

Chinese Dual Language Immersion Teacher Professional Learning Community

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Abstract

To support the increasing numbers of Chinese language programs in the United States, there is a need to recruit and support highly qualified teachers. In this study, we described an online professional learning community (PLC) among a small group of Kindergarten Chinese teachers. All the teachers were visiting teachers with prior teaching experiences from China. Based on PLC meeting notes, artifacts, and individual teacher interviews, we explored teachers' development of human, social, and decisional capitals, and the impact of PLC on their instructional practices. Discussions and implications were also provided to further cultivate, sustain, and expand such professional learning opportunities for teachers from diverse backgrounds.

Introduction

There is an increase of Chinese-as-a-foreign-language (CFL) programs in the United States. According to the American Council for International Education's report (2017), the number of CFL learners was 227,086 across 1,144 programs during the 2014–15 academic year, ranking first among the less commonly taught languages (LCTLs) taught in K–12 settings. In addition, more and more U.S. public schools also offer Dual Language Immersion (DLI) programs where both English and the partner language (e.g., Chinese) are used in content area instruction. According to the 2021 national canvass of DLI programs, there are 312 Chinese DLI programs in the United States, only second to the Spanish DLI programs (Roberts, 2021).

With the rapid increase of CFL and Chinese DLI programs, there is a critical need to recruit, prepare, and support teachers in these programs (Everson, 2016; Ruan et al, 2016). There are three general categories of teachers working in CFL and DLI settings in the United States: heritage speakers, English speakers, and visiting teachers (Stewart & Livaccari, 2010). Heritage speakers are native or heritage speakers of Chinese who reside in the United States. Native English speakers include those who participated in the K–12 CFL or DLI programs themselves and are English-Chinese bilingual. The number of heritage speakers and English speakers working in CFL or DLI programs is very limited. In states where there are few Chinese heritage speakers or English Chinese bilingual speakers, most of the Chinese language programs rely on visiting teachers as the major teaching force. Visiting teachers are Chinese nationals who are recruited to teach in the U.S. K–12 schools through visiting programs. These teachers are native Chinese speakers, and most have had prior teaching experiences in China. Visiting teachers typically do not have experiences

learning and teaching Chinese as a second language, and most of them are not familiar with the U.S. educational system, pedagogical expectations, and American society and culture in general.

Visiting teachers have specific professional development needs as they navigate the teaching settings in U.S. K–12 schools. In addition to focusing on pedagogical knowledge and skills regarding foreign language instruction in general, these teachers need to develop better understanding of the U.S. educational system, instructional practices, characteristics and readiness of K–12 learners, and ways to communicate effectively not only within the Chinese language classrooms, but also with other teachers and families. The need to develop professional language communication and collaboration skills is especially salient for visiting teachers working in DLI programs. Different from CFL programs where the teacher can manage the curriculum and instruction mainly using the Chinese language, DLI programs require teachers to use both English and Chinese in content-based instruction and some DLI programs require collaborations and co-teaching between English-speaking teachers and Chinese-speaking teachers.

Further, researchers have identified unique professional development needs among Chinese teachers. Saydee (2016), for example, explored beliefs and practices of LCTL teachers. Chinese teachers in the study shared concerns regarding exclusive use of the target language. Polin (2021) examined teacher self-efficacy based on responses from 47 Chinese teachers in North Carolina. Variances were observed regarding teachers' perceived capability to demonstrate knowledge of Chinese linguistics, adapt second language acquisition theories and methods in Chinese language instruction, design differentiated instruction, create standards-based curricula, assess students through multiple measures and performance-based tasks, support interactions, and integrate technology in planning and instruction. Teachers rated themselves the lowest regarding engaging in reflective practices. These studies highlighted the need to not only offer general professional development programs to support teachers' instructional effectiveness, but also intentionally engage Chinese teachers in dialogues and reflections on their professional experiences. Further research is needed to cultivate and explore such reflective and collaborative learning experiences among Chinese teachers in U.S. K–12 settings.

To meet these professional development needs of visiting Chinese teachers working in DLI programs, we supported professional learning communities (PLCs) among visiting Chinese teachers in North Carolina. All teachers were visiting teachers with prior teaching experiences from China. The PLCs were organized using both synchronous and asynchronous platforms to allow teachers working in different schools located across the state to participate in PLC activities.

In this study, we focused on the Kindergarten PLC to explore the impact of the PLC on teachers' development of professional capital and their instructional practices. Two research questions were addressed in this study: 1) how do teachers develop their professional capital through their engagement in the PLC? and 2) how does teachers' PLC engagement impact their practices in Chinese DLI programs? Findings from this study not only provided specific examples of PLC activities that may support visiting Chinese teachers working in DLI programs, but also offered insights for administrators and teacher educators recruiting and supporting visiting teachers in general.

