Mapping Chinese Language Pedagogy from 1966 to 2013: A Bibliometric Study of the *Journal of Chinese Language Teachers Association*

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Abstract This article presents the results of a bibliometric study on the evolution of Chinese language pedagogy over the past five decades. It is based on the 745 articles published in the *Journal of the Chinese Language Teachers Association* (*JCLTA*) from 1966 to 2013. Taking the *JCLTA* as its corpus of study, this paper attempts to provide an overview of research on Chinese language pedagogy, both in quantitative and qualitative terms. Apart from offering a diachronic analysis of the object of study and research methods adopted by Chinese language teachers that brings us up to the current situation, this article identifies both the main focus of research and those areas that have been largely overlooked. It also provides a description of the geographical and social distribution of the articles, including statistics on the authors and institutions that offers a broad picture of the main actors engaged in this field. We believe our findings can help researchers and Chinese language teachers to reflect on the important issues in this area and search for possible future directions in research.

Keywords: teaching Chinese as a foreign language, bibliometric study, *Journal of the Chinese Language Teachers Association*, Chinese language pedagogy research

提要：本文旨在分析最近五十年来汉语教学法的演变，并介绍我们以此为目的所做的一项文献计量研究的成果。这项研究以《中文教师学会学报》1966 年至 2013 年间发表的 745 篇文章为基础，以该刊物为研究主体，力求从质和量两个方面对汉语教学法研究的演变提供一个全面而概括的描述。本文针对研究对象及各中文教师采用的研究方法提供了一个历时性分析，由过去引入现状，以辨析其重点研究范畴以及长期以来备受忽略的领域各有哪些。此外，本文描述了相关作者的社会及地域分布情况，包括对作者及其所属机构的数据统计，从而提供了一幅该领域内主要研究人员的全景分布图。相信我们的研究成果可以帮助相关研究人员及对外汉语老师，尤其是同行新秀，反思该领域内最重要的问题，并探求潜在的未来研究发展方向。
关键词：对外汉语教学、文献计量研究、《中文教师学会学报》、汉语教学法研究

1. Introduction

This article attempts to provide an overview of the research carried out in the discipline of teaching Chinese as a foreign language (TCFL) in the last five decades, taking the articles published in the *Journal of the Chinese Language Teachers Association* (*JCLTA*) from 1966 to 2013 as a corpus of study.

Back in the 1980s, Walton (1989, p. 25) claimed there was an urgent need to agree on the subject matter to be studied in the area of TCFL prior to establishing a research agenda. However, despite the significant research carried out, there has been little debate or consensus as to which are, or should be, the main objects of study. As Chinese language instructors, we should not only pursue research in those areas where we think our teaching does not meet our needs, but also to keep abreast of what is being published in our discipline to improve everyday practice in the classroom. So, we agree with Ke (2012, p. 43-4) when he points out that "[t]heory and research directly concern the quality, effectiveness and efficiency of our instruction" and "it is ultimately the nature of the accumulated body of knowledge that determines the quality of our instruction." Mapping Chinese language pedagogy research can contribute to setting a research agenda and, consequently, bridge the gap between theory and practice. Hence, this article makes a diachronic analysis of the evolution of research on Chinese language pedagogy and the current state of the art. Furthermore, it attempts to identify those areas which have been the main focus of Chinese language teachers' research interests, from which we are able to pinpoint those areas that have been overlooked and that might be worth researching in the future.

Although a number of scholars have written about the state of the field of CFL pedagogy (Walton, 1989; Ke, 2012, Wang, 2012), previous reviews only offer partial accounts regarding the period or topics covered. Ke's (2012) excellent synthesis article, built on previous synthesis studies, exclusively focuses on the most significant CFL empirical studies conducted since the late 1980s; Walton (1989) offers a very personal account of the situation in the USA from 1979 to 1989; and Wang (2012) evaluates the development in the field from 2004 to 2012. There are three aspects which distinguish our study from previous articles: the methodological approach (it adopts an empirical methodology, since it is a bibliometric study based on a self-built corpus combining both quantitative and qualitative analysis), the exhaustiveness of its scope in terms of time-span and topics covered (it includes all the articles published by the *JCLTA* until 2013, thus covering almost its complete history in the past fifty years), and the fact that our data are the most recent and up to date.

In order to map the development of research in the field over the past five

decades, the following research questions are addressed: Which are the most and the least researched topics? Has the discipline evolved in terms of research methods? Who are the main agents involved in TCFL research?

The following section explains the design and methodology used: how the corpus was created, criteria for labeling and decision-making and how the information was processed and analyzed. Section 3 presents the results and discussion of the data. It starts with a summary of the data as a whole, followed by a description of the geographical and social distribution of the articles, including statistics on the authors and institutions, which can shed light on the main figures involved in TCFL and their research. It also provides an overview of the methodological approaches adopted and a thematic analysis of the articles. The conclusions reflect on the main contributions and limitations of this study, with suggestions for future research.

2. Methodology
2.1. Corpus

We have chosen the *Journal of the Chinese Language Teachers Association* as the source of articles to build our corpus of study for several reasons. First, there are other journals that could be analyzed, such as 《语言教学与研究》 (1979),《云南师范大学学报（对外汉语教学与研究版)》(1984),《世界汉语教学》(1987),《国际汉语研究》(2002),《華語文教學研究》(2004), *Journal of Technology and Chinese Language Teaching* (2010), and《汉语国际传播研究》 (2011). However, the *JCLTA* is the longest standing journal on Chinese pedagogy: the Chinese Language Teachers Association (CLTA) celebrated its 50th anniversary in 2012 and the journal itself was founded in 1966.[1] Second, because as Wang (2012, p. 27) acknowledges, this journal has contributed to establishing a strong research tradition in Chinese language teaching and has played a key role in disseminating knowledge and expertise. Third, because even though it is based in the USA, it has proved inclusive, integrating different research traditions and cultures from all over the world, mainly from East Asia and different Western countries. Moreover, it publishes both in English and Chinese, potentially appealing to an international authorship and a broad readership. Therefore, we believe *JCLTA* can be considered a representative journal of the research in the discipline.

The corpus of this study comprises the 745 articles published in the *JCLTA*

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[1] Other institutional referents are the Taiwanese World Chinese Language Association, founded in 1972, the network Chinese Conference, which annually organizes conferences on Chinese language pedagogy, starting in 2000 (see: http://www.chineseconference.org/AboutUs.html), and the European Association of Chinese Language Teachers founded in 2015.

since 1966 until the last issue, which was published at the time the database was generated, namely volume 48:3, published in October 2013. It includes all the articles published in the 3 issues this journal publishes every year under the sections "articles" and "pedagogy". This second section —which ran from 1979 until 1987— has been included because it focused on gathering contributions directly related with practical concerns about pedagogical issues by practicing teachers and because from 1988 on the articles under this section went back to the main section of "articles". According to the editor in charge at that time, many members of the profession felt that pedagogical research had become increasingly more complex, more important and that articles on pedagogy should be given the same scholarly recognition as those on linguistics or literature (Tai, 1988, p. ii). The aim of this editorial change was, therefore, two-fold: to reflect changes in the profession, and to promote scholarly research in TCFL.

2.2. Database Design

The database is made up of three different parts, the first of which collects all the bibliographical and descriptive information corresponding to each article. Data for each article includes: year of publication, volume and issue, title, author's name and number of authors, author's ethnic origin (Chinese/non-Chinese), author's affiliation and country where the institution is located, language of the article, orthography used (traditional or simplified characters) and transcription system used (if any), and, finally, number of pages. The analysis of all these variables has provided us with a social perspective on the data.[2]

The second part of the database concerns methodological issues from the perspective of the kind of research conducted in each article, namely primary or secondary research, which will be defined below in section 3.2.

