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Preparing Culturally and Linguistically Responsive Teachers across Contexts: Community-
Based Learning and Intercultural Telecollaboration

A Dissertation Presented to the Graduate Faculty of
Simmons School of Education and Human Development
Southern Methodist University

In partial fulfillment of the requirements
for the degree of
Doctor of Philosophy
in
Education

By
Sumei Wu
Dallas, Texas
December 2020

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Preparing Culturally and Linguistically Responsive Teachers across Contexts: Community-Based Learning and Intercultural Telecollaboration

Overview on the three-paper dissertation

Utilizing a three-paper structure, this dissertation examines *complementary* approaches to supporting teachers in learning from and with one another as a community of educators developing their expertise to teach culturally and linguistically diverse learners. The first approach of *community-based learning* has a longer research trajectory because it examines the context of face-to-face tutoring, in which teachers work directly with diverse learners in a physical setting as part of professional learning and move through a feedback cycle, planning – enacting – feedback - reflection. The second approach shifts into a growing area of interest, *telecollaboration*, for teacher educators, particularly in second and foreign language teaching. This approach of telecollaboration is also known as virtual exchanges, in which teachers build communities of practice with international teacher partners across cultures in online settings.

The common goal of community-based learning and telecollaboration is to empower teachers with competencies in cultural and linguistic awareness (Banks, 2010; Gay, 2010) and cultural and linguistic responsiveness (Lucas & Grinberg, 2008; Villegas & Lucas, 2011) to support diverse learners. Culturally and linguistically responsive teachers demonstrate sociolinguistic consciousness, value for linguistic diversity, and advocacy for diverse learners. They also possess pedagogical knowledge and skills, such as competencies “exploring the “sociocultural learning context and acknowledging cultural displays in understanding of others” (Flores et al., 2015, p.7), a repertoire of strategies that help understand the linguistic and academic backgrounds of diverse learners in English and their native language, and “ability to

identify the language demands of classroom tasks” (Villegas & Lucas, 2011, p. 101). Acquiring a higher level of cultural and linguistic awareness is a critical indicator for teachers’ abilities in creating nurturing learning environment (Chernging & Davids, 2019) and in improving their pedagogical competence (Gay, 2002; Villegas & Lucas, 2002).

It is of significance to strengthen cultural and linguistic responsiveness for teachers in the United States who are working with an increasing population of diverse learners (de Jong & Harper, 2005; Lucas & Villegas, 2010, 2013). Teachers in the U.S. context benefit from strengthening their competence in these areas because of three major challenging conditions:

1) An imbalance exists in the cultural, social and linguistic background between teachers and students (Darling-Hammond, 2005) in which K-12 students are culturally and linguistically diverse while 82.7% of the K-12 teacher force is White (Albert Shanker Institute, 2015).

2) Teachers have reported their under-preparedness with diverse learners in their mainstream classrooms (Gandara, Maxwell-Jolly, & Driscoll, 2005; Janzen, 2008), which is particularly concerning in light of increasing U.S. federal expectations on teacher quality and student accountability (U.S. Department of Education, 2011).

3) A continued trend of achievement gaps exist between English learners and their native peers (Snyder & Dillow, 2010).

Comparatively, foreign language (FL) teachers across the global contexts are facing different challenges imposed by globalization and advanced social networks. Due to the advancement of communication technologies and globalized social networks, students have gained increasing access to native speakers of their foreign languages in cross-cultural contexts

(Kramsch, 2014). These students are expected to not only develop foreign language abilities but also new competencies such as intercultural communicative competence (Byram, 1997) and multiliteracy skills (Helm & Guth, 2010). This has led to a tension between what they learn in the classroom and what they will need in the real world once leaving the classroom because their foreign language teachers are not yet prepared for teaching them these new competencies (Kramsch, 2014). The FL teachers are facing their own tensions as language educators at such a context: 1) a majority of them are likely lack of learning experience as such during their past education that they neither know how to interact with people across cultures nor know how to delivery instruction that targets such new competencies; 2) rather than developing a repertoire of strategies that can help contextualize and customize their instruction to the local needs of their students, they have mostly assumed that “the best pedagogical style is that of the learners’ national culture, not of the target culture”. Consequently, they tend to overgeneralize the values and cultural assumptions of the first language (L1) education and adopt the same pedagogic approaches that are used to teach L1 in the teaching of other foreign languages (Kramsch, 2014, p. 288; Holliday, 2008).

Although facing unique challenges with local and global contextualization features, teachers in the U.S. and FL teachers across the globe can both benefit from professional learning that is grounded in a common conceptual lens, the *Multilayered Complexity of Language Learning and Teaching* (Douglas Fir Group, 2016). I chose framework of the *Multilayered Complexity of Language Learning and Teaching* because it is a transdisciplinary framework that maps out “maximally diverse yet compatible approaches to SLA (Second Language Acquisition) phenomena” and guides my design of teacher learning in integrated ways that accounts for the multilayered complexity of second language (L2) learning and teaching. The complexity can be

categorized into three interrelated layers, including the micro-, meso-, and macro- level (Douglas Fir Group, 2016; Lamy & Goodfellow, 2010; Ware, 2018). The micro-level involves social action and interaction in the classroom and online learning contexts, the meso-level involves sociocultural institutions and communities, and the macro level involves ideological structures. The micro-level social interaction shape and are fundamentally shaped by the meso- and macro level of larger social institutional and cultural norms. Because the broader socio-institutional expectations significantly affect “learners’ access to specific types of social experiences and their ability and willingness to participate in them and engage with them in affiliative and transformative ways” (Douglas Fir Group, 2016, p. 37), it is important for educators to avoid a limiting view of a teacher learning approach as purely pedagogical practice and to cast it as an educational culture instead (Lamy & Goodfellow, 2010).

As guided by the Multilayered Complexity framework, my first study of community-based learning adopted a situated perspective when teachers in direct teaching experiences with culturally and linguistically diverse learners and their families within a community setting. Such learning opportunities exposed them to the diverse cultures of a local context. The framework also guides my research on teacher intercultural learning. I explored teacher intercultural telecollaboration as a complimentary model for the community-based learning model because it expands opportunities for teachers to engage with their own educational culture and other educational cultures through intercultural communication with international partners (Lamy & Goodfellow, 2010). In the study on teacher intercultural learning, I intentionally designed telecollaborative tasks to enable teachers to notice critical features relevant to language and culture teaching across the micro-, meso-, and macro-layers of complex socio-institutional and

cultural contexts, which I believe will promote the cultivation of their cultural and linguistic responsiveness.

My first paper, “Building Teachers’ Self-Efficacy by Infusing English Learner Supports into Professional Learning” focuses on the community-based learning model that provides direct teaching opportunities for teachers in the United States to improve their instruction with English learners (ELs) in a community setting. This study explores teachers’ efficacy beliefs, an important factor for teacher confidence of and motivation on delivering high-quality instruction (Bandura, 1977; Lakshmanan, Heath, Perlmutter, & Elder, 2011; Tschannen-Moran, Hoy, & Hoy, 1998), about their preparedness and adaptability to work with ELs. While this model also intentionally engaged the teachers in community activities for their increased cultural awareness and responsiveness for EL students and their families, this study emphasizes more the teachers’ self-efficacy about their linguistic responsiveness in their instruction with EL students from diverse linguistic backgrounds and with different English proficiency levels.

As previously discussed, it is my argument that, as teachers proceed to develop their cultural responsiveness, telecollaboration (or virtual exchanges) can serve as *a complementary model* to the community-based learning to provide unique opportunities for enhanced cultural responsiveness via *intercultural learning* (Bryam, 1997; Kramsch, 2009), the essential cross-cultural knowledge and skills to interact and collaborate with students from diverse cultures and different linguistic backgrounds. My second paper and third papers each focus on its use for teachers to become interculturally sensitive educators (Belz, 2003; Bohinski & Leventhal, 2015; Guth & Helm, 2010). The second paper reports on a telecollaboration project in which teachers across cultures and geographic boundaries used a mixed reality simulation lab and online

communication platforms to interact and collaborate. It explores what teachers noticed and how they leveraged their noticing to co-construct an online learning community, in particular a pedagogically rich context (Ware, 2005) or a pedagogical “third space” (Kramsch, 1993, p. 236). The third paper, which draws on a different data set from the same project, supports the second paper by primarily focusing on how to strengthen synchronous online discussions between teachers across cultures, a key aspect of telecollaborative learning to enhance teachers’ deep intercultural learning (Helm, 2013; O’Dowd, 2016). For all three papers, I am the first author for publication. Specifically, I co-authored with Drs. Paige Ware and Jillian Conry for the first paper, with Drs. Paige Ware and Meei-ling Liaw for the second paper, and Drs. Meei-ling Liaw and Paige Ware for the third paper. The next three chapters focused on these three papers, respectively.

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Chapter I. Examining Different Pathways to Promote Teacher Self-efficacy in Supporting English Learners

Abstract

Teacher self-efficacy - teachers' beliefs about their abilities to teach and produce intended outcomes – is a significant predictor of instructional effectiveness (Tschannen-Moran, Hoy, & Hoy, 1998). To promote the self-efficacy of mainstream teachers who are increasingly working with English learners (ELs) but often feel under-prepared (Gandara, Maxwell-Jolly, & Driscoll, 2005), community-based learning has been forwarded as a popular practiced-based approach because it engages teachers in direct contact with ELs to strengthen theory-to-practice connections (Faez & Valeo, 2012). Yet, little is known about how its influence on teachers' efficacy beliefs differs from the influence of a conventional university seminar in terms of unpacking areas of different preparation models (Flores et al., 2015). To address this gap, this one-year-long, mixed-methods study examines how two learning models—one focused on community-based tutoring with ELs and another focused on university-based seminar—might influence the self-efficacy of 51 mainstream teachers (22 pre-service and 29 in-service) to educate ELs. Quantitative analyses of pre/post surveys indicate that the community group reported significantly greater growth in their self-efficacy. Interview analyses uncover the different trajectories of self-efficacy formation followed by teachers at various points along their career paths. Implications for the design and implementation of professional learning are discussed.

Introduction

Research on second language (L2) teacher cognition shows that L2 teachers' beliefs and perceptions about their teaching competence can affect their actions in the classrooms and in turn

affect students' learning outcomes (Borg, 2003, 2015). Empowering teachers to develop a strong sense of self-efficacy - teachers' beliefs about their abilities to teach and produce intended outcomes- is critical (Bandura, 1977; Tschannen-Moran, Hoy, & Hoy, 1998). However, many L2 scholars over the past decades have documented teachers' lack of positive sense of self-efficacy about educating English learners (ELs) (Gandara, Maxwell-Jolly, & Driscoll, 2005; Youngs & Youngs, 2001). Increasing numbers of mainstream teachers across the globe are working with ELs, but they often report a sense of under-preparedness to integrate content and language instruction (Bunch, Aguirre, & Téllez, 2009; Gandara, Maxwell-Jolly, & Driscoll, 2005; Lucas, Villegas, & Freedson-Gonzalez, 2008).

In the absence of professional learning opportunities, content-area teachers who have not received professional learning to support ELs might hold incomplete perceptions about ELs. Researchers have documented that teachers with this background (henceforth referred to as “teachers”) can sometimes lean on negative views about the inclusion of ELs in their content subjects classrooms (Youngs & Youngs, 2001), make inaccurate decisions about educational opportunities for ELs (Reeves, 2004, 2006; Ridley, 2015), or hold a deficit view of ELs' ability to learn because of their mistaken equalization of ELs' language barriers to their cognitive competence (de Jong & Harper, 2005; Lee, 2018). They also tend to perceive instruction for ELs as “just good teaching” (de Jong & Harper, 2005) and feel underprepared to meet the linguistic needs of ELs (Polat, 2010).

Given that self-efficacy is a significant predictor of career commitment (Chesnut & Burley, 2015) and instructional effectiveness (Tschannen-Moran, Hoy, & Hoy, 1998), identifying the kinds of teacher preparation designs that facilitate positive changes in teachers' self-efficacy can inform how teacher educators might bolster teachers' perceived abilities and thus their

instructional capacity. While many teacher educators have advocated for community-based learning to increase teacher self-efficacy to educate ELs (e.g., Coady, Harper, & de Jong, 2011; Faez & Valeo, 2012), little is known about the key features of strong infusion models of community-based learning for mainstream teachers of ELs and how its influence on teachers' efficacy beliefs differs from the influence of other preparation models.

The purpose of this study was to explore the impact of two models of teacher professional learning (community-based learning and university-based seminar) designed to strengthen pre-service and in-service mainstream teachers' expertise in working with ELs in a year-long program. Specifically, we examined, quantitatively, how their sense of self-efficacy changed from the beginning to the end of the program, as well as, qualitatively, the patterns of those changes and the most useful features of the program as perceived by the participants through one-on-one interviews conducted after their professional learning. We addressed the following research questions:

How did teachers in each of the two professional learning contexts grow in their sense of self-efficacy for educating ELs?

Which learning components in the two models of professional learning did teachers find most beneficial for their self-efficacy?

What patterns characterized how each of the two types of teachers (pre-service and in-service) developed confidence in educating ELs?

Theoretical Framework

Research on general teacher education documents the significant role of teacher self-efficacy as a two-sided coin that influences both positively and negatively perceptions of teaching competence and, subsequently, their teaching practices and student learning outcomes.

A strong sense of teacher self-efficacy has been linked to teacher confidence in various instructional goals: establishing productive learning environments for students (Bandura, 1997), delivering high-quality instruction (Tschannen-Moran, Hoy, & Hoy, 1998), and applying new instructional strategies (Lakshmanan, Heath, Perlmutter, & Elder, 2011). In contrast, teachers with less confidence in their skills tend to feel less motivated (Bandura, 1977) and may find it difficult to overcome novel teaching challenges (Chesnut & Burley, 2015; Tschannen-Moran, Hoy, & Hoy, 1998). A focus on self-efficacy sources that inform L2 teachers' judgement about their teaching competence can generate important implications for L2 teacher education.