Literature Review

Professional Learning Communities

PLC is widely implemented across U.S. schools to offer teacher reflective dialogue space and professional development support. PLCs can be traced back to teachers' reflective practices (Dewey, 1929; Schön, 1983). Instead of focusing on individual teacher's reflective inquiries, PLCs

were developed to centre on teachers' shared leadership and collaborative inquiries to support student learning and school improvement (Darling-Hammond et al., 2017; Hargreaves, 2007; Hord, 1997). Situating teachers' learning and professional development in communities of practice (Wenger, 1998), PLCs were established in schools to "promote and sustain the learning of all professionals in the school community with the collective purpose of enhancing student learning" (Bolam et al., 2005).

Scholars have established general agreement on key features of PLCs. These key features include shared values and vision, collective responsibility, reflective professional inquiry, collaboration, and group and individual learning (Bolam et al., 2005; Stoll et al., 2006). The shared values and vision establish the foundation for the learning exchange space for PLC participants who assume collective responsibility to cultivate and sustain the learning community. Through PLC activities, teachers engage in reflective inquiries and collaborations to enhance their teaching practices. Effective PLC engagement leads to group learning in addition to individual development.

Even though PLCs' positive impact on student learning has been widely acknowledged (Bolam et al., 2005; Dogan et al., 2017; Stoll & Louis, 2007; Vescio et al., 2008), challenges of sustaining PLCs have also been documented (Fullan, 2007; Hargreaves, 2007). First, the accountability mandates may narrow PLCs' focus on standardized testing scores as the only student learning outcome measure. Teachers may be pressured to align their educational values and instructional practices with mandated curriculum rather than engage in transformative capacity building through PLCs (Hargreaves, 2007; Philpott & Oates, 2017). The narrow focus on reading and math scores also disincentivizes meaningful participation of and innovations from educators from a wide range of disciplinary areas in schools. Further, with the original focus on school improvement, most PLCs in U.S. schools are grade-level or school-based. Participation in PLCs may be restricted by school boundaries (Stoll & Louis, 2007).

These challenges are especially salient for Chinese teachers working in U.S. K–12 settings because there are typically only a couple of Chinese teachers in one school, and they may not have designated time to engage in PLC activities focusing on Chinese instruction. While visiting teachers benefit from learning exchanges and collaborations with other content area teachers at the grade-level and within the school, their unique professional development needs cannot be sufficiently addressed through grade-level or school-based PLCs alone.

PLC is not a foreign concept for teachers from China. The concept and principles of PLCs have been integrated in teachers' collaborations in China through Teaching Research Groups (or *jiaoyanzu*) (Cao & Qiao, 2013; Wang, 2016; Zhang & Pang, 2016). Researchers have documented the positive impact of such teacher collaborations on both teacher professional growth and student learning in China (Gao & Wang, 2014; Tucker, 2014; Wang et al., 2017; Zhang, et al., 2017). Based on a historical review of PLCs in China during 1949–2019, Chen (2020) affirmed the long tradition of PLCs among teachers in China and argued that collaborative tradition among teachers is rooted in the Chinese culture as well. Contrasting PLCs in China and PLCs in the western world, Chen (2020) pointed out that PLCs in China typically operated at the system level across schools and the systematic approach ensured the effectiveness and sustainability of teacher collaborative efforts beyond school boundaries.

In this study, we supported the development of PLCs among visiting Chinese teachers working in different schools in North Carolina so that these teachers' unique professional development needs can be addressed. Building upon visiting teachers' PLC experiences from their prior teaching experiences in China, teachers led the design and implementation of the PLCs to focus

on grade-specific issues and strategies through collaborative inquiries and reflective dialogues focusing on Chinese DLI instruction.

Teacher Professional Capital

To examine the impact of PLC engagement on teacher professional growth, we adopted the professional capital lens. According to Hargreaves and Fullan (2013), teacher professional capital entails human capital, social capital, and decisional capital. Human capital refers to teachers' individual knowledge, skills, and overall preparedness of being a teacher. Social capital is situated in teachers' professional network through which teachers exchange ideas, engage in collaborative inquiries, and generate renewed understandings of teaching. Decision capital refers to teachers' judgment and decision making based on their growing expertise and experiences they develop throughout their career. Teachers' development of human capital, social capital and decisional capital reflects their growth in collaborative professionalism instead of contrived collegiality (Hargreaves, 2019).

Scholars have employed professional capital as a lens to study teacher development and engagement. To explore teachers' culturally responsive practices in full-service community schools designed to support historically underserved students, Sanders et al. (2021) reported teachers' professional capital in three schools using a qualitative case study and underscored the importance of organizational social capital based on their findings. Employing both qualitative and quantitative methods, Hanreddy (2019) combined professional capital with reciprocity as measures of success to examine the implementation of a professional development school partnership. Focusing on teachers in China, Wu and Chen (2022) studied factors that influence teacher effectiveness in the massive open online course (MOOC) environment based on data from teachers who actively participated in an online MOOC platform. Statistical analysis was conducted to operationalize teacher professional capital based on social exchange theory to draw implications to support teachers in designing and offering high quality MOOCs.

