

Research on Teaching Chinese as a Second or Foreign Language in and Outside Mainland China: A Bibliometric Analysis

Yang Gong¹ · Boning Lyu¹  · Xuesong Gao²

Published online: 23 May 2018
© De La Salle University 2018

Abstract This article reviews studies on teaching Chinese as a second or foreign language (CSL/CFL) inside and outside Mainland China. In the review process, we analyzed a total of 1358 Chinese language articles and 175 English language articles from CNKI (中国知网) and Web of Science, respectively, during the period from 2004 to 2016. By analyzing the frequency and the co-occurrence of keywords in these articles, this review identifies the development trajectories and topical trends of Chinese language education research in mainland Chinese and international journals. The review also highlights both researchers and institutions that contributed significantly to research on CSL/CFL teaching and learning. As revealed through the analysis, researchers in and outside mainland China focus on different research issues with different perspectives, while few cross-border research collaborations are observed among the leading researchers and(or) institutions in this field. Consequently, we conclude this review with suggestions for researchers in mainland China and other contexts, journals, and institutions for promoting transnational-collaboration research to support the development of Chinese language education.

Keywords Teaching Chinese as a second or foreign language · Mainland Chinese journals · International journals · Bibliometric analysis · Cross-border collaborations

Introduction

In the last decade, Chinese has emerged as an increasingly important language taught and learnt as a second or foreign language (e.g., Chen et al. 2017; Qi and Lai 2017; Wang and Curdt-Christiansen 2016). In 2016, more than 2.1 million people were reportedly learning the Chinese language as a second or foreign language, and six million learners of Chinese as a foreign language took Chinese tests of various kinds around the globe (Hanban Hanban 2017). A total of 442,773 international students are also studying in mainland China, among whom 38.2% are learning Chinese as a foreign language in higher educational institutions (中华人民共和国教育部 March 01, 2017). The rise of Chinese as an international language arguably plays an important role in ‘diversifying the world’s lingua franca and sharing the market of education’ worldwide (Zhao and Huang 2010, p. 127). The teaching and learning of Chinese as a second or foreign language (CSL/CFL) has also attracted attention in research, and for this reason, journals in mainland China such as *世界汉语教学* Chinese Teaching in the World and *华文教学与研究* Teaching Chinese to Speakers of Other Languages Studies serve as important platforms for teachers, researchers, and policy-makers to undertake scholarly dialogues. Meanwhile, more and more scholars focus on Chinese language education overseas (Lu 2017). International journals, such as *The Asia-Pacific Education Researcher*, *The Modern*

✉ Boning Lyu
millylyu@hku.hk

Yang Gong
frankgongyang@gmail.com

Xuesong Gao
xuesong.gao@unsw.edu.au

¹ Division of Chinese Language and Literature, Faculty of Education, The University of Hong Kong, Hong Kong SAR, China

² School of Education, Faculty of Arts and Social Sciences, University of New South Wales, Sydney, NSW, Australia

Language Journal, and *System*, have also become more open to CSL/CFL teaching and learning research (e.g., Loh et al. 2018; Qi and Lai 2017). The existing systematic reviews have provided some insights of CFL/CSL research, in terms of identifying relevant topical concerns and methodological trends (e.g., Ma et al. 2017; Shen 2013). However, these reviews only reported the studies published in mainland Chinese journals, although some CSL/CFL studies were also published in international journals. Unfortunately, given researchers' imbalanced proficiency in English and Chinese, there have been limited exchanges among researchers who publish their works in Chinese and those who publish in international journals. It seems that research on teaching and learning CSL/CFL within and outside mainland China are two worlds apart; the two groups of researchers may not be fully aware of what their counterparts have achieved in research. Therefore, a review of studies on teaching and learning CSL/CFL published in mainland Chinese and international journals is essential because it would facilitate to build a bridge or a shared knowledge base for the two groups of researchers to engage in productive mutual exchanges. Different from conventional reviews focusing on foreign language teaching and learning research in one country/region, this review was aimed at providing a full picture of CSL/CFL education by comparing studies published in mainland Chinese and international journals (in English) to depict the development trajectories and topical trends, respectively. In addition, this review also identifies the leading researchers and institutions to inform readers who may be interested in looking for researchers and institutions for collaboration. To achieve these goals, a bibliometric analysis was conducted on 1358 articles published in mainland Chinese journals and 175 articles in international journals from 2004 to 2016. The review attempted to answer the following research questions:

- (1) What development trajectories can be identified in studies on the teaching and learning of CSL/CFL?
- (2) What topical issues are researchers in and outside mainland China concerned with in studies on the teaching and learning of CSL/CFL?
- (3) Who and what are the leading researchers and institutions in terms of publications on the teaching and learning of CSL/CFL?

In the following sections, we explain how the review was conducted and then describe the overall development trajectories by identifying the number of journal articles published in Chinese and English language journals, respectively, from 2004 to 2016. We then highlight the critical issues that researchers in and outside mainland China are concerned with in terms of keyword frequency and co-occurrence. Finally, we describe how leading

researchers and institutions have contributed to studies on CSL/CFL.

Methodology

Database Selection

Given the sociopolitical and historical differences in the teaching and learning of CSL/CFL and space constraints, the review focused on journals published in mainland China, excluding Taiwan, Hong Kong, and Macau (Hu and Gu 2002). Therefore, two databases—CNKI (中国知网) and Web of Science (WoS)—were used in the present study. CNKI was selected because it is the largest mainland Chinese journal full-text database in the world and covers almost all kinds of research disciplines. Thomson Reuter's WoS was chosen as the other main database as it is the most comprehensive one covering the majority of refereed journals in social sciences, arts, and humanities (Steinhardt et al. 2017; Darvish and Tonta 2016). We focus on English language journal articles in the database. In general, the two databases have been quite useful for researchers to learn about the progress being made in various subjects and the latest hot topics (Kuang et al. 2016). Furthermore, taking into account the potential impact and the quality of the relevant studies in this field, the review of Chinese publications was restricted to journals listed in the China Social Sciences Citation Index (CSSCI): peer-reviewed core journals 'where CSL/CFL teachers, researchers and policy-makers in China compete to publish their research' (Ma et al. 2017, p. 3).