Community-based learning experiences are viewed favorably by many L2 teacher educators because such embedded, hands-on experiences allow teachers to collect evidence about their teaching ability through practice with language learners and to filter that through the lens of their peer and instructor interactions, course readings, and ongoing processing of new information (e.g., Coady, Harper, & de Jong, 2011; Faez & Valeo, 2012). To optimize L2 teacher learning for putting theory into practice (Johnson, 2006; Hennebry-Leung, Gayton, Hu, & Chen, 2019), teacher educators often design *sociocultural activities* (Cross, 2010) that acknowledge the social, practical, and contextual aspects of teacher cognition and positions L2 teachers as both *teacher-learners* (Freeman & Johnson, 1998) and *social agents* (Cross, 2010) whose learning is socially and linguistically shaped across micro, meso, and macro contexts (Doulgas Fir Group, 2016). Further, teacher educators can offer enactment opportunities and attend to how teachers then *perceive and reflect* on their participation in these learning experiences (Daniel & Pray, 2017; Farrell, 2007; Freeman & Johnson, 1998; Johnson, 2006, 2015). Many argue that efforts should be focused on strengthening *social interactions and collaboration* in teacher learning process (Canagarajah, 2016; Clair, 1998; Gibbons, 2003).

For many mainstream teachers in particular those who might not view themselves as “responsible” for language teaching, nonetheless need to be able to integrate content and language teaching (Snow, Met, & Genesee, 1989). This requires a change in their beliefs and formation of new visions (Feiman-Nemser, 2018) as they scaffold instructional supports (Echevarria, Vogt, & Short, 2016), adapt their knowledge and skills to complex teaching contexts and to different learners (Collie & Martin, 2017; von Esch & Kavanagh, 2018), and improve their culturally responsive competence as underlying guide that can influence their enactment practices relevant to student achievements (Grossman, Hammerness, & McDonald, 2009). To support them, teacher educators have called for the inclusion of an explicit focus on language and culture across teachers’ professional learning (Bunch, 2013; de Jong & Harper, 2005; Lucas & Villegas, 2010, 2013). What is particularly important is acculturating them into an asset-based perspective, from which they can navigate and integrate across complex linguistic and cultural worlds (e.g., Fitchett, Starker, & Salyers, 2012; Siwatu, 2007).

LITERATURE REVIEW

Self-efficacy sources in the field of L2 teacher education

A majority of studies on teacher self-efficacy in the field of L2 teacher education have focused on identifying sources of information that contribute to the development of L2 teacher self-efficacy (Atay, 2007; Cabaroglu, 2014; Chacon, 2005; Faez & Vale, 2012; Moradkhani & Haghi, 2017, 2019; Phan & Locke, 2015; Sevimel & Subasi, 2018; Tran, 2015; Wyatt & Dikilitaş, 2016). While some studies explored efficacy sources generated through university-based seminars (e.g., Moradkhani & Haghi, 2019; Tran, 2015), a majority focused on practice-based learning or community-based learning (e.g., student teaching, practicum) as a potential source of efficacy for L2 teachers (Atay, 2007; Cabaroglu, 2014; Faez & Vale, 2012;

Moradkhani & Haghi, 2017; Phan & Locke, 2015; Sevimeel & Subasi, 2018; Wyatt & Dikilitaş, 2016).

Many of the community-based studies align with the view forwarded by Bandura (1997) that *mastery experiences* generated through practice-based learning can affect teacher self-efficacy the most, even as different outcomes have been reported across different cultural contexts (Moradkhani & Haghi, 2017; Phan & Locke, 2015). Many L2 teacher educators have situated their work within a range of unique contexts and applied domain-specific measurements when investigating efficacy sources (e.g., Cabaroglu, 2014; Faez & Vale, 2012; Moradkhani & Haghi, 2017, 2019; Phan & Locke, 2015; Sevimeel & Subasi, 2018). The degrees of teachers' self-efficacy varied based on task types and contexts across these studies (e.g., Faez & Vale, 2012), even as they largely confirmed the importance of opportunities to gain mastery experience.

Changes in efficacy beliefs for pre-service and in-service L2 teachers

Another body of research explores how teacher efficacy beliefs change over time and across the stages of teachers' career (Atay, 2007; Cabaroglu, 2014; Hoy & Spero, 2005; Siwatu, 2007; Tschannen-Moran, Hoy, & Hoy, 1998; Wyatt & Dikilitaş, 2016). Some scholars have explored how interventions affect the development of pre-/in-service L2 teacher self-efficacy, such as pre-service teacher participation in practicum (Atay, 2007) and in-service teacher engagement in action research (Cabaroglu, 2014; Wyatt & Dikilitaş, 2016). Others focused on how a sense of self-efficacy develops across career stages (Hoy & Spero, 2005; Tschannen-Moran, Hoy, & Hoy, 1998). Pre-service teachers, for example, are arguably more likely to be receptive to new teaching strategies because they are still in the stage of developing early routines for basic teaching competence (Tschannen-Moran, Hoy, & Hoy, 1998). However, they

also tend to underestimate the complexity of the teaching profession and form unrealistic expectations, which implies the needs for providing them with opportunities to evaluate their teaching competence through implementation of new strategies and analysis of task complexity.

Compared to pre-service teachers, in-service teachers might hold relatively stable beliefs about their teaching competence, such that they could be more hesitant when asked to reshape their existing beliefs (Bandura, 1997; Tschannen-Moran, Hoy, & Hoy, 1998). It takes a gradual and complex process with challenges for individuals to reexamine their existing beliefs, in order to learn to adopt and transform new knowledge. These general challenges in changing belief structures translate into challenges in changing well-seated teaching behaviors into different types of instruction (Tschannen-Moran, Hoy, & Hoy, 1998).

Community-based learning as a source of self-efficacy

Studies that examine the efficacy beliefs of teachers with ELs show that the primary sources of their efficacy stem from community-based learning and their cultural competence for working with ELs (Flores et al., 2015; Fitchett, Starker, & Salyers, 2012; Siwatu, 2007). After participating in community-based learning, most teachers reported that gaining direct teaching experience with ELs was most powerful in affecting their positive beliefs about their preparedness to educate ELs (e.g., Coady, Harper, & de Jong, 2011; Faez & Valeo, 2012; Flores et al., 2015). For instance, teachers in Flores et al.'s (2015) study indicated a significant increase in their perceived instructional impact on EL learning and attributed their positive changes to student academic achievement and caring, positive relationships with their students and colleagues. Further, teachers' perceptions of preparation were positively correlated with their perceived effectiveness in teaching ELs (Coady, Harper, & de Jong, 2011).

While the inclusion of community-based experiences as part of professional learning is an avenue currently pursued to support L2 teachers' self-evaluation of their preparedness (e.g., Coady, Harper, & de Jong, 2011; Flores et al., 2015), gaps exist in the following research areas: 1) no studies compared two learning approaches for mainstream teacher preparation, especially university-based seminar and community-based learning that have been investigated separately in the above reviewed studies; and 2) few studies tracked whether pre- and in-service mainstream teachers may draw on different sources of learning and exhibit different patterns of uptake of efficacy beliefs. This study addresses these gaps.

Methods

We designed a mixed-methods study to explore teachers' development of self-efficacy in two learning conditions that differ primarily based on whether or not teachers were engaged in - direct teaching experiences with ELs in a community setting.

Participants

We followed a cohort of 65 mainstream teachers (pre- and in-service) who were studying to become English as a Second Language (ESL) certified in Texas where the second highest number of ELs in the United States reside. Using a stratified random assignment approach, we assigned each teacher to one of two learning conditions: community-based learning (n =32) or university-based learning (n =33). Demographic information obtained from participants at the beginning of the program is summarized in Table 1.

Table 1.

Characteristics of Participants

		University group (n =33)	Community group (n = 32)
Gender (n=65)	Male	6.1%	18.8%
	Female	93.9%	81.3%

	20-29	43.8%	40.6%
Age	30-39	31.3%	21.9%
(n=65)	40-49	12.5%	12.5%
	50+	12.5%	25.0%
Teaching	Pre-service	48.5%	56.3%
status	In-service	51.5%	43.8%
(n=65)			

As shown in Table 1, most participants were female (88%) and under age 40 (69%). Participants within most age ranges were fairly evenly distributed across the two learning conditions, and were nearly evenly divided between pre-service (48%) and in-service (52%). About 85% of in-service teachers taught in elementary settings. We had an attrition rate of 14 participants (six participants in the community group and eight participants in the university group) and seven of these 14 withdrew/dropped before the first class session. Therefore, a total of 51 participants completed the program (78% of the sample). Specifically, 26 teachers remained in the community group (13 pre-service and 13 in-service) and 25 teachers remained in the university group (9 pre-service and 16 in-service).

Research Design

In this one-year-long program, both groups received the same syllabus, assignments, number of contact hours, frequency of contact (3 hours/week for 28 weeks), and weekly online modules covering topics related to second language acquisition, ESL instruction and assessment, cultural awareness, history and law, and family and community involvement. The two groups differed in two ways: location and tutoring. The community group spent their 3 hours of weekly contact in a non-profit community setting that served children and families for whom English is not their home language. At the first hour, teachers tutored small groups of 2-4 ELs and practiced specific instructional strategies. They then participated in a face-to-face discussion session with

their peers and instructor on a weekly focal topic paralleled with the university group's topic.

Teachers across both conditions had the opportunity to discuss instructional strategies, exchange ideas on solutions for potential problems, and learn ways to engage and advocate for ELs.

Teachers in the university group, instead of tutoring for one hour, participated in three hours each week of seminar-based discussions, role playing, and in-class hands-on and application activities in a traditional university setting.

Data Collection

We gathered a total of 102 pre/post ($n = 51$ teachers) survey responses to measure teachers' efficacy beliefs about working with ELs and conducted one-to-one interviews at the end of the program.

Teacher self-efficacy survey. The survey measured teachers' sense of self-efficacy about their preparedness to work with ELs in content subjects. Such task-specific and context-specific survey items include their preparedness to differentiate instruction for individual needs of ELs, their deep understanding of language demands in content areas, and their ability to give feedback while teaching. Teachers were informed that their participation in the survey was voluntary, their responses would remain confidential, and results would be reported in an aggregate manner to preserve respondent anonymity. They were asked to rate the extent to which they agreed with each survey item based on a four-point scale ranging from 0 (strongly disagree) to 4 (strongly agree).

We draw on 15 items that measured teachers' sense of preparedness about two domains (perceived EL teaching knowledge and teaching adaptability) because they were critical teaching competencies our program aimed for teachers to develop and we followed scholars' advice on exploring teachers' adaptable abilities to adapt to different tasks and contexts (Collie & Martin,

2017; Faez & Valeo, 2012). Five items measured their perceived knowledge of EL teaching and 10 items measured their teaching adaptability. Examples of survey items about the perceived EL teaching knowledge are “I am prepared to tailor instructional and other services to the needs of EL students” and “I possess a clear understanding of the language demands of the content area that I teach.” Examples for teaching adaptability are “I am able to think through a number of possible options to assist me in a new situation” and “When uncertainty arises, I am able to minimize frustration or irritation so I can deal with it best.” To ensure scale reliability of individual items, we calculated Cronbach's alphas and principal component analyses. The analyses show that survey items formed reliable scales with Cronbach's alphas of greater than 0.75: perceived EL teaching knowledge (.84 in pre-survey and .88 in post-survey) and teaching adaptability (.86 in pre-survey and .91 in post-survey).

Interviews. A follow-up interview was conducted with each teacher at the end of the program in a face-to-face, audio-recorded session. We prompted teachers about their perceptions of the most useful component of their learning environment (community-based or university-based). First, they gave ratings to indicate their confidence before and after the program using a five-point scale with a range of 1 for “not confident at all” and 5 for “very confident”. Second, they were provided with a list of six items that featured key learning activities they had engaged in. Five items were made available for the university group to rank (completing online modules, doing in-class hands-on and/or application activities with peers, participating in classroom discussions, interacting with the instructor, and practicing for the ESL exam) and six items for the community group, with an additional item of tutoring ELs. Finally, they were prompted to share their top selection and explain why they considered it the most influential source of efficacy to work with ELs.

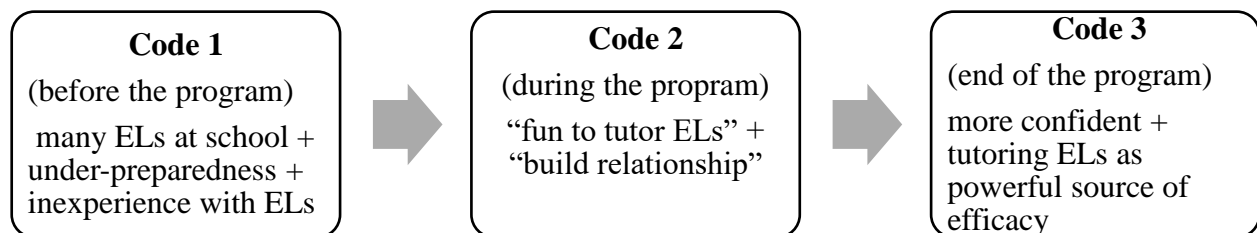
Data Analyses

Data analyses included quantitative analyses of 102 pre/post surveys, an independent sample t-test of 102 confidence ratings, and qualitative analyses of 51 interview transcripts. At first, we ran descriptive statistical analyses to evaluate the baseline equivalence between two groups and because the baseline differences of the sample were large, we conducted a confirmatory impact model to control for baseline differences to estimate the outcomes of perceived EL teaching knowledge and an exploratory impact model to estimate the outcome of teaching adaptability because we did not have baseline measures on this variable. Next, we calculated standardized effect sizes using Hedges' g for the outcomes of teacher self-efficacy (WWC, 2017) based on adjusted means. We calculated adjusted means taking the covariates into account to produce a single measure that permits group comparisons. Second, to measure the changes in teacher efficacy, a regression model included baseline outcome measures and pre-treatment teacher characteristics to control for baseline differences and to improve the precision of the impact estimate (Tabachnick, Fidell, & Ullman, 2012). The model was specified as: $Y_i + \beta_0 + \gamma_0 Treatment_i + X_i + \epsilon_i$ where Y_i is the outcome measure for teacher i , β_0 is the covariate-adjusted overall mean of the outcome, $\gamma_0 Treatment_i$ is the treatment effect estimate for teachers assigned to the community group, and X_i is a matrix of teacher baseline covariates, including pre-treatment scores on the respective outcome measure, gender, age, and teaching experience measures. To analyze the teacher pre/post confidence ratings, an independent sample t-test was conducted to examine whether the community group would feel more confident than the university group (Howell, 2013).

