




Hotspots and Trends of Higher Education Quality Assurance Research

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Abstract. Taking the literature on the quality assurance of higher education collected by Web of Science as the research object, CiteSpace is used to carry out visual analysis from the level of countries, keywords and so on. The research shows that the research hotspots mainly focus on quality assurance, sustainable development, medical education, prevention, involvement, management and so on. Research trends to mainly focus on Framework, knowledge and other aspects.

Keywords: quality assurance · CiteSpace · knowledge graph · visualization

1 Introduction

In recent years, a number of policy documents issued by the state repeatedly mention the improvement of higher education quality assurance, which shows the importance of education quality assurance. [1] Based on this, the bibliometric analysis method is adopted to process and analyze the relevant literature of “higher education quality assurance research”. With the help of CiteSpace information visualization software, the external characteristics of the research countries in this field are sorted out, and the keyword time zone view analysis, keyword clustering and emergent word analysis are carried out. This paper analyzes the development context, research hotspot and research trend of higher education quality assurance research, in order to seek the future development direction of higher education quality assurance research through the above analysis.

2 Research Design

2.1 Data Sources

In the Web of Science Core Collection, the time span is all years through the search method Topic = (the Quality Assurance of Higher Education), the search date is August 10, 2022, and a total of 1041 results were retrieved. After manual verification and screening, 1031 valid documents were finally obtained by eliminating the documents that were not related to the quality assurance of higher education.

2.2 Research Process

CiteSpace is a bibliometric tool widely used at home and abroad, which can analyze the potential knowledge in the literature. [2] This paper uses CiteSpace to retrieve the literature in the field of higher education quality assurance research from the Web of Science Core Collection, using the software version CiteSpace 5.8. R3 (64-bit); The node type selects countries, keywords, etc. to generate a knowledge map for visual analysis. It aims to understand the development and evolution, research topics and research trends in the field of higher education quality assurance research.

3 General Survey of Higher Education Quality Assurance Research

3.1 Distribution of Literature years

Through quantitative and visual analysis of relevant literature in the Web of Science Core Collection, the chronological distribution map of literature related to higher education quality assurance research is obtained (Fig. 1). According to the nodes in Fig. 1, the research on quality assurance of higher education can be divided into three stages: the first stage is from 1990 to 2006, the total number of published papers in this stage is relatively small, indicating that the research on higher education quality assurance is relatively low; The second stage is from 2006 to 2016, and the number of research papers is on the rise, and the rate of increase is very fast, reaching a peak of 87 in 2016. The third stage is from 2017 to the present. During this period, the research on the quality assurance of higher education The growth rate of literature has slowed down, and the number of published papers has shown a slow downward trend, but the number of published papers is still maintained at more than 33 each year. [3] The data in 2022 is the predicted value, and the attention on this field is still maintained at a high level. Here At this stage, teaching quality assurance and sustainable development have received more and more attention.

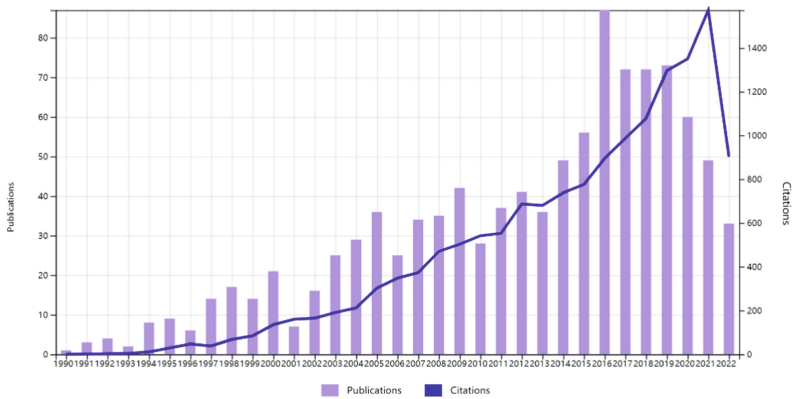


Fig. 1. The chronological distribution of literatures related to quality assurance research in higher education [self-painted]

Table 1. Statistical table of the national publication volume of higher education quality assurance research (number of publications ≥ 17) [self-painted]

S/N	Countries	Year	Count	S/N	Countries	Year	Count
1	USA	1991	207	11	ENGLAND	1993	29
2	ENGLAND.	2007	66	12	ITALY	2008	29
3	GERMANY	2007	59	13	GREECE	2007	22
4	CHINA	2008	50	14	AUSTRIA	2008	19
5	CANADA	2007	42	15	SWEDEN	2008	18
6	AUSTRALIA	2007	41	16	PORTUGAL	2010	18
7	SPAIN	2006	39	17	NORWAY	2007	17
8	NETHERLANDS	2007	33	18	FRANCE	2007	17
9	GERMANY	1999	32	19	IRELAND	2009	17
10	ROMANIA	2006	31	20	RUSSIA	2014	17

3.2 Study Country Distribution Analysis

By analyzing the distribution of countries that publish relevant literature on higher education quality assurance research, we can understand the main academic positions in this research field. 19 countries published 17 or more papers, reaching 771, accounting for 74.78% of the total, indicating that the countries that publish higher education quality assurance research are relatively scattered. According to Table 1, analyze the distribution of countries with a number of publications ≥ 17 : First, the USA is the country with the largest number of publications in higher education quality assurance research, 207, much higher than other institutions. It can be seen that the USA is the highest quality of higher education The main position of security research is the main force in this research field. Second, among the 19 countries with ≥ 17 publications, there are 15 European countries, 2 North American countries, 1 Asian country, and 1 Oceanian country. European countries are the main battlefields of higher education quality assurance research., which reflects the phenomenon of regional differentiation in higher education quality assurance research. The year in Table 1 is when the first relevant paper in that country was published.