Instead of prescribing standardized protocols and curriculum for teachers to implement, the professional capital lens allows researchers to explore the way teachers initiate and engage in collaborations and reflections with one another based on their localized problems of practice and collective strategies and solutions. This lens is consistent with the PLC features, and PLC is one of the forms that engage teachers in professional capital development (Hargreaves, 2019).

However, limited research has explored the development of teacher professional capital through PLC engagement. Studies that employed the professional capital lens mainly focused on teachers working in their home country educational settings (e.g., Lee, 2021; Sang et al., 2021; Wu & Chen, 2022). In this study, we expanded the use of the professional capital lens to focus on the PLC engagement of visiting Chinese teachers working in DLI programs in U.S. schools. These teachers' human capital was formed through their prior teaching experiences in China and was further developed through their learning and negotiation in the new teaching contexts in the United States. Their prior experiences with PLCs in China also informed their social and decisional capital growth through PLC activities focused on DLI instruction, an instructional format that differed from their prior teaching contexts. Using professional capital as the lens in this study allowed us to examine the impact of teachers' PLC engagement not only on teachers' individual human capital development, but also on their social and decisional capital growth as a group.

Methods

Program Context and Participants

All teacher participants in this study were Kindergarten teachers working in Chinese DLI classrooms in North Carolina. The state had its first Spanish DLI program in 1990. As of 2022, there are over 240 DLI programs in eight different languages including Chinese. While all DLI programs share the same emphasis on content area instruction in both English and the partner language (e.g., Chinese), specific program structures may vary. Language allocation, the ratio of the use of English to the use of the partner language for instruction, is one way to describe the specific DLI program structure (Howard et al., 2018). In this study, all teachers worked in 80/20 two-way immersion programs, which means that approximately 80% of the instruction was delivered in Chinese while 20% was delivered in English to all students including both native English speakers and native or heritage Chinese speakers. The visiting Chinese teachers in these DLI programs may teach all core subjects (i.e., reading, math, science, and social studies) in both Chinese and English or co-teach with another English-speaking teacher on selected subjects.

Visiting Chinese teachers participated in this study were recruited by a global education company from mainland China to support the growing number of DLI program offerings in North Carolina. Teachers were offered teaching positions for three years, with a possible extension of two more years, for a total of five years. At the time of the study, there were seven visiting teachers who were recruited by the global education company to teach in Kindergarten DLI programs in North Carolina. All seven teachers involved in the Kindergarten PLC and agreed to participate in this study.

Teachers' overall years of experiences, their experiences teaching in U.S. Kindergarten settings, and their roles and responsibilities in the DLI program may influence how they engaged in PLC activities and their perceptions of the impact of PLC engagement on their professional capital development and instructional practices. Teacher participants have varied levels of prior teaching experiences. Among the seven teacher participants, Lily had less than 5 years of total teaching experience; Renee, Chelsea, and Wendy had 5-10 years of teaching experience; and Holly, Sally, and Daisy had more than 10 years of teaching experience. At the time of the study, Holly, Sally, Chelsea, and Wendy have taught in U.S. schools for 3-5 years, while Renee, Lily, and Daisy just started their teaching positions in the United States. Holly and Wendy have the most experiences working in U.S. Kindergarten settings. Both have taught Kindergarten since they started teaching in U.S. schools. As an experienced teacher teaching in U.S. schools, it was Chelsea's first year teaching Kindergarten at the time of the study. All teacher participants worked in DLI programs at the school. Holy, Daisy and Chelsea taught all subjects and served as homeroom teachers at their school. The other four teachers co-taught different subjects with other English-speaking teachers in the DLI program at their schools. Table 1 summarizes the background of all participants.

Table 1.*Participants' Background*

Pseudonym	Total Years of Teaching Experiences	Years of Teaching in the U.S.	Years of Teaching in Kindergarten	Roles & Responsibilities
Holly	11	4	4	DLI teacher – all subjects Homeroom teacher PLC facilitator
Sally	12	3	2	DLI teacher – co-teach in reading
Renee	6	1	1	DLI teacher – co-teach in reading and math
Lily	4	1	1	DLI teacher – co-teach in reading and math
Daisy	18	1	1	DLI teacher – all subjects Homeroom teacher
Chelsea	8	5	1	DLI teacher – all subjects Homeroom teacher
Wendy	10	5	5	DLI teacher – co-teach in math, science, and social studies

Data Collection

To address the research questions, qualitative data including PLC meeting notes, PLC artifacts (i.e., lesson plans, teaching materials, student work samples), and individual interviews were used in this study.