In coding 51 transcripts, we used two approaches to identify themes as outlined in a multi-step process forwarded by Miles, Huberman, & Saldaña (2019). First, we employed holistic coding to capture and categorize the key ideas of large units of transcript data. Next, we followed a two-cycle coding approach as a data-condensation process, first identifying the most meaningful data chunks, and then further condensing the data by clustering similar codes into larger categories. In the first cycle, we applied causation coding with 3-sequence pathways to unpack “the complexity of influences and effects on human actions” (p. 79), capturing how and why community-based learning functions as a source of teacher self-efficacy to work with ELs. It allows interrelated or mediating elements to be combined and form into three-sequence causation pathways (CODE 1 > CODE 2 > CODE3). The + symbol represents the combination of elements indicated by participants as interrelated parts and the > symbol denotes “leads to”. Below is an example of our analysis of an in-service teacher’s pathway (Figure 1).

Figure 1.

Coding process of three-sequence causation pathways



The three codes are interrelated and their interrelatedness shows the dynamic changes of teacher self-efficacy at different time points. In the second cycle, we generated changing patterns for pre- and in-service teachers in the community group for explanations following the three-sequence causation pathways.

Findings

RQ1: How did teachers in each of two professional learning contexts grow in their sense of self-efficacy for educating ELs?

Results showed statistically significant differences such that the community group reported greater self-efficacy than the university group. The results in Table 2 demonstrate that teachers in the community group ($M = 3.57$, $SD = .38$) reported a statistically significant higher level of EL teaching knowledge compared to the university group ($M = 3.25$, $SD = .49$) with a substantive effect size of $.67$, $p < .05$. Another statistically significant difference existed in participants' teaching adaptability between the community group ($M = 3.65$, $SD = .32$) and the university group ($M = 3.38$, $SD = .44$) with a larger effect size of $.69$, $p < .05$.

Table 2.

Descriptive Statistics from Impact Estimates on Teacher Preparedness to Teach ELs

Construct	Outcome variables	University-based learning	Community-based learning	Effect size (Hedge's g)	<i>n</i>
		Adjusted <i>M</i> (Adjusted <i>SD</i>)			
Preparedness	EL knowledge	3.25 (.49)	3.57 (.38)	.67*	51
	Teaching adaptability	3.38 (.44)	3.65 (.32)	.69*	45 ^l

Note. Statistical significance is indicated by asterisks: * $p < .05$, ** $p < .01$, *** $p < .001$.

¹ At the time of the end of year survey, some university group teachers still did not have experience teaching a classroom of students and therefore were not presented with these questions.

Multivariate regressions were carried out to investigate whether the opportunities to participate in community-based learning could significantly predict teachers' efficacy beliefs with ELs. As shown in Table 3, the results indicated that after controlling all covariates (e.g., age, gender), community-based learning contributed significantly to teachers' increased sense of

perceived EL teaching knowledge, $F(5, 45) = 5.48, p < .05$, with an R^2 of .37 and to their efficacy beliefs about their adaptability, $F(4, 40) = 1.39, p < .05$, with an R^2 of .13.

Table 3.

Regression Analysis of Teacher Sense of Preparedness to Teach ELs

Construct	Outcome variables	Treatment	Baseline outcome measure	In-service	Female	Age	Constant	<i>n</i>
Standardized regression coefficients (SD)								
Preparedness	EL knowledge	.32* (.12)	.33** (.10)	-.07 (.11)	-.02 (.16)	.01 (.00)	2.31*** (.32)	51
	Adaptability	.27* (.13)	-	.07 (.14)	.05 (.17)	.00 (.00)	3.25*** (.23)	45

Note. Statistical significance is indicated by asterisks: * $p < .05$, ** $p < .01$, *** $p < .001$.

The results of an independent sample t- test confirmed the above results from regression analyses. At the end of the program, teachers in the community group ($M = 2.19, SD = 1.13$) felt more confident to work with ELs than teachers in the university group ($M = 1.52, SD = .96$), $p < .05$, with a large effect size, Hedge's g of .64. In other words, directly working with ELs in a community setting contributed more significantly to teachers' increased self-efficacy.

RQ2: Which learning components in the two conditions of professional learning did mainstream teachers find most beneficial for their self-efficacy?

While the above results indicate that community-based learning can have a powerful impact on teachers' sense of self-efficacy, the surveys alone do not reveal insight into *which aspects* of teachers' experiences in each learning condition were powerful. In follow-up

interviews, about 90% of the community group considered tutoring ELs the most influential on their increased self-efficacy and 58% of the university group selected the opportunity to apply in-class hands-on and application activities with peers. From both groups' explanations data, several themes emerged regarding the reasons for their choices (see Table 4).

Table 4.

Comparing Most Influential Learning Components across Learning Conditions

Community-based learning	University-based learning
Tutoring ELs	Applying in-class hands-on and/or application activities with peers
First-hand experience with real ELs	The benefits of “learn by doing”, even under hypothetical teaching scenarios
Able to apply strategies to figure out what works/not work with ELs	Learned from experienced peers
Increased awareness of EL linguistic needs and task demands	Obtained information on what worked and what did not work
Increased confidence/motivation to teach by seeing EL high engagement, eagerness to learn, and growth	Learned about information on practical and commonly used strategies from peers

Teachers in the community group expressed an increased sense of preparedness because of the opportunity to put theory into practice through first-hand experience with ELs. As Jennifer (all teacher names in the article are pseudonyms) described it, “I think first, being able to do hands on with ESL students, just like builds that confidence, and really allows you to try different strategies, see what works, what doesn’t work. And you know, I think the only way to learn is to do it with students first-hand.” Their successful implementation of strategies enhanced their efficacy beliefs. In particular, their increased awareness of ELs’ linguistic needs and task demands strengthened their perceived preparedness, as John explained:

Just being able to work with someone that you can talk about this and have strategies, but then once you’re there, of actually dealing with a student that can’t put meaning to a word

or things like that, you can really be able to see and know, oh, these things work with the student or these things don't... I see that they do struggle... they're having trouble with speaking or completing complete sentences.

Comparatively, Teachers in the university group tended to mention hypothetical mastery experiences or "secondary" sources. Instead of using strategies with actual ELs, for example, they applied or rehearsed them through role-playing or imagined scenarios of problems:

Doing hands-on activities...has been extremely helpful, mainly because she (the instructor) poses a real-life situation, and then we get into groups and we have to solve the problem, or we have to figure out, 'How would we best teach this?'...I think it just makes you think outside of the box.

They also learned about what strategies worked and did not work but it was through enactment practice with less authenticity and in a less contextually-situated environment. They enjoyed listening to experienced peers and likely believed that they could make the same accomplishments. Overall, they appreciated the opportunity to do hands-on activities and interact with experienced peers.

RQ3: What patterns characterized how each of the two types of teachers (pre-and in-service) developed confidence in educating ELs?

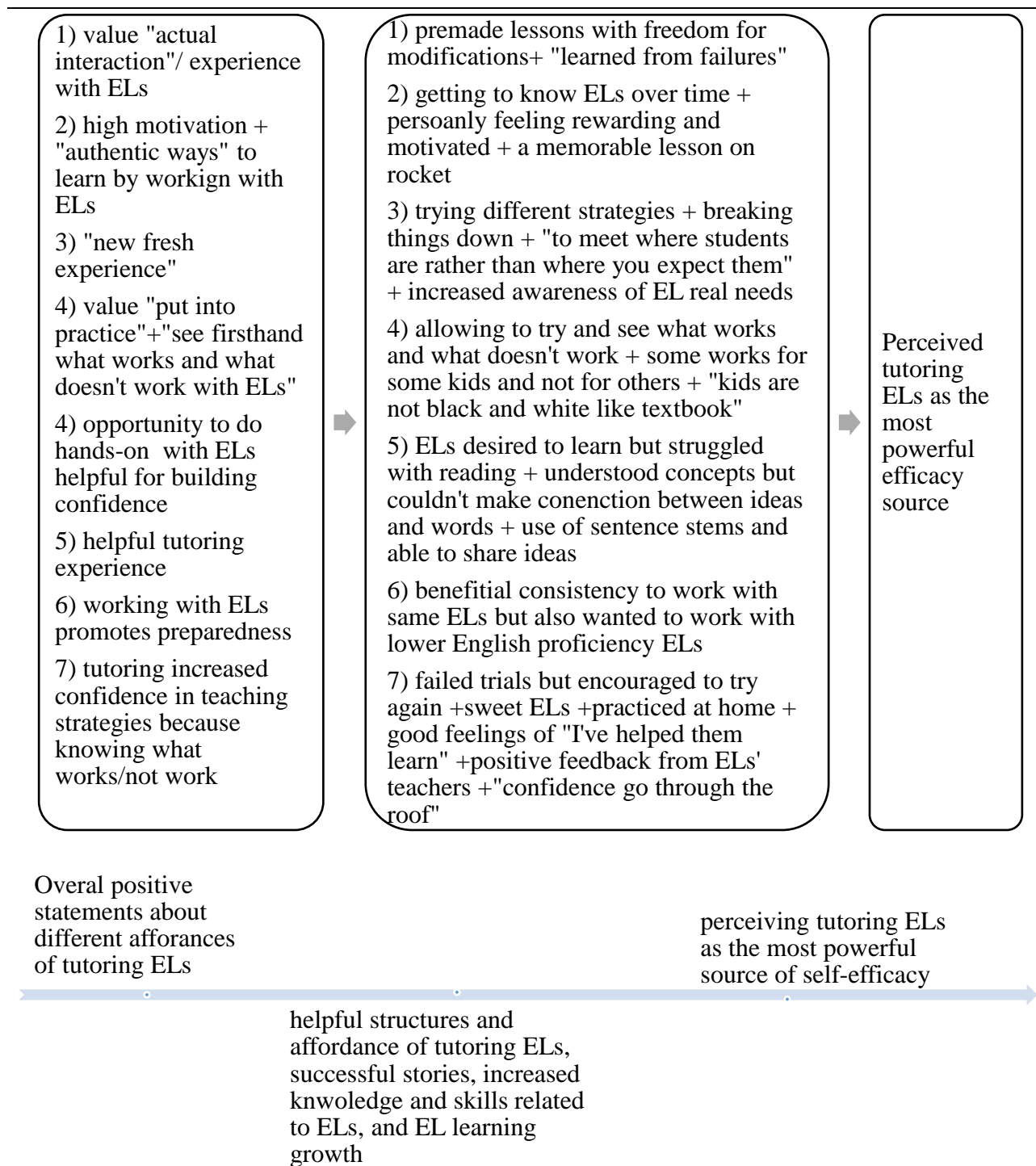
We analyzed interview transcripts for patterns in teachers' reasoning and explanations using causation coding with three-pathways (Miles, Huberman, & Saldaña, 2019). The analysis led to an interesting pattern that differentiated responses between *pre*-service teachers (see Table 5) and *in*-service teachers (see Table 6).

As shown in Table 5, pre-service teachers typically started with a positive statement about the helpful affordances of the tutoring experience, such as “actual interaction” with ELs (Margarita), “put into practice” (Ellen), “see first-hand what works and what doesn’t work” (Eugenio), and “authentic ways” to learn (Brenda); they then moved on to describe discrete experiences with ELs, their changed perceptions and knowledge of ELs, and successful stories. Johnson provided a concrete example of successful teaching with ELs and demonstrated high confidence as he described his effective use of strategies to support learning: he “showed them a short, simple video and they were able to see the actual pictures of different clouds and what the names of them are and the simple characteristics” and “actually brought leaves from outside, and petals, and things they were able to glue them, and then for clouds, I (he) brought cotton and then they glued and they also drew some pictures, so hands on.” He felt a sense of accomplishment because he perceived that “a teacher's dream is to have your kids be interested in the lesson” and his kids’ excitement to learn from him was an indicator. At last, the pre-service teachers concluded that the opportunity to tutor ELs most powerfully influenced their perceived preparedness to work with ELs.

Table 5.