4 Key Content Analysis of Research Literature

By analyzing the keywords of the literature, the keyword time zone view, cluster view and mutation word list are obtained, and the development context, research topics and research frontiers of higher education quality assurance research since the reform and opening up are respectively sorted out. [4].

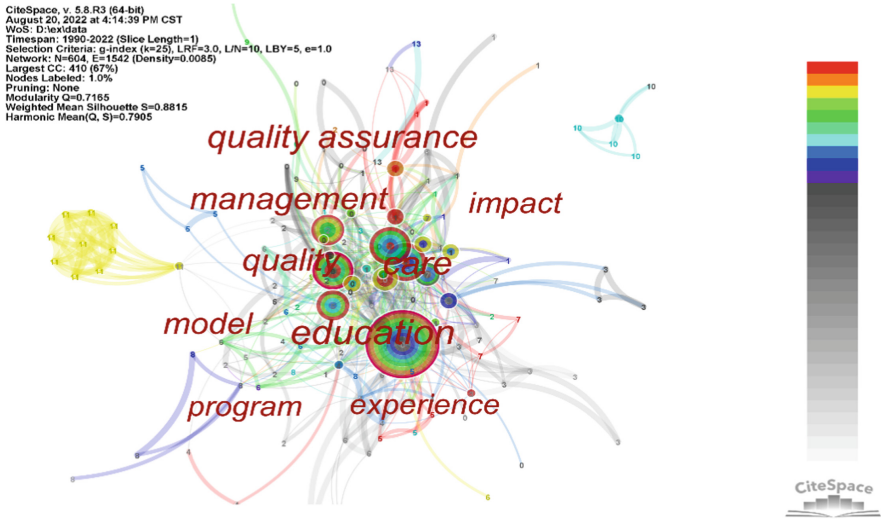


Fig. 2. High-frequency keyword clustering knowledge graph [self-painted]

4.1 Hotspots of Higher Education Quality Assurance Research

Select “keyword” as the node type for keyword co-occurrence analysis, and use the log-likelihood algorithm (LLR) in CiteSpace to cluster high-frequency keywords, and finally generate a keyword clustering time map (Fig. 2). Clustering is to group keywords with relatively high correlation into a group, which helps us to grasp the main research topics at present. Among them, the module value Modularity $Q = 0.7165 > 0.3$, indicating that the clustering results are credible, and the mean silhouette value Mean Silhouette = $0.8815 > 0.7$, indicating that the clustering is convincing.

The irrelevant clusters are hidden, and the clusters are filtered and merged in combination with the existing literature. [5] The cluster analysis table of high-frequency keywords from 1990 to 2022 is obtained, as shown in Table 2.

4.2 Trend Analysis of Higher Education Quality Assurance Research

Emergent words refer to keywords whose frequency of use suddenly increases in a short period of time. Through the analysis of CiteSpace’s emergent words, the research frontiers and trends in a certain field can be detected (Fig. 3). By refining high-frequency emergent words, higher education quality assurance research may develop in the direction of Framework and knowledge.

Table 2. High-frequency keyword cluster analysis table [self-painted]

Silhouette	Size	Mean (Year)	Top Terms (LSI)
0.953	18	2013	quality assurance; inter-rater reliability; training curriculum; work capacity evaluation; 30 day 30 day; emergency department; quality assurance; inter-rater reliability; certified centres
0.945	34	2007	medical education; clinical skill; student; arthritis; curriculum performance; program; nurse; multilevel analysis; outcome
0.925	40	2003	authenticity; clerkship; experience; military medical education; format monitoring; accidents; standards;
0.894	30	2007	medical education;
0.88	55	2009	quality assurance; coding standard; quality assurance-healthcare
0.871	27	2010	dental education; quality assurance; influence factors
0.854	32	2006	quality assurance; quality improvement; quality management; sustainable development; nordic countries nordic countries; sustainable development; integrated management systems;
0.853	54	2011	quality assurance; patient education; primary prevention; health care sustainable development; social responsibility; impact assessment; adult education; farmer field school

Top 6 Keywords with the Strongest Citation Bursts



Fig. 3. Graph of high frequency emerging words sorted by time [self-painted]

5 Conclusions

This study adopts bibliometric analysis method and takes the literature on quality assurance of higher education in Web of Science from 1990 to 2022 as the research object, and draws the following conclusions.

First, according to the analysis of countries and regions, the United States is the main position of higher education quality assurance research, and European countries are the main battlefield of higher education quality assurance research.

Second, according to the keyword clustering map, research hotspots mainly focus on quality assurance, sustainable development, medical education, prevention, involvement, management, etc.

Third, according to high-frequency emerging words, framework and knowledge in the field of higher education quality assurance research will be the frontier directions that will continue to be paid attention in the next few years.

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