PLC meeting notes and artifacts were collected throughout the academic year in an ongoing matter. During the 2021–2022 academic year, the PLC focused on collaborative lesson planning and assessment design. The PLC had quarterly virtual meetings synchronously (i.e., four meetings throughout the year) and frequent asynchronous communications via a social media platform, wechat. PLC artifacts were shared via a Google Drive folder in an asynchronous manner as well. Kindergarten teachers used 32 books throughout the year (i.e., 8 books per quarter). These books aligned with the curriculum and the DLI pacing guide across the schools. Teachers worked collaboratively on lesson planning and instructional material development. Each teacher was assigned 4-5 books to take the lead on instructional planning. Other teachers also contributed their ideas and additional instructional activities and materials. All curriculum materials were uploaded and shared through the Google Drive folder. Teachers also shared representative deidentified student samples after the delivery of the lesson using the shared folder or through wechat.

Prior to the academic year, the PLC had one synchronous meeting for teachers to share teaching beliefs and experiences, and established PLC ground rules. Four teachers with experience teaching in the United States agreed to each create one teaching unit to share with the group as examples via Google Drive folder. Those who were teaching in the U.S. for the first time contributed to the unit plan development and asked questions through the wechat platform in preparation for the new academic year. During the fall semester, teachers started to share more about their instructional experiences in their own classrooms and content-specific instructional strategies. In addition, teachers started to create online shared space for student collaborations. Through the synchronous discussions, the PLC agreed on the use of a shared weekly lesson plan template. At the end of the fall semester, the PLC reflected on the use of shared teaching resources and decided to focus PLC discussions on student engagement and academic performance during the following spring

semester. Professional learning opportunities designed to support teachers' use of the weekly lesson plan template and their implementation of various classroom management techniques were offered. Coaching support was also provided. Towards the second half of the spring semester, the PLC focused its discussions on the use of alternative assessments to measure student learning and inform instructional practices. Teachers across the schools piloted alternative assessment tools and engaged in discussions to plan for their future professional development engagements. Table 2 includes the timeline, synchronous meeting focus, asynchronous activities, and PLC outcomes.

Table 2.

PLC Timeline and Activities

Timeline	Synchronous Meeting Focus	Asynchronous Activities	PLC Outcomes
August-September, 2021	Share teaching beliefs and experiences	Experienced teachers created one teaching unit including class activities and assignments; new teachers contributed to the unit planning (Google Drive)	PowerPoints and worksheets for Unit Instruction
	Establish PLC ground rules	Teachers shared resources in preparation for the new school year (wechat)	Activity ideas for Chinese festivals
			Resources for new teachers
October-November, 2021	Discuss a weekly lesson plan template	Share instructional experiences and artifacts (Google drive)	Re-organized Google Drive folder with more instructional resources
	Share content area instructional strategies	Create shared space for student collaborations (padlet)	Shared collaborative space for students
December 2021-February 2022	Focus on student engagement and academic performance	Professional learning opportunity focused on enhancing student academic performance	Application of shared weekly lesson plan template
March-May, 2022	Use alternative assessments to measure student learning and inform instruction	Share end-of-year resources (Google drive)	Pilot of alternative student language assessment
	Reflect on professional engagement to plan for future PLC	Celebrate students' accomplishments (wechat)	PLC plan for 2022-2023

At the end of the spring semester, individual interviews were scheduled with each teacher participant. During these interviews, teachers shared their teaching experiences and teaching contexts, described their experiences in the PLC, shared examples of meaningful PLC engagement, and the impact of PLC on their instructional practices and student learning. In addition, teachers were invited to share ideas to further enhance their PLC experiences in the coming academic year. These interview questions were designed to solicit both teachers' engagement through the PLCs based on their contributions during the synchronous and asynchronous sharing and their perception of the impact of the PLC not only on their own professional growth, but also on their instruction in the DLI programs (see Appendix A).

We, three bilingual researchers, worked together for data collection. One researcher is a DLI teacher and a participant in the PLC, one researcher is a program manager who recruited the DLI

teachers and offered professional support, and the third researcher is a teacher educator working in collaboration with DLI teachers to support the Chinese DLI programs in local schools. The interview was audio recorded and notes were taken during the interview. Interview summaries were shared with each teacher for member checking.

Data Analysis

Data were collected, organised, and analysed using an iterative thematic inquiry approach guided by pragmatism to address the research questions in this study (Morgan & Nica, 2020). Following the four phases of iterative thematic inquiry, we assessed our beliefs, built new beliefs through encounters with data, listed tentative themes, and evaluated themes through coding.

During the first phase, we started by sharing our backgrounds, teaching experiences, and our experiences recruiting, mentoring, and supporting teachers in DLI programs from our different perspectives as a teacher leader, a DLI program manager, and a teacher educator. Based on discussions regarding teacher professional capital development and Chinese DLI instructional practices, we shared our preconceptions and added memos to the proposed themes focusing on the research questions. Building upon the initial shared understanding, we reviewed all PLC meeting notes, artifacts, and individual teacher interview summaries to reconstruct our prior beliefs and substantiate our representation of the themes with specific data from our study through memo writing during the second phase. After reaching theoretical saturation (i.e., no new materials were added for memo writing), during the third phase, we listed primary themes and converted the themes to a codebook. The specific codes included human capital, social capital, decisional capital, and DLI instructional practices that were operationalized and reflected in artifacts, interviews, and meeting notes. In the final phase of the analysis, we deductively applied the codes to all the data across data sources to connect examples teachers shared in meetings and individual interviews with specific artifacts they created.