Patterns of Pre-Service Teacher Self-Efficacy

Pathway part 1	Pathway part 2	Pathway part3
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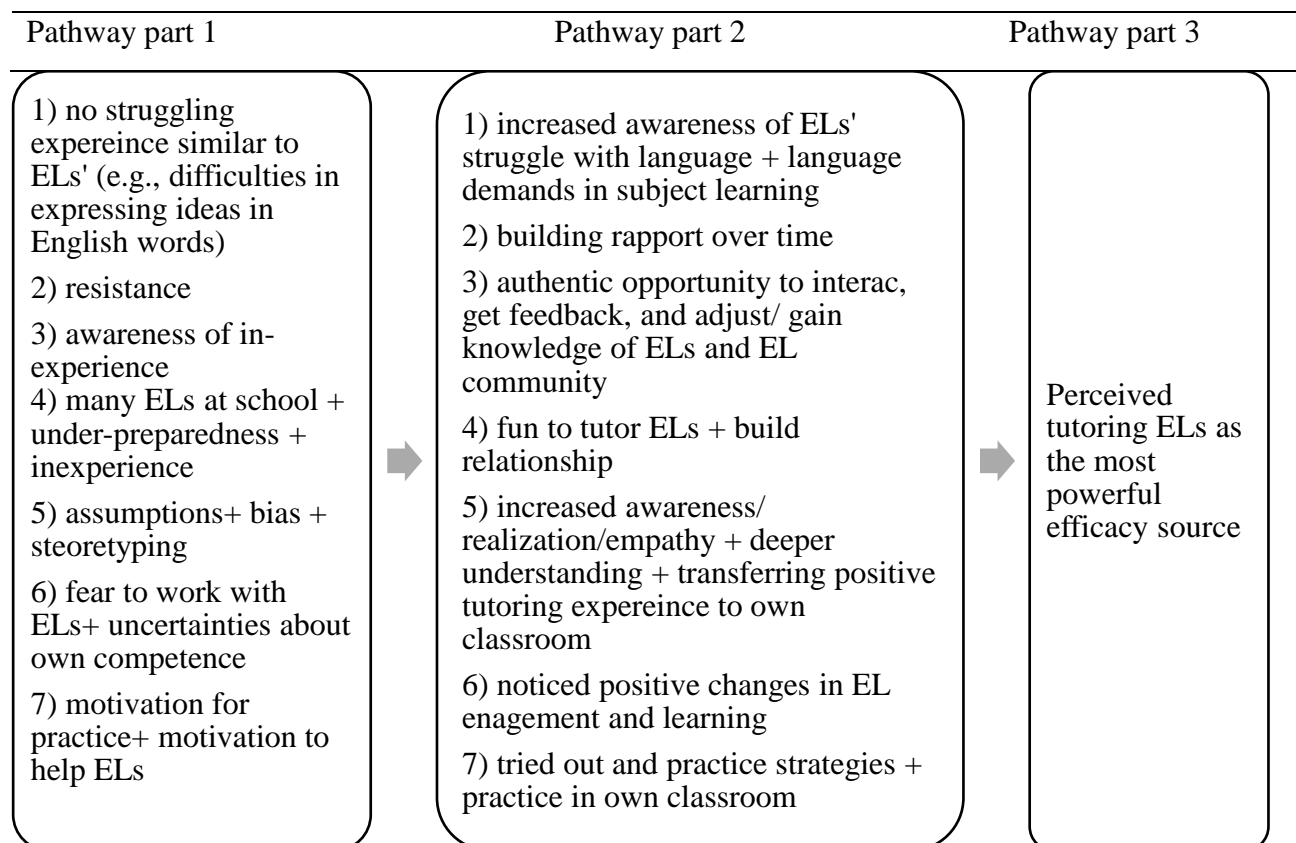


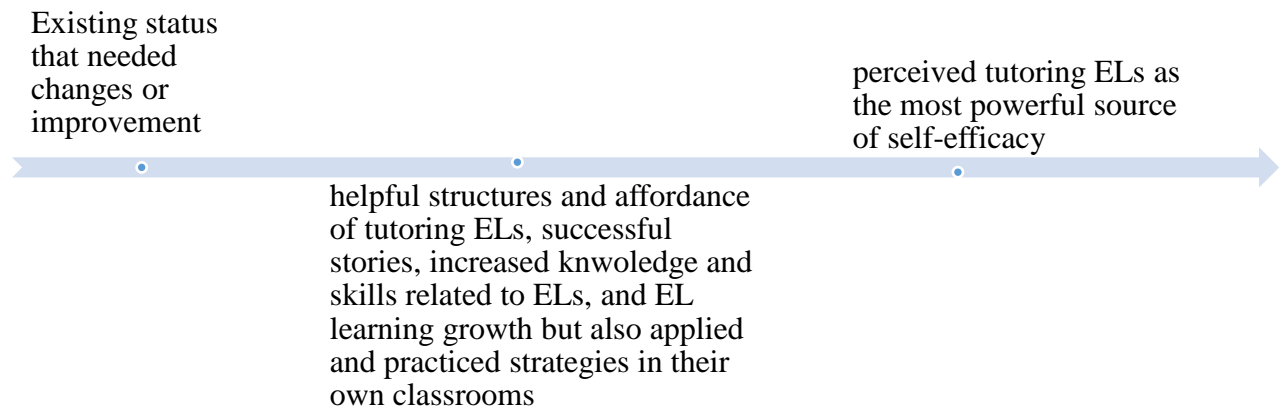
Note. The themes in each column represent individual cases labeled with a case number, therefore, the cases in each column are corresponding to cases with the same number in another column. This is the same arrangement for Table 6.

In-service teachers, on the other hand, showed a different pattern of explanations for the impact of the tutoring component (see Table 6). In the first part of their pathway, they indicated that they had entered the program with already-existing beliefs or skills that required changes or improvement, such as resistance to tutor ELs because of their existing access to teach ELs in their own classrooms, difficulties in understanding EL needs due to the lack of similar struggling experiences, wrong assumptions and stereotyping, awareness of one's own inexperience or under-preparedness with ELs, and motivation for professional learning related to ELs. This pattern differed from the pre-service teachers' responses, as they appeared to struggle to work with ELs in certain ways and to some extent before participating in this teacher preparation program.

Table 6.

Patterns of In-Service Teacher Self-Efficacy





In the second part of their pathway, they described features they had noticed about ELs through small-group tutoring, positive changes in their awareness and knowledge of EL needs, and their abilities to leverage such knowledge to tailor instructions for ELs. For instance, Pamela noted that by closely working with a small group of ELs, she was able to notice that “to write a sentence is a lot” and “five minutes to write a paragraph is incredibly demanding” for an EL, but “for me (her) not an issue”. Such observation consistently made her wonder, “How can I scaffold” to help them “write in science and in every subject” and “explain concepts and synthesize things?” She felt like she was able to gain more insight about the EL community and make connections to the ELs “way more than the two years of experience I [she] had teaching around.”

In addition to learning how to implement strategies during their tutoring, in-service teachers also applied them in their actual classrooms. It showed the transferability of both their skills and their efficacy beliefs about their preparedness from tutoring to their classrooms. They exhibited excitement as they shared stories about their successful implementation of the same EL-specific strategies during tutoring and in their own classrooms, which explains why they felt more prepared and confident to work with ELs. Considering their original “resistance” or under-preparedness and these positive changes, such learning outcomes could be vividly described as a

“turnaround” in an in-service teacher’s words. In the end, a majority of in-service teachers regarded tutoring ELs as a powerful source of efficacy regarding their preparedness and confidence.

Discussion

This study explored two models of professional learning for supporting mainstream teachers to feel more prepared and confident in educating ELs. Analyses of interview responses shed light on the sources of learning that teachers deemed pivotal for building their sense of self-efficacy. Furthermore, we unpacked the different patterns of efficacy formation for pre- and in-service teachers in the community group.

Community-Based Learning as a Source of Self-Efficacy

Teachers in the community group reported a higher level of self-efficacy regarding their preparedness and confidence around EL instruction than teachers in the conventional university group. Tschannen-Moran and her co-authors(1998) have argued that the development of teacher efficacy follows a cyclical path, which indicates that teachers’ increased sense of preparedness and confidence would likely affect different dimensions of their professional performance: innovative teaching competence and behaviors (Lakshmanan et al., 2011); commitment to teaching (Chesnut & Burley, 2015); and efforts, persistence, and resilience working with struggling ELs (Bandura, 1977; Tschannen-Moran, Hoy, & Hoy, 1998). While the current study does not track these outcomes longitudinally beyond the end of teachers’ coursework, the increase in their sense of self-efficacy across an initial 28-week professional learning program can be seen as a positive first indication.

Our findings also support the positive outcomes of community-based learning reported by other L2 teacher educators (e.g., Atay, 2007; Faez & Valeo, 2012; Flores et al., 2015; Sevime

& Subasi, 2018). We found that the opportunity to directly work with ELs can powerfully build teachers' positive efficacy beliefs. It corroborates Coady and her colleagues' (2011) and Faez and Vale's (2012) view that participation in field experiences with ELs can affect teachers' self-evaluation of their preparedness. Further, this study extends existing knowledge of the influence of teacher preparation programs on teachers' self-efficacy by exploring their efficacy formation into two important domains of pedagogical knowledge (knowledge of teaching ELs and teaching adaptability). Both of these domains are required for quality instruction with ELs (von Esch & Kavanagh, 2018) and for the needs to develop teachers' self-efficacy regarding culturally responsive competence (Flores et al., 2015; Fitchett, Starker, & Salyers, 2012; Siwatu, 2011). Moreover, the use of a mixed-methods design with a stratified random sampling of teachers assigned to two learning conditions generates evidence that supports the greater value of community-based learning as a source of offering influential mastery experiences (Bandura, 1977).

Community-Based Tutoring as a Significant Part of Professional Learning

The coding results of teacher interviews illuminated the learning components that teachers perceived as the most impactful source of efficacy regarding their preparedness and confidence working with ELs. Nearly 90 percent of the community group identified tutoring ELs as the top source of their improved self-efficacy from a learning cycle with multiple efficacy sources, *online learning - planning – tutoring – feedback - reflection*. This aligns with previous work indicating that direct teacher experience with ELs, as a mastery experience, boosts teacher efficacy by drawing on their past teaching accomplishments or successful enactive performance (e.g., Flores et al., 2015; Fitchett, Starker, & Salyers, 2012). Another finding shows that many teachers rated their interactions with and observations of experienced peers as a key source of

self-efficacy. When observing a competent peer's success, an important type of vicarious experiences, teachers develop positive beliefs in their own ability to accomplish the same success (Bandura, 1997; Tschannen-Moran, Hoy, & Hoy, 1998). In addition, a comparison of the nuanced affordances emerging from the two learning components (tutoring ELs versus in-class hands-on and application activities with peers) showed that growth in efficacy beliefs of both teacher groups varied depending on whether they obtained the opportunity to participate in authentic enactment practices of EL-specific strategies with ELs.

As a type of mastery experiences, tutoring ELs provided the type of authentic and influential learning opportunities for teachers described by many scholars (e.g., Faez & Valeo, 2012; Flores et al., 2015; Sevimeel & Subasi, 2018). It supported their view that mastery experiences offer the most authentic evidence of improvement in teaching practices and bear the strongest influence on teacher self-efficacy. Teachers in the community group gained such mastery experiences closely related to ELs (e.g., better understanding of EL needs, successful implementation of strategies, and adaptability for teaching) that they gradually developed greater efficacy beliefs in their EL teaching knowledge and teaching adaptability. While this finding confirms the significance of tutoring ELs, scholars should not assume its generalizability or applicability in other cultural contexts (Moradkhani & Haghi, 2017; Phan & Locke, 2015).

In comparison to the community group, the university group also gained enactment practices of EL-specific strategies through hands-on and application activities with peers, but the authenticity and types of efficacy information differed. Working directly with ELs presented the community group with real-world teaching problems closely related to ELs, and they tried strategies and modified them based on ELs' actual needs. Without the actual tutoring experiences with ELs, the university group enacted teaching practices via hypothetical scenarios with peers to

role playing or rehearsals. Although such approaches may be less authentic than tutoring ELs, it seems to nonetheless provide desired affordances, such as providing a safer learning environment to practice strategies through role playing or rehearsals before actually working with students (Kazemi, Ghouseini, Cunard, & Turrou, 2016; Lampert et al., 2013). Furthermore, as shown by Bandura's (1997) hypothesis that other efficacy sources will become more salient with the absence of mastery experiences, the university group appreciated the opportunity for observing experienced peers' practices, which they referred to as "theory in action".

Different Learning Pathways for Pre-service and In-service Teachers

The interviews with pre- and in-service teachers in the community group showed how their efficacy beliefs had changed over time in different patterns, a trend supporting existing studies (e.g., Hoy & Spero, 2005; Tschannen-Moran & Hoy, 2007; Wyatt & Dikilitaş, 2016). Pre-service teachers highlighted the helpfulness of tutoring ELs (e.g., authentic ways to learn) and significant experiences with ELs (e.g., changed perceptions and knowledge of ELs, successful stories), and considered it a powerful source of their efficacy growth. Comparatively, in-service teachers followed a different pathway. Their pathway started with pre-existing beliefs or skills (e.g., resistance, stereotyping) requiring improvement in teaching ELs, followed by increasingly positive experience with ELs (e.g., building relationships, noticing higher EL engagement and achievement) and successful trials of implementing the same strategies in their own classrooms, and ended with the same conclusion as pre-service teachers that tutoring ELs had powerful influence on their increased efficacy beliefs toward their preparedness and confidence.

These different patterns in the pathways toward self-efficacy align with Tschannen-Moran and her co-authors' (1998) view that pre-service teachers might be receptive in different

ways than in-service teachers to new teaching strategies. An explanation of the differences could be that pre-service teachers are at an early stage of developing basic teaching competence and forming teaching efficacy, while in-service teachers may have already stabilized their teaching efficacy (e.g., George, Richardson, & Watt, 2018; Tschannen-Moran, Hoy, & Hoy, 1998). However, the difference in the receptive levels should not lead to an immediate conclusion that pre-service teachers will likely acquire better or more knowledge than in-service teachers because in-service teachers can also learn through successful implementation of new strategies. It may simply take different ways of learning for them to achieve their personal learning goals. As shown in this study, a majority of in-service teachers in the community group experienced a pathway in which they re-evaluated their assumptions and beliefs and reshaped them based on newly acquired knowledge and skills. In particular, their noticed evidence of ELs' achievement made them feel more prepared and confident, which supported other scholars' works (Tschannen-Moran, Hoy, & Hoy, 1998; Tschannen-Moran & Johnson, 2011).

Finally, the use of causation coding approach (Miles, Huberman, & Saldaña, 2019) shed light on the dynamic process of teacher efficacy development. Such qualitative inquiry allows researchers to illustrate a variety of ways teachers build their sense of self-efficacy (Morris, Usher, & Chen, 2017). Accordingly, many scholars have called for more in-depth qualitative research to gain insights into teachers' perceptions of their learning in teacher education programs in order to better support their learning and development of self-efficacy (Morris, Usher, & Chen, 2017; Tschannen-Moran, Hoy, & Hoy, 1998; Wyatt, 2018). Echoing this call, the rich, in-depth report on teachers' interview responses in this study contributes to the field by unpacking and comparing the patterns of efficacy formation for pre-service and in-service teachers.