Article Selection

The review focused on Chinese and international journal publications during the period 2004–2016 because the year 2004 witnessed significant events in the teaching of CSL/CFL worldwide, including the establishment of the first Confucius Institute in South Korea, the start of the 'International Chinese Teacher Volunteer Program,' which involves sending teacher volunteers to foreign countries, and the launch of the 'Chinese Bridge' project, aimed at spreading the Chinese language and culture. All these events mark the Chinese government's ambition to promote the teaching and learning of Chinese globally. Selected search strings were used to search and select articles since the method 'enables inclusion of a broad range of journals and subject categories' (Steinhardt et al. 2017, p. 224). In other words, the search string-based selection of publications can generate an inclusive, interdisciplinary picture of teaching and learning CSL/CFL. The string search was conducted for both Chinese language

and English language articles. After several more test rounds, the topics ‘对外汉语’ and ([education OR teach OR learn] AND “Chinese language”) were adopted for mainland Chinese journals and international journals, respectively, since the two search strings embraced the majority of Chinese language and English language publications related to the teaching and learning of CSL/CFL.

Inclusion Criteria

Consequently, a total of 1,358 Chinese language articles from CNKI and 422 English language articles from WoS from 2004 to 2016 were found. The inclusion criteria are same for both Chinese and English articles: (1) the study should be related to CFL/CSL research, and (2) the article should be published in SSCI/CSSCI journals. Hence, 1780 article titles and abstracts were evaluated and their relevance to this review was assessed. After the intensive evaluation, 1358 Chinese language articles and 175 English language articles were identified as relevant. As the authors’ names and the institutional addresses were sometimes misspelled or recorded in different forms in both databases, the data were checked and cleaned of mistakes by the researchers before analysis.

Analysis and Tools

The current review examined the bibliometric indices of the literature, including author, published journal, publication year, and keyword. Keyword frequency analysis and keyword co-occurrence analysis were also performed, which aimed to indicate the core term and content of a research field (Callon et al. 1983). Keyword co-occurrence refers to the common presence, frequency of occurrence, and close proximity of similar keywords present across the literature, revealing research domains and the cognitive

structures (Chen 2006). The embedded tool of bibliometric analysis in CNKI and Vosviewer, a software which can construct and visualize bibliometric networks, were used to visualize the results (Van et al. 2010).

Results

Overall Development Trajectories

Overall, from 2004 to 2016, mainland Chinese journals published 1358 articles, with an average of more than 100 each year, but the number of publications seems to have reached its peak in 2008, as from 2009, the number began to decline (see Fig. 1). In contrast, while the total number of publications in international journals was much smaller, it had been rising in the previous 13 years. Specifically, Fig. 2 shows a dramatic increase in the number of English language articles beginning in 2010, and a relatively steady growth rate from then on. In other words, Chinese publications continued to play a major role in the field of CSL/CFL teaching research, and international publications also made substantial efforts to respond to the considerably growing demand for Chinese language education around the world.

According to Kosmützky and Putty (2016), a crucial indicator of the maturity of a research field is a concentration of publications in certain journals. Table 1 lists the top 10 mainland Chinese journals based on the percentage of the CSL/CFL studies in relation to the total number of articles published in each journal from 2004 to 2016. The distribution of Chinese articles is skewed because approximately 40% of the articles were published in the top 10 journals. Table 2 shows the top 10 international journals based on the percentage count. Compared to papers in mainland Chinese journals, international journal articles