The third part comprises several kinds of information and categories that allow for a thematic analysis, which has provided an overview of the emerging themes in Chinese language pedagogy research published in this journal over the past fifty years. Initially, the *JCLTA* topic index provided in the Chinese Language Teachers Association webpage[3] was a first point of reference in designing the database, but since we wanted to have more precise and detailed information concerning the contents of the articles, we realized this classification did not meet our needs. However, some of the categories used, such as Culture, Litera-

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[2] The gender variable has not been taken into account because in Chinese it is not always possible to ascertain author's gender from his/her name, especially if it is only written in pinyin.

[3] Namely: Applications, Applied Linguistics and Acquisition, Cultural Discussions, Educational Technology, Lexicography and Characters, Literature, Pedagogical Issues, Report, Review, Index. See: http://clta-us.org/publications/jclta-online/jclta-index/ (last accessed 19th March 2014).

ture, and Lexicography and Characters were maintained in our database. The keywords provided in the articles were not useful for two reasons. On the one hand, keywords were not systematically included until 2009. On the other hand, keywords are not chosen from a close set, but are an open-ended category and as such they are too disperse to be analyzed using quantitative methods. Full access was available to all issues and after thorough reading, a categorization was agreed on for each entry. By adopting a consensus-building approach we wanted to control the degree of subjectivity that could result from only one person performing the classification.

Firstly, all the articles were classified as primary or secondary research, according to the type of data collected, findings presented and the type of analysis carried out. Primary research studies were in turn subdivided into three categories: qualitative, quantitative, and descriptive. Secondly, all articles were also tagged according to a series of parameters:

- main object of study (language, culture or literature),
- language variety (Standard Chinese, Chinese topolects or Classical Chinese),
- levels of language structure (phonology, morphosyntax, pragmatics, and semantics),
- language skills (listening, reading, speaking, writing, and lexicography & characters),
- general teaching methodologies and professional issues (materials, educational system, curriculum, profession).

In short, each article has two main labels, one for the kind of research it presents and another related to the content of the article. In order to have a workable database, the main topic of each article was prioritized over secondary ones, although it was not always a straightforward decision, but was agreed upon by the two authors. Other information and approaches dealt with in the articles, such as the use of Information and Communication Technologies (ICT), were also recorded with additional labels, which are not mutually exclusive to the other type of labels.

2.3. Data Processing

Prior to the analysis, there were some hurdles to overcome. Foremost among them was the fact that the name of an author alone does not necessarily identify him/her uniquely. In our data there may be alternative ways of naming the same author in different articles. This was further complicated by the fact that there is a relatively high mobility of scholars within the USA as compared to European colleagues and the same author often appears as affiliated to different institutions.

Identifying authors was especially problematic in the case of authors of Chinese origin, because there are inconsistencies in the way they sign their articles. There are authors who combine their Chinese name with an English name, for example Yang Chunsheng, who sometimes also signs as George Yang, or Xing Zhiqun, who also signs as Janet Zhiqun Xing or Janet Xing. There are authors who on some occasions use their full name, while on others only use their initials, such as Gwang-Tsai Chen or Ho Shang-hsien who also appear as a G. T. Chen and S.H. Ho, respectively. Various disambiguation techniques were used in order to infer the author's actual identity from author names as accurately as possible, and eventually the different versions of the same name were merged so that they were counted as just one author.

The second problem when counting authors arose with publications written by more than one author, a growing trend in our field. Cronin and Overfelt (1994) compared three possible methods: (1) straight counting, in which only the first author of a publication is counted, (2) whole counting, in which every author of a publication receives a credit for it, and (3) adjusted counting, in which each co-author receives a fractional count. According to Stock (2001, p. 21–22, as cited in Grbić & Pollabauer, 2008, p. 314), straight counting is not fair and whole counting is problematic as one arrives at sums higher than 100%. Adjusted counting seems to be the fairest method, although it still fails to reveal any reliable information about the actual contribution of an author to a given publication. In this study, whole counting was used, supplemented with co-author analysis.

As for the institutions authors are affiliated to, names were also unified in two cases. Firstly, those institutions that had changed their name over the years, for instance Beijing Language Institute (also recorded in our corpus as Peking Language Institute), known nowadays as Beijing Language and Culture University, were counted as one single entry. Secondly, those universities (especially from the USA) with different campuses were recorded under the name of the main university, for example, the University of California, which includes University of California, Berkeley, Irvine, Los Angeles, Riverside, San Diego, and Santa Barbara, among others.[4]

Altogether, there are 211 institutions recorded in the database, although there are 18 articles written by authors who did not state the institution where they worked at the time of writing the article, including four articles written by editors signing on behalf of the Editorial Board. These cases were left blank. There are

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[4] We are aware that processing universities separately would have been better because it would have allowed for a more detailed analysis of the institutions at the USA level. However, as scholars from a European background, we merged different campuses to avoid the dispersion of data, since in Europe different campuses are considered to belong to a single institution as far as academic production is concerned.

also authors, such as Cao Fei, Feng Shengli, Ou Te-Fen, Wu Guo, and Cornelius Kubler, who were affiliated to more than one institution at the same time. In these cases, both institutions were recorded.

As for the labeling system regarding the content of the articles, the following process was adopted. During the first stage, when assigning papers to different topics, a wider range of categories was established, adding subcategories and descriptive labels for each topic dealt with in each article. For instance, under the category syntax there were different labels, such as sentence with 把, aspect with 了, verbal complements, etc. At the time of data processing, the labeling system was simplified in order to reduce categories for analysis and to achieve a workable classification. Subcategories and descriptive labels were merged adopting the wider categories presented in the previous section. For instance, in the aforementioned examples related to syntax, all the labels fell under the category morpho-syntax. Thus, we can make a global analysis but also delve into details if necessary.

3. Results and discussion

3.1. Authors, Institutions, and Geographic Distribution of Articles

The 745 articles in the database were written by 507 different authors, coming from 211 different institutions and three main geographical areas: the United States of America, Chinese-speaking countries and regions and the rest of the world, which includes different countries in Europe, America, Asia, and Australia. The productivity rate is 1.4 articles per author, 3.5 per institution. Therefore, articles seem to be rather dispersed at the author and institution level. However, they are very concentrated at a geographical level, as will be explained in detail below.

3.1.1. Authorship

The 507 authors were classified into two groups: ethnic Chinese and non-ethnic Chinese. This variable was included because we thought it might be interesting to analyze whether a correlation between researcher ethnic background and other variables could be established. The 338 authors (i.e. 67%) in the database with Chinese names were considered to be ethnic Chinese, regardless of their nationality (including Mainland China, Hong Kong, Taiwan, Singapore and Chinese living abroad –mainly the USA). The rest (33%) were considered to be non-ethnic Chinese. There were three authors whose background could not be deduced from their names or other information provided (most likely two non-ethnic Chinese and one ethnic Chinese).