Implications

English learners face the challenge of developing a new language while simultaneously learning grade-level content. It is essential that their teachers are well equipped and feel prepared to support them through these challenges. Findings from this study have implications for the design and implementation of teacher professional development. First, community-based learning approaches should be strongly considered as part of professional learning programs given the connection to growth in teacher self-efficacy (e.g., Coady, Harper, & de Jong, 2011; Faez & Vale, 2012), but it should be conducted with modifications to certain contexts where cultural factors may place stronger influence on teacher perceptions (Moradkhani & Haghi, 2017; Phan & Locke, 2015). Next, certain aspects of university-based learning approaches carry promise in supporting teachers (Moradkhani & Haghi, 2019), particularly those that emphasize components such as role-playing and rehearsals with peers (Kazemi et al., 2016; Lampert et al., 2013). Such opportunities should be intentionally woven into teacher education programs. Finally, the different developmental patterns that emerged between pre- and in-service teachers' sense of self-efficacy indicate that instructional approaches can be tailored to support teachers at different career stages.

Limitations

A few limitations warrant consideration when interpreting the findings of this study. The randomized sample of teacher participants exhibited a high-level attrition between both groups and the magnitude of bias caused by it is unknown. Second, teacher participants were aware of their assignment to either the community-based model or university-based model. This might have affected the baseline and end-of-program scores in their reports on their self-efficacy. Third, the self-report nature of survey data may have implications regarding data reliability. In

order to mitigate these limitations, we monitored to ensure the loss of participants was due to chance (Springer, 2010) (e.g., keeping a record of withdrawing reasons participants might voluntarily share); we collected follow-up interviews to triangulate the survey data and to allow teachers from both groups to share their perceptions of their unique learning experiences in each model; we also used a convergent lens to examine the unique features of each model to uncover how multiple sources might be integrated to maximize teacher self-efficacy. We framed the project, not as a treatment/control study, but rather as an open-ended inquiry into which aspects of each of the model provided particular affordances and challenges. Further, we carefully designed the survey instrument to increase its credibility (e.g., to make survey items task-specific and context-specific, to conduct psychometric tests).

Even in light of these limitations, we believe our findings build on extant research and support the notion that teacher educators can intentionally draw on multiple sources of efficacy and leverage them in complimentary ways to maximize teacher self-efficacy. A variety of enactment practices are critical for strengthening teacher efficacy beliefs toward their preparedness and adaptability to work with students from diverse cultural and linguistic backgrounds. Helping shape their sense of self-efficacy requires attention to their different individual goals, motivation, needs, and level of experience, as well as customized professional learning designs that foster positive teacher efficacy beliefs about their efforts, persistence, and competence in overcoming difficulties and accomplishing goals.

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Chapter II. Promoting Peer-to-Peer Synchronous Online Discussions:

Case Study of Intercultural Communication in Telecollaboration

ABSTRACT

This chapter examines ways to support peer-to-peer synchronous discussions that move beyond the basic exchange of information toward complex online intercultural communication. It begins by providing an overview of the affordances and challenges of online communication tools. It then explores how tasks and facilitation protocols were structured into small-group interactions through the lens of a case study in which teachers from Taiwan and the United States collaborated for thirteen weeks in an online project, for which we designed and implemented a structured facilitation protocol based on a framework from teacher education, the Principled Use of Video (Kang & van Es, 2019). It draws on examples from the teachers' peer-to-peer interactions to highlight ways in which the tasks and protocols elicited intercultural discussions focused on topics of importance to their unique contexts. It ends by summarizing key takeaways with an emphasis on pedagogical implications and suggestions for future research.

Keywords: Computer-Mediated Communication, Discussion Protocol, Intercultural Learning, Facilitation Protocol, Teacher Noticing, Reflection Protocols, Simulations, Mursion, Task Design

INTRODUCTION

With increases in the number of online and blended learning courses, many instructors and researchers are exploring ways to foster peer-to-peer online discussion through well-designed and purposeful online activities, many of which unfold among peers within synchronous discussion platforms (Helm, 2013, 2016; Kang & Im, 2013; Moore, 1989; Woo & Reeves,

2007). Peer-to-peer interaction plays a critical role in many online learning contexts, particularly in language education in which fostering opportunities for written and oral communication are key objectives shared by teachers and students. Instructors and researchers have therefore focused attention on creating such interactive and collaborative opportunities particularly through a variety of synchronous and asynchronous technologies so that participants have opportunities for virtual learning across cultural, linguistic, and geographic boundaries as they develop the intercultural skills associated with intercultural communication (Belz, 2003; Bohinski & Leventhal, 2015; Guth & Helm, 2010; Slaouti & Motteram, 2006).

This chapter offers a key contribution to this volume in an examination of how to maximize the affordances of synchronous communication in order to promote peer-to-peer synchronous discussions. To that end, the project is localized in the context of language education with in a particular case of a telecollaboration, an online exchange between participants in different geographic, linguistic, and cultural contexts. Peer-to-peer online discussions—those that lead toward opportunities for learners to engage in intercultural communication—hold untapped potential for participants to learn how to initiate, sustain, and engage in complex discussions around topics of joint interest. Unlocking this potential challenges instructors to develop a better understanding of the ways in which classroom-based pedagogical structures can support collaborative learning online among peers. In this effort, the study responds to the call by Levy and Moore (2018) to view task design as “a starting point for learning” by extending opportunities for learners to “interpret tasks and (inter)act in task-based activity to create their own learning opportunities” (p. 2).

To achieve the promotion of high-quality online interactions, instructors need a better understanding of how to purposefully design online discussion tasks and facilitation protocols. The use of protocols can provide structured guidance to engage learners in online interactions and facilitate their learning process (Chen, deNoyelles, Patton, & Zydney, 2017). Facilitation protocols sit at a strategic crossroads for instructors; on the one hand, they communicate the instructor's view of the interactional purpose and set a particular overarching tone; and on the other hand, participants need enough freedom to co-produce knowledge without putting unnecessary constraints on the emergence of authentic, learner-driven conversations (Darabi, Liang, Survavanshi, & Yurekli, 2013). Well-designed protocols; therefore, balance these goals that provide guidelines without forcing straitjackets so that peer-to-peer interactions can fulfill pedagogical and personal goals (McDonald, Zydney, Dichter, & McDonald, 2012). To address these concerns, researchers have explored ways to structure classroom-based online discussions to better support participants in initiating and sustaining online discussions (Fuchs, Snyder, Tung, & Han, 2017; Liddicoat & Scarino, 2013; O'Dowd, 2016b).

The goal of this chapter is to examine the ways in which teachers in a qualitative case study engage in peer-to-peer online discussions through purposeful task and protocol design that explicitly layer in reflective synchronous conversations. Its particular focus is on distance learning contexts in which participants communicate across distinct and geographically distal locations. Hence, the study explores ways that both multimodal technologies of video sharing as well as real-time videoconferencing can serve as vehicles for engaging learners around explicitly designed facilitation protocols. To this end, the following questions frame this study:

1. *What are the major challenges associated with integrating peer-to-peer, small-group discussions into the context of online learning?*
2. *How can facilitation protocols be structured into synchronous, small-group interaction activities as part of the overall structure of online learning?*

The chapter begins by providing an overview of the affordances and challenges of different types of asynchronous and synchronous tools that have been used to promote classroom-based, peer-to-peer online discussions. Next, it discusses the major challenges associated with synchronous online discussions that are situated in the context of this project—a telecollaborative context in which participants are teachers from Taiwan and the United States. The project examines how teachers make use of innovative tasks, such as co-planning and co-teaching in a mixed reality teaching simulation lab, in order to engage in intercultural conversations about teaching. It reports on developing and implementing a facilitation protocol design on a framework from teacher education, the Principled Use of Video (Kang & van Es, 2019). It draws on examples of the teacher interactions in this qualitative work to highlight ways in which the tasks and protocols elicited intercultural discussions about pedagogy within the participants' unique contexts. It ends by summarizing key takeaways with an emphasis on implications for pedagogy and suggestions for future research.

BACKGROUND

This section draws on two overlapping areas of reviewed literature. The first part briefly defines and describes the affordances of online communication tools as grouped by those that support asynchronous and synchronous communication. Key features of each are outlined to highlight research that has examined how users themselves perceive—and act upon—these

features. In the second part, the context of this project is localized as rooted in language education. The theoretical grounding for the project is anchored in a widely used model of intercultural communication (Byram, 1997). This model parses out the skills and attitudes associated with intercultural communication that help position the chapter's core focus on supporting peer-to-peer conversations to "go deeper" than the basic exchange of information.

Affordances of online communication tools: An overview

Each online tool carries its own unique affordances and limitations that inform how people make use of the tools to achieve different communicative goals (Chun, 2008; Helm, 2015; Hirotani, 2009). This array of tools can be generally categorized into asynchronous or synchronous types, which are briefly defined and described. First, synchronous communication tools, which provide platforms for text-based communication, such as email, discussion forums, and wikis, allow more time between responses and produce an archive of written correspondence. Early integration of online interactional tools in classrooms in the 1990s relied primarily on asynchronous tools because they were more readily accessible and more easily supported by available technologies and local bandwidth (Godwin-Jones, 1997). Without the real-time demand for immediate interactional responses, research on asynchronous communication documented that participants used long, in-depth responses that shared the syntactic complexity of written, rather than spoken, dialogue (Hirotani, 2009). Promoting greater syntactic complexity and longer interactional sequences are consistent findings (Angelova & Zhao, 2016; Warschauer, 1995), but several drawbacks accompany the use of delayed-time interactions. These drawbacks included lower perceptions of social presence, limited topic development, and short turn-taking sequences (O'Dowd, 2003; Ware, 2005).

With the increase in real-time synchronous communication tools, these drawbacks have in some ways been mitigated. Using instant messaging, video conferencing, Skype, Zoom, and other synchronous platforms, participants can interact with each other in real time using multimodal features of texts, audio, and video (Hauck & Young, 2008). Arguably, the affordances of such real-time tools better approximate face-to-face communication in ways that seem to influence participants' perceptions of intimacy and social presence (Helm, 2013; Liaw & Ware, 2018; O'Rourke & Stickler, 2017). Learners have been shown to develop a sense of shared responsibility for tasks that are marked by affective communication markers (Satar, 2015, 2016). Synchronous interactions elicit a range of interactional behaviors: negotiation of meaning and more rapid turn-taking structures (O'Rourke & Stickler, 2017); social interaction features associated with greetings, farewells, and transitions (Hampel & Stickler, 2012); off-task conversations that serve to promote interactional cohesion (Ware, del Rosal, & Conry, 2018); and longer discussions about culture-related topics (Angelova & Zhao, 2016; Chun, 2011). Of the array of synchronous communication technologies, videoconferencing has gained high popularity in recent years (Helm, 2015; O'Dowd, 2016a), particularly as participants can boost their "joint intentionality" around their interaction (O'Rourke & Stickler, 2017, p.3), because videoconferencing leverages a number of multimodal affordances that allow simultaneous display of texts, audio, and video that influence the learners' perceived social presence (Develotte, Domanchin, & Levet, 2018; Liaw & Ware, 2018) and relationship-building (Dumont, 2018).

Even as researchers have documented these affordances of different tools, evidence of how participants themselves are aware of—and make strategic use of the tools—is also emerging. For example, Karpova, Correia, and Baran (2009) examined how and why international teacher

partners utilized particular types of technologies in their online collaboration to solve problems. They found that participants used a wide variety of asynchronous communication tools (e.g., Google docs, email, and WebCT, an online learning management system) as well as synchronous communication tools (e.g., Skype) each for specific purposes and at different application stages. For instance, during their collaborative tasks, participants preferred to use Skype, and videoconferencing for brainstorming and making collective decisions while using emails to share personal information or documents at the stage of developing initial contact. In two similar studies (Liaw & Ware, 2018; Ware, del Rosal, & Conry, 2018) that examined the tools participants used when they were explicitly provided with a wide variety of interactional options to complete class assignments (Zoom, VoiceThread, Edmodo, GoogleDocs, Zaption), findings from both studies converged to demonstrate that participants regularly turned to multimodal tools over text-only interactional forums, citing their preference for the immediacy and intimacy of multimodal and synchronous options. These studies demonstrate mounting evidence that participants actively “adapt the functionalities of the tools and transform them for their own purposes” (Hampel & Stickler, 2012, p. 134).

Classroom instruction and peer-to-peer online discussions: Leveraging tools for specific purposes

This project is grounded in language education, where over the last 20 years, online communication projects have been largely referred to as *telecollaboration*, which indexes a form of virtual exchange that joins students in intercultural interactions using a range of evolving technologies (for recent reviews, see Guth & Helm, 2010; Lewis & O’Dowd, 2016; O’Dowd, 2011). Telecollaboration has contributed to gains in second and foreign language learners’

linguistic development (Belz, 2003; Warschauer, 1996), increased motivation (Warschauer, 1996, 1998), intercultural awareness and communicative competence (Belz, 2007; Belz & Muller-Hartmann, 2003; Hampel & Hauck, 2004; Kramsch & Thorne, 2002; Mollering & Levy, 2012; Ware & Kramsch, 2005), and online literacies skills (Guth & Helm, 2010). Studies have explored teachers' own intercultural learning (Belz & Muller-Hartmann, 2003; Dooly, 2011; Guichon & Hauk, 2011) and their development of technology-based teaching competencies (Dooly, 2009; Dooly & O'Dowd, 2018; Dooly & Sadly, 2013; Fuchs et al., 2017; Guichon, 2009; Hampel, 2009).

Several key principles form the theoretical foundation for how language researchers have operationalized the construct of intercultural communication. First, researchers have relied on markers of “successful” intercultural communication as a combination of the frequency and amount of contact between participants, coupled with survey-based or interview-generated feedback that participants themselves perceive the interactions to be successful (O'Dowd, 2003). Inventories of these studies on this type of information exchange highlight consistent interaction, in which participants are transactionally engaged in ongoing talk, primarily on instructor-generated topics. At a more complex level, intercultural communication takes a more cognitive orientation and resides in participants' ability to tackle analytically complex tasks such as comparing and analyzing where learners are encouraged, for example, to examine two parallel texts (e.g., literature, fairy tales, film) and analyze common themes (Mueller-Hartmann, 2000).