Fig. 1 Number of papers published in mainland Chinese journals from 2004 to 2016

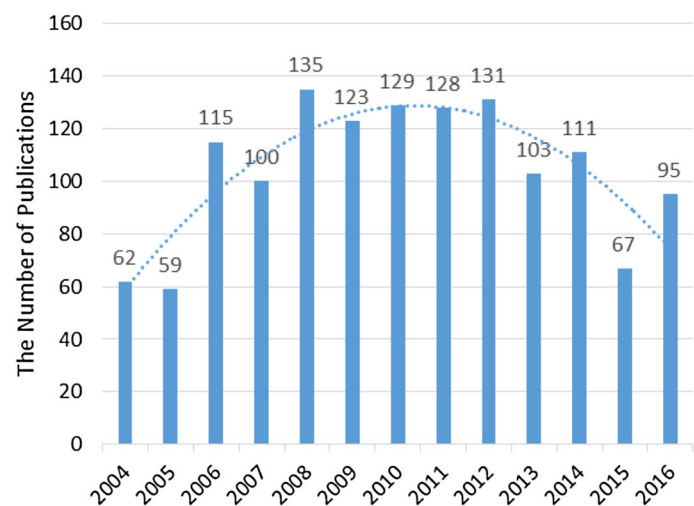


Fig. 2 Number of papers published in international journals from 2004 to 2016

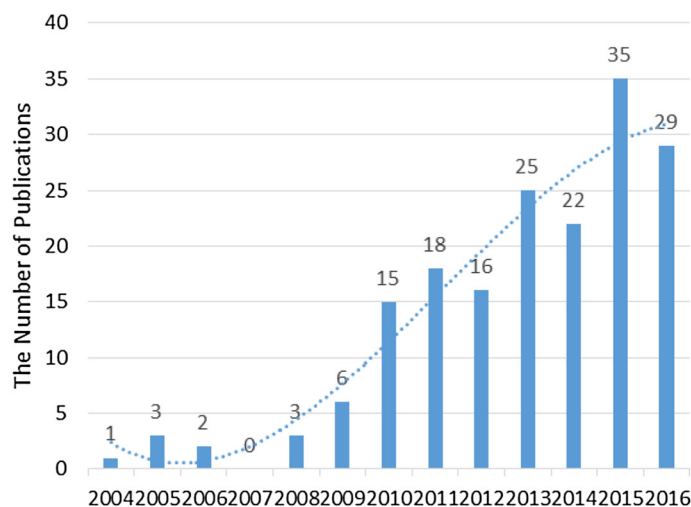


Table 1 Top 10 mainland Chinese journals

Rank	Percentage count (%)	Number of articles	Journal (Chinese name of the journal)	Affiliation & Location
1	16.96	166	<i>Chinese Teaching in the World</i> (世界汉语教学)	Beijing Language and Culture University (Beijing)
2	10.25	129	<i>Language Teaching and Linguistic Studies</i> (语言教学与研究)	Beijing Language and Culture University (Beijing)
3	8.46	66	<i>TCSOL Studies</i> (华文教学与研究)	Ji'nan University (Guangzhou)
4	6.92	81	<i>Hanyu Xuexi</i> (汉语学习)	Yanbian University (Yanji)
5	6.12	103	<i>Applied Linguistics</i> (语言文字应用)	Institute of Applied Linguistics (Beijing)
6	2.75	33	<i>Journal of Capital Normal University (Social Sciences Edition)</i> (首都师范大学学报(社会科学版))	Capital Normal University (Beijing)
7	1.57	22	<i>Zhongguo Yuwen</i> (中国语文)	Institute of Linguistics (Beijing)
8	1.47	29	<i>Journal of Research on Education for Ethnic Minorities</i> (民族教育研究)	Minzu University of China (Beijing)
9	1.40	14	<i>Lexicographical Studies</i> (辞书研究)	Shanghai Lexicographical Publishing House (Shanghai)
10	0.43	14	<i>Modern Educational Technology</i> (现代教育技术)	Tsinghua University (Beijing)

Table 2 Top 10 international journals

Rank	Percentage count (%)	Number of articles	Journal
1	1.54	6	<i>Computer Assisted Language Learning</i>
2	1.11	2	<i>Cogent Education</i>
3	0.64	2	<i>Language, Culture and Curriculum</i>
4	0.38	3	<i>Teaching and Teacher Education</i>
5	0.37	5	<i>The Modern Language Journal</i>
6	0.32	3	<i>System</i>
7	0.28	3	<i>The Asia-Pacific Education Researcher</i>
8	0.24	2	<i>Computers in Human Behavior</i>
9	0.26	2	<i>Foreign Language Annals</i>
10	0.17	2	<i>Journal of Educational Technology & Society</i>

are less specialized to some extent, which indicates that CSL/CFL education outside mainland China is an emerging area of research. More specifically, research on the teaching and learning of CSL/CFL in mainland China not only has its specialized platforms (e.g., *世界汉语教学* Chinese Teaching in the World, *华文教学与研究* Teaching Chinese to Speakers of Other Languages Studies) but also is able to gain support from other applied linguistics journals (e.g., *语言教学与研究* Language Teaching and Linguistic Studies, *语言文字应用* Applied Linguistics). At the same time, CSL/CFL teaching and learning can be identified as a flourishing specialty to a large extent in Beijing, where six well-regarded journals have become a strong engine leading the field. With regard to CSL/CFL studies published in international journals, applied linguistics and education journals mainly provide a forum for international researchers to discuss discoveries and to

exchange their experiences and their ideas on how to facilitate Chinese language teaching and learning (e.g., *The Asia-Pacific Education Researcher*, *Computer Assisted Language Learning*, *The Modern Language Journal*). However, research on the teaching and learning of CSL/CFL outside mainland China seems not to be a specialty since there is no academic journal specializing in publishing Chinese language education articles, at least not in the Web of Science.

Topical Trends

Tables 3 and 4 present the frequency of keywords in the articles in mainland Chinese and international journals, respectively. Generic keywords in both Chinese language and English language papers, such as ‘life,’ ‘globalization,’ ‘language,’ ‘students,’ and so forth, were excluded from the frequency counts. Except for two basic keyword classifications ‘CSL/CFL teaching and learning’ and ‘CSL/CFL,’ which are shared by both mainland Chinese and international journals with high frequencies (192 and 134, respectively, in mainland Chinese journals and 29 and 46, respectively, in international journals), the two tables demonstrate different keyword classifications. For instance, according to Table 3, Chinese research studies especially focus on the teacher dimension, including ‘Classroom teaching content,’ ‘Teaching materials,’ ‘Teaching methods and processes,’ and ‘Teacher education.’ At the same time, ‘Global spread of Chinese language’ is an important research topic in Chinese publications. In contrast, English language articles pay more attention to the student dimension, such as ‘Learning content,’ ‘Student variations,’ and ‘Student language learning’ (Sung et al. 2015). Moreover, international journals are highly concerned with research issues related to the use of information and communication technology

Table 3 Top 12 most frequent keyword classifications in mainland Chinese journals

Rank	Frequency	Keyword classification
1	192	CSL/CFL teaching and learning
2	134	CSL/CFL
3	52	Classroom teaching (vocabulary, character, and grammar)
4	49	Teaching materials (textbooks and dictionaries)
5	43	Teaching methods and strategies
6	36	Teacher education
7	19	Global spread of Chinese language
8	16	Chinese expression errors and error analysis
8	16	Confucius Institute and soft power
10	15	Culture and intercultural communication
11	11	Chinese language corpora
12	10	Foreign students

Table 4 Top 12 most frequent keyword classifications in international journals

Rank	Frequency	Keyword classification
1	46	CSL/CFL
2	40	Information and communication technology (ICT) and Chinese language education
3	29	CSL/CFL teaching and learning
4	22	Culture and intercultural communication
5	20	Learning content (character, grammar, Pinyin, spoken, and writing)
6	14	Student variations
7	11	Teacher education and development
8	9	Teaching methods
8	9	Student language learning (strategy, motivation, and attitude)
10	6	Confucius Institute and soft power
11	4	Chinese language corpora
12	3	Curriculum design

(ICT) in CSL/CFL language teaching and learning (Wong et al. 2015; Wu et al. 2010). In regard to ‘Culture and intercultural communication,’ it seems that researchers outside mainland China place more value on improving learners’ intercultural competency through CSL/CFL teaching (e.g., Curdt-Christiansen 2008). Also, ‘Confucius Institute and soft power’ as well as ‘Chinese language corpora’ are important topics that interest both Chinese and international scholars. Studies related to Confucius Institute especially interested more Chinese scholars, which might be due to the fact that the body of the CFL/CSL researchers in mainland China is very diverse, including CSL teachers, Chinese linguists, and scholars in the fields

of language policy or social communication, and the latter two groups of researchers especially made the contributions to the Confucius Institute research.