During the first few years of the journal, most articles were authored by non-ethnic Chinese, but from 1970 the tendency changed. From the mid-1990s the gap between the two groups increased with a clear dominance of ethnic-Chinese authors, as illustrated in figure 1. These changes may be caused by a growing demand for Chinese language courses, which eventually increased the number of native Chinese language teachers engaged in scholarly research.
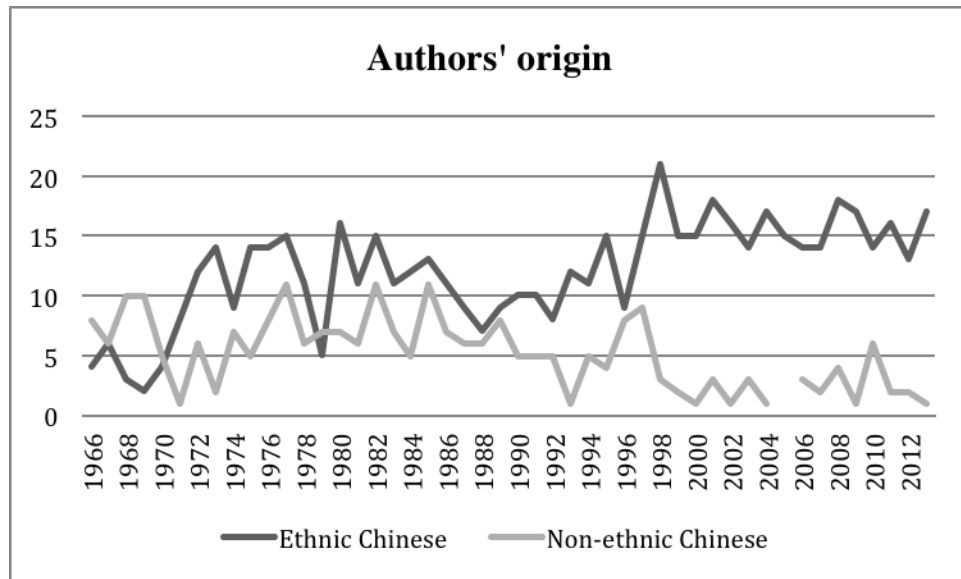

Figure 1 Evolution of authors' ethnic origin

Although the average productivity rate is 1.4 articles per author, the fact is that 68% of the authors have only published one article in *JCLTA* since its foundation. About half of the rest of the authors have written two articles each, and the remainder more. The most prolific authors in this journal over these almost 50 years are Chauncey C. Chu and Jin Honggang with 9 articles each, followed by John De Francis, H. T. Lu, and Timothy Light with 8 articles each. The 27 most productive authors with five or more articles represent only 5.3% of all authors, but account for 22% of the whole production.

Table 1 shows the 15 most prolific authors of the corpus. We note that, except for John H. T. Lu, this group of authors has also been part of the *JCLTA* editorial board.

Table 1 Most prolific authors

Authors	Number of articles per author and percentage of the total
Chu, C. Chauncey	9 (1.2%)
Jin, Honggang	
DeFrancis, John	8 (1.1%)
Light, Timothy	
Lu, H. T. John	
Kubler, Cornelius C.	7 (0.9%)
Ross, Claudia	
Tai, H. Y. James	
Yao, Tao-chung	
Chan, K. M. Marjorie	6 (0.8%)
Chen, Chung-yu	
Shi, Yuzhi	
Wang, Fangyu Fred	
Xie, Tianwei	
Xing, Zhiqun Janet	

Co-authored articles make up less than 10% of the overall database, indicating a large proportion of single-authored articles in the field, a fact that reflects the widespread academic culture within the Humanities, where individual research is the norm (Borgmann & Furner, 2002, p. 29). Notwithstanding, co-authorship is a phenomenon that can be observed in our corpus since 1967 but that has boomed significantly over the past ten years, in line with the general tendency of increasing co-authorship in the Humanities, following research trends in the sciences, where teamwork is the norm. As Dekeyser (2010, p. 646) puts it, this "may be a sign that our discipline is coming of age." The majority of co-authored articles are written by 2 people, and the rest are written by 3 and 5 authors.

Of the 71 co-authored articles, 66% are intramural collaboration, i.e. written by authors affiliated to the same institution, and 33% are by authors belonging to different institutions. Almost half of the cases of extramural collaboration are also instances of international collaboration. The most significant is that between institutions from the USA and Mainland China (4 articles), followed by cooperation between Hong Kong and Mainland China and the USA and Singapore, with two articles each. Despite these cases, the data from the corpus reveal relatively little cross-institutional and cross-regional cooperation in the field.

The institution with more co-authored articles is by far Ohio State University

(12 articles), followed by the University of California (5 articles) and the Defense Language Institute (3 articles). A mention has to be made of co-authorship in the articles produced by the Hong Kong academic community, where cooperation among authors is more marked - 36% of their articles are co-authored.

3.1.2. Institutions

In the database there are 211 different institutions recorded. Most of them are universities, although a small number of articles (6%) are written by authors that have a different type of affiliation. Amongst them there are authors who identify themselves as members of research institutes (such as the Chinese Academy of Social Sciences), government institutions (such as the American Institute or the Defense Language Institute,), or companies (International Cyber Machines Corporation). There are also a few teachers working in primary schools, high schools or Confucius Institutes.

As figure 2 shows, the most productive universities are by far Ohio State University and the University of Hawaii, which together account for almost 11% of the articles published. We can observe a correlation between the fact that the journal editorial offices have been based in these universities for a very long time and that many members of the editorial board have been affiliated to these institutions.
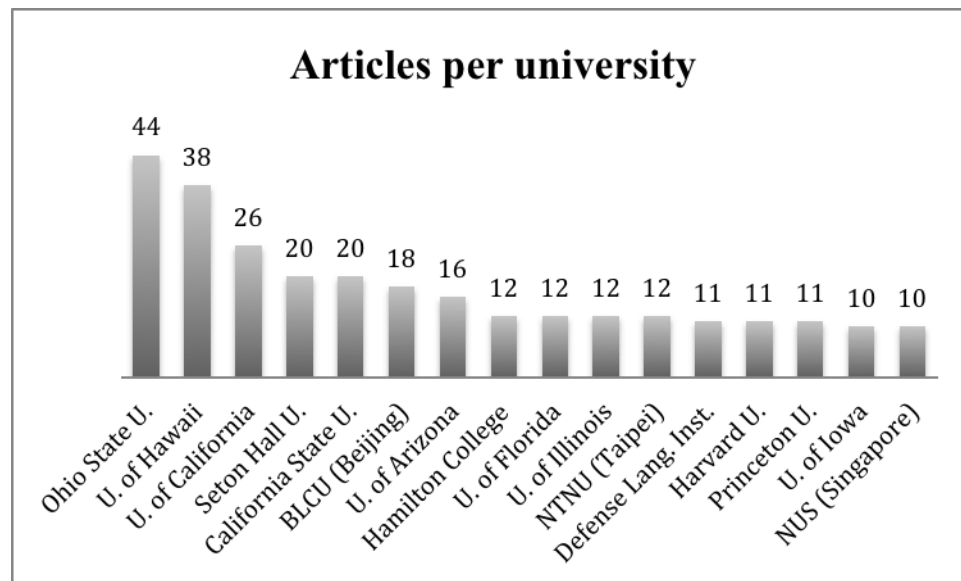

Figure 2 Number of articles per university

3.1.3. Geographical area

Although articles are dispersed at the author and institution level, they are very concentrated at the geographical level, according to the three main areas into which the corpus has been divided: the USA, Chinese-speaking territories (including Mainland China, Hong Kong, Taiwan, and Singapore), and other areas (comprising countries in Europe, Asia, Australia and other American countries different from the USA). Around 80% of the articles come from institutions based in the USA, followed by articles written by authors working in Chinese-speaking regions (12%). Only up to 7% of the articles come from other countries, such as the UK, Canada, Australia or Japan, to name a few, but they are rather minor in quantitative terms, even though they have been a constant since the early 1970s and have increased more notably since the mid-1990s.