And yet, at both of these levels of operationalization, two persistent concerns emerge: 1) the relative infrequency of sustained and collaborative discussions on conceptually rich topics; and 2) the tensions that unfold when conversations among peers misfire. Providing instructional

technologies that promote peer-to-peer interaction—whether synchronous or asynchronous—does not guarantee productive, ongoing interaction in online discussions. Online conversations have led to reifying stereotypes, over-emphasizing superficial similarities (Liddicoat & Scarino, 2013; O’Dowd, 2016a); mismatches in communicative purposes (O’Dowd & Ritter, 2013), and missed opportunities for sustained conversations (Ware, 2005). To address these concerns, researchers have explored ways to structure classroom-based online discussions to better support participants in initiating and sustaining online discussions (Fusch et al., 2017; Liddicoat & Scarino, 2013; O’Dowd, 2016b).

A common theoretical frame for researchers in language education to mark this shift from information exchange and comparison-based interactions toward more complex, sustained interactions is a widely adapted model of intercultural communication (Byram, 1997) in which domains cross affective, cultural, socio-cognitive, and linguistic dimensions. Intercultural communication is operationalized as a set of *skills* of interpreting and relating ideas and of interacting and maintaining dialogue, as well as a set of *attitudes and dispositions* toward discovery, subjectivity, and openness. Creating classroom tasks and structures that promote the use of these skills and attitudes is logistically and conceptually demanding and has therefore received less attention in both research and practice (O’Dowd, 2015a; O’Dowd & Ware, 2009). In a recent synthesis, for example, Cunningham and Akiyama (2018) categorized 65 studies and reported that information exchange tasks remain as the most widely used approach (in 29 out of 65 studies), followed by 12 studies utilizing collaborative tasks, but only two projects involving students in collaborative tasks that promote a wider palette of skills and attitudes associated with effective intercultural communication.

The position taken in this chapter is that facilitating peer-to-peer online discussions can allow participants to learn how to initiate, sustain, and engage in complex discussions around topics of joint interest. An understanding, in particular, of key features of tasks and protocols can build toward core principles that translate across the many contexts in which peer-to-peer online discussions take place—in telecollaboration as well as other classroom contexts wherein peers engage in collaborative discussions online.

MAIN FOCUS OF THE CHAPTER

In this section, the context of the research project that supports the exploration of synchronous tasks and their associated facilitation protocols is described. Next, the tasks and protocols themselves are reviewed in detail to show how they were theoretically motivated to promote more complex, collaborative interactions among the participants based on the issues laid out in the background section. Third, the themes that emerged from this pilot project are addressed with salient examples. Finally, several solutions and recommendations based on this analysis are summarized before ending with a final section on suggestions for future research and concluding remarks.

Context of the project

The project is grounded as a qualitative case study examining how English teachers in geographically distal locations and culturally distinct contexts engaged in intercultural communication through co-teaching and collaborative discussions using a series of tasks and facilitation protocols. The research team, all co-authors of this chapter, was formed by two university professors (one each in Taiwan and the US) and a doctoral student in the US who is

originally from China and fluent in English and Mandarin. The team had previously designed and implemented a sequence of three semester-long asynchronous and synchronous telecollaboration projects for larger cohorts of 20-25 language students in classrooms in both Taiwan and the US; in contrast to the previous focus on language students; however, in this qualitative study the team designed an examination of how participants who were themselves studying to become *language teachers* (referred to henceforth in this chapter as “teachers”) would engage in intercultural communication as they co-planned, co-taught, and jointly reflected upon their online collaboration experiences in order to explore the intercultural aspects of teaching in different cultures and contexts. A total of five English language teachers (two in the United States and three in Taiwan) chose to participate voluntarily in this pilot project. Institutional review board protocols were followed in both countries, and all participants gave both written and oral consent, with the understanding that pseudonyms would be used. Using a series of Zoom conferencing before and during the project, the research team met to design, implement, and calibrate the tasks and protocols across eight collaborative planning sessions.

The following data was collected across the thirteen-week project: six video recordings (each between 60-90 minutes) of synchronous discussions via Zoom; ten video recordings via Zoom of teaching episodes inside a mixed reality simulation lab; and an archive of written reflections and interactions in Google Docs. All video-recorded, Zoom-based synchronous discussions and teaching episodes were transcribed, and the videos and transcripts were accessible to only the research team in a university-based, password protected storage site.

The project was implemented across several stages, beginning with an introductory phase in which teachers introduced themselves asynchronously with photos and brief messages using

Padlet and Google Docs. This phase was followed by the launch of the first task: a recorded teaching episode that could be shared with their international partner as a “text” for stimulating the first Zoom conversation. Because the focus was on establishing tasks that would provide engagement in tasks that were of common interest to teachers, teachers shared how they taught through authentic examples, not just through elaborate descriptions of how they taught. To this end, each teacher submitted a video-recording of a brief, ten-minute episode of their own teaching that was recorded in a mixed reality simulation lab. This lab was housed at the university in the United States, which uses a mixed reality simulation lab to support teachers in rehearsing their teaching skills in a lab-based setting prior to teaching inside real classrooms. The lab uses a licensed software called Mursion (Murphy, Cash, & Kellinger, 2018; Schott & Marshall, 2018), which provides an interface in which up to five avatar students can interact in real time with individual teachers. The avatar students are controlled in real time by a trained actor, also called a simulation specialist, who uses the software together with webcam technologies to see, hear, and interact with teachers. Unique scenarios can be designed in conjunction with the simulation specialist, such that particular behaviors, personality profiles, curricular challenges, and problems of practice can be designed. The simulations can be delivered using the Mursion software and made virtually available to teachers through Zoom. Their teaching performance with the avatar students can then be simultaneously recorded through Zoom for group reflection and research purposes.

For this project, the simulation specialist worked with the research team across a three-month period to develop the personality profiles, linguistic features, and cultural backgrounds of the three avatar students such that their characteristics could be customized to exhibit profiles of early adolescent English learners with high intermediate English fluency, but from different

cultural backgrounds: a 13-year-old male student from Mexico, a 13-year-old female student from India, and a 13-year-old female student from Taiwan. A scenario was developed in which each of the five teacher participants would teach two times—once independently and once as a co-teaching model after co-planning a lesson with their international partners. The lessons were based on having teachers explore different portrayals of the story of Mulan, both from the original story perspective and the adapted movie version made popular through Disney.

The phases that involved collaborative reflection of teaching began with a video-based Zoom conference, in which teachers met in a group of three (one teacher from the US and two from Taiwan) and a pair (one teacher from the US and one from Taiwan) to analyze and reflect on the independent teaching episodes that each teacher had recorded and shared with their partners. Each of these Zoom-based peer-to-peer discussions lasted between 60 and 90 minutes. Next, teachers held a second peer-to-peer Zoom session two weeks later to co-plan a lesson and then later co-teach that jointly planned lesson to the avatars. These collaborative teaching episodes were also recorded. In the third and final Zoom session, teachers engaged in peer-to-peer reflective conversations about their co-teaching experiences. Each of the three tasks that took place in the Zoom videoconferencing sessions was supported by a specially designed facilitation protocol, which is described more fully in the tasks and protocols section below.

ISSUES AND PROBLEMS: A NEED FOR DESIGNING TASKS AND PROTOCOLS TO AUGMENT ONLINE DISCUSSIONS

Classroom experiences that are designed to deliberately foster collaborative, peer-to-peer online discussions rely on a number of factors: how turn-by-turn interactions unfold, what topics and tasks elicit more complex and sustained discussions, how participants understand the

different roles they take up, and how instructors develop pedagogical tools to scaffold participant engagement. The specific tasks and protocols explored in the sections below were developed along a central guiding premise—namely, that participants are more likely to develop and sustain intercultural communication in peer-to-peer interactions when they are engaged in topics that are relevant to their own learning, and when they can maximize the affordances of multimodal and synchronous technologies.

Several of the main issues first laid out in the literature review that therefore guided the design of the task sequence and facilitation protocols are briefly summarized here:

1. Online discussions can reify stereotypes or lead to over-generalizations (Dooly, 2008), and to the “downplaying of cultural difference” (Kramsch, 2014, p. 300). This “illusion of commonality” (Ware & Kramsch, 2005, p. 200) can force an aversion away from topics or issues that can deepen learning.
2. More opportunities are needed for teachers to critically reflect and interpret cultural interactions with partners in the process of their learning (Fusch et al., 2017; Kramsch, 2014; Liddicoat & Scarino, 2013; O’Dowd, 2016b). Reflection, if executed well within a sequence of tasks, provides the type of learning that can be characterized as “a process of coming to understand what was previously not understood” (Liddicoat & Scarino, 2013, p. 26).
3. Differences in curricular goals, technology resources, contact hours with students, assessment policies, and teaching conditions have frequently been cited as sources of possible communication breakdown, or at a minimum, tension (Belz & Mueller-Hartmann, 2003; O’Dowd & Ritter, 2013; Ware, 2005) at the level of peer-to-peer online

discussions. As two or more instructors lay the foundational work for peer-to-peer online discussions, they themselves must engage in the intercultural communication footwork of negotiating differences, making informed compromises, and being willing to take risks.

In the task design, therefore, use of the teaching video episodes was approached as an opportunity to support teachers in intercultural communication about a topic of relevance to them and the course: an examination of teaching as culturally and locally situated. In previous research, the use of such teaching videos to stimulate teachers' reflection has primarily been used to encourage and facilitate teachers in analyzing practices of their own teaching, rather than that of their peers' teaching (Roller, 2016; Schmid, 2011). Teachers typically watch recordings of their own teaching practices to reflect on their beliefs, assumptions, and theories related to teaching (Borg, 2003, 2015). The recording nature of video enables the teachers to watch, re-watch, and conduct careful analysis of teaching episodes where they can potentially notice critical teaching moments which they may miss in the moments of teaching (Roller, 2016; van Es & Sherin, 2010). Van Es and Sherin (2010) stressed that video can capture the complexity of classroom teaching and allows time for reflection. Further, cultural routines in one's own teaching are foregrounded and evaluated by engaging teachers in an analysis of video (Santagata, 2009).

Because this research brought teachers from different linguistic and cultural backgrounds into conversations about their own—and one another's teaching—and because these conversations were to take place via synchronous technologies, a facilitation protocol was designed using an explicit framework: Principled Use of Video (PUV: van Es & Sherin, 2002, 2008). The PUV provides explicit guidelines with a focus on learning to *actively notice* as a way

to intentionally direct teachers’ attention to particular features of teaching and help them develop an interpretive inquiry stance to these observations. Kang and van Es (2019) suggest that teachers use their own teaching video and work in groups for collaborative analysis so that they can bring individual experiences to a “collective learning space” (p. 2). Teachers then focus on their analysis of the videos, interact in distributed and inclusive ways to appreciate multiple perspectives, and support their interpretations of teaching acts with evidence generated from the video. Table 1 provides an example of the facilitation protocol that was developed by adapting the PUV framework.

Table 1.

Example of synchronous online discussion protocols

Goals: This discussion protocol aims to guide your group discussion about your 2nd VRS teaching practices and to give you an opportunity to share your instructional decisions with your local/ international partners. (Please remember to make a video recording of your Zoom meeting.)

Time	Discussion Topic	Tasks
Approximately 5 -10 min.	Share your 2 nd VRS experience	Share 1-2 things you like most about VRS teaching and explain why; Share 1-2 things you might not like about VRS teaching much and why not.
Approximately 10-15 min.	Share your thoughts about your collaborative planning/teaching experience	Share one thing that your partner(s) did or an idea that he/she shared that impressed you during the collaborative planning/teaching and explain why; Share one thing that your partner(s) did or an idea he/she shared that surprised you and explain why; Share the challenging aspect(s) of the tele-collaborative work for you and how you have addressed/might address them.
Approximately 20 -25 min.	Share your ideas about teaching content and language	Round #1 (Take turns to): Play a short (no more than one minute) clip of your own video to showcase your teaching practices that reflect your instructional beliefs in the integration of content and language. You will: share what you tried to do with this learning activity and why;

		<p>highlight 1-2 things in the video that you want to particularly draw your partners' attention to and explain why;</p> <p>Round #2 (Take turns to):</p> <p>Play a short (no more than one minute) clip of a partner's video which you feel most curious/fascinated about (particularly about the integration of content and language). Ensure that each partner gets a turn and his/her video gets selected at least once. After playing each video clip, you will:</p> <p>explain why you selected the clip;</p> <p>share what made you feel curious/fascinated about the clip;</p> <p>inquire why your partner made such instructional decisions.</p>
Approximately 20-25 min.	Share ideas about culture and teaching	<p>Round #1 (Take turns to):</p> <p>Play a short (no more than one minute) clip of your own video to showcase your teaching practices that reflect your instructional beliefs in culture and teaching. You will:</p> <p>share what you tried to do with this learning activity and why;</p> <p>highlight 1-2 things in the video that you want to particularly draw your partners' attention to and explain why;</p> <p>Round #2 (Take turns to):</p> <p>Play a short (no more than one minute) clip of a partner's video which you feel most curious/fascinated about (particularly about culture and teaching). Ensure that each partner gets a turn and his/her video gets selected at least once. After playing each video clip, you will:</p> <p>explain why you selected the clip;</p> <p>share what made you feel curious/fascinated about the clip;</p> <p>inquire why your partner made such instructional decisions.</p>
Approximately 5 min.	Re-teaching ideas	Given another chance to teach your lesson again, what are the things that you wish to do differently and why? (Take turns to share and make comments to each other's)
Approximately 5-10 minutes	"Free" discussion on the topics of your own choice	<p>Prepare for 1-2 questions or topics you would like to ask/ discuss with your partners that are not listed above [<i>Note: please prepare for this part before your Zoom meeting</i>].</p> <p>[<i>During your Zoom meeting</i>] Take turns to suggest 1-2 topics or list out your questions and discuss with each other.</p>

Notes: You don't have to constrain your conversations based on the indicated time because they are just provided to give you a general idea of time allocations to ensure your better time management for each topic. While the topics on content and language as well as culture and teaching are separated, they are essentially interrelated. Therefore, you may discuss/refer to them in an integrated way.