Figures 3 and 4 indicate the social network structure among keywords in Chinese language and English language articles, respectively. In the network of Chinese publications, the following keywords are connected with many different keywords and play a central role: ‘CSL/CFL teaching and learning,’ ‘CSL/CFL,’ ‘Classroom teaching,’ ‘Teaching materials,’ and ‘Teaching methods and strategies.’ ‘CSL/CFL teaching and learning’ and ‘CSL/CFL’ have the highest occurrence in publications as they were used as search terms in CNKI. Three thematic

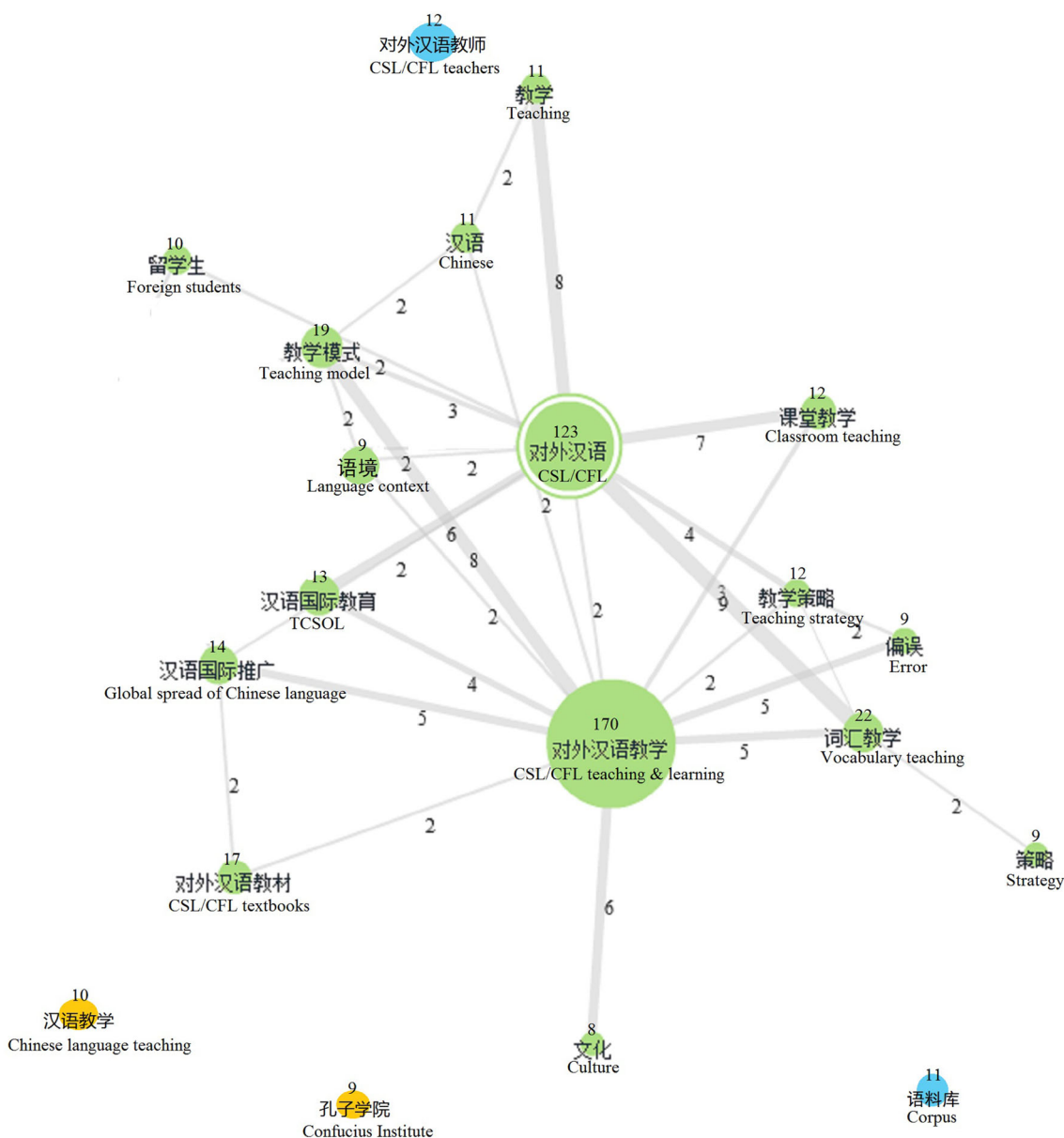


Fig. 3 Keywords co-occurrence in mainland Chinese journals



Fig. 4 Keywords co-occurrence in international journals

clusters were identified by the embedded tool of bibliometric analysis on CNKI: a CSL/CFL teaching and learning cluster, a Chinese language corpus cluster, and a Confucius Institute cluster. Specifically, the CSL/CFL teaching and learning cluster is the largest of the three clusters and in the center of the whole network. The three clusters are dependent and not connected with each other. In contrast, in the social network structure of English language publications, ‘Chinese (language),’ ‘Learners,’ and ‘Education’ are linked with many various keywords. Five clusters were identified by Vosviewer: a Confucius Institute cluster, a ‘Chinese language learning in Singapore’ cluster, a learning content cluster, a learning strategy

and performance cluster, and a student variations cluster. The Confucius Institute cluster is the largest among the five clusters, but it does not locate at the center. Furthermore, the five thematic clusters are closely correlated with each other.

