

TPACK: A New Dimension to Chinese as a Second Language Teacher Training

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Abstract—In recent years, with the rapid growth of China's national strength, “Chinese fever” has constantly promoted globally. Correspondingly, the demand for CSL (Chinese as a second language) teachers has also increased. Faced with today's pluralistic and complex educational contexts, especially the rapid development of ICT (Information and Communications Technology), CSL teachers will encounter more challenges. This study first demonstrates the current situation of CSL teachers' development and requirements for CSL teachers in the new era of science and technology, and then introduces the framework of TPACK (technological pedagogical and content knowledge), which provides a new theoretical guidance for CSL teacher training. In the last section, the paper presents specific suggestions for developing pre-service CSL teachers' TPACK in the teacher training.

Keywords—TPACK; CSL teachers; ICT; teacher training

I. INTRODUCTION

In recent years, as the “Chinese fever” continually warms up, more and more people begin to learn Chinese all around the world. Statistics from the Confucius Institute Headquarters showed there were almost 2.8 million people learning Chinese in America and the number of Chinese L2 (second language) learners had reached 100 million in the world. Outside China, according to the statistics from 2015 *Confucius Institute Annual Development Report*, there had been 500 Confucius Institutes and 1000 Confucius classrooms all around the world by the end of 2015. A total of 1.9 million students were registered. Meanwhile, there were 343 Confucius Institutes being included into the course credit systems of their host universities [1]. In China, according to the statistics from the official website of the Ministry of Education of China, a total of 397,635 foreign students from 202 countries and regions studied in 811 colleges, universities and research institutes across China in 2015 [2]. Compared with the statistics in 2014, the total number of foreign students in China had increased by 5.46 percent in 2015.

When the number of Chinese L2 learners is increasing constantly, the demand for CSL (Chinese as a second language) teachers has also increased correspondingly. The demand is not only reflected in the quantity, but also in the quality. Although there are 44,000 full-time and part-time CSL teachers in Confucius Institutes and Confucius classrooms, it is still not enough compared with the number of

Chinese L2 learners in the world. Nowadays, the multicultural society and complex educational contexts become increasingly difficult for CSL teachers. Especially, the rapid development of ICT (Information and Communications Technology) revolutionizes the way of teaching and learning. How to use modern educational technology for effective CSL teaching gradually has become a major theme for CSL teacher training.

In this paper, the author will show the current situation of CSL teachers' development and new requirements for CSL teachers in the information age. For gaining better understanding of teaching knowledge, the framework of TPACK (technological pedagogical and content knowledge) which provides a new theoretical guidance for CSL teacher training will be introduced. In the last section, three suggestions for developing pre-service CSL teachers' TPACK in the teacher training will be presented.

II. THE CURRENT SITUATION AND NEW CHALLENGES OF CSL TEACHERS

Over the past decade, the “Chinese fever” has become a popular trend all around the world. There is a stark contrast between the rapid increased number of Chinese L2 learners and the lack of CSL teachers. Therefore, CSL teacher training becomes a top priority. At the same time, digital education has become one of the dominant trends in the development of educational system nowadays. It brings new challenges for CSL teachers. Here the author will demonstrate the current situation and new challenges of CSL teachers.

A. *The Current Situation of CSL Teachers*

In 1952, China began to send CSL teacher to go aboard to teach Chinese, and then the number of CSL teachers increased continually. Chen believed that the changes of CSL teacher training mode had experienced three periods in China [3].

In the first period, the Chinese government transferred some famous scholars to be the CSL teachers for foreign students from Eastern Europe after the foundation of the People's Republic of China in 1949. The scholars were the main force of CSL teachers in that period in China. In the second period, a great number of universities had enrolled foreign students in succession since the late 1970s. Some universities established training center of CSL teachers. In-service training became the main mode of CSL teacher

training. In the third period, with the deepening of reform and opening-up, some universities started degree courses of teaching Chinese as a second language in 1980s. Professional CSL teachers began to come into view.