With different professional backgrounds and experiences with the PLC, we shared both the insider and outsider perspectives through collaborative data analysis and interpretation. Our regular meetings to share our memos, our experiences, and our interpretation of the data allowed us to reflect on our preconceptions and develop new understandings regarding the impact of PLC on visiting Chinese teachers' professional capital development and DLI practices.

Findings

Participants demonstrated professional capital growth through their PLC engagement. Specifically, all participants reported their individual growth as teachers (human capital), and what the groups were able to accomplish collectively (social capital). Based on their PLC engagement, the group also made decisions to continue to enhance their instructional practices and their future PLC engagement (decisional capital). As a result, the PLC collaborations impacted participating teachers' instructional practices as well. In this section, we organized our findings based on the research questions to report the development of teachers' professional capital first and then highlighted the impact of PLC on teachers' instructional practices.

Development of Teacher Professional Capital through PLCs

Individual Teacher Human Capital Development. With the focus on instructional practices in Kindergarten Chinese DLL classrooms, teachers worked together to share instructional resources, strategies, tools, and planned specific lessons and cultural activities together. All

participants, including both experienced teachers and relatively new teachers in US DLI settings, commented on how this experience was beneficial for their individual growth as teachers.

In the interview, Sally shared that she viewed the PLC as a “collaborative planning and learning process.” (Sally, interview, 04/25/2022). As an experienced teacher, she shared lessons and resources through the PLC with other teachers. She also appreciated the website, teaching materials, and instructional approaches other teachers shared through the online platform. Commenting on how the PLC is like a teacher network, Sally said that the PLC “opened a new window” for her. Wendy also commented on the benefits of PLC. She shared that

PLC reflects a shared understanding among teachers. We learn from each other, enhance our teaching, adapt what we learn from other teachers to our own instruction, and then we examine how and what our students learn based on our enhanced instruction. We analyse, evaluate, and assess what we learn. (Wendy, interview, 04/26/2022)

For first-year teachers in the U.S., the PLC discussions were helpful as they developed their understanding of being a teacher in the U.S. beyond teaching. At the beginning of the academic year, teachers new to the US schools asked questions through the informal social media platform. In response to these questions, experienced teachers shared classroom management resources such as student lunch cards designs, class t-shirt ideas, classroom decorations, newsletters, and parents’ letters. Even though each school’s contexts vary, these shared resources supported these newly arrived teachers as they prepared for the beginning of the first school year. In addition to the resources, teachers were also introduced to the local Chinese teacher association and other online teacher networks.

Both first-year and experienced teachers commented on the unique benefits of the cross-school PLC. Renee, a first-year teacher in the United States, reflected on her learning through the PLC,

The collaboration is helpful in our teaching and making family connections. Our Chinese PLC is very helpful. It allowed us to collaborate horizontally (if the school-based PLC allowed us to collaborate vertically). There are a lot of more experienced teachers in the PLC. We collaborated in our planning. They shared their experiences. So I am learning from our school teachers and learned a lot from our Chinese teachers. (Renee, 04/26/2022)

Lily also recognized the benefits of PLCs among Chinese teachers and commented on how she could contribute more based on her own teaching experiences from China:

In our Kindergarten PLC, a lot of teachers shared a lot of resources for different holidays. For example, last week, they shared resources for Earth Day. Everyone is so willing to share. We are very happy through this sharing. At our school, we do have grade-level PLC. English teachers will share with us as well. However, for Chinese, I share more with Chinese teachers. (Lily, interview, 04/25/2022)

Sally, an experienced teacher who has taught in the U.S. for three years, commented, “In school, we have grade-level PLC. We have limited access to Chinese content. [In those PLCs], it is mostly about English and math. It’s more helpful for me to work with other Chinese teachers in PLC.” (Sally, interview, 04/25/2022)

Overall, teachers benefited from the sharing space through the PLC and especially appreciated being able to exchange ideas and resources with other teachers teaching the same content and at the same grade level. Those who were first-year teachers in the United States also benefited from learning about the U.S. schools from other teachers and had more opportunities to contribute to the PLC discussions.

Cross-School Social Capital Development. With similar prior teaching experiences and working in different U.S. school settings, teacher participants collectively reflected on teaching experiences in China and the United States. The cross-school collaborations among teachers also engaged them in professional dialogues as a group and further enhanced collaborative potentials across school settings.