In light of the frequency and the co-occurrence of keywords in Chinese language and English language journal articles, many differences can be seen between the studies of CSL/CFL inside and outside mainland China. First of all, scholars in and outside mainland China have distinctly different research foci. Mainland Chinese researchers focus on developing CSL/CFL teachers’ professional skills and competency, and thus they have

explored relevant issues, including teachers' instructional practices, teacher education, and teacher development. In contrast, researchers outside mainland China are highly concerned with student learning achievement and finding ways to enhance students' language skills and their competency in intercultural communication. Hence, they expect studies to inform their support for student learning by examining learner variation, learner attitudes, learning processes, and so on. Second, Chinese language teaching research in and outside mainland China are projected to be at different stages of development in the analysis. In particular, research on the teaching and learning of CSL/CFL has become a relatively independent discipline in mainland China, with quite a few sub-areas of inquiry, whereas outside mainland China it is a relatively new field without a clear focus, as reflected by the studies published in international journals. Third, compared to mainland Chinese researchers, researchers outside mainland China have explored issues that are much more specific and fine grained, such as Pinyin learning, student attitudes in learning Chinese, and CSL/CFL education in the higher education context (Chai et al. 2016; Lee and Kalyuga 2011; Wong et al. 2013).

Leading Researchers and Institutions

Tables 5 and 6 show 10 leading Chinese researchers and 10 leading international researchers, respectively, along with their total number of publications and affiliations from 2004 to 2016. The total number of articles authored by these leading Chinese researchers (73) doubles the number of articles authored by the leading international researchers (35). In terms of the Chinese researchers' affiliations, most of the researchers are from universities in Beijing, and others are from universities in Xiamen, Wuhan, Shanghai, and Guangzhou. This means that Beijing, as home to the highest number of higher education institutions in China, has a large number of productive researchers in CSL/CFL teaching and learning. At the same time, the other four cities, with rich educational resources, also play crucial roles in promoting Chinese language education research. As for international researchers, researchers from Singapore were found to have been highly productive and active in the field of CSL/CFL research, followed by researchers from Taiwan and Hong Kong. Most of these researchers are of Chinese cultural origins. In contrast, Western researchers rarely engage themselves in research on Chinese language education. Furthermore, researchers from mainland China contribute little to English journals in the field of CSL/CFL education research, and vice versa. In addition to researchers' contributions, very little collaboration was observed between researchers who publish their

work in Chinese language journals and those who publish in English journals.

As shown in Table 7, from 2004 to 2016, the top 10 Chinese higher education institutions published almost 40% of all the publications in mainland Chinese journals. Six universities in Beijing played a central part in this regard, followed by the other four universities in Guangzhou, Shanghai, and Xiamen. In particular, Beijing Language and Culture University has played a leading role in research on CSL/CFL teaching and learning with its commitment to promoting Chinese language and culture across the world. Apart from Beijing, it should be noted that Guangzhou, Shanghai, and Xiamen, as the most developed and the earliest opening-up cities in China, have attracted a great many foreign students from different countries; at the same time, these cities have also invested heavily in relevant studies. Compared to the publications from Chinese institutions, the English language articles from the top 10 universities in different countries/regions accounted for about 26% of the relevant publications in all international journals (see Table 8). Two universities in Singapore were the most productive ones in terms of publications, followed by universities in Taiwan, Hong Kong, Australia, Russia, and China.

In short, mainland Chinese researchers and universities have focused on publishing studies in Chinese Social Science Citation Index (CSSCI) journals in China, but they have rarely been involved in publishing English language articles in international journals. Researchers and universities in Singapore, Taiwan, and Hong Kong have published more in international journals and have thus contributed more to promoting research on the teaching and learning of CSL/CFL overseas. In addition, little international collaboration was observed between scholars in mainland China and other contexts, and that there has been little exchange or communication between research institutions in mainland China and other contexts.

Discussion

Previous literature reviews addressing the development of research on CSL/CFL teaching and learning reported methodological trends and research themes or reviewed research only on particular geographic areas and themes in Chinese language education (e.g., Shen 2013). In contrast, the present review of studies published during the period from 2004 to 2016 and included in both a Chinese language journal database in mainland China and an international journal database depicts a more comprehensive picture of the development of relevant research, the issues that researchers in and outside mainland China are concerned with, and the achievements in research on Chinese

Table 5 Top 10 leading Chinese researchers in terms of journal publication

Rank	Number	Author	Affiliation and Location
1	10	LIU Songhao	Peking University (Beijing)
2	9	ZHAO Jinming	Beijing Language and Culture University (Beijing)
3	8	RUAN Jing	Minzu University of China (Beijing)
4	8	SUN Dejin	Beijing Language and Culture University (Beijing)
5	7	LI Quan	Renmin University of China (Beijing)
6	7	LI Rulong	Xiamen University (Xiamen)
7	6	ZHANG Yi	Central China Normal University (Wuhan)
8	6	WU Yongyi	East China Normal University (Shanghai)
9	6	ZHOU Xiaobing	Sun Yat-sen University (Guangzhou)
10	6	LU Jianming	Peking University (Beijing)

Table 6 Top 10 leading international researchers in terms of journal publication

Rank	Number	Author	Affiliation and Location
1	8	Wong Lung-Hsiang	Nanyang Technological University (Singapore)
2	6	Chai Ching Sing	Nanyang Technological University (Singapore)
3	3	Wu Chung-Hsien	National Cheng Kung University (Taiwan)
4	3	King Ronnel B	Education University of Hong Kong (Hong Kong)
5	3	Curd-Christian Xian Lan	University of Reading (UK)
6	3	Lin Wei-Chun	National Taiwan Normal University (Taiwan)
7	3	Looi Chee-Kit	Nanyang Technological University (Singapore)
8	2	Li Li	Nanyang Technological University (Singapore)
9	2	Li Xiao	Anyang Normal University (China)
10	2	Lin Chien-Yu	National Taiwan Normal University (Taiwan)