As for the evolution over time, there is only one fact worth mentioning. As shown in figure 3, contributions by authors from Chinese speaking territories are more significant from the 1980s onwards, which might be a direct consequence of the re-establishment of diplomatic relations between the USA and the PRC in 1979.
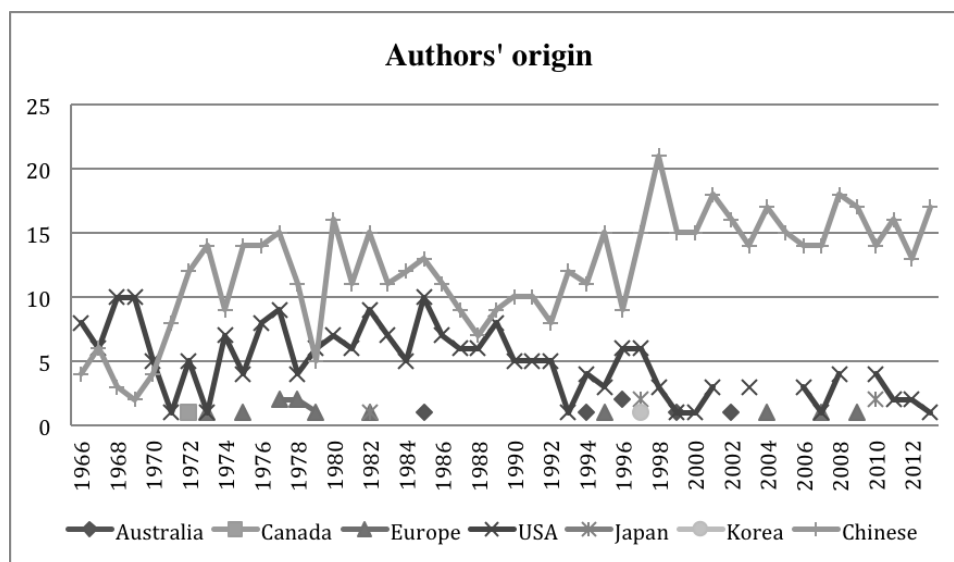

Figure 3 Evolution of authors' origin

According to CLTA's webpage (2015) approximately half of their "membership is composed of specialists in Chinese language, literature, linguistics and

culture teaching at colleges and universities throughout the world"; however more than three quarters of the articles published in the journal originated from universities or institutions located in the USA. This might be directly related to the fact that the journal was founded and has its headquarters in this country. Chinese speaking communities constitute the second group in number clearly because of the topic and mission of the journal, that is, the promotion of research on CFL and the dissemination of these research results.

3.2. Methodological Approaches: Primary Versus Secondary Research Methods

Since this study is mainly concerned with the development of research in TCFL, one of the parameters taken into account and codified when processing the information contained in the papers was the types of research adopted as explicitly stated or implicitly followed by the authors. To carry out this analysis, the following criteria were adopted. First, a distinction was made between primary research, also known as original or field research, and secondary research, the so-called desk research. This distinction was important because it is related not only to the type of data and methods of data collection, but also to the type of analysis conducted on the data. These two types of research account for 55% and 45% of the total, respectively. However, it is worth noting that there is a clear evolution towards primary research studies, as shown in figure 4, since 2000.
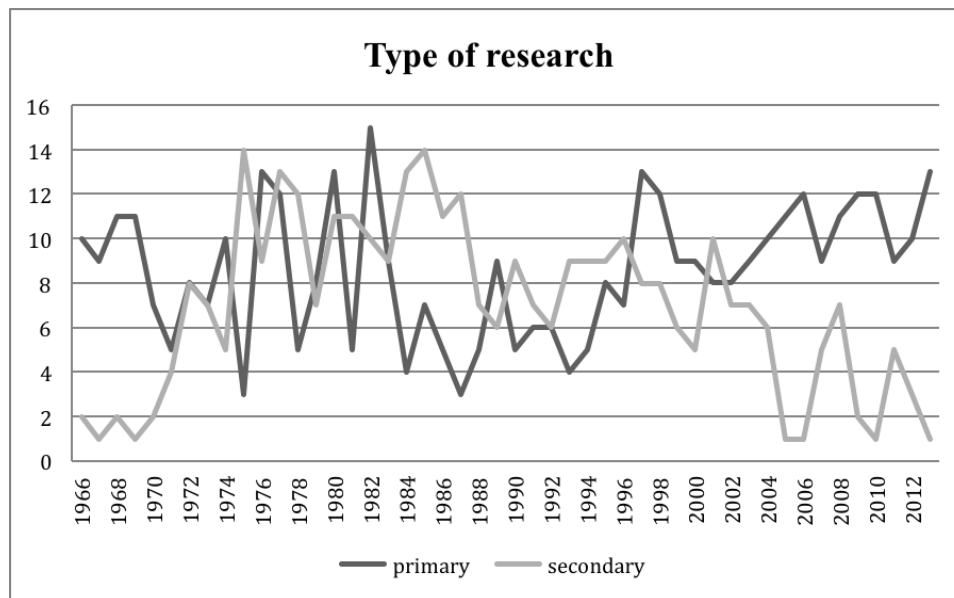

Figure 4 Evolution of type of research adopted by authors over time

Primary research is generated by asking questions, conducting trials and collecting results, and articles report on and share new research findings. What was labeled as primary research does not imply higher research quality, but focuses on the origin of the data (personal experience, participant observation, (quasi-)experimental data collection, etc.). Within those primary research articles identified, 32% correspond to quantitative studies (such as surveys, observations, experiments), 39% to qualitative studies (such as focus groups, interviews, participant observation), and 29% to descriptive studies, indicating a trend of even distribution. The label "descriptive study" was incorporated in order to offer a better account of the characteristics of our corpus of study. It includes those papers which are actually reports on workshops or seminars, personal reflections and experiences, open letters, biographies, obituaries, conference proceedings, teaching material presentations, and tributes, among others. Although they all deal with very different topics, in most cases the language used follows a newsletter rather than an academic style. The reason why they were included in this database was two-fold. On the one hand, they were treated as regular articles within the journal and it is often difficult to draw a clear-cut line between qualitative and descriptive studies. On the other hand, their mere existence reflects the idiosyncrasy of the journal, and their evolution in quantitative terms can also contribute to reflections on the discipline itself, evolving from a rather descriptive approach, which frequently presented basic concerns of teachers, to a more empirical or scholarly-approach towards TCFL. This turn towards more orthodox approaches and the increase in academic standards can also be observed in the structure of the journal itself, which with the passing of time has tended to systematically include keywords, abstracts, and a reference list for every published article.

In fact, looking at the evolution over the past three decades, one can observe a clear descending tendency of descriptive studies, which had their peak in the first half of the 1980s and that have been insignificant since 2000, as shown in figure 5. From the second half of the 1990s onwards both quantitative and qualitative studies have risen and show a similar trend, in line with the increase of empirical or data-based studies mentioned by Ke (2012, p. 97).
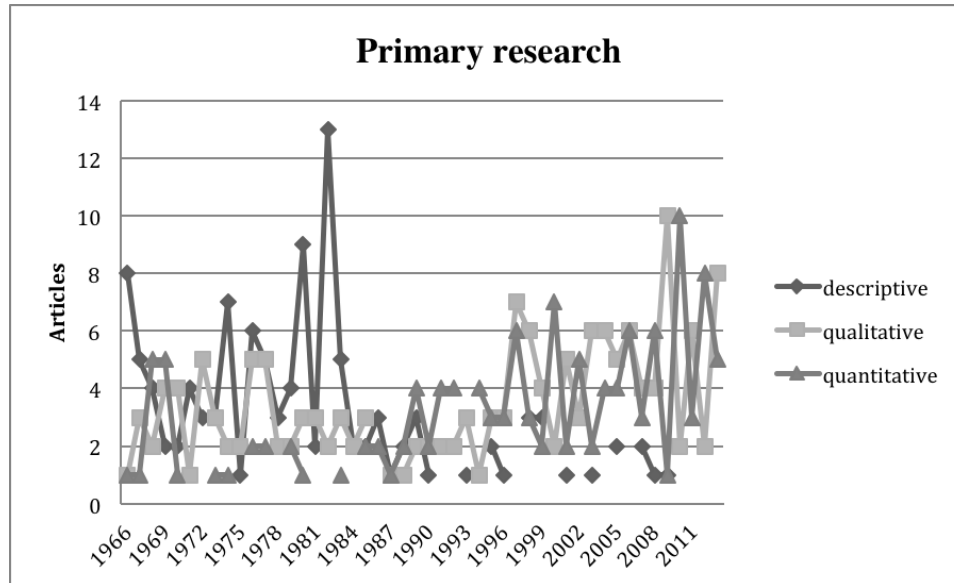
Figure 5 Evolution of trends in different types of primary research