Comparing the difference in instructional practices in China versus in the United States, PLC participants learned more about how to support student learning in the U.S. DLI settings together. Renee shared how she learned to apply guided reading strategies in dual language instruction:

Even though I had a lot of classroom teaching experiences, it is very helpful to learn from those more experienced teachers who have worked in the U.S. classrooms for a while. When we teach Chinese, we may think that we want to focus on vocabulary. Through our PLC, I learned that we can work on student holistic learning. For example, we can introduce the book as a whole first. Then, we can focus on vocabulary. And then we can expand student learning based on the key concepts and vocabulary. I think I used to focus too much on vocabulary instruction [when I was teaching in China]. (Renee, 04/26/2022)

Through PLC discussions, a weekly lesson plan template was developed and adopted by all PLC participants. Instead of starting with vocabulary instruction, the weekly plan template emphasized the support for student overall comprehension and reminded teachers to avoid overemphasis isolated vocabulary learning.

Teachers were able to develop better understanding of the shared instructional materials and collaborated in planning to save preparation time. Chelsea reflected on how the PLC allowed her to spend more time further refining her instruction to engage students and attending to her own growth as a teacher:

Some teachers share ideas and activities that I can use in my classroom. We collaborate together. I used to make a lot of slides, worksheets, etc. If teachers can collaborate on planning, now I can spend more time thinking about new ideas to adapt the lesson plan and make it more creative and interesting. It is very beneficial for me. It helps me spend my time more productively on my own growth as a teacher. I can then in turn, share my ideas back with the team. (Chelsea, interview, 04/25/2022)

Through online asynchronous collaborations, teachers shared specific instructional technology resources. For example, Chelsea shared “CapCut” video editor to make class stories and students performance videos, and “Meitu” app to add funny filters on videos and pictures. Holly shared the “Chatterkid” app to give photos a voice to further engage students. Sally and Renea started to expand their integration of instructional technology in their teaching, using Wordwall and Seesaw to create digital games of Chinese words and sentences practices. Chelsea and Holly assigned video homework, including digital word puzzles, digital sentence games, and recording assignments.

Decisional Capital Through Instruction and Leadership. Teachers’ development of decisional capital was reflected in both their instructional decisions and their collective decisions regarding the future directions of the PLC. The cross-school collaborations strengthened teachers’ confidence in their collective efforts when making these decisions.

One of the key instructional decisions the PLC made was based on their pilot of a formative language assessment using high-frequency words. Even though there were standardized end-of-year Chinese language assessments that have been used to measure students’ language proficiency development, teachers have discussed the need to not only use formative assessments in their

individual classrooms to monitor student learning, but also employ a shared instrument so that they could compare students' learning progress across schools. Homeroom teachers also expressed the need to share student ongoing language learning progress with families. Based on asynchronous sharing of resources and synchronous discussions, each teacher volunteered to pilot the assessment in their classrooms. They decided to use a modified version of Mandarin high-frequency word assessment during the following school year. This assessment measures students' mastery of the required foundational vocabulary words at the Kindergarten level, including pictography characters and Levelled A, B and C vocabulary from the pacing guides. The PLC has decided to continue to monitor the assessment results. All teachers will use this assessment to gather student data to measure student progress across schools and to inform collaborative instructional decision making in the coming academic year.

Further, at the end of the academic year, teachers reflected on their PLC experiences and three of them expressed interest in taking on leadership roles in future PLCs. Holly, for example, shared in her interview, "I would like to serve as a co-leader in the future. I want to share my experiences and what I learned with other teachers to reach a more generative impact." (Holly, interview, 04/21/2022). Similarly, Sally and Daisy also shared in their interviews that they would like to take on more leadership roles through PLCs. At the last quarterly PLC meeting in May 2022, all PLC participants discussed having a shared leadership structure for the upcoming school year. Specifically, teachers decided that there would be a different PLC leader who organizes PLC meetings and leads PLC asynchronous collaborations every quarter. Teachers can volunteer to serve as the leader for a specific quarter. The leader needs to be willing to take on leadership roles and responsibilities. Holly, Sally, and Daisy all volunteered to serve as quarterly leaders for the upcoming academic year.

PLC Impact on DLI Instructional Practices

Teachers' participation in the PLC directly impacted their instructional practices and the learning experiences of their students. Students' use of both English and Mandarin Chinese language in classroom interactions is a good example that reflects the dilemmas teachers faced and the impact of PLC discussions. One of the major differences between CFL instruction and DLI instruction is the use of the Mandarin language in content area instruction. Most visiting teachers have limited teaching experiences working with emerging bilinguals who may participate in content area learning using their full linguistic repertoire. Not surprisingly, first-year teachers in the US DLI classrooms expressed uncertainty and anxiety about students' use of the English language in classes when Chinese language proficiency is one of the primary learning outcomes. Through PLC discussions, teachers shared resources regarding the translanguaging practices and discussed ways to create translanguaging space to honour students' multilingual assets and at the same time focus on modelling academic language in Mandarin Chinese through content instruction. The group also discussed the importance of taking students' individual preferences into consideration to offer scaffolding to support students with different learning styles and different levels of readiness to contribute to class discussions using Mandarin Chinese.