Nowadays there has been a full-fledged education system for cultivating undergraduates, postgraduates on master's and doctoral programs of teaching Chinese as a second language in China. Besides China, 170 countries also set up Chinese course or Chinese major, such as France, Britain, America, Korean, Japan, Malaysia, Thailand, and so on. 60 countries integrate Chinese language teaching into national education systems in the world.

The Chinese courses or majors make it possible to develop native CSL teacher training outside China. The CSL teacher training has made significant progress these years. However, the number of CSL teachers still cannot meet the demand of rapidly increasing Chinese L2 learners. The complex educational context and the fast development of science and technology also bring new challenges to CSL teachers. Next, the author will focus on demonstrating the challenges for CSL teachers from the rapid development of ICT.

B. *The New Challenges of CSL Teachers*

As the Chinese language teaching moves towards the world, the issue of CSL teacher training has gained more and more attention by scholars in recent years.

Zhang gave a systematic review of the studies in quality and training of CSL teachers and suggested that the CSL teachers should improve the structure of knowledge and abilities [4]. How to renew the future CSL teachers' knowledge and their abilities has become the key issue of CSL teacher training. Cui pointed out teacher education, textbook development and pedagogical researches were the hot topics of teaching Chinese as a second language, and teacher education was the core element among the three topics [5]. It fully shows the importance of CSL teacher training.

Sibgatullina presented that the competence of the future teacher should contain a quantity of theoretical knowledge, practical skill and abilities [6]. In recent years, the structure of knowledge and ability of CSL teachers also have gained wide attention. Wu, Hua and Chu made a narrative inquiry of CSL teachers' growth history [7]. It revealed the CSL teacher education researches had faced with a kind of transformation, which was from the development of teachers' standards, the training content and the innovation of training mode to the teachers' personal development and teachers' cognition process. The accumulation of practical knowledge of CSL teachers has been concerned by educators.

In modern society, the technology knowledge and ability of CSL teachers appear especially important. The fast development of ICT increases the difficulty of CSL teachers in performing the work successfully. Sysoyev and Evstigneev indicated the ICT competence of a foreign language teacher [8]. It should contain using Internet technologies, presenting digital studied material, conducting teaching practice of cooperative learning through technology, cultivating the students' independent learning abilities via ICT and teaching

students a foreign language through ICT-based personalized learning mode.

Undoubtedly, ICT-based teaching knowledge and skills are imperative for CSL teachers in teaching. In *Standards for Teachers of Chinese to Speakers of Other Languages*, the Standard 9 defined CSL teachers should be familiar with basic components of a computer and other electronic devices, different kinds of software, multimedia devices and basic Internet knowledge [9]. Most importantly, CSL teachers should apply all the ICT knowledge, resources and methods appropriately to their teaching practice, in order to improve their Chinese teaching.

In fact, the application of new computing devices in education not only provides convenience for learners, but also brings teachers new challenges. For example, the application of tablet PC, smart phones, Google glass or other mobile devices in education increases the complexity and dynamic of educational activities. In addition, a qualified CSL teacher should be familiar with Chinese input method and Chinese operation system besides general ICT knowledge. How to help CSL teachers to overcome the new challenges and integrate ICT knowledge into Chinese teaching? Next the author will show the framework of TPACK and discuss its application in CSL teaching.

III. THE DEVELOPMENT OF TPACK AND ITS APPLICATION IN L2 TEACHING

With the dynamic and continuous development of ICT, modern educational technology has already become an important role in educational system. Further, it has revolutionized the teaching methods and experience. It makes the nature of classroom more and more lively and flexible. Malinina pointed out that it created a new chance in arranging educational environment when teachers applied ICT [10].

This revolutionary change also allows to re-examine the role of teachers. In the teaching activities based on digital age, the teachers integrate technology, pedagogy and content consciously and unconsciously. On the other hand, it is really helpful to enhance the efficiency and effectiveness of teaching. However, it can be difficult to strike a balance between technology, pedagogy and content. Fortunately, the TPACK framework gives teachers a new dimension to conduct the classroom practice in the era of information technology. Here the author introduces the development of TPACK framework and its application in L2 (second language) teaching.

