



# Theoretical Research and Prospects of Higher Preschool Education in China since the Last Decade---Visual analysis based on CNKI journal big data platform

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**Abstract.** Based on CNKI, this paper uses Citespace and the visualization analysis of China Knowledge Network to visualize and analyze its literature, focusing on the authors, issuing institutions, issuing volume, keyword time zone, clustering and mutation of theoretical research on higher vocational preschool education since the last decade. Visual image mapping of the current state of research, hot spots and trends in higher preschool education. A more objective visualization of the basic status of preschool education in higher education.

**Keywords:** Higher Vocational College, Preschool Education, Citespace

## 1 Introduction

In addition to higher education, higher vocational education is also a very important part of China's education system. With the clarification and refinement of academic disciplines in China, preschool education in higher vocational education has also received more and more attention. This paper selects the theoretical literature of higher vocational preschool education as the research object, and uses Citespace, a literature analysis software, and the visualization analysis of China Knowledge Network as the analysis means to collect, organize and analyze the literature in the field of "higher vocational preschool education", and then summarize its laws, status quo, distribution, etc. through visualization means. The visualization of the literature in the field of "preschool education in higher education" is collected, organized and analyzed, and then the patterns, status, distribution, etc. are summarized through visualization. The visualization is used to draw a visual image of the field of "higher preschool education".

## 2 Research and Analysis

### 2.1 Analysis of the Number of Articles Published

In this paper, we searched "higher vocational preschool education" through China Knowledge Network and got 3522 papers in total, and organized and analyzed them to get the annual publication trend of "higher vocational preschool education", as shown in Figure 1. As shown in Fig. 1, the literature research can be divided into three stages: the budding period (2000-2008), the growth period (2008-2019) and the stable period (after 2020). With the development of China's economy and society and the improvement of people's living standard, so the research requirements for preschool education in higher vocational schools are also increasing. As can be seen from the figure, the volume of literature began to appear and was slowly rising after 2000, and began to grow explosively from 2008 especially in 2019 when it reached 538 articles, and gradually leveled off after 2019.

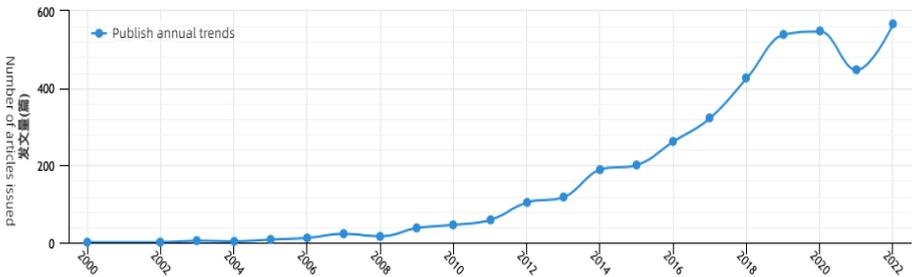


Fig. 1. Annual trends in the publication of theoretical research literature on higher preschool education

### 2.2 Research Hotspot Analysis

#### 2.2.1 Keyword co-word analysis.

Citespace was used to analyze all the articles on "higher preschool education" in CNKI from 2012 to 2022. Keywords are the most accurate summary and distillation of the core content of academic articles [1]. The keyword co-word analysis is to analyze, generalize, summarize and conclude the research literature in this field in a certain period of time, and also to derive the research hotspots in this field. As shown in Figure 2. Through the analysis of 689 keywords, the keyword with the highest frequency is "preschool education" with the frequency of 1290, which ranks the first. After that, the word frequency of "preschool education" is 957, the word frequency of "higher vocational college" is 762, and the word frequency of "higher vocational" is 549. In addition, the word frequencies of "higher vocational preschool education", "higher vocational preschool education major", "education reform", "talent cultivation" and "These key words constitute the core nodes of the image, and can also be judged as the research hotspots in this research field. The lines in the figure indicate

the citation relationship of the core nodes. As shown in Table 1, preschool education has received the most attention from researchers.

