

Research Status of University Teaching and Research Section Based on Visual Analysis

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Abstract. The development of teaching and research sections in Chinese universities has gone through a long process. With the development of colleges and universities, the construction and functions of teaching and research sections are constantly improving. This paper sorts out the research status quo of teaching and research offices in Chinese universities from the perspective of bibliometrics, and makes a visual analysis of 300 literature data related to teaching and research offices construction in China National Knowledge Infrastructure in recent ten years, sorts out the literature characteristics of teaching and research offices research in Chinese universities, excavates the research foundation of teaching and research offices and the research hotspots in different periods, and systematically analyzes the research status quo of teaching and research offices in Chinese universities from the visual perspective.

Keywords: Teaching and Research Section; Colleges and Universities; Atlas of Scientific Knowledge; Visual Analysis

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1. Introduction

Teaching and research room is the abbreviation of teaching and research room [1]. At present, the teaching and research section in the mode of "school-department-Teaching and Research Section" in Chinese universities is called physical teaching and research section or traditional teaching and research section. Because of its weakening function, rebuilding teaching and research section is a systematic organizational improvement. Based on the perspective of system contingency theory, the reform direction of the teaching and research Department should focus on reshaping the teaching culture, improving the awareness of teaching and research, and improving the teaching and research system and process [2]. By improving the system of the teaching and research office and adopting the method of management by objectives, Tan Junhua et al. actively carried out the interaction of "Internet + teaching and research", aroused the enthusiasm of teachers to participate in teaching management and effectively improved the teaching quality [3]. Zeng Jianchao et al. explored the construction path of virtual teaching and research room and proposed that the construction of virtual teaching and research room should follow the principles of problem-oriented, cross-integration, forward-looking research and dynamic construction [4]. Yue Jianjun proposed that the functions of university teaching and research departments should be reshaped into three aspects: adhering to the function of talent training, focusing on the function of teachers' professional development and innovating the function of serving society [5]. Wang Xiumei et al. formulated management measures according to the characteristics of the teaching and research office and strengthened the assessment and evaluation mechanism [6]. Based on the current situation and blocking points of the construction and development of teaching and research departments in higher vocational colleges, Cheng Jiangping proposed strategies to activate the organizational functions of teaching and research departments in higher vocational colleges [7]. Starting from five aspects, such as the teaching and research office system, teachers' responsibilities, incentive mechanism, teacher construction and school-enterprise cooperation, Rui Li explored scientific and standardized

strategies for the construction of teaching and research offices in private application-oriented undergraduate universities [8]. Shi Yixiu and others proposed to promote the implementation of basic teaching in the teaching and research department; Deepen the reform of the teaching and research Department and promote the construction of first-class disciplines [9]. Daytime et al. constructed and discussed the combination model of knowledge map and virtual teaching and research room to promote the complementary development of teaching and research [10].

At present, domestic research on the teaching and research section of colleges and universities pays attention to the development, reform and construction of the teaching and research section, and does not systematically evaluate the internal relevance and evolution trend of the research content of the teaching and research section of colleges and universities. Therefore, this paper systematically analyzes the data of 300 documents related to the teaching and research section in China National Knowledge Infrastructure (CNKI) in recent ten years by combing the research status of the teaching and research section in Chinese universities. Through the analysis of the annual publishing trend, main themes, subject distribution, periodical distribution and fund distribution, this paper combs the literature characteristics of teaching and research section research, excavates the research foundation of teaching and research section and the research hotspots in different periods, and provides reference for the research direction of teaching and research section in colleges and universities.

2. Statistical Analysis of Teaching and Research Section Research

2.1 Posting Trend

Visual analysis is made on the annual publishing trend of related papers retrieved by CNKI. From 2013 to 2023, the related literature on the construction of teaching and research offices in colleges and universities has increased significantly since 2021, indicating that teaching and research offices have attracted more and more attention from researchers, as shown in Figure 1.

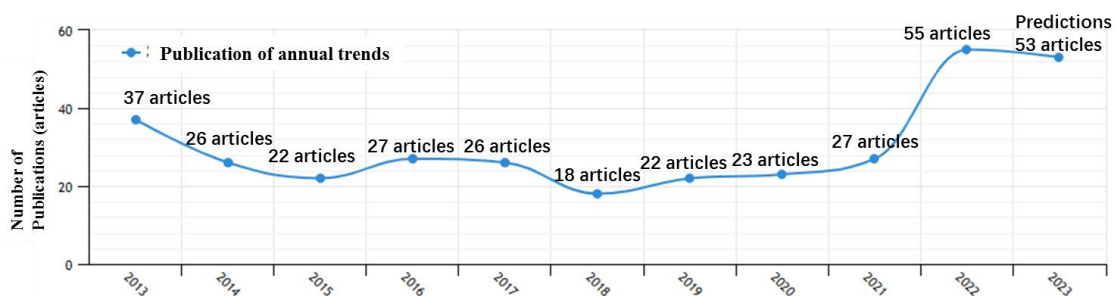


Figure 1. Annual distribution of the number of documents issued

2.2 Distribution of Main Themes

Table 1 shows the number of papers published on major topics from 2013 to 2023. It can be seen from Figure 2 that the annual distribution of each topic tends to be flat, but since 2021, the research on "virtual teaching and research room" is obviously more than other topics, indicating that the research direction of teaching and research room is gradually inclined to virtual teaching and research room.