Secondary research is based on the findings from previous research, i.e. it involves the gathering of the results of other people's previous research. According to Brown (1988, p. 1), "[s]econdary research, that is, research based on sources that are one step removed from the original information, is probably the type with which language teachers are most familiar," which is the case in our dataset up to the mid-1990s, when primary research studies started to surpass secondary research ones (see figure 4). The studies in our corpus labeled as secondary research mainly consist of information research, such as literature reviews, systematic reviews or meta-analyses. The selection, assessment, and synthesis of existing primary research allowing for evidence to support the author's conclusions constitute the main contribution of these articles.

It must be borne in mind that these distinctions among types of research are to some extent simplistic, since these categories are not always mutually exclusive. We often find studies combining primary and secondary research or integrating both quantitative and qualitative paradigms. To decide which category each paper fell into, it was decided to go through the whole paper and select the label that best described the main methodology followed, i.e. the one responsible for the type of results achieved. Attaching such a label has been useful to show the dominant research methodologies and tendencies within the field.

Despite the fact that primary and secondary research are quite balanced in

global terms as research methodologies, there are remarkable differences as far as the object of study is concerned. For instance, as figure 6 shows, primary research is preferred in studies dealing with language skills and pragmatics, while secondary research is more common in works devoted to literature, Classical Chinese or morphosyntax.
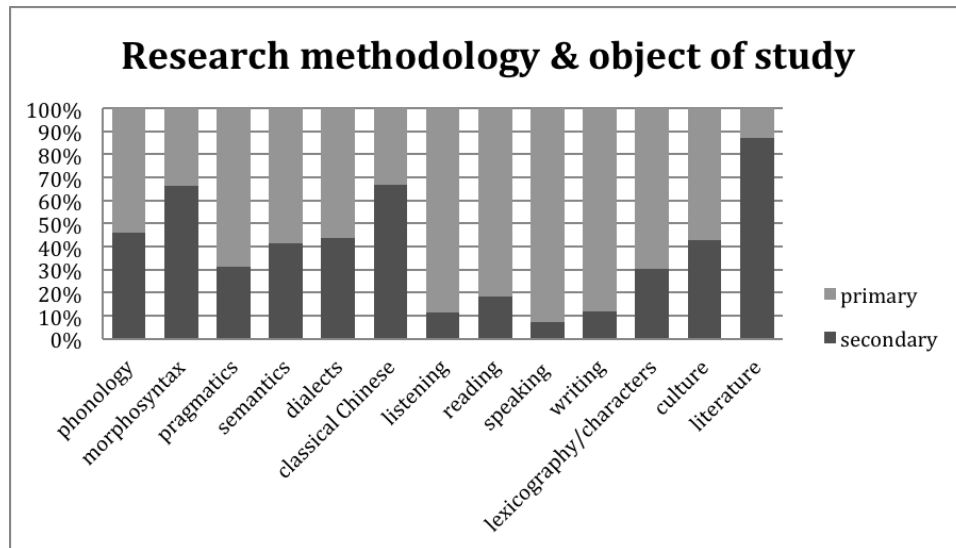

Figure 6 Research methodology in relation to the object of study

The data reveal that researchers prefer one research methodology over another according to the object of study (see figure 7). For instance, within primary research studies there are four areas of study with no quantitative approaches, namely, Classical Chinese, culture, literature, and speaking. Conversely, reading, phonology, and lexicography & characters are the areas with more quantitative studies in relative terms. Topics, such as phonology, morphosyntax, pragmatics, semantics and dialects have been approached from both qualitative and quantitative perspectives in similar percentages. Except for papers on speaking and literature, descriptive studies are very scarce.
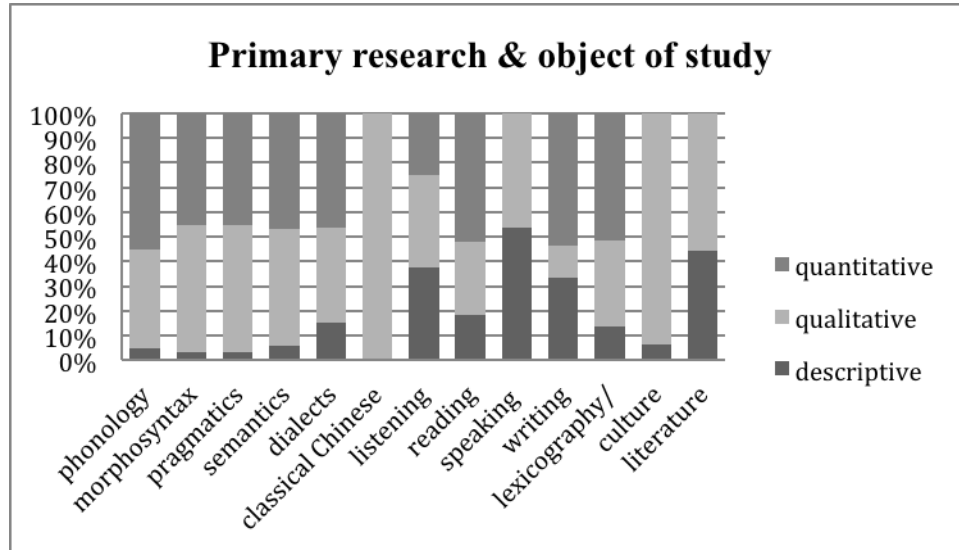
Figure 7 Type of primary research in relation to the object of study

As Mackey and Gass (2005, p.186) suggest, "research in a wide range of contexts and using multiple methods and techniques will be necessary for developments in the ongoing investigation of how second languages are learned, and, consequently, how languages may best be taught." In this respect, it can be concluded that research related to TCFL is in good health because scholars in the field resort to many different research approaches to scrutinize their object of study.

3.3. Article Length

In other disciplines in the Humanities, some authors have commented on the relatively large number of articles which can best be classified as 'anecdotal' rather than 'scientific' (Bahadir, 2000, p. 211, cited by Grbić & Pollabauer, 2008, p. 308). Grbić & Pollabauer (2008, p. 308) take this as a starting point to assume that anecdotal articles are "less extensive in scope, less detailed and shorter than full-scale 'academic' papers based on sound empirical data", since "a comprehensive discussion of a problem requires more than 1 to 5 pages of writing." On the basis of this hypothesis, we considered the length of the articles in our corpus and attempted to match the data with other variables, such as the kind of research, or year of publication.

Articles in our corpus range from 1 page (0.7%) to 70 pages (0.1%). There are 234 articles (31%) of 10 pages or less, but the average number of pages per

article is 16.3, with a standard deviation of 10 pages assuming a normal distribution. There is not much difference between types of research as far as number of pages is concerned. However, the average number of pages per article has increased over the years: during the 1970s the average was about 9 pages per article (with a standard deviation of about 7), in the 1980s this began to increase and in the last decade of the journal this number is 23 (with a standard deviation of 9).[5]

There might be various reasons behind the gradual lengthening of articles over the decades. For Dekeyser (2010, p. 646) it is partially due to the fact that "more literature has accumulated and needs to be cited and in part because of increasingly complex methodology and increasingly stringent rules for reporting…". Our results are in line with this general trend, and also suggest that earlier papers labeled as descriptive in our corpus might be closer to the so-called anecdotal accounts rather than academic research results.