A. *About TPACK*

The framework of TPACK has experienced three decades of development. In 1986, Shulman first advanced the concept of PCK (pedagogical content knowledge). He put forward the category of PCK included "the ways of representing and formulating the subject that made it comprehensible to others" [11]. Then Shulman described PCK as "the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction" [12] in 1987. It means the teachers should adequately use their pedagogical knowledge, content

knowledge and teaching skill to represent the topics and issues according to students' interests and abilities.

With the rapid ICT development, plenty of technologies have gradually been applied to education. The concept of PCK cannot meet the demands of teachers in the highly complex and dynamic educational environment. To better represent what teachers need to know about technology, Koehler and Mishra proposed a framework of TPCK (technological pedagogical content knowledge) [13]. The framework of TPCK presented a new dimension to develop teachers' knowledge and developed better learning environment for teachers and students [14]. Thompson and Mishra announced that TPCK would change its name to TPACK [15]. The reason for renaming was that TPACK could be used and remembered better. TPACK also emphasizes that technology, pedagogical and content knowledge are three essential elements and form an indivisible part. Fig. 1 shows the framework of TPACK below.

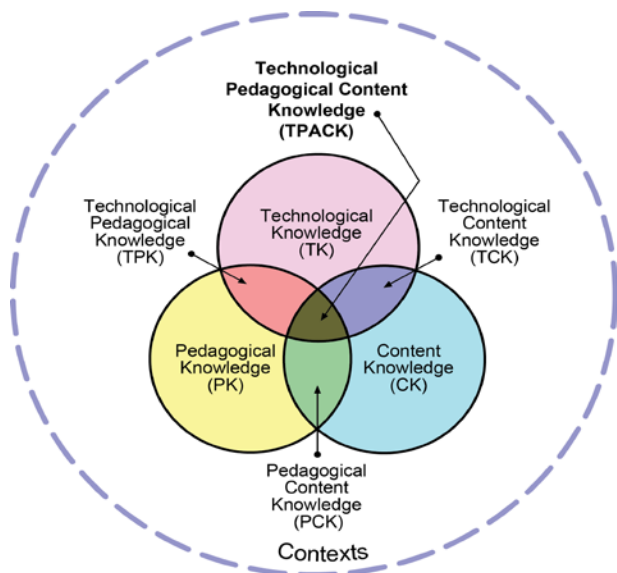


Fig. 1. The TPACK framework and its core factors (Reproduced by permission of the publisher, © 2012 by <http://tpack.org/>)

There are seven core factors which are main knowledge of teachers in the framework: (1) CK (content knowledge) refers to the subject matter knowledge to be taught by teachers; (2) PK (pedagogical knowledge) contains all the knowledge in the teaching practice, for example, teaching theories, teaching methods, teaching strategies, teaching evaluation, classroom management skills, and so on. (3) TK (technological knowledge) is the knowledge about the hardware and software of ICT, such as Internet, blog, notice board, videoconferencing, skills of mobile devices and so on. (4) PCK (pedagogical content knowledge) is similar to Shulman's description in 1986 and 1987, which refers to the understanding of how to use pedagogical strategies to represent the specific teaching issue or content clearly. (5) TCK (technological content knowledge) refers to the understanding about applying technological approaches to represent the target subject or content in the teaching process. (6) TPK (technological

pedagogical knowledge) includes the knowledge about how to use technological affordances to guide the pedagogical skills in specific teaching environment. (7) TPACK (technological pedagogical and content knowledge) refers to the knowledge of how to integrate technological affordances and appropriate pedagogies to represent the target content in the teaching and learning.

Teachers are in an highly complex and dynamic teaching environment to perform the work. The framework of TPACK offers a theoretical model for studying changes in teachers' knowledge about effective teaching with technology [16]. Considering the knowledge of teacher as the dynamic relationship between content, pedagogy and technology, Hunter also pointed out TPACK framework had a significant impact on education and provided teachers with a useful theoretical model in teaching [17]. The author believes that the framework of TPACK will continually improve and develop in the future.