Teachers' sharing of successful implementation of specific strategies and activities led to scaled-up applications across multiple schools through PLC discussions as well. Inspired by a workshop and other teachers' practices, Holly engaged students in a class book project, focusing on theme-based curriculum, with sentence frames such as "I like..." to express personal opinion focusing on the topic regarding "seasons." This project included basic writing practices, engaging story samples for students to learn reading strategies, and potential critical thinking practice at the

kindergarten level. Holly's class created six class books through collaborative writing. Students engaged in the writing process and enhanced their Chinese writing competency through the project. Holly shared that her students were working on the class book project during their snack time, and some of them asked for additional paper and supplies to work on their writing and add drawings. Some students even used additional sentence frames they have learned in their writing for this project. Learning more about the project and its successful implementation through PLC discussions, Sally, Wendy, Renee, and Lilly implemented the same project in their classes. In Sally and Lilly's class, students used the "there be..." sentence frame to describe "ocean." Students were encouraged to submit their writing to the Chinese Bridge Chinese Language Competition for K–8 Students. More than 10 students participated in the competition from Holly and Chelsey's classes. One student's writing was selected for inclusion in the 2021–2022 year's edition of Selection of American K–12 Outstanding Chinese Works from CLTA.

The potential of the cross-school student engagement further adds to the collective capacity developed through the PLC. In addition to collaborative planning, teachers engaged in instructional collaborations across schools. Holly, for example, recorded a video of her students introducing themselves to other Kindergarteners who were Chinese learners and shared that through the PLC. Other teachers were able to include that as instructional materials in their classes to share with their students. As part of the instructional activity designed around Earth Day, Chelsey video recorded students' recommendations for taking care of our planet and shared it with the PLC. Other teachers then used this video as instructional materials to share with students in their schools. As Sally commented,

We can collaborate across schools. For example, I used other students' performance from other schools in my class to share with my students. That's very interesting and meaningful. My students were very interested in it. We are planning on having the students meet synchronously across schools. (Sally, interview, 04/25/2022)

Having the opportunity to get to know students in other schools provided the Kindergarteners an authentic purpose when preparing their video introductions and sharing. The exchange of these student videos also expanded student communications beyond individual classrooms or school. It was evident that students were highly motivated knowing that they were preparing their presentations to be videoed and shared with other students who were also learning the Chinese language and were engaged in authentic communication practices through these asynchronous video exchanges. Through these collaborations, students also became more motivated to demonstrate their Chinese language use through writing and speaking.

Discussion

The PLC described in this study involved visiting teachers who taught Chinese in Kindergarten DLI classrooms in the United States. There were several limitations in this study. First, the study only involved seven visiting teachers who were all teaching in Kindergarten DLI classrooms at the time of the study. The relatively small number of participants and specific PLC focus restricted the scope of transferability of the findings based on this study. Second, we focused our study based on data collected from participating teachers. However, we were not able to conduct any classroom observations or analyse any students' assessment outcomes due to lack of access and restrictions on research at the district and school. Classroom instructional videos and analysis of student outcomes would further strengthen the study and allow us to explore the impact of PLCs on student learning more directly. Third, all teacher participants in this study were very comfortable using

formal and informal technology platforms (e.g., Google Drive, wechat, Zoom) to engage in PLC activities. We did not provide specific technology support to assist any PLC activities. For teachers with different levels of readiness to use technology for collaboration, additional support may need to be considered to initiate and sustain cross-school online PLCs.

Despite these limitations, findings of this study expanded the current literature focusing on grade-level or school-based PLCs either in the United States or in China to consider PLCs designed for teachers from China working in U.S. K–12 settings cross school-boundaries (Chen, 2020; Stoll & Louis, 2007). Different from school-based PLCs, teachers had more in common in terms of their teaching backgrounds, language backgrounds, and teaching responsibilities. The findings of this study illustrated how PLCs can be formed to surface and address the unique professional development needs of visiting Chinese teachers in working in DLI programs in the United States. The PLC discussions reflected the unique strengths and needs of a group of teachers with experiences teaching in both Chinese and U.S. classrooms. Even though all teachers had prior teaching experiences before coming to the United States, they benefited from the PLC space to reflect on the differences between the teaching contexts and to learn more about strategies to meet the needs of multilingual students in their classrooms. Teachers' development of the weekly plan template to centre on student comprehension rather than prioritizing vocabulary instruction, their discussions of translanguaging strategies, and the resources shared regarding classroom management and family engagement were all examples of specific professional learning needs these teachers may experience. Having a space such as the PLC to share their dilemmas and concerns, to reflect on their teaching beliefs and practices, and to exchange ideas with colleagues not only provided teachers with the information needed, but also established a network of support that engaged teachers in reflective practice through dialogues and collaborations.