3.4. Language, Orthography, and Transcription Systems

The *JCLTA* accepts articles both in English and in Chinese. However, there is a clear preference for authors to publish in English (85%), rather than in Chinese (15%). Despite the fact that there have been articles published in Chinese since the end of the 1960s and that volume 17(2) published in 1982 contained the highest number of articles in Chinese ever (9), the use of Chinese as a language for disseminating research outputs does not consolidate until the mid-1990s, when all *JCLTA* issues include articles in Chinese and, according to the data, this upward trend is likely to continue. This may be due to different reasons. Firstly, as pointed out earlier, because the number of ethnic-Chinese scholars in our corpus has increased. Secondly, because of the growing importance of China in the international arena, along with the booming interest in Chinese as a foreign language. As noted by Flowerdew (1999, p. 258) "[i]n the long term, if China's economic development continues at the present rate, it is conceivable that there may come a time when research publication in Chinese is equally, if not more, prestigious than English." Finally, advances in technology are another reason explaining the change of trend in the increasing use of Chinese. Due to technical problems, Chinese characters were written manually until 1980, and after eight years of transition, characters were digitally introduced from 1988 onwards.

All the articles written in Chinese are by ethnic Chinese authors. Conversely, it is noticeable that most ethnic Chinese also resort to English even though Chi-

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[5] Although there have been changes in the kind of typography used (typewriter versus computer) that have slightly decreased the total number of words per page, such differences do not substantially affect our findings.

nese is one of the languages of the journal. There are several reasons that might explain these data. First, many of the authors are based in American institutions where English is the language for scholarly use. Second, from a global point of view, English offers greater international visibility and impact, since publishing in English improves bidirectional information flow, facilitates professional networking and exchange of academic knowledge.

As for the preferred Chinese orthography, the use of traditional (51%) and simplified characters (48%) is quite balanced. However, a change of tendency can be observed in the past 20 years. As shown in figure 8, traditional characters were dominant until the 1990s (2.6 times more) and, after ten years of transition when both orthographies coexisted, from the year 2000, simplified has overtaken the traditional orthography (three times more).
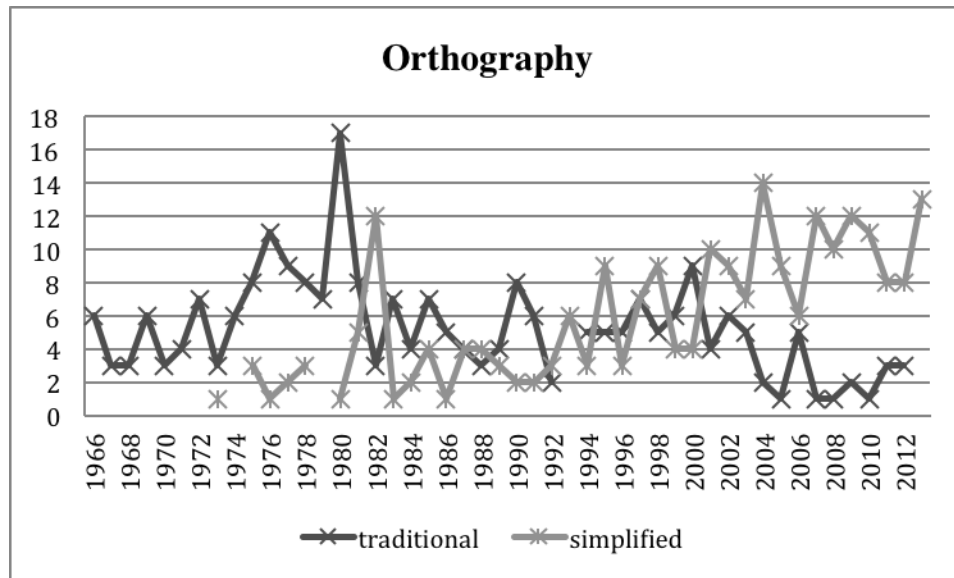

Figure 8 Evolution of the use of Chinese traditional and simplified orthographies

A similar trend can be observed in the use of transcription systems. It is worth mentioning that in most cases, authors do not explicitly mention the Romanization system being used, and in a couple of cases it was impossible to figure it out. Out of the 444 articles that use some kind of transcription for Chinese characters, 82% use pinyin, a dominant feature from the 1980s onwards with the opening of the PRC. This is followed by Wade-Giles (10%), Yale (3%) and Gwoyeu Romatzyh (GR) (3%). Other transcription systems include jutpin, Can-

tonese, zhuyin fuhao, and in a few cases specifically dealing with transcription systems, a mixture of different systems can be found in the same article.

These results show a change of trend with respect to Walton's (1989, p. 7) observation when he affirmed that "[p]inyin has not completely replaced GR and the zhuyin fuhao. An impression is that many teachers still prefer to teach traditional characters either before or along with simplified characters." This situation has changed since the time he wrote his article. Even though he was referring exclusively to teaching practice and not research dissemination, we consider both to be closely interrelated in our case. This new trend is possibly the result of the PRC linguistic policies promoting the use of pinyin and of simplified characters at all levels.

3.5. A Thematic Map of TCFL Research
3.5.1. Object of study

The articles published in the *JCLTA* can be divided into four groups: Chinese language (57%), literature (9%), culture (4%), and other themes mainly related to teaching methodologies and professional issues (30%). Articles devoted to literature and culture only represent 13% of the corpus and are very heterogeneous in nature. Those focusing on literature mostly deal with specific authors, works or genres, and a small number with more general matters related to the teaching of literature. Articles on Chinese culture start to appear in the late 1970s and are unevenly spread across the following decades. It is worth mentioning that most papers dealing with Chinese culture (71%) are authored by ethnic-Chinese, which shows a correlation between the authors' background and the object of study.

Below we will focus on the main object of study of the *JCLTA*, i.e. Chinese language teaching and related pedagogical issues, which include linguistic variants, language skills, language levels, as well as other topics related to teaching methodologies and the profession.

3.5.2. Linguistic variants

As far as Chinese linguistic variants are concerned, the vast majority of articles focus on Modern Standard Chinese (95%), while only 3% are devoted to some of the Chinese topolects and 2% to Classical Chinese. From those dealing with topolects, most concentrate on Cantonese and the languages spoken in Taiwan. Interestingly, 65% of these articles have been written by USA scholars, while the rest are very evenly distributed geographically (Hong Kong, Singapore, Australia, and Europe). Hence, this topic seems to attract the attention of authors in many areas, except for Mainland China. One plausible hypothesis to explain

this pattern is that Chinese authorities promote the use and teaching of Modern Standard Chinese over Chinese topolects and therefore Chinese scholars focus on the former.

A similar trend can be observed in the case of the 12 articles that focus on Classical Chinese. Except for one, from a European institution, they all come from universities in the USA. It is possible that scholars from Chinese communities prefer to publish such articles in other journals or that they consider Classical Chinese to be a rather marginal subject within TCFL and thus devote no effort to it.

3.5.3. Language skills

Although language skills are traditionally divided according to four subskills (listening, speaking, writing, and reading), a fifth category named "characters & lexicography" has been included to better match the features of Chinese language learning and underline a reality: there is a strong bias within TCFL, at least as shown in our corpus, towards character learning. Out of the 126 papers devoted to language skills, 42% deal either with characters or lexicography, 26% are related to reading, 14% to writing, 11% to speaking and the remaining 7% to listening. The first two categories together, which are needed for developing reading competence, make up more than two thirds of the total. This suggests that the Chinese morphosyllabic writing system is perceived as one of the major learning difficulties for Western learners (main target learners of the *JCLTA*). These findings coincide with those of Ke (2006, p. 91 and 2012, p. 44), who affirms that: "[p]erhaps no other area of the L2 Chinese learning process has received more attention than the reading process. This should not be surprising given the highly complex process involved in reading and the important role reading plays in the development of Chinese language proficiency."