Table 1 Distribution of the top five main topics

Sort	Main Theme	Number of Documents Issued
1	Construction of teaching and research section	99
2	teaching and research section	95
3	Virtual teaching and research section	55
4	Higher vocational colleges	27

5	University teaching and research section	25
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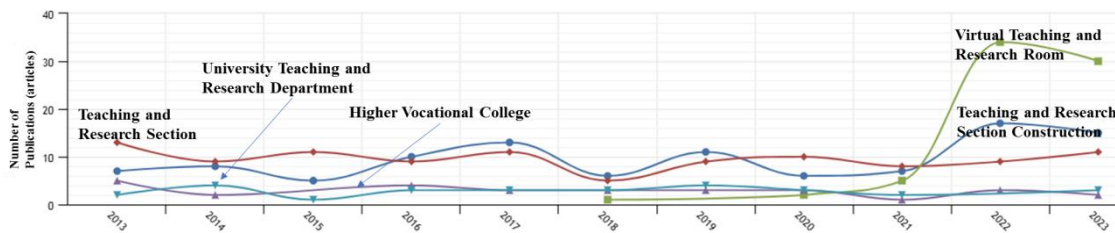


Figure 2. Annual distribution of main themes

2.3 Distribution of Disciplines

Table 2 shows the number of papers published by different disciplines from 2013 to 2023. It can be seen from Figure 3 that the number of papers published in "Higher Education" is obviously more than that in other disciplines, and the number of papers published has increased significantly since 2021.

Table 2 Distribution of Papers Published by the Top Five Subjects

Sort	Main Theme	Number of Documents Issued
1	higher education	200
2	vocational education	47
3	Medical Education and Medical Marginal Discipline	20
4	Educational theory and educational management	18
5	Computer software and computer application	17



Figure 3. Annual distribution of disciplines

2.4 Distribution of Periodicals

Table 3 lists the main journals from 2013 to 2023. Figure 4 shows that the number of papers published in high-level journals has increased significantly since 2021.

Table 3 Distribution of the Top Five Published Journals

Sort	Main Theme	Number of Documents Issued
1	education forum	11
2	the guide of science & education	7
3	the science education article collects	6
4	Asia Pacific education	4
5	Journal of higher education	4

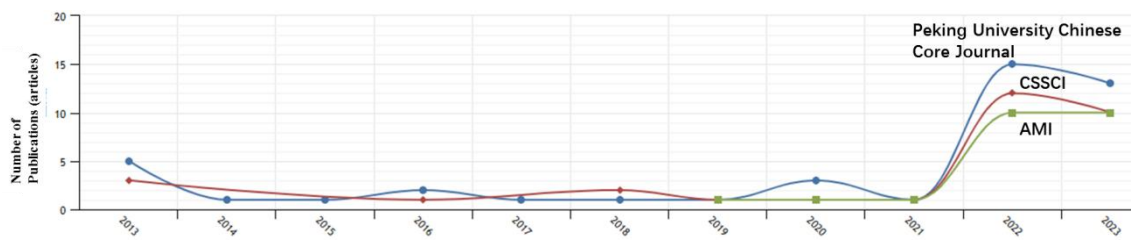


Figure 4. Source Category Distribution

2.5 Distribution of Funds

As can be seen from Figure 5, the research fund for the construction and development of teaching and research sections has little support, mainly focusing on provincial education reform projects; And in recent years, the support of fund projects is unstable.

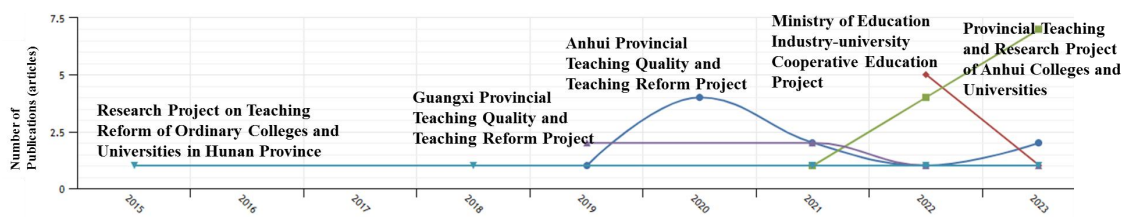


Figure 5. Fund distribution

3. Evolution Analysis of Research Hotspots in Teaching and Research Section

Table 4 lists the top ten keywords in the research field of teaching and research section according to the frequency of keyword co-occurrence. Keywords represent knowledge points and research hotspots in a certain research field. The year in the table represents the time when the number of articles published by the corresponding keywords first appears frequently, which is not necessarily the time when keywords first appear. Mainly: teaching and research section, universities, construction, teaching reform, etc.

Table 4 Sorting of Co-occurrence Frequency of Top Ten Keywords

Sort	Keyword Occurrence Times	Age	Keyword
1	89	2013	teaching and research section
2	27	2013	build
3	20	2013	Higher vocational colleges
4	15	2013	reform in education
5	11	2015	personnel training
6	10	2013	colleges and universities
7	9	2014	quality of teaching
8	8	2013	counter-measure
9	8	2014	Curriculum construction
10	7	2022	Construction path

4. Conclusions

In this paper, qualitative literature review and visual analysis methods are used to systematically review the research of domestic teaching and research sections. This paper analyzes the annual publishing trend, main themes, subject distribution, periodical distribution and fund distribution of

300 documents in the teaching and research section from 2013 to 2023. The main conclusions of this paper are as follows:

Firstly, the number of articles published in the field of teaching and research section in China has shown an increasing trend since 2021. With the development of industrial colleges and professional clusters, the research on virtual teaching and research section has gradually increased.

Secondly, the number of papers published in higher education is obviously more than that in other disciplines, and the number of papers published in high-level journals has increased significantly since 2021.

Thirdly, the research fund for the construction and development of teaching and research section has little support, mainly focusing on provincial education reform projects; And in recent years, the support of fund projects is unstable.

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