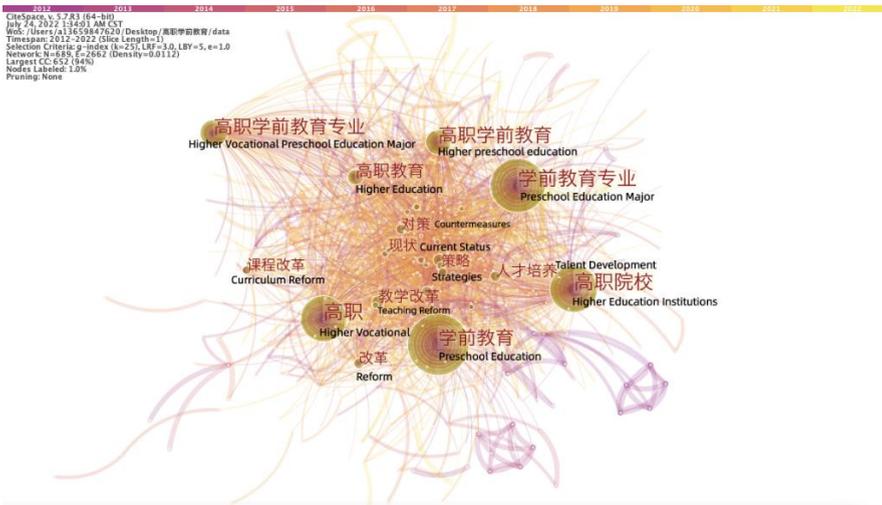


Fig. 2. Keyword co-occurrence mapping of theoretical research on higher preschool education

Table 1. Top10 keywords list for higher preschool education

Number	Keywords	Year	Frequency	Centrality
1	Preschool Education	2012	1290	0.29
2	Preschool Education Major	2012	957	0.32
3	Higher Education Institutions	2012	762	0.31
4	Higher Vocational	2012	549	0.32
5	Higher preschool education	2012	228	0.2
6	Higher Vocational Preschool Education Major	2012	219	0.23
7	Higher Education	2012	123	0.09
8	Teaching Reform	2012	101	0.06
9	Talent Development	2012	94	0.08
10	Vocal Teaching	2013	80	0.02

### 2.2.2 Keyword clustering analysis.

The clustering analysis of keywords can better discover the research hotspots in this research field [2]. the research literature of higher vocational preschool research in CNKI was imported into Citespace for keyword clustering analysis, as shown in Figure 3. a total of 689 nodes, 2662 connected lines, and a network density of 0.0112 were generated as shown in Figure 3[3]. the labels of the clusters were #0 higher vocational institutions, #1 preschool education, #2 higher vocational preschool education, #3 higher vocational education, #4 higher vocational preschool education major, #5 higher vocational, #6 problem, #7 talent training, #8 dance teaching, and #9 cur-

riculum thinking. In the author's opinion, the research contents can be divided into the categories of higher vocational education, preschool education majors, talent training, and subject-specific education, which also shows that the research contents of higher vocational preschool education are more traditional and basic [4].



Fig. 3. Clustering mapping of keywords for theoretical research on higher preschool education

### 2.2.3 Keyword time zone map.

As time passes, the research content of the literature is constantly updated over time, and the research value of the relevant literature decreases over time. The time zone map can be grouped in the same time zone by integrating keywords of the same time point. The time zone map gives a better picture of the evolution and development of the research in the field of study. The inheritance relationship of nodes in the time zone diagram is proportional to the number of nodes, and the more closely connected the nodes are, the more they are. The time zone of the keywords obtained from the analysis of the literature related to "preschool research in higher education" is shown in Figure 4. In the past decade, the number of articles published in the literature has been increasing, and the research hotspots are also very obvious, focusing on "higher education institutions" and "higher preschool education". The theoretical research on "higher preschool education" in China has gradually matured and new hotspots are emerging. We can also see that the research on higher preschool education is no longer only focused on basic research, but is more detailed.

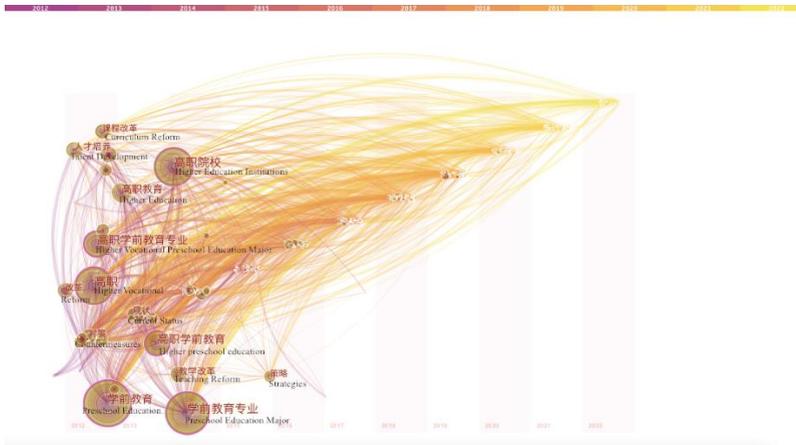


Fig. 4. Theoretical research on higher preschool education keyword time zone map

2.2.4 Keyword mutation analysis.

Using the mutation detection function of Citespace, we analyzed and studied the keyword mutations in higher preschool education and obtained the high frequency keyword mutations in higher preschool education. The new research directions and hot spots in this field of higher preschool education can be seen from Figure 5.