These discussion protocols were designed with the objectives to promote intercultural communication: to engage in a personal and professional experience of teaching with a partner from another culture, to understand one's own assumptions and values, and to explore differences with the goal of understanding the historical and social influences of those

differences (Helm, 2013; Kramsch, 2009). Making these types of overarching goals explicit in the initial task design invites participants to engage in a conversation about their own goals and to negotiate space for describing their own expectations (Mueller-Hartmann & Kurek, 2016). This early work can foster a safe environment by surfacing participants' hope and concerns. In addition, revisiting these goals at various points throughout the project—in this case at each of the three inflection points of the three phases—supports the overall coherence of the project.

The protocol follows the three stages of the PUV framework, including goal setting, planning, and enactment of video-imbedded activities. As illustrated in Table 1, the learning objectives for this particular synchronous online discussion were laid out to guide the teachers' discussion about their teaching practices in the simulation lab and about sharing instructional decisions with their partners. During the planning stage, the discussion protocols focused on intentional integration of the three components suggested in Kang and van Es's (2019) framework: to select a clip, to design a task, and to select a tool. For the selection of video clips, teachers were asked to select and time stamp one-minute video clips reflecting teaching practices related to the key topics in a week prior to their synchronous online discussions.

To minimize the power issues in intercultural interactions between English native speakers and their international partners (Helm, Guth, & Farrah, 2012), the protocol was shared in advance to intentionally allow sufficient time for all teachers to view the videos in advance and prepare for the real time interactions. The protocols indicated that each group member should take at least one turn to show their video clips and participate in discussions. To elicit teachers' reflection on how they might improve certain teaching activities, the protocol prompted them to brainstorm on how they might approach the activity differently and why. This afforded the

teachers learner autonomy and flexibility, to some degree and in some aspects, when using the protocols. For instance, the teachers had the freedom to select video clips of their interests or of importance based on their individual judgment, as long as they made the selections in relation to a concept/topic. The teachers were encouraged to discuss topics or ask questions that were not listed on the protocols.

Four Key Themes with Illustrative Examples from the Peer-to-Peer Synchronous Discussions

In this section, the findings are organized around four key themes that emerged from the analysis, with salient examples of teacher interactions are provided from the synchronous communication to illustrate these themes. The examples below were selected from the interactions of two groups of international teachers, including an American teacher participant, Jenny, and her partners from Taiwan, Qiangwen and Huahua, in a group and Maddie, another American teacher, and her partner Limei from Taiwan in another group. Their names are pseudonyms.

Theme #1: The multimodality of video conferencing provides a sense of social presence

Episode 1. The simultaneous display of multimodal resources (e.g., texts, audio, and video) of synchronous communication platforms has been shown to affect the online learners' sense of social presence (Develotte, Domanchin, & Levet, 2018; Liaw & Ware, 2018). Episode 1 illustrates the influence of webcams on the participants' sense of social presence. Upon the start of their video conferencing, three participating teachers (Jenny, Qiangwen, and Huahua) were anticipating seeing all partners' faces, but in this episode, Jenny and Qiangwen were not able to

see their third partner Huahua (turns two, three, and four). As stated by Jenny, “We can hear you. I cannot see you” (turn four). Then they took time to communicate to ensure the visibility of each other (turn five).

Episode 1

Jenny:	Hi.
Qiangwen:	Hello. Is that Huahua?
Huahua:	Hi. Can you see me?
Jenny:	Hello. We can hear you. I cannot see you, yet, but I can hear you.
Qiangwen:	If you are in the darkness, then yes. Okay, now you're not.
Huahua:	Hi.
Qiangwen:	So Huahua, I think we can get into your first question...

This interaction shows teachers’ shared recognition of the webcam function of a video conference, and because it was important for them to view each other’s talking heads which could have an immediate effect on their sense of co-presence, they could either manage their positions or adjust the communication tool in order to build a shared interactional space (Develotte, Domanchin, & Levet, 2018).

Episode 2. In addition to the multimodal environment of synchronous online interactions, the multiple functions of synchronous communication technologies contain features that enable more collaborative interactivity (e.g., screen sharing, virtual conference room). The screen sharing feature enabled participants in our project to share multimodal resources using the sharing screen to simultaneously play and share video of their teaching performance with each other. In Episode 2 depicted below, after referring to the reflection prompts that required them to play video clips and share ideas about the observed teaching event, Jenny verbally shared what she would do to enable the video sharing, “I’m going to share my screen” (turn three). After she enabled the screen sharing function, all group members were able to view the same video clip for group reflection.

Episode 2

Jenny: Okay, let me pick a clip here.
Huahua: Okay.
Jenny: **I'm going to share my screen.** I'm going to pick Huahua's which here we go 19:00. Okay, so while it's loading, this clip I was curious about is the way you invited student responses. Is it common in Taiwan? Or, if it's something you personally do. 'Cause I liked how you tried to elicit student response.
[Video played, 0:44:21 to 0:44:38]...

Such an affordance of screen sharing made video simulation possible for group reflection on the platforms of synchronous interaction technologies. The teachers could view video and draw on rich examples/evidence generated by the video to reflect on socio-culturally situated teaching. In other words, they benefited from the affordances of different digital tools (e.g., videoconferencing and instructional video) by integrating them for different purposes in their online interactions (Helm & Guth, 2010; Karpova, Correia, & Baran, 2009; O'Dowd, 2007).

Theme #2: Facilitation protocols serve as mediating tools

The facilitation protocols engaged participants in performing simultaneously as the discussion facilitators as well as participants to ensure the success of their interactions. Several patterns of the active application of protocols by teachers in their synchronous online discussions were identified: 1) helping each other interpret the interaction tasks and reflection prompts by explicitly discussing the prompts and asking clarifying questions (Episode 3 below); 2) equating the use of protocols to the facilitation presence of the instructor in their real-time interactions (Episode 4 below); and 3) demonstrating learner autonomy when they were allowed room for flexibility by adjusting the use of the protocols during synchronous online discussions (Episode 5 below).

Episode 3. Successful synchronous online discussions require online partners to demonstrate an understanding of their shared responsibilities and the interaction tasks that are designed to help achieve their learning goals. Although the protocols were designed with an intent to make the instructions on each interaction task as clear as possible, the online partners could interpret and perceive tasks differently or with uncertainties at times. In the following Episode 3, as Qiangwen was taking the leadership in pasting a reflection prompt to move his group discussion to the next topic (turn one), he realized that instead of “next question,” there were three questions for the next topic. Jenny helped correct Qiangwen’s mis-interpretation of the task, “I don’t think so or maybe both. It says collaborative planning and teaching experience” (turn six). As his silent consent to Jenny’s comment, Qiangwen moved on to share what had impressed him the most in the collaborative/co-teaching process with his partners (turn seven). He expressed his appreciation for the opportunity to brainstorm ideas as well as the “organic” process of different ideas to either “clash or [be] married” because he saw “something new [had] emerged.”

Episode 3

Qiangwen:	I'm trying to find the protocol.
Jenny:	I can paste the – let's see here. Here's the first question, if it lets me send it. [No conversation, 0:12:55 to 0:13:35] Is that helpful? I just pasted the first question to the chat.
Qiangwen:	Mm-hmm. Yeah, I'm seeing it. Huahua?
Huahua:	Hm?
Qiangwen:	Did you see your questions from the chat?
Huahua:	The chat?
Qiangwen:	There's a space for, it's called [Chinese language spoken, 0:14:02] and then if You click on [Chinese language spoken, 0:14:04] and you can...
Huahua:	[Chinese language spoken]?
Qiangwen:	The message should pop up from the box.
Huahua:	Oh, yeah.

So me and Jenny, we were sharing our thoughts about these two questions.

Mm-hmm. Okay. Since you shared your experience, I want to share some of my ideas about this Mursion project.

This example highlights what happened when the teachers were uncertain about a written prompt. Because Qiangwen asked clarification questions and the group members explicitly discussed the prompt, they were able to accurately interpret the task and gear their discussions toward the intended direction.

Episode 4. Protocol-based online discussions eliminate the physical presence but not the facilitation presence of an instructor in synchronous online interactions. Because it is an instructor who creates the protocols, through those structures, the instructor can indirectly facilitate interactions from behind the scenes. In this project, teachers were aware of the instructor's facilitation presence throughout their online interactions. In Episode 4 below, as Qiangwen was checking with his partners on whether he had responded to the first question, he referred to "Qiuling's protocol" (turn one), the instructor's protocol, instead of "protocol".

Episode 4

Qiangwen:	I'm pasting the next question just so we have it.
Jenny:	Okay.
Qiangwen:	Oh, there are three questions.
Jenny:	Yes.
Qiangwen:	Yeah, that's supposed to altogether be about 15 minutes.
Jenny:	So this is about collaborative process, not the actual teaching, correct?
Qiangwen:	I don't think so or maybe both. It says collaborative planning and teaching experience.
	Share about teaching content and knowledge. Impress. Yeah, I think what impresses me is that 'cause we were discussing when we were brainstorming and everybody was throwing ideas and it feels organic

when you allow these different ideas to either they clash or either they married and something new emerged. I like that collaborative process.

Qiangwen's reference to the instructor demonstrates that although the instructor was absent from his real time interactions with his intercultural group, he was well aware of the instructors' expectations of their performance and the requirements for their interactive tasks that were presented in the protocols. The behind-the-scene support of the instructor can also be seen in how she created the protocols and shared them with the teachers in advance so that the teachers could prepare for the discussions.

Episode 5. The use of a protocol can be efficient in promoting synchronous online discussions when they allow room for learner autonomy and flexibility in using the protocol. In the excerpt below, Huahua expressed her uncertainties about the order of imbedding the video and discussing the video (turn two). Because no explicit instructions were available regarding this on the protocol and feeling comfortable with making flexible adjustments, Qiangwen encouraged Huahua to decide based on her own judgement, "You can decide" (turn three). Then to help Huahua make a sound decision, Jenny asked a question about the length of the video because it could be a key factor (turn four). Huahua indicated it would be a long video clip (turn five), so Jenny suggested watching the video first and then pausing it for discussion as necessary.

Episode 5

Yeah, I agree with you on that. Trying to think - **I'm just looking at the questions that were sent out to us to make sure we pretty much covered everything.** And as far as the **background knowledge**, I guess another question I'm just curious about is, like when you are

planning or teaching a lesson, and you're trying to figure out what students know and don't know. What would be a common practice? What do you think?

The teachers negotiated as a group in order to decide how to best approach the inclusion of the video and their discussions. A key reason for this positive outcome was because of the autonomy and flexibility the protocol permitted. Yet, because the rigid, text-based nature of the protocol can place undesired constraints on online learners' natural interactions, it is important to build "the ground for autonomous modes of working and encourage the development of reflective patterns of thought" (O'Rourke, 2007, p. 44).

Further, the teachers used the protocol to share the responsibility for leading discussions (Mueller-Hartmann & Kurek, 2016). In this way, synchronous online interactions reflect the mixed efforts made both by the online learners and by the instructor who crafts the protocol. In this project, the teachers showed active engagement and autonomy throughout their online discussions and also managed their interpretations of the protocol to ensure the accuracy of their perceptions of the telecollaborative tasks that the instructor had designed for them.

Theme #3: Facilitation protocols provide structure as well as flexibility

The facilitation protocols guided the strategic use of video and promoted intercultural teacher reflections on culturally-situated teaching practices. Written instructions were provided on what aspects to notice in the video clips, how to imbed them during the synchronous online interactions, and how to reflect on the teaching practices generated in the video clips. In order to

focus the attention of the teachers on the video-imbedded reflection, the protocol suggested that the teachers reflect on their practices as individuals before sharing in their group reflection. In particular, the protocol intentionally prompted them to identify one-minute short video clips, to time stamp the video clips, and to provide/inquiry about rationale a for the observed instructional acts in the video clips.

Episode 6. Because of the individual preparation for synchronous online discussions, the participants brought the outcomes of their individual reflections to share as a group. The protocols provided structures and facilitation for this part of their online interactions, namely the interaction tasks related to video-imbedded reflections. In Episode 6, after everyone took a turn sharing their collaborative/co-teaching experience, Jenny referred to the protocol on the next topic, which was about “content objective” of their lesson (turn one). She paraphrased the relatively lengthy and formal instructions of the reflection task into simple language, “so each of us are going to pick a clip that we are curious about... and chat about it.” Then she and her partners took turns playing video clips and reflected on the teaching practices generated from the video clips.

Episode 6

Qiangwen:	Yeah. Did I answer your first question from Qiuling’s (the designer of this project) protocol?
Jenny:	Kind of. I think you naturally did. That was very nice.

Prompted to embed the video clips they had viewed and time stamped to the video conferencing, they came to the group reflection with prepared video clips revealing clear understanding that they would play the video clips about building student background knowledge and converse about the teaching practices towards which they felt curious following their observations.

Episode 7. Teacher engagement in online interactions was well reflected in Huahua’s words, “focus on discussion,” in the excerpt below. Qiangwen and Jenny shared two video clips of their choice on a particular topic and centered their discussion based on observations of the teaching practices in the respective two video clips. Then Jenny’s timer went off before Huahua got a turn to share her video clip. Instead of being constrained by the time, Huahua suggested, “Can we just forget the time, because I want to focus on discussion?” (turn three).

Episode 7

Jenny:	Okay, I'm gonna open up the protocol... Okay, did you all see it from Qiuling?
Qiangwen:	Yes.
Jenny:	It would still be teaching about a Mulan story, correct? Or – No, I asked Qiuling 'cause I wasn't quite sure how we do the tap teaching since we're in different places, and she said it would make sense probably for me to either do the first or the last ten minutes so that way...
Qiangwen:	So we'll be teaching basically a series of lesson that has to be cohesive?
Jenny:	So I don't know who it'll go, but that's what she told me. Just keep that in mind.