Table 7 Top 10 leading institutions in mainland Chinese journals

Rank	Number of articles	Institution and Location
1	183	Beijing Language and Culture University (Beijing)
2	72	Beijing Normal University (Beijing)
3	60	Peking University (Beijing)
4	46	Ji'nan University (Guangzhou)
5	45	Capital Normal University (Beijing)
6	34	East China Normal University (Shanghai)
7	32	Minzu University of China (Beijing)
8	25	Xiamen University (Xiamen)
9	20	Renmin University of China (Beijing)
10	20	Sun Yat-sen University (Guangzhou)

language education. First of all, mainland China has already become the major producer of CSL/CFL teaching and learning research, although international scholars have made notable efforts in this emerging field in Western countries. As the center of China's political, economic, cultural, and international exchange, Beijing has the largest number of higher education institutions in mainland China that have attracted tens of thousands of foreign students

and many CSL/CFL teachers and researchers. In addition, as the location of Hanban headquarters, Beijing also has a large amount of financial, policy, and academic support to promote Chinese language education. Taking Beijing Language and Culture University as an example, it has 7172 international students, 10 teaching units, 32 institutions, and two core journals on CSL/CFL teaching and learning. All these have contributed to the formation of 'a

Table 8 Top 10 leading institutions in international journals

Rank	Number of articles	Institution and Location
1	18	Nanyang Technological University (Singapore)
2	6	National Taiwan Normal University (Taiwan)
3	4	Education University of Hong Kong (Hong Kong)
4	4	Macquarie University (Australia)
5	3	Tomsk State University (Russia)
6	3	Yanbian University (China)
7	2	Nanjing University (China)
8	2	National Chi Nan University (Taiwan)
9	2	National Taiwan University (Taiwan)
10	2	National University of Singapore (Singapore)

combined effect' in making Beijing Language and Culture University one of the most active research universities in mainland China. Although Guangzhou, Shanghai, Xiamen, and Wuhan perform less well in research productivity than Beijing, they have more economic, educational, and policy resources than other inland cities in mainland China, and therefore the universities in these four cities also publish many publications in mainland Chinese journals. Given the existing combined effect as mentioned above, the phenomenon of Chinese articles on CSL/CFL teaching and learning mainly being published by institutions in developed cities in China will continue. The concentration of leading researchers and research resources in developed cities in mainland China observed in our analysis may reflect an inequitable and unbalanced development of CSL/CFL programs throughout the country. For instance, according to the newest statistics report of foreign students in China, both Beijing and Shanghai ranked top two in terms of attracting foreign students (*中华人民共和国教育部* March 01, 2017), which may also be correlated with the number of publications throughout the country.

In international journals, Singapore is playing a central part in international scholarship on Chinese language education, followed by Taiwan and Hong Kong. More specifically, Nanyang Technological University performs best in publications output in international journals. Singapore is a multilingual country (English, Malay, Chinese, and Tamil), where English is the common language and Singaporeans are mostly bilingual. In general, Singapore Chinese researchers are fluent in both Chinese and English, which enables them to publish in international journals. This finding is consistent with the finding of Man et al. (2004), who empirically showed that 'countries with excellent English fluency had high publication output' (p. 814). Although international applied linguistics journals welcome submissions on CSL/CFL teaching and learning research at present, it still seems to be very challenging for

mainland Chinese researchers to compete with their Singaporean or other international counterparts.

Secondly, it is observed that researchers in and outside mainland China focus on different research issues with different perspectives. Mainland Chinese researchers are much concerned with teacher education, teacher instructional practice, and teacher development, whereas researchers outside mainland China mostly aim to help learners to enhance learners' problem-solving competence. This finding is in accordance with Ma et al.'s (2017) study, which found that a great number of studies in four core mainland Chinese journals on CSL/CFL teaching and learning were related to Chinese language teachers' concepts, theories, and pedagogical approaches in teaching. A possible explanation for this finding lies in the difference between the Chinese education system and a constructivist-based education system. In the Chinese education system, teachers are generally 'treated with formal deference' and 'conceptualized as the authority of knowledge' (Moloney and Xu 2015, p. 3). This mostly results in teacher-centered classrooms and also a teacher-centered view of research. In contrast, the constructivist-based education system in which researchers outside mainland China are trained posits that 'Only learners themselves can be the active participants in the learning process' (Simons 1993, p. 294–295). Therefore, in this context, the teacher acts more as a facilitator in the classroom, and researchers normally pay more attention to students' learning process and achievements. In addition, while there is an increasing demand for Chinese language teaching in the world, the shortage of qualified teachers in both China and Western countries has been an enormous challenge for policy-makers and higher education institutions (Wang et al. 2013). Accordingly, as the world's major exporter of CSL/CFL teachers and producer of CSL/CFL education, the Chinese government and Chinese researchers typically pay close attention to the 'teacher factor.'

Third, in light of the number of research articles published in 2004–2016, researchers and institutions in and outside mainland China have made considerable efforts to promote CSL/CFL teaching and learning across the world. However, although some researchers and institutions within and outside China play a leading role in research on Chinese language education, few cross-border research alliance or collaborations can be seen among them. On the one hand, it might be that Chinese and international research institutions have different research paradigms and target audiences, which results in a cultural barrier to truly international cooperation. On the other hand, researchers' proficiency in both English and Chinese language can be an important factor influencing them to access the publishing community of CSL/CFL teaching and learning research (Man et al. 2004).

Conclusion and Limitation

This paper reviews the development trajectories of teaching and learning Chinese as a second or foreign language in the past 15 years by analyzing the bibliometric indicators of publications in both mainland Chinese journals and international journals from 2004 to 2016. The results showed that the number of publications on the teaching and learning of CSL/CFL had been increasing, especially in the international journals. The analysis also revealed that studies in mainland China tended to address different issues from those in studies published in international journals. The results also suggested that in mainland China, this field has become relatively advanced in economically developed areas, such as Beijing, Shanghai, Guangzhou, and Xiamen. As for contexts outside mainland China, CSL/CFL teaching and learning is mainly concentrated in Taiwan, Hong Kong, and Singapore. It must be noted that our analysis and comparisons were confined to journals that are either indexed as core mainland Chinese journals or Social Science Citation Index journals, and thus our interpretation may be compromised by our methodological decision. In fact, we are aware that there are an increasing number of international journals on Chinese language education, such as *Chinese Language and Discourse* (John Benjamins publishing company) and *Global Chinese* (De Gruyter), which have yet to be indexed by the SSCI. This increase testifies to the growing maturity of the field internationally, but the journals' current status also indicates that the field still has some way to go before it is accepted as mainstream by international applied linguistics journals. Therefore, we draw on our findings to offer the following suggestions to researchers, journals, and institutions so that they can optimize various resources to enhance research on Chinese language education inside and outside mainland China. We

believe that such efforts may help relevant research gain more prominence in international mainstream journals.

First, we believe that more efforts to bridge CSL/CFL research inside and outside China should be undertaken since CSL/CFL teaching contexts, such as Confucius Institutes, are often associated with both a university in mainland China and an overseas university. In such contexts, the teachers in Confucius Institutes can serve as an effective bridge to connect researchers inside and outside mainland China. Institutions could provide more financial resources and grant opportunities to build a platform for international cooperation and to support cross-border projects. For instance, there has been an urgent need to investigate heritage students' Chinese language learning, and there have been some scattered studies conducted in Canada and the USA (e.g., Wong and Xiao 2010; Wen 2011). However, it can be more valuable for CSL/CFL researchers to look into the complex ecology of heritage Chinese language learning in diverse contexts worldwide (Li and Duff 2008). At the same time, institutions need to recruit more talent with bilingual or multilingual competence, especially in Chinese and English.

Second, we hope that both mainland Chinese and international journals can prioritize the publication of cross-border studies because teamwork projects generally benefit research on critical aspects of CSL/CFL teaching and learning. We also further urge leading international journals to look at the emerging regions of Chinese language education. For example, even though there is an ongoing growth in the number of Chinese language learners and in the number of Confucius Institutes and Confucius Classrooms in Australia, relatively little attention has been given to Chinese language learning in Australian schools (Moloney and Xu 2015).

Last but not least, we would encourage researchers in and outside mainland China to co-organize academic dialogues on Chinese language education in order to build international links and create cross-border collaboration opportunities. These may discuss and address research issues of common concern in CSL/CFL teaching. We also believe that journals can provide such a platform to facilitate relevant dialogues and raise researchers' awareness, especially mainland Chinese researchers' awareness on each other's work in order to internationalize their research in support of global Chinese language education.

The study has several limitations. First, we only reviewed the journal articles related to CSL/CFL research in the CSSCI and SSCI journals because journal publications are increasingly valued more than other types of publication in institutional research assessment exercises. Hence, non-CSSCI/SSCI journal publications, books, or book chapters were excluded from the review. This might have skewed the findings, especially those on the leading

researchers and institutions in the field of CSL/CFL research. As for the database, considering the sociopolitical and historical differences in the teaching and learning of CSL/CFL and space constraints, the review excluded the studies published in the journals that indexed in Taiwan Social Science Citation Index (TSSCI). Another limitation is that the tools we used in this study may be unable to provide the detailed indices of the networking structure such as betweenness centrality, closeness centrality, and degree centrality, which can indicate the node that takes up critical position in the network (Freeman 1978). Thus, there is still a need to further illustrate the data to provide more solid evidence when reviewing CSL/CFL studies. Moreover, a variety of publications (i.e., books) and database source (i.e., Taiwan electronic periodical services) should be included in the future study to provide more insights of CSL/CFL research.