B. The Application of TPACK in Second Language Teaching

With the wide application of TPACK framework in education, some scholars start to use it in second language teaching in recent years. The main researches are concentrated on EFL (English as a foreign language) teaching and CSL teaching.

Tseng, Cheng and Lin revealed three junior high EFL teachers' TPCK through CALL (computer assisted language learning) lesson plans analysis and stimulated recall interviews [18]. Besides teachers' perceptions, Tseng also researched 257 junior high EFL students' perceptions of their teachers' TPACK [19]. Then Tseng attempted to develop a TPACK assessment tool which can be used to investigate EFL students' perceptions of their teachers' TPACK [20]. With more and more applications of mobile device in EFL teaching, Tseng used the framework of TPACK to improve EFL learners engagement via tablet technology [21].

As the Chinese language is more and more popular in the world, scholars begin to apply TPACK framework to CSL teaching besides EFL teaching. Cheng and Zhan tried to explore CSL pre-service teachers' instructional strategies for TPACK via video-conferencing during their training [22]. Chai, Chin, Koh and Tan investigated Singaporean Chinese language teachers' TPACK and their pedagogical beliefs [23]. For teachers' TPACK, they suggested that constructivist pedagogical beliefs had higher degree of correlation than the traditional beliefs. Tseng, Lien and Chen used a teacher support group to develop CSL teacher' TPACK via web conferencing technology [24].

Researchers find that there is still rare research about developing teachers' TPACK in the field of CSL teaching. Next the author will talk about CSL teachers' TPACK and how to integrate TPACK into CSL course.

IV. TPACK IN CSL TEACHER TRAINING

In the era of ICT, the framework of TPACK provides a new dimension in CSL teacher training. Researchers can make pre-service CSL teachers know the role of TPACK in CSL course and how to integrate it into CSL teaching in CSL teacher training. McCrory put forward that three aspects were important when integrating TPACK into specific course: (1) Where to use technology in the course; (2) What kind of technology can be used in the course; (3) How to use technology to teach in the course [25]. It gives a good perspective to integrate TPACK into CSL teaching and develop CSL teachers' TPACK in the teacher training.

A. CSL Course and TPACK

The frame of TPACK not only enhances the teaching methods in the classroom through technology for second language educators, but also brings more cultural and linguistic meanings [26]. Table I shows examples of core factors of TPACK in CSL course.

TABLE I. THE EXAMPLES OF CORE FACTORS OF TPACK IN CSL COURSE

TPACK Constructions	Examples of Core Factors of TPACK in CSL Course
CK	Basic knowledge of Chinese, such as Chinese characters, Chinese vocabulary, Chinese grammar, Chinese pronunciation and so on.
PK	Knowledge about second language acquisition, learning strategies and Chinese language teaching methodology.
TK	Knowledge about basic concepts and abilities about computer assisted Chinese language learning.
PCK	Knowledge of using inductive method or deductive method to explain Chinese basic ability.
TCK	Knowledge of using tablet PC, mp3, smartphone, e-book or other mobile devices to learn Chinese characters or vocabulary.
TPK	Knowledge about how to use the software of ANOVA or SPSS to analyse the data from CSL classroom.
TPACK	Knowledge of using traditional teaching methods and mobile assisted language learning to increase communicative competence of Chinese as a second language in a blending learning environment.

Table I shows the framework of TPACK can be successfully applied to CSL course. However, it is necessary to make CSL teachers know how to integrate TPACK into the CSL Course in the CSL teacher training.

B. How to Integrate TPACK into the CSL Course

Here the author will demonstrate how to integrate TPACK in the CSL course through three sections.

1) Where to use technology in the CSL course:

When applying TPACK framework to the CSL course, where to use technology is the first problem needing to be overcome. Traditional teaching modes often ignore the importance of technology. In fact, technology can bring unexpected teaching experience, particularly in teaching the key and difficult point in the course.