Top 25 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2012 - 2022
Professional Competence	2012	6.37	2012	2016	[Bar chart showing citation burst from 2012 to 2016]
Piano Instruction	2012	4.66	2012	2013	[Bar chart showing citation burst from 2012 to 2013]
Teaching content	2012	3.06	2012	2015	[Bar chart showing citation burst from 2012 to 2015]
Professional Standards	2012	3.05	2012	2016	[Bar chart showing citation burst from 2012 to 2016]
Reform	2012	5.6	2013	2016	[Bar chart showing citation burst from 2013 to 2016]
Curriculum	2012	4.23	2013	2017	[Bar chart showing citation burst from 2013 to 2017]
Cultivation	2012	4.33	2014	2016	[Bar chart showing citation burst from 2014 to 2016]
School Articulation	2012	3.56	2014	2016	[Bar chart showing citation burst from 2014 to 2016]
Courses	2012	3.53	2014	2015	[Bar chart showing citation burst from 2014 to 2015]
Higher Vocational Education	2012	2.91	2014	2015	[Bar chart showing citation burst from 2014 to 2015]
Convergence	2012	3.66	2015	2017	[Bar chart showing citation burst from 2015 to 2017]
Five-year Consistent System	2012	3.21	2015	2017	[Bar chart showing citation burst from 2015 to 2017]
Bilingual Early Childhood Education	2012	2.78	2015	2016	[Bar chart showing citation burst from 2015 to 2016]
Music	2012	3.1	2016	2017	[Bar chart showing citation burst from 2016 to 2017]
Course Design	2012	3.08	2016	2018	[Bar chart showing citation burst from 2016 to 2018]
Cultivation Strategies	2012	2.8	2017	2018	[Bar chart showing citation burst from 2017 to 2018]
Improvisation accompaniment	2012	3.23	2018	2020	[Bar chart showing citation burst from 2018 to 2020]
Practical skills	2012	3.19	2018	2019	[Bar chart showing citation burst from 2018 to 2019]
Modern Apprenticeship	2012	2.77	2018	2020	[Bar chart showing citation burst from 2018 to 2020]
Teaching Practice	2012	2.89	2019	2020	[Bar chart showing citation burst from 2019 to 2020]
Core Literacy	2012	2.87	2019	2022	[Bar chart showing citation burst from 2019 to 2022]
Industry-education integration	2012	2.82	2019	2022	[Bar chart showing citation burst from 2019 to 2022]
Curriculum Civics	2012	13.14	2020	2022	[Bar chart showing citation burst from 2020 to 2022]
Teaching Quality	2012	3.1	2020	2022	[Bar chart showing citation burst from 2020 to 2022]
Professional Certification	2012	2.75	2020	2022	[Bar chart showing citation burst from 2020 to 2022]

Fig. 5. The keyword mutation chart of higher preschool education

The red line indicates the high frequency keywords within a certain period of time, which is also the most researched content within this period of time, and also shows the research value within this period of time. From the figure, we can see that before 2016, the intensity of "vocational ability" was 6.37, which was also the key research content in that period of time, and "higher vocational education", "teaching content" and "curriculum" were the most researched content in that period of time. In this period of time, the key words of "higher vocational education", "teaching content", "curriculum", "training" and so on are still the hot spots of research. From 2016, new research contents are emerging. Among them, "curriculum thinking and politics" has the highest intensity of 13.14, "cultivation strategy," "practical ability," "teaching practice" The appearance of key words , such as "integration of industry and education" and "teaching quality", shows that the theoretical research on higher vocational preschool education is more integrated in practice, and it also promotes the development of higher vocational preschool education [5].

### 3 Conclusion and Outlook

In this paper, we analyze the research status of "higher preschool education" by using the visual analysis of Citespace and CNKI, so that we can understand the research hotspots that researchers focus on and analyze its development status.

#### 3.1 Conclusion

1. In the past ten years, the research trend of "higher vocational preschool education" in China has gradually matured, and the number of articles issued has shown a rising trend.

2. The research content is more detailed, not only the basic research on "higher vocational", "higher vocational education" and "preschool education", but also the research on "practical ability", "teaching practice" and "personnel training". The new research hotspots such as "practical ability", "teaching practice", "talent training" and "integration of industry and education" have emerged.

3. The research on "higher vocational preschool education" is more combined with practice, and more promote the theory and practice and development of higher vocational preschool education.

4. The research method of "higher vocational preschool education" is relatively single and subjective, and lacks data support and objectivity.

#### 3.2 Looking ahead

1. Expand the research content, the theoretical development of "higher preschool education" should be more synchronized with the development of the times.

2. The necessity of cross-disciplinary research should be enhanced. The research of "higher preschool education" should break the inherent way of thinking. The study of

"higher pre-primary education" should cross the barriers between disciplines and be more comprehensive.

3. Strengthen the research way of combining theory and practice to promote the development of higher preschool education.

4. Update the research method. With the continuous development and improvement of science and technology, the research on higher vocational preschool education can be supported by more new research methods and more and more objective data, so as to better promote its development.

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