References

- Callon, M., Courtial, J. P., Turner, W. A., & Bauin, S. (1983). From translations to problematic networks: An introduction to co-word analysis. *Social Science Information*, 22(2), 191–235.
- Chai, C. S., Wong, L. H., & King, R. B. (2016). Surveying and modeling students' motivation and learning strategies for mobile-assisted seamless Chinese language learning. *Journal of Educational Technology & Society*, 19(3), 170.
- Chen, C. (2006). CiteSpace II: Detecting and visualizing emerging trends and transient patterns in scientific literature. *Journal of the Association for Information Science and Technology*, 57(3), 359–377. <https://doi.org/10.1002/asi.20317>.
- Chen, Y. L., Yang, T. A., & Chen, H. L. (2017). Challenges encountered in a Chinese immersion program in the United States. *The Asia-Pacific Education Researcher*. <https://doi.org/10.1007/s40299-017-0337-2>.
- Curd-Christiansen, X. L. (2008). Reading the world through words: Cultural themes in heritage Chinese language textbooks. *Language and Education*, 22(2), 95–113. <https://doi.org/10.2167/le721.0>.
- Darvish, H., & Tonta, Y. (2016). Diffusion of nanotechnology knowledge in Turkey and its network structure. *Scientometrics*, 107(2), 569–592. <https://doi.org/10.1007/s11192-016-1854-0>.
- Freeman, L. C. (1978). Centrality in social networks conceptual clarification. *Social Networks*, 1(3), 215–239. [https://doi.org/10.1016/0378-8733\(78\)90021-7](https://doi.org/10.1016/0378-8733(78)90021-7).
- Hanban. (2017). *2016 Confucius Institute Annual Development Report*. Beijing: Confucius Institute Headquarters.
- Hu, G. W., & Gu, Y. Q. (2002). An annotated bibliography of selected research on Chinese ELT contexts and EFL/ESL learners. *Asian Journal of English Language Teaching*, 12, 229–267.
- Kosmützky, A., & Putty, R. (2016). Transcending borders and traversing boundaries: A systematic review of the literature on transnational, offshore, cross-border, and borderless higher education. *Journal of Studies in International Education*, 20(1), 8–33. <https://doi.org/10.1177/1028315315604719>.
- Kuang, Y., Hong, M., & Zeng, J. (2016). Big data research analysis based on bibliometrics. *Hans Journal of Data Mining*, 6(3), 125–137. <https://doi.org/10.12677/hjdm.2016.63015>.
- Lee, C. H., & Kalyuga, S. (2011). Effectiveness of on-screen pinyin in learning Chinese: An expertise reversal for multimedia redundancy effect. *Computers in Human Behavior*, 27(1), 11–15. <https://doi.org/10.1016/j.chb.2010.05.005>.
- Li, D., & Duff, P. (2008). Issues in Chinese heritage language education and research at the postsecondary level. In A. W. He & Y. Xiao (Eds.), *Chinese as a Heritage Language: Fostering Rooted World Citizenry* (pp. 2–32). Honolulu, HI: University of Hawai'i Press.
- Loh, E. K. Y., Liao, X., & Leung, S. O. (2018). Acquisition of orthographic knowledge: Developmental difference among learners with Chinese as a second language (CSL). *System*, 74, 206–216. <https://doi.org/10.1016/j.system.2018.03.018>.
- Lu, D. et al. (2017). “Da huayu” duoren tan. [Expert views on the Greater Chinese]. *Chinese Journal of Language Policy and Planning*, 2(4), 81–87. <https://doi.org/10.19689/j.cnki.cn10-1361/h.2017.04.016>.
- Ma, X., Gong, Y., Gao, X., & Xiang, Y. (2017). The teaching of Chinese as a second or foreign language: a systematic review of the literature 2005–2015. *Journal of Multilingual and Multicultural Development*, 38(9), 815–830. <https://doi.org/10.1080/01434632.2016.1268146>.
- Man, J. P., Weinkauf, J. G., Tsang, M., & Sin, J. H. D. D. (2004). Why do some countries publish more than others? An international comparison of research funding, English proficiency and publication output in highly ranked general medical journals. *European Journal of Epidemiology*, 19(8), 811–817. <https://doi.org/10.1023/B:EJEP.0000036571.00320.b8>.
- 中华人民共和国教育部网站, March 1, 2017. 2016 年度我国来华留学生情况统计. http://www.moe.gov.cn/jyb_xwfb/xw_fbh/moe_2069/xwfbh_2017n/xwfb_170301/170301_sjtj/201703/t20170301_297677.html.
- Moloney, R., & Xu, H. (2015). Transitioning beliefs in teachers of Chinese as a foreign language: An Australian case study. *Cogent Education*, 2(1), 1–15. <https://doi.org/10.1080/2331186X.2015.1024960>.
- Qi, X., & Lai, C. (2017). The effects of deductive instruction and inductive instruction on learners' development of pragmatic competence in the teaching of Chinese as a second language. *System*, 70, 26–37. <https://doi.org/10.1016/j.system.2017.08.011>.
- Shen, H. H. (2013). Chinese L2 literacy development: Cognitive characteristics, learning strategies, and pedagogical interventions. *Language and Linguistics Compass*, 7(7), 371–387. <https://doi.org/10.1111/lnc3.1203>.
- Simons, P. R. J. (1993). Constructive learning: The role of the learner. In T. M. Duffy, J. Lowyck, & D. H. E. Jonassen (Eds.), *Designing Environments for Constructive Learning* (pp. 291–313). Heidelberg: Springer.
- Steinhardt, I., Schneiderberg, C., Götze, N., Baumann, J., & Krücken, G. (2017). Mapping the quality assurance of teaching and learning in higher education: the emergence of a specialty? *Higher Education*, 74(2), 221–237. <https://doi.org/10.1007/s10734-016-0045-5>.
- Sung, Y. T., Lin, W. C., Dyson, S. B., Chan, K. E., & Chen, Y. C. (2015). Leveling L2 texts through readability: Combining multilevel linguistic features with the CEFR. *The Modern Language Journal*, 99(2), 371–391. <https://doi.org/10.1111/modl.12213>.
- Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>.
- Wang, W., & Curdt-Christiansen, X. L. (2016). Teaching Chinese to international students in China: Political rhetoric and ground realities. *The Asia-Pacific Education Researcher*, 25(5–6), 723–734. <https://doi.org/10.1007/s40299-016-0316-z>.

- Wang, D., Moloney, R., & Li, Z. (2013). Towards internationalising the curriculum: A case study of Chinese language teacher education programs in China and Australia. *Australian Journal of Teacher Education*, 38(9), 116–135. <https://doi.org/10.14221/ajte.2013v38n9.8>.
- Wen, X. (2011). Chinese language learning motivation: A comparative study of heritage and non-heritage learners. *Heritage Language Journal*, 8(3), 41–66.
- Wong, L. H., Chai, C. S., Chen, W., & Chin, C. K. (2013). Measuring Singaporean students' motivation and strategies of bilingual learning. *The Asia-Pacific Education Researcher*, 22(3), 263–272. <https://doi.org/10.1007/s40299-012-0032-2>.
- Wong, L. H., Chai, C. S., Zhang, X., & King, R. B. (2015). Employing the TPACK framework for researcher-teacher co-design of a mobile-assisted seamless language learning environment. *IEEE Transactions on Learning Technologies*, 8(1), 31–42. <https://doi.org/10.1109/TLT.2014.2354038>.
- Wong, K. F., & Xiao, Y. (2010). Diversity and difference: Identity issues of Chinese heritage language learners from dialect backgrounds. *Heritage Language Journal*, 7(2), 153–187.
- Wu, C. H., Liu, C. H., Harris, M., & Yu, L. C. (2010). Sentence correction incorporating relative position and parse template language models. *IEEE Transactions on Audio, Speech and Language Processing*, 18(6), 1170–1181. <https://doi.org/10.1109/TASL.2009.2031237>.
- Zhao, H., & Huang, J. (2010). China's policy of Chinese as a foreign language and the use of overseas Confucius Institutes. *Educational Research for Policy and Practice*, 9(2), 127–142. <https://doi.org/10.1007/s10671-009-9078-1>.