Preschool Bilingual Teachers' Research Hotspot Based on Co-word Clustering and Multi-dimensional Scale Analysis --123 Chinese Documents from 2003 to 2017

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Abstract—Bilingual education of young children is one of the international research hotspots. As a world’s most populous nation, China has done abundant research on this topic and pay more attention on the teachers. This study collected 123 valid documents in the full-text database of CNKI. Based on the overall situation analysis of the published documents in the past years, the keywords were analyzed with respect to frequency, co-occurrence, co-word clustering and multidimensional Scale. Combining with the above results, the research classifies research hotspots into four categories: (a) Research on the development of professional competence of pre-school bilingual teachers; (b) Research on teacher training for pre-school bilingual teachers; (c) Research on bilingual teachers in ethnic minority areas; (d) Research on teaching strategies of pre-school bilingual teachers. Based on the above research, this study puts forward the important tasks of current research and future research trends in order to provide some ideas for follow-up research.

Index Terms—Pre-school bilingual teachers, research hotspots, co-word clustering, multidimensional scaling

I. QUESTION RAISED

In China, pre-primary bilingual education is that teachers use the first language and the second language at the same time or in intervals to organize children's theme education activities, game activities, and daily activities in the kindergarten's daily education and teaching environment. Its purpose is to both enlighten children and attract their interest for the second language on the basis of the development of their mother tongue, and to allow children to contact and experience multiple cultures as well as acquire two languages, laying the foundation for their development in a multicultural society [1]. The contents mainly include: 1) Chinese children of Han ethnic group learn second or third languages other than Mandarin, such as English, Japanese, Korean, etc.; 2) Chinese minority children learn Chinese; 3) Foreign children who live in China need to learn Chinese because of their parents' work, such as young children from countries such as Singapore, the United States, and South Korea. Results of survey on bilingual kindergarten teachers in 24 provinces and cities in China [2] reveal that teachers of pre-primary bilingual education in China are mainly divided into three categories: 1) Teachers who graduated from preschool education, although such teachers have certain pre-school education knowledge, skills, and experience, there are deficiencies in the grammar, phonic sound, spoken English and other aspects. 2) Teachers who graduated from the English majors or professional colleges, although such teachers have professional English language skills, they lack professional knowledge and skills in preschool education. Teaching content, forms, and methods may not be suitable for young children’s physical and mental development; 3) Foreign teachers, although popular with parents and young children, complex professional background (most are not preschool majors), varying levels of teaching, mobility and randomness are their characteristics, nor do they have uniform assessment and appraisal mechanism.

Facing the complex situation of current pre-school bilingual teachers, Chinese researchers have conducted extensive research on this issue from multiple perspectives. What are the focuses of the current research hotspot? What are the future development trends? In this study, a common word clustering method was used to map the knowledge.

II. RESEARCH METHOD

A. Data Sources and Processing

Till August 2017, the study has used subject headings as preschool/ kindergarten/ infant bilingual teachers/teachers/professionals/courses/training to sequentially search in the CNKI full-text database, and a total of 197 articles related to pre-school bilingual teachers were retrieved. To ensure the validity of the data, the following articles were selected in this study: (1) duplicated literature; (2) meetings, newspapers, and other literature; (3) articles with little relevance to the topic. Finally, 123 valid data were obtained.

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B. Research Tools and Methods

In this study, Bicomb 3.2 co-word analysis software and SPSS 21.0 statistical software were used to conduct word frequency analysis and co-word cluster analysis. Among them, word frequency analysis, by counting the frequency of the keywords covering the main content of the literature in the literature of a certain research field, infers research hotspots and development trends in the field [3]. Co-word clustering, which is based on word matrix, performs correlation calculation and will be closely related. The key words are clustered together to determine various research hotspots [4]. The frequency of the keywords covering the main content of the literature in the literature of a certain research field, infers research hotspots and development trends in the field [3]. Co-word clustering, which is based on word matrix, performs correlation calculation and will be closely related. The key words are clustered together to determine various research hotspots [4].

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In this study, the top 19 vocabularies with a frequency of more than 8 times (a total of 19, accounting for 71.4% of the total number of keywords) were selected for co-word cluster analysis, and the Bicomb co-word analysis software was used to generate the metric matrix. Then import SPSS for cluster analysis, and eventually converge into three major types. The specific results are shown in Fig. 2.

B. Frequency Analysis

According to statistics, 123 documents contain a total of 270 keywords, with a cumulative frequency of 493. However, due to different expression habits, there are many synonyms in the keywords. In order to better statistically correlate the results, the study synthesizes synonymous keywords, that is, they are modified into the same noun. Among them, other competencies refer to professional skills other than teaching and speaking skills, such as the skills of simple strokes, basic skills, and communication skills. In this way, 75 keywords were collected and the frequency was between 1-53. Among them, there were 38 keywords with more than 3 times of frequencies.

These 38 keywords appeared 444 times in these articles, accounting for 60.85% of the total frequency of keywords. The first 15 keywords appeared more than 10 times in frequency, followed by pre-school bilingual teachers (53), bilingual education (43), teacher language level (32), ethnic minority areas (28), pre-school education (23), bilingual teacher training (22), training methods (18), bilingual teachers (15), teaching methods and strategies (14), universities and students (13), teaching ability (12), status quo and Question investigation (11 times), teacher professional development level (11 times), curriculum setting (10 times).

