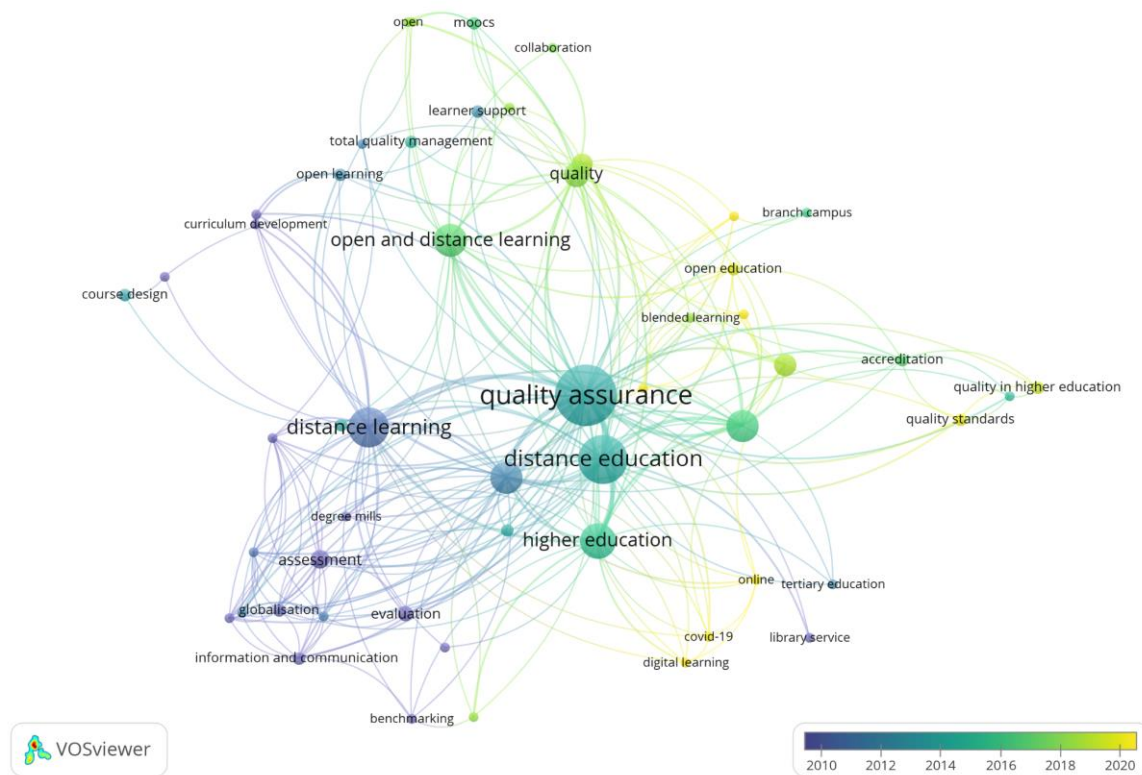


Figure 6: Science mapping of co-occurrence keywords in the knowledge base of QADHE from 1993 to 2024

5. Conclusions

In conclusion, this bibliometric study investigates the landscape of QADHE through an analysis of Scopus-indexed publications from 1993 to 2024. The study identified publication trends, international collaboration networks, influential authors, primary sources, thematic focuses, and emerging topics within the field.

The research trend in QADHE has progressed through three phases: an initial stage with few publications in the 1990s, a rapid expansion in the early 2000s with the rise of the internet, and stabilization in the late 2010s, indicating ongoing interest despite fluctuations, particularly in the mid-2000s. While QADHE shares developmental similarities with related fields, it has a lower publication volume, highlighting a significant demand for research in this area.

International collaboration in QADHE is robust, with significant contributions from Anglophone countries and South Africa, forming extensive research networks that highlight the subject's global importance. The emergence of Asian countries like Japan, India, and Malaysia as notable contributors underscores the growing diversity within the field. However, while institutions from English-speaking countries dominate citation counts, there is a strong encouragement for increased contributions from countries in Southeast Asia, Central Asia, and South Africa to further enrich the theoretical frameworks and research diversity within the field of QADHE.

Authors from diverse regions are advancing the discourse, but institutions in English-speaking countries lead in publication counts and citations. Significant contributions also come from International Christian University in Japan and the University of South Africa, highlighting the global impact of QADHE research. The increase in researchers since 2016 reflects a growing interest, particularly due to the shift to online learning. As the field evolves, there is ample opportunity for authors from various backgrounds to engage in the QADHE discussion.

The analysis of primary sources in QADHE indicates a need for a dedicated journal on the topic, complemented by influential edited books that enhance scholarship. Key documents offer insights into theoretical frameworks and practical examples, showcasing both general and specific perspectives. While Western scholars dominate citations, the global impact of QADHE research highlights the importance of diverse viewpoints. This trend further underscores the need for underrepresented regions to contribute to the literature, fostering a more inclusive understanding of QADHE.

The analysis of themes and keywords provides a comprehensive view of the diverse landscape of QADHE research, identifying significant clusters of thematic focus. The study highlights key clusters such as the integration of technology, methodologies, implementation strategies, and the Asian context. Keyword trends reveal the evolving discourse, shifting from traditional assessments to the emergence of "open" principles. Continued research is essential to address the complexities and challenges of online and open education, ensuring the quality and effectiveness of DHE programs globally.

However, several limitations should be considered when interpreting the findings. Firstly, reliance on Scopus-indexed publications may bias the results towards English-language sources, excluding relevant research from non-indexed databases or in non-English languages. Secondly, the study's temporal scope may overlook recent developments in QADHE amid rapid technological advancements. Additionally, while bibliometric analysis provides quantitative insights, it may not fully capture the qualitative nuances of research quality and content. Acknowledging these constraints and embracing future research suggestions can deepen the understanding of QADHE and enhance global educational practices.

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