For instance, it is very difficult to learn the classical Chinese poetry for CSL learners. Using cartoon, video or other multi-media courseware to show the specific context will be

helpful for CSL learners to know the meanings of the classical Chinese poetry.

Besides teaching the key and difficult point in the CSL course, using technology to record and collect the data from classroom is a good choice too. Meanwhile, adopting mobile devices to enhance collaborative learning outside of classroom can benefit CSL learning. In short, CSL teachers can use technology to enhance teaching effect in many cases. CSL teachers need to choose appropriate technology in specific situations.

2) What kind of technology can be used in the CSL course:

A large number of technical means can be adopted in the CSL teaching. The author classified them into three categories: digital teaching resources, teaching tools and hardware equipment.

a) *Digital teaching resources:* CSL teachers can find many Chinese multimedia coursewares, Chinese language learning Apps, Chinese e-books, Chinese digital teaching materials or other digital teaching resources from the Internet. In recent years, some universities also build Chinese interlanguage corpuses. It is of crucial significance to understand CSL learners' study situations and supports firsthand research data for CSL teachers.

b) *Teaching tools:* The development of technology offers a great deal of teaching tools for CSL teachers, such as Internet, email, forum, chatting room and blog. Remarkably, some mobile teaching tools begin to receive attention by CSL teachers. Smartphone, tablet PC or other mobile devices can assist CSL teachers to teach without the restrictions of time and space.

c) *Hardware equipment:* Nowadays, many universities in China have the multimedia classrooms for CSL students. Further, some universities build intelligence classrooms. CSL students can download learning materials from the cloud database, use digital devices to interact with their classmates and gain individualized instruction in intelligence classrooms. Undoubtedly, the intelligence classrooms assist CSL teachers to integrate technology effectively into the CSL teaching environment.

3) *How to use technology to teach in the CSL course:* In the CSL teaching environment, teachers need to understand how to use technology to teach, in order to help students gain the best learning outcomes. The author believes that CSL teachers can consider how to use technology to teach from three dimensions:

a) *Enhancing more input information:* In the second language learning process, enhancing input information plays important role. CSL teachers can use technology to distribute digital learning materials or support students more learning opportunities.

b) *Creating more learning environments:* CSL learners need to learn Chinese in learning environment. One of the important missions of CSL teachers is to create more learning environments for CSL learners. CSL teachers can use video

conference, blog or chat room to enhance learning environments.

c) *Supporting more interaction opportunities* : If CSL learners can have more interaction opportunities, they can get more information, and thus gain better learning effect. CSL teachers should use social media or other interactive softwares to support more interaction opportunities for students.

V. CONCLUSIONS

The framework of TPACK offers a new dimension for CSL teacher training. The paper demonstrates the current situation of CSL teachers' development and new requirements for CSL teachers in the ICT age, and presents the development of TPACK and its application in L2 teaching. The author attempts to present how to make pre-service CSL teachers know the core factors of TPACK in CSL course and how to integrate TPACK into CSL course in the CSL teacher training.

In the teacher training, pre-service CSL teachers receive systematic training and equip themselves with content, pedagogical and technological knowledge. However, they need to constantly develop their TPACK in the teaching process. The author gives the following suggestions on developing pre-service CSL teachers' TPACK in the teacher training. Firstly, it is necessary to build a communication platform for developing CSL teachers' TPACK. TPACK is a new emerging framework and is still in the development stage. Meanwhile, the professional CSL teacher is also a young career. Researchers should build the communication channel for pre-service CSL teachers to share the teaching experience. Secondly, it is necessary to implement microteaching for developing pre-service CSL teachers' TPACK. For better understanding how to integrate TPACK into CSL course, pre-service CSL teachers need enough teaching practice. It is obvious that microteaching is a good choice. At last, it is imperative to cultivate the reflective awareness of pre-service CSL teachers. When applying the TPACK framework to CSL teaching, CSL teachers should be able to reflect on their teaching practice and constantly adjust teaching methods according to the teaching effect.

In the future, the author will conduct empirical research on developing CSL teachers' TPACK in the teaching context.

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