Huahua showed her engagement in the episode because she would rather focus on the discussion than be constrained by the time. She and her partners understood the importance of ensuring fair opportunities for each partner to share their video clips for discussion, as shown in turn one where Qiangwen asked if there was time for Huahua to share and in turn two where Jenny suggested that Huahua share if she had any clips she wanted. The engagement, turn taking, and task management strategies the teachers exhibited play a key role in their in-depth discussion.

Theme #4: The combination of tasks involving videos with facilitation protocols supports intercultural communication

Episode 8. The prompts of the facilitation protocols were developed to guide the teachers' reflection on their teaching videos to describe the teaching practices they notice, then provide a rationale for their instructional decisions. In Episode 8, the second group of teachers viewed a short video clip they had selected and time stamped in advance (turn one) and then Maddie shared her “thinking behind that (teaching act)” so that she could make her pedagogical decisions visible to her international partner (turn three). Adding to Maddie’s point that the teachers should offer opportunities for students to think, Limei contributed to the conversation by suggesting that they could provide sufficient time for the students to process information before they shared their ideas.

Episode 8

Jenny:	You good?
Huahua:	Yeah, so we played the video and also at the same time we talked to each other? Or, we talk to each other after the video?
Qiangwen:	You can decide.
Jenny:	Either way. How long is the clip?
Huahua:	Oh, so long [Laughs].
Jenny:	So... we can watch the video first and I will talk when I think it's okay for us to discuss.
Huahua:	Okay, thank you.
Qiangwen:	Uh-huh, here we go.

The interaction indicates that when teachers were prompted to view, describe, and justify their teaching practices as well as to inquire about each other’s instructional decisions, they were encouraged to connect their teaching practices to their instructional philosophies and to make the connections noticeable for their partners to understand and to discuss as a group. The teachers needed such opportunities for guided reflection so that they could “critically examine their values, assumptions, theories and strategies that underline their behavior and their decisions in the classroom” (Masats & Dooly, 2011, p. 1155).

Episode 9. Teachers also drew on evidence from the video to support their points of view, which enriched their reflection and interpretations of the teaching acts in specific cultural contexts. In Episode 9 below, Jenny had just made a statement about a common teaching practice in the US where teachers normally repeat or rephrase students' responses as reinforcement (turn one). In order to illustrate her view, she chose to show a clip of Huahua's video as an example (turn three). After playing the video clip, she described, in detail, how Huahua responded to the student's answers in the video, and commented why she considered it a good example (turn four).

Episode 9

Jenny:	... Next topic is about content objective which was to prepare them for the lesson online - to build background knowledge . So, it says, " So each of us are going to pick a clip that we are curious about from one of our videos and chat about it. So, do ya'll have one in mind?
Huahua:	Anybody want to start?
Jenny:	Who's going first?
	Whoever is ready. I have to open up my video.

The episode shows how the teachers interpreted teaching with the support of evidence generated by the video clips. After Jenny gave a general description of the pedagogy that teachers in the US would normally reinforce the students' positive responses, she drew on a video clip of her partner from Taiwan as an example. She used the video simulation to make the notion of pedagogy come to life for her partners. This process of collective reflection is beneficial in promoting the teacher's co-construction of knowledge and development of multiple perspectives.

Episode 10. The reflection prompts of a protocol also directed the learners' attention to search for differences in their partner's teaching practices. When prompted to discuss something that surprised them during the lesson co-planning process, and to explain why, Maddie shared

“an interesting difference” she noticed between the teacher talk and student talk in the US and in Taiwan and how different “school situations” and the teachers’ prior schooling experiences might affect their decision making (turn one). Surprised that Maddie had noticed “the same point,” Limei contributed to the group conversation by acknowledging a difference in the teacher-student relationships in both educational contexts (turn two) and elaborated on the difference in the straightforward ways Maddie used to talk to the learners and the subtler ways teachers in Taiwan used, “words between the lines” (turn four).

Episode 10

Maddie:	If you want to go out of sharing, or if you want to pull up the other video, my
Limei:	video.
Maddie:	Okay. I can share your video.
Limei:	Okay. The part that I was going to talk about is at 2:50.
	Okay.
Maddie:	<i>[video from 0:20:00 to 0:20:56]</i> You can stop. I think my thinking behind that is when we're brainstorming some things, I just think it's really important to have students talk with one another to build their confidence and to get some feedback ____ they have to share out with the whole class. And even though in this situation there's only three students, I've always found it's something useful to do instead of just calling on kids like cold calling, giving them an opportunity to think about it. Kinda like what you did.
	You
Limei:	had them write it down before they shared it out.
	... Giving them an opportunity to have time to process the question.

Rather than assume cultural similarities, Maddie and Limei appeared to feel comfortable to explore differences existing in their teaching practices and allowed each other to have different interpretations of the same teaching practice. They described it as an “interesting difference” (turn one). Moreover, Limei demonstrated positive intercultural learning when she took an honest comparative stance towards the different ways teachers approached

communication in the US and Taiwan with students: at first, she expressed her appreciation for Maddie's straight-forward ways of interacting with the students and then critically examined the "words between the lines" approach many teachers in Taiwan use, with an indication that it was a less helpful approach (turn four).

SOLUTIONS AND RECOMMENDATIONS

Through the development, implementation, and analysis of a qualitative case study of teachers creating and discussing their teaching videos in synchronous discussions, this study provided evidence in responding to two framing questions. In this section, each of these questions is addressed in turn, followed by recommendations drawn from this inquiry.

What are the major challenges associated with integrating peer-to-peer, small-group discussions into the context of online learning?

Several challenges were laid out in the "Issues" section, including the tendency of peer-to-peer online discussions to remain superficial or to downplay differences (Belz, 2002; Dooly, 2008), or to lead to miscommunication (O'Dowd & Ritter, 2006; Ware, 2005). Also, particularly in collaborations involving two or more classrooms, as is the case with telecollaboration in language education, differences in local contexts can impact how participants approach their tasks (Belz & Mueller-Hartmann, 2003; O'Dowd & Ritter, 2013; Ware, 2005). Implications from this project suggest several ways to mitigate these challenges: 1) ensure strong communication among the instructors who are developing and implementing tasks so that differences in institutional contexts can be minimized; 2) discuss openly with students the differences in the types of online communication that can take place (information exchange, comparison/ analysis,

and collaboration); 3) design tasks that build toward authentic collaboration by leveraging the real-world interests of students; and 4) create facilitation protocols to help participants set goals, structure their conversations, and be attentive to time constraints.

How can facilitation protocols be structured into synchronous, small-group interaction activities as part of the overall structure of online learning?

The analysis led to four themes that offer recommendations for structuring peer-to-peer synchronous discussions: 1) leverage the features of multimodality and synchronous communication to enhance participants' sense of social presence; 2) develop facilitation protocols that help mediate the learners' online discussions and pose critical questions; 3) ensure that both tasks and facilitation guides provide structure—but not constraints—so that interactions can include participant-generated interests and timing; and 4) create tasks and protocols that prompt participants to engage in multiple collaborative activities, including those that tap cognitive and affective skills and attitudes.

A number of specific suggestions for creating facilitation protocols emerged: 1) leverage the affordances of synchronous communication tools that enhance social presence; 2) use succinct, clear, and reader-friendly language that is linguistically and culturally relevant to participants from diverse backgrounds; and 3) encourage participants to use the protocols flexibly so that they can take ownership of the direction, tone, and depth of their intercultural communication. For facilitation protocols that involve video, several additional principles to promote teacher reflective practices are suggested: 1) encourage reflective dialogue through the combined use of video simulation and protocols, 2) leverage the affordances of different technologies, and 3)

negotiate the instructors' roles for fostering clear participant roles and task management strategies.

Finally, instructors need to attend to both their own level of involvement as well as to provide clarity around the participants' roles. During peer-to-peer discussions, instructors may need to monitor the task-as-process to support authentic collaboration (Dooly, 2011), particularly when working with large groups of students who may or may not themselves have the skills to manage peer-to-peer relationships. Instructors must also orchestrate a number of offline learning opportunities that take place concurrently during the time frame of online discussions by supporting the interspersed, individual reflections that students produce. In many ways, instructors serve as interpreters because language learning—with all its tasks and protocols—are, as Mueller-Hartmann and Kurek (2016) aptly describe, *culturally laden*. This project shows how language teachers can come together with peer teachers from unique cultural contexts in order to make salient such tacit norms that inform how, what, and why they teach.

Explicit attention to the participants' roles, and to developing interactional strategies that align with those roles, can also foster healthy, sustained exchanges of ideas. Establishing—and communicating—meaningful, overarching goals for online discussions is an important first step, and yet, when the turn-by-turn work toward achieving those goals is ambiguous, even the worthiest of goals can be thorny to enact. In their work on task design, Mueller-Hartmann and Kurek (2016) documented how groups that form around a distributed, or shared, leadership model, tend to result in stronger group cohesion. They revealed that successful groups divided the labor of the project in equitable ways and attended directly to establishing community rules for participation. Their careful analysis of the within-group dynamics in telecollaboration

generated a typology of strategies: social strategies, such as displaying emotions and acknowledging contributions; managerial strategies, such as inviting feedback and making intentions explicit; and cognitive strategies, such as monitoring the work and taking an occasional step back to gain a fresh perspective.

FUTURE RESEARCH DIRECTIONS

This chapter offers a description, developed through a qualitative case study, of how purposefully designed tasks and facilitation protocols can engage teachers from different cultures in synchronous intercultural communication. These efforts resonate with the recent development of research into the pedagogical efficacy of teacher telecollaboration (Dooly, 2011; Dooly & O'Dowd, 2018; Dooly & Sadly, 2013, 2019; Fuchs et al., 2017; Guichon & Hauk, 2011) and ways to promote critical reflections and interpretations of cultural events/interactions with international partners (Fusch et al., 2017; Kramsch, 2014; Liddicoat & Scarino, 2013; O'Dowd, 2016b). The project involved a small number of participants in order to document a highly detailed exploration the unique use of the mixed reality simulation lab, which requires time and human intensive resources. Thus, the key themes identified from the data demonstrated that the affordances of synchronous online discussions are useful, but certainly not definitive findings. Future studies involving a higher number of participants from a variety of backgrounds could yield more complex insights into the feasibility and dynamics of the proposed tasks and protocols across a wider range of pedagogical contexts and instructional goals.

CONCLUSION

Over the past two decades, telecollaboration has contributed to second and foreign language developments in terms of linguistic development, learning motivation, intercultural awareness, communicative competence, etc. (Belz, 2003, 2007; Hampel & Hauck, 2004; Kramsch & Thorne, 2002; Mollering & Levy, 2012; Ware & Kramsch, 2005; Warschauer, 1996, 1998). Teacher educators are increasingly paying attention to the importance of including telecollaboration as part of teacher professional development (e.g., Belz & Muller-Hartmann, 2003; Dooly, 2011; Guichon & Hauk, 2011; O'Dowd, 2015a, 2015b). Despite the many merits that telecollaboration may hold, successful online intercultural interactions do not merely happen by engaging learners in technology-mediated communication. Telecollaboration among teachers may fall short of expectations because of factors such as insufficient opportunities for teachers to reflect on their practices and a lack of guided reflection in synchronous online interactions. Thus, it is imperative that teacher educators provide opportunities for teachers to critically reflect and interpret cultural events/ interactions with partners in the process of intercultural learning (Fuchs et al., 2017; Kramsch, 2014; Liddicoat & Scarino, 2013; O'Dowd, 2016b).

In this chapter, the argument pivoted on the idea that, in order to achieve the promotion of high-quality online interactions and intercultural learning for language teachers, teacher-educators can rely on purposefully designed reflection protocols through which participants' attention is heightened, and their meaning-making and intercultural learning experiences are enhanced. A series of proposed ideas for designing effective protocols was forwarded, including reflection prompts and strategic use of videos in synchronous online discussions to engage students in interactions and reflections. Themes from the analysis of video transcripts provide examples of teacher interactions in the project and highlight the affordances of synchronous communication tools for video-embedded reflection. By designing and using protocols in these

ways, other educators may avoid the pitfalls that can lead to unsuccessful peer-to-peer discussions and instead create opportunities for participants to engage in reflective and critical thinking during collective construction of knowledge with their online partners.

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Chapter III. Exploring Teacher Noticing in the Context of Intercultural Telecollaboration

Abstract

In teacher telecollaborative studies, teachers often participate in a number of activities designed to foster collaboration and intercultural learning. Often, these collaborative activities include pedagogical tasks, such as creating and sharing lesson plans for students' learning. However, the opportunity for teachers to *enact* lessons they create and to reflect on the delivery of those lessons is limited in this virtual space. To address this gap, this project built on a new technology interface of Virtual Reality Simulations that allows teachers to teach avatar students using a Zoom-based platform. In this qualitative case study, we engaged 5 teachers in the U.S. and in Taiwan in a telecollaboration project with tasks designed around co-teaching in this virtual reality environment. A key component of this project design was to use those co-teaching episodes to frame their subsequent discussion-based reflections about pedagogy to ask what teachers notice about their own and their intercultural partner's teaching practices, and how those teaching practices are situated within different layers of institutional and cultural contexts. A thematic coding approach (Miles, Huberman, & Saldana, 2020) was used to analyze teacher interactions, teaching videos, and written reflections. Four themes were identified: 1) identify and interpret critical incidents imbedded with cultural differences; 2) engage in video-based analysis of teaching and encourage alternative interpretations of teaching practices; 3) connect to and reason about real-world scenarios from their own teaching; and 4) notice and connect across cultures through explorations of frames of reference. Findings indicate that intercultural conversations occurred when the teachers extended their communication beyond the micro-level interactions of their pedagogy and used those observations to analyze the meso- and macro-

contexts that inform their in-the-moment pedagogical choices. Implications for pedagogy and future research are discussed for teacher intercultural learning and telecollaborative project design.

Introduