

Data Mining Visualization Based on Physical Education Teacher Training Related Research Literature Atlas Analysis

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Abstract: Physical education teachers are not only the executor of the school sports reform policy implementation but are also important factors in ensuring the quality of teaching. The purpose of this article: cite space software was used to conduct data mining on 284 literature related to PE teacher training to extract deep and valuable knowledge and rules. In 1992, the first paper on PE teacher training was made available in the core journal. In the 29 years to 2021, there were four peaks in the number of papers published annually. It has formed scientific research institutions with normal colleges as the main body. It formed an interdisciplinary research team consisting of Ji Liu, Yin Zhi Hua, Wang Xiao Zan, Huang Han sheng, Fang Qian Hua, Wang Jia Hong and others. These organizations and team members are mainly situated in central China, the political, economic and cultural center of China. Through the drawing of “physical education,” “school physical education,” “physical education teacher education,” “physical education,” “teacher training mode,” “physical education teacher qualification,” and other aspects of high-frequency keywords co-occurrence map and statistical table, is the current research hotspot of physical education teacher training in China.

Keywords: Data mining; Knowledge visualization; Physical education teacher training; Bibliographic analysis

1. Introduction

Every year, a large number of scientific and technological literature are produced in the world. The big data of scientific and technological literature is the most direct reflection of scientific research development. For example, Statistical Reports on MEDLINE/PubMed Baseline Data (2020) In the biomedical field, more than 1 million scientific and technological papers are added to the database every year, almost 2 every minute.

In recent years, with the development of natural language processing technology, the mixing and application of scientific and technological documents based on content have been paid more and more attention. Li, Yuan & Li (2020), based on the core collection of the Web of Science Citation Index database, literature on children's physical health as the research topic was retrieved, and a total of 2248 articles were obtained.

Wu & Fu (2019), using cite space software, this paper conducted a science-based analysis of 828 pieces of literature in the field of innovation management from the Web of Science (1962-2019).

Zhang(2021) used Cite Space literature visualization software to reveal the relationship between research focus and evolution trend, predicted the impact of urbanization on reactive nitrogen flow, and provided historical reference and suggestions for future research in the field of reactive nitrogen flow.

2. Study Object

On October 10, 2022, through the literature search engine CNKI full data platform, with the subject word “physical education teacher training” as the search term, to search the papers published in the core journals in the past ten years, a total of 334 papers were obtained.

Through the screening criteria, 10 papers, 12 meeting minutes, 5 interview records, 4 newspaper articles, 6 duplicate documents, and 13 incomplete paper structures were screened out. Finally, 284 papers were left that met the criteria.

3. Data mining and analysis:

Cite Space software was used to analyze 284 papers that met the criteria. 1. Analysis by the author. 2. Analysis of research

4.4 Co-occurrence analysis of key words in physical education teacher training research

As seen from Table 1, the frequency and centrality of physical education teacher, training, physical education and physical education majors rank in the first four places, which can be said to be the main contents in the research field of physical education teacher training in China. Among the keywords, physical education teacher appears the most frequently and centrally.

Top 7 Keywords with the Strongest Citation Bursts

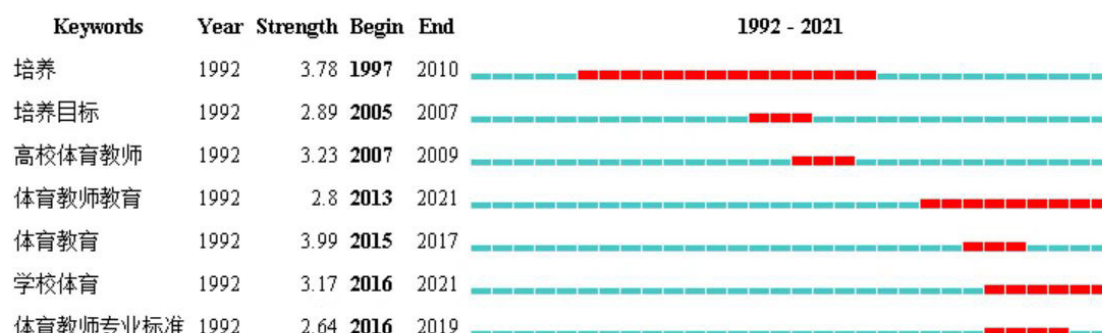


Figure 4: Top 7 Keywords with the Strongest Citation Bursts

The cite space burst detection algorithm detected 7 breakout words (Figure 5). It can be seen that the four keywords “physical education (3.99)”, “training (3.78)”, “college physical education teachers (3.23)” and “school physical education (3.17)” have the highest burst intensity, followed by “training objectives (2.89)”, “physical education teacher education (2.8)”, “professional standards for physical education teachers (2.64)”. The time for each keyword to enter the research center is different.

5. Recommendation

(1)The literature on PE teacher training presents a wavy development. The introduction of new national policies leads to an increase in the number of articles published, but then it will decrease. It shows that the research of PE teacher training can keep pace with The Times.

(2)To strengthen the cooperative relationship between Chinese physical education teacher training research institutions and authors, strengthen exchanges between different disciplines, so as to expand the cooperative research scale, innovative research content and innovative mode. The continuous expansion of the scope of research institutions and the construction of a network of research institutions in the northeast, northwest, southeast and southwest centered on the Yangtze River Delta is conducive to the differential training of physical education teachers in different regions and climates.

(3) Through the analysis of the map of authors and research institutions of PE teacher training and further data, it is found that the core group of authors has initially formed in this research, and the layout of research institutions is also dominated by higher physical education institutions.

(4)To construct multiple physical education teacher training research, promote the development of multidisciplinary comprehensive research direction, expand the scope of research, and improve the professional depth and international influence of Chinese physical education teacher training research. Our country also needs to learn from foreign countries, especially countries with developed schooling, for example, from America, Japan and other countries, to learn as much as possible beneficial experience in physical education teacher training research from all countries.

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