As for the relationship between the origin of scholars and their object of study, one can see a slight bias of non-ethnic Chinese focusing more on writing and reading skills, while listening is preferred by ethnic Chinese authors. This might be related to the fact that, according to our experience, native teachers have been more in charge of oral communicative skills, while non-native teachers have focused more on reading and grammar.

Comparing results over time (see figure 9), a clear decreasing tendency of studies focusing on the teaching of characters can be observed, while there are no significant changes in the other language skills. In this respect, the adoption of communicative methodologies has not resulted in an increase of research on speaking and listening, which are the abilities that have attracted least attention all along. Nowadays, the study of the five skills is more balanced than ever.
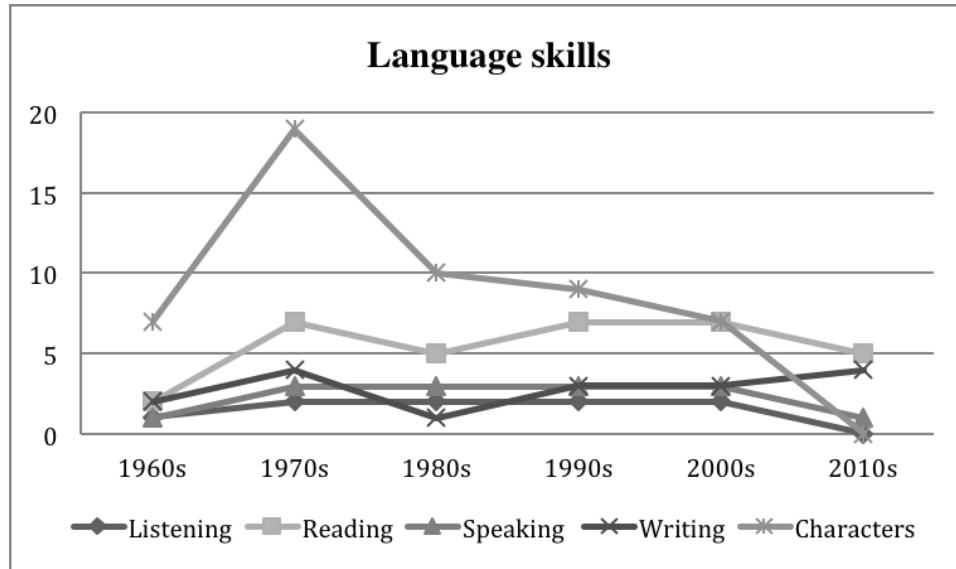
Language skills

Figure 9 Evolution of number of articles on language skills

3.5.4. Levels of language structure

There are 275 articles in our corpus concerned with the various levels of language, which account for almost 37% of the total. Their distribution in quantitative terms is very uneven, with a clear preference for the study of morphosyntax (62%), followed by pragmatics (16%), phonology (12%), and semantics (10%).

The category morphosyntax includes articles dealing with both morphology and syntax, that is, word formation and how words are combined into larger units, corresponding to what people commonly associate with, or call, 'grammar'. There are only 9 papers in the whole corpus dealing with morphology alone, more precisely on lexicalization, reduplication, suffixation and compounding. Since many of the articles focusing on morphology also relate it to syntactical issues, and the boundaries in the teaching of these two levels of language structure in Chinese are not clear-cut, they have been combined into a single category for analysis purposes. The most prominent topics within this category, besides general approaches to morphosyntax (16%), include the study of parts of speech (27%), syntactic structures (18%), aspect (16%), and word order (12%).

The parts of speech that have attracted researchers' attention are measure words, particles, and verbs, with the first two reaching around 50%. By far the

most researched syntactic structures in the *JCLTA* corpus are sentences with 把, 被, and verb copying, which together account for almost 75%. Regarding aspect, both 了 (37%) and 着 (37%) account for the biggest slice of the cake, followed by the aspect particle 过 (13%), while the study of the remaining aspect markers, such as 起来 or 来着 is very marginal. Finally, as far as word order is concerned, 28% of articles focus on the topic-comment structure, 12% on the expression of time and the rest cover a panoply of issues related to word order in Chinese. If more than half of papers devoted to levels of language structure in the corpus focus on morphosyntactic issues, one can infer that they are a subject of concern for many Chinese language teachers.

Works on phonology account for a very small proportion of the corpus (12%) and the most remarkable fact is that 62% of all these articles study the Chinese tones, with a clear special interest for the third tone. This is in line with the findings of Ke (2012, p. 43), who stated that "most of the studies on CFL pronunciation learning have focused on the learning and teaching of tones". Interestingly, 78% of these articles were written by Chinese authors, therefore it seems to be a field that attracts more attention to ethnic-Chinese than to non-ethnic Chinese teachers and researchers.

Only 10% of the articles fit into the category of semantics, an area that has been under researched all along. Many of them examine the study of vocabulary, including idioms, words related to certain semantic fields, such as family terms or colors and neologisms (the latter mainly published between 1975 and 1984, a time of change when China started opening up to the West). Authors of Chinese origin seem to pay more attention to these issues, since they account for almost 80% of all the articles. The same percentage is also true for papers that deal with pragmatics, which account for 16% of the articles in the corpus. They were mainly published from the late 1990s onwards, in line with the growing importance of pragmatics in the teaching of foreign languages globally, although they still account for a small proportion of research in our field.

3.5.5 Teaching methodologies and professional issues

Thirty percent of the corpus articles are related to issues other than language itself, and equally worthy of comment because they have a direct impact either on Chinese language pedagogy or on the teachers professionalization and working conditions. They can be divided into three main areas: curriculum design & educational system (53%); materials (40%); and professional issues (7%). Except for the articles dealing with materials, most in this category focus on the need for teacher training and the establishment of standards, on the one hand, and the professional status of instructors of Chinese, on the other, especially in the USA.

54% of articles belonging to the category "materials" present or assess teaching materials, while 20% concentrates on multimedia materials. The rest are very diverse in nature, ranging from theoretical approaches to more practical ones, such as the use of games or authentic materials. As figure 10 illustrates, the diachronic analysis reveals that the interest in materials has been quite steady since the 1970s but has been concentrated in specific issues of the *JCLTA*. Wang (2012, p. 35) mentioned an explosion of materials and resources in the USA from 2004 but, according to our data, this has not translated into an increase in research on materials.
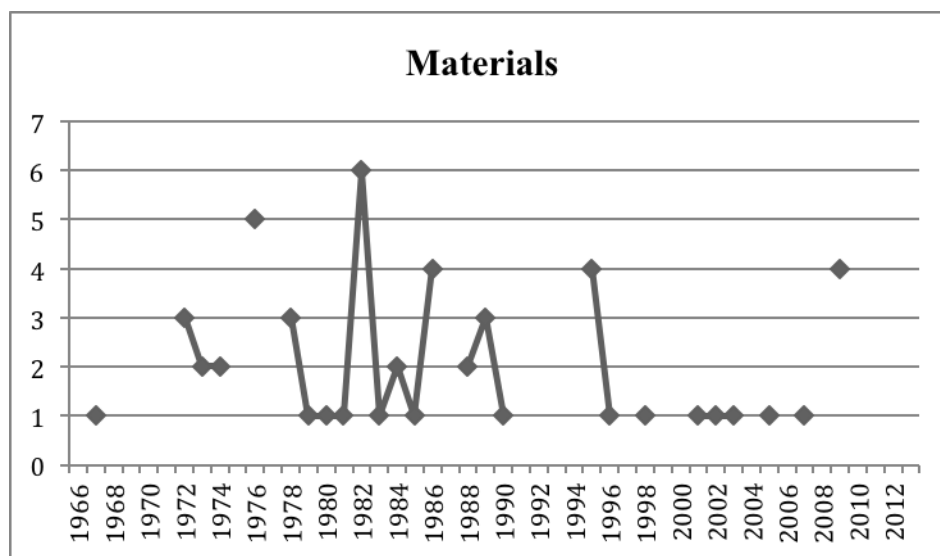

Figure 10 Evolution of papers on materials

3.5.6. Information and communication technologies (ICT)

Our corpus has 45 articles dealing with ICT issues, which accounts only for 6% of the total. Although most articles concerned with the application and use of ICT in Chinese language teaching are concentrated in issues from the year 2001 onwards, the first one dates back to as early as 1973 and there are articles spread across the 1980s and 1990s. They have been grouped into four broad topics, namely, computer (55%), multimedia (18%), Internet (18%) and overviews of different tools (9%).