Further, using the professional capital lens to explore the impact on teachers' professional capital development confirmed the positive impact PLC has on teachers' development of social and decisional capital beyond individual learning (Hargreaves, 2019; Sanders et al., 2021). Meaningful collaborations with other teachers working at the same grade level and in similar instructional contexts maximized teachers' sharing and collaborative planning through the PLC. Teachers' decisions to integrate instructional technology tools, pilot formative assessment instruments, and implement the same class projects illustrated the potential of cross-school collaborations that may lead to scaled-up implementations. The impact of teacher collaboration on student exchanges through videos further illustrated the potential impact of the PLC on student engagement and student learning. These social interactions through the cross-school PLC also made it possible for teachers who may not feel as comfortable to contribute to school-based PLC meetings to become active PLC participants and to take on leadership roles. With the emphasis on standardized testing scores, CFL and DLI teachers' participation in school-based PLC discussions may be peripheral. It was very encouraging to have teachers volunteer to take on leadership roles in future PLCs and take ownership of their own professional learning experiences.

Building upon findings, three areas of research are of particular interest to further enhance our understanding of visiting Chinese teachers' professional capital development through PLCs. First, it would be valuable to engage visiting teachers as researchers to develop inquiries focusing on specific instructional innovations and collaborative strategies developed through PLC collaborations. Classroom observations and analysis of students' formative and summative assessment data would enrich our understanding of the impact of such PLC engagement on student learning. Second, while researchers have studied teacher leadership development through PLCs both in the United States and in China (e.g., Chen & Zhang, 2022; Moller, 2006), few studies

examined the development of visiting teachers' leadership capacity as part of their professional capital growth throughout their teaching career across various teaching contexts. Longitudinal studies focusing on teachers' professional capital growth may offer additional insights regarding visiting teacher leadership development through PLCs. Third, future studies focusing on PLCs involving visiting Chinese teachers with different prior teaching experiences and teaching in other grade-levels, subject areas, and school contexts in the United States could provide additional opportunities for us to develop a better understanding of the similarities and differences between the structure, implementation, and impact of PLCs in China and those in the United States. Further insights can be drawn to leverage visiting Chinese teachers' prior PLC experiences to maximize their contributions and potential for leadership opportunities in U.S. school contexts.

Conclusion

With the recent growth of CFL and Chinese DLI programs in the United States, there is an increasing need to recruit, prepare, and support teaching in these programs to meet the needs of multilingual students. It is important to recognize that in addition to contributing to the language teaching capacity through CFL and DLI programs in schools, visiting teachers have much more to offer to contribute to the overall teacher quality and instructional effectiveness in schools and have their own unique professional development needs. Visiting teachers may have teaching beliefs, instructional approaches, and classroom management styles developed based on their prior teaching experiences that present dilemmas and conflicts as they start to teach in the U.S. K–12 schools (Ruan et al., 2016). Instead of viewing these differences from a deficit perspective, administrators, teacher leaders, and teacher educators should offer PLC engagement opportunities beyond traditional grade-level or school-based structures to encourage visiting teachers to share and collaborate with one another. The cross-school PLC in this study illustrated the collaborative potential for teachers to engage in dialogic and critical reflections and develop not only individual capital, but also social and decisional capitals with the support of the professional community. It is also evident that teachers' professional growth is closely connected to their instructional practices.

The PLC described in this study presented an alternative to traditional school-based PLC or topic-centred workshops that may not offer meaningful reflective dialogue space for educators with different teaching backgrounds or professional development needs. To further sustain and expand this type of professional communities for teachers from diverse backgrounds, administrators, teachers, teacher leaders, teacher educators, and researchers need to work together to continue to explore varied PLC structures and to further build theory and practice connections for enhanced student learning.

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Appendix A

Interview questions

Let's start with your teaching background and current roles and responsibilities as a teacher.

1. Tell me a little about your background as a teacher.
 - a. How long have you been teaching?
 - b. What have you been teaching?
 - c. How would you describe teaching contexts you have experienced?
2. Tell me about your current teaching context.
 - a. How long have you been in the current teaching setting?
 - b. What are you teaching?
 - c. How would you describe your current teaching context?

I know you have been participating in the professional learning community (PLC) activities. Let's talk more about your experiences through the PLC.

3. How would you describe your experiences with the PLC?
 - a. How did you learn about the PLC?
 - b. How long have you participated in the PLC?
 - c. What activities have you participated in?
4. What are some examples of meaningful PLC experiences for you?
 - a. What have you learned from PLC activities?
 - b. How have you contributed to the PLC activities?
 - c. How have you benefited from the PLC engagement?
5. How has the PLC participation impacted your teaching or your role as a teacher?
 - a. What are some examples of PLC experiences that impacted your planning or instruction?
 - b. How has your PLC participation impacted your students' learning?
 - c. How has your PLC participation impacted your engagement with other educators, families, and communities?

You might have opportunities to lead or participate in future PLCs.

6. How would you like to lead/participate in these future PLCs?
7. Are there any other experiences or feedback related to PLCs you would like to share?