C. Co-occurrence of Hot Key Words

The so-called co-occurrence refers to the situation where two vocabularies appear in the same article at the same time [6]; Co-occurrence matrix is Used to represent the co-occurrence times of two or two keywords. In this study, a 75*75 co-word matrix was calculated using Bicomb software. There were 8 pairs of words that co-occurred more than 10 times in frequency.

It was found that vocabulary such as pre-school bilingual teachers and teachers’ language proficiency, ethnic minority areas, bilingual teacher training, and teacher professional development level are frequently used together; teacher language level and pre-school bilingual teachers, colleges and students, bilingual teaching, and teaching activities. The co-occurrence frequency of such vocabularies was higher; vocabularies such as ethnic minorities and preschool bilingual teachers and bilingual education appeared frequently.

D. Co-word Cluster Analysis

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Co-word clustering statistics show that the first type of clustering results include quality assessment, teaching activities, professional development level of teachers, other abilities, curriculum setting, status quo and problem investigation, colleges and universities, students, and teaching ability; The results of the second class of clustering include teaching methods, bilingual teachers, bilingual teacher training, preschool education, ethnic minority areas, bilingual education, and preschool bilingual teachers.

E. Multi-dimensional Analysis

To further clarify the situation, in the top 19 vocabularies of this study, three vocabularies with little meaning, such as pre-school bilingual teachers, bilingual education, and preschool education, were removed, and the remaining 16 vocabularies (of the total number of keywords were 47.21%) The multidimensional scale analysis was performed. The specific results are shown in Fig. 3.

IV. DISCUSSION AND CONCLUSION

In summary, the development of pre-school bilingual teachers in China is at a preliminary stage of development. After 2013, the number of studies has shown a significant increase in volatility. At present, the research hotspots for pre-school bilingual teachers in China involve four aspects:

Firstly, professional development, curriculum setting and quality assessment. In terms of professional competence, the study proposes that the professional competence of pre-primary bilingual teachers should include bilingual language level, basic theory of preschool education, design of teaching activities and organizational ability, and practical ability from the perspective of both theoretical and practical perspectives. It is difficult to master bilingualism at the same time. Language ability and teaching ability are the current major bottlenecks.

Secondly, bilingual teaching strategies. This kind of research mainly explores the specific forms of various types of activities, existing deficiencies, and effectiveness of teaching strategies in light of different teaching theories, status surveys in specific regions, and quality assessment.

Thirdly, teacher training. Pre-employment training mainly focuses on the suitability of various types for colleges and universities such as curriculum setting, training programs, training modes, and teaching materials design. The number of post-employment training studies is relatively small, focusing on forms such as new teacher induction training, kindergarten internal practice training, and teaching and research. The shortcomings of these trainings are unanimously manifested as a lack of uniform training objectives and competency standards, a scientific curriculum system, and an effective evaluation system.

The fourth, the study of bilingual teachers in ethnic minority areas mainly includes 1) the discussion of countermeasures based on current research; 2) exploring the path of professional development of teachers from different career stages, especially focusing on new accreditation stages; 3) analysis of training needs on the basis of regional differences; 4) specific training content and methods in minority areas; 5) qualification and admission requirements for qualified bilingual teachers.

In the future, Chinese researchers may continue to address the following three issues:

Firstly, to solve the problem of teacher resources and quality in minority areas. China is a multi-ethnic country with a large demand for bilingual teachers in ethnic minority areas. The government has invested a lot of money and issued documents requiring teachers to teach their own language and Chinese at the same time, consolidating national unity and meanwhile promoting coordinated development among regions. Nearly 40% of the literature studies preschool bilingual teachers in minority areas.

Secondly, to establish a set of national qualification standards for pre-primary bilingual teachers and standardize the teaching team to ensure the quality of bilingual education. This will help solve the problem of mixed quality of education and management systems in the three co-existing status of Chinese bilingual
kindergarten teachers (teachers of the kindergarten, foreign English teachers, and foreign teachers).

Thirdly, it is necessary for teachers to establish the correct educational philosophy of pre-primary bilingual education. Apart from language learning, they are also required to pay attention to the cultural value behind. Researchers rarely pay attention to the cultural conflicts behind the two different languages. The frequency of culture only accounts for 0.45%. It should be noted that language is not only a communication tool, but also one of the carriers that carry different concepts, modes of thinking, traditional customs and historical culture. It can play an important role in the development of innovative thinking and problem solving skills on the basis of expanding children's horizons. It is an inevitable trend to further study the competence structure of pre-school bilingual teachers based on a cultural perspective and incorporate them into the conditions for qualification entry.

REFERENCES


Luyi Jiang was born in Zhejiang Province of China on 22th December, 1989. Her educational background as followed: (1) 2009-2013, studied at Zhejiang Normal University in Hangzhou, China and obtained a bachelor's degree in preschool education. (2) 2013-2016, studied at the East China Normal University in Shanghai, China and obtained a master's degree in preschool education. (3) 2016-present, studying at East China Normal University in Shanghai, China and receiving a doctorate program in preschool education. Her major field is preschool education.

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