During the 1970s and 1980s one can find very general approaches concerning the use of CALL (computer assisted language learning) or audiovisual materials in the CFL classroom, but also more technical issues such as possible input

methods for Chinese, text processors or how to communicate in Chinese using a computer. During the following decade most of the approaches focused on CALL, while from the new millennium onwards the main concern has been integrating the different web-based learning resources, participatory web tools (blogs, wikis, etc.), the use of corpora for teaching, digital and on-line dictionaries, as well as other audiovisual aids, such as podcasts, DVSs and PPT.

5. Conclusion

This data-driven bibliometric study provides a map of research on TCFL by offering a general picture of its historical development and current trends that can be of value for anyone interested in TCFL, especially for those relatively new to the field. This map depicted can also constitute the starting point in the design of a more rational and agreed upon research agenda that can ultimately help us bridge the gap between theory and practice.

The dataset is unusual in two respects: the long period of time it covers, which spans almost 50 years (1966 – 2013), and the fact that each article has been thoroughly mined. The analysis of the 745 *JCLTA* articles that make up the corpus has been both systematic and comprehensive. A mixture of both quantitative and qualitative research methods has been used, including patterns of authorship, identification of research approaches, and topic mapping (based on content thematic analysis), for the main part. The purpose of this multi-method design was to provide more research angles and perspectives on TCFL as reflected in one of its most representative journals.

According to our analysis of the data, there has been a significant change in the research culture in TCFL. Although in quantitative and global terms the number of articles labeled as primary research is quite similar to those for secondary research, in the past fifteen years the discipline has clearly evolved from the use of secondary and more theoretical and descriptive approaches to primary and more empirical research. In this sense, research in TCFL has experienced a turn towards primary research, following the global changes in scholarly research methods and production and, particularly, in applied linguistics, as noted by Duff (2010, p. 57-9).

Within the area of language as a broad topic, the most researched issues are writing (particularly the study of characters), grammar (morphosyntax) and phonology (with special emphasis on tones). Moreover, a growing tendency to take into account discourse and pragmatics can be observed, even though this area still represents a small proportion of research in the field and deserves more attention. At the other end of the spectrum one finds speaking and listening skills as the least researched areas. These results match the conclusions reached by Ke

(2012, p. 44) who concluded that empirical research has concentrated largely on different aspects of the CFL reading process, grammar competence, pronunciation, pragmatic development, and field building.

In particular, those areas that have attracted more attention are those that are specific to the Chinese language and represent difficulties for Western learners, for instance tone acquisition and certain grammar points, such as aspect particles or word order. Even though phonology has attracted the attention of many researchers, most of them focus on the third tone, while intonation issues remain under researched. Therefore, our results show that not many changes have taken place in this respect in the last five decades.

Research on ICT applied to TCFL has been present throughout the history of the journal. The results show an evolution from the focus on rather rudimentary issues such as how to type in Chinese to the use of the most advanced technologies in the classroom. However, the data show a turning point in the 2000s, both quantitatively and qualitatively, with an increase in the range of technologies used. It can be expected that studies focusing on the use and impact of applications for mobile devices in Chinese learning and teaching will be published in the near future.

Although around a third of the articles of the corpus deal with teaching methodologies and professional issues, assessment is an area that has been completely neglected as already pointed out by Ke (2012, p. 96), when he stated, "[w]hile the field has accumulated a large body of literature in defining language proficiency, efforts need to be made to define various culture performance constructs so that assessment tools can be developed to measure them." It would also be interesting to take into account international language level standards, including HSK and the Common European Framework of Reference for Languages (CEFR) in order to appreciate a broader picture of the subject.

Another area that Ke (2012, p. 98) pointed out as deserving more attention is research on pre-college data, since most research is done at university level taking college students as their target. This variable has not been analyzed in this research because in our corpus very few articles explicitly stated their target students and those that did mainly focused at the university level, while only a handful were centered at high school level or lower. At the same time, there is not enough research on the different linguistic backgrounds of Chinese language learners and the problems they face. Therefore, digging into the different learners' profiles is another area to be further explored.

As for the main figures involved in TCFL research, our data show that the most productive centers and scholars publishing in the JCLTA are located in the USA. However, their origin has gradually diversified and in the past couple of

decades there is a growing number of authors from all over the world, especially from Chinese-speaking territories, while other parts of the world are still underrepresented. This bias is understandable taking into account both the main focus and the nature of the journal, which publishes papers on the Chinese language written by members of the CLTA, based in the USA. We believe that TCFL research would greatly benefit from more intermural and international collaboration.

We also wanted to find out whether a correlation existed between the authors' ethnic background and their research outputs. Our data show that the number of scholars coming from a Chinese background has risen steadily and from the mid-1990s they clearly outnumber those from non-ethnic-Chinese background, which includes Westerners and researchers from other Asian countries such as Japan or Korea. However, when analyzing the research topics this variable does not seem to be very significant, since most of them are quite evenly distributed according to the proportion of these two groups in the database. Nevertheless, there are areas such as phonology, morphosyntax, semantics, pragmatics, and listening where ethnic-Chinese authors outnumber non-Chinese in relative terms. Conversely, in the areas of reading and characters & lexicography, figures for non-Chinese authors are above the average.

The empirical findings of this study contribute to filling a significant void in TCFL and helping linguists, Chinese language teachers, researchers and students see at a glance the wealth of research carried out over the last five decades, as well as signaling areas that should be addressed. Clearly the *JCLTA* does not reflect the whole bulk of research carried out in the field of TCFL. Although the corpus used cannot be considered small, the fact that it includes only one journal based in the USA is a drawback to the generalization of the results. However, by detecting and confirming general trends this study serves as an important step in re-thinking the field and such empirical findings can be useful pointers for further analysis, quantitative or qualitative. In this respect, this study clearly shows that Walton's call back in 1989 to establish a common research agenda to agree on the subject matter to be studied remains unanswered, since the topics researched have not changed much, while others are still neglected.

This study could be replicated and further developed in the future to provide a more comprehensive picture. The analysis could be extended in many ways. There are many questions that could be addressed with this dataset. The unusually long time-span and quantity of data mined opens up a variety of possibilities, such as tracking the careers of individual scholars or institutions, as well as the evolution of particular topics. Keyword analysis could also provide an even more detailed insight into the landscape of topics. Another way to study research pat-

terns within the discipline would be to carry out a citation analysis to investigate the relative weight of research cultures or paradigms and their evolution, networks of citations and co-authorship. And, finally, any of the existing analyses could be extended to data sets covering other journals or monographs in the field to involve learners from different linguistic backgrounds or simply to offer a more comprehensive picture of the state of the art in the field. All of these would make excellent subjects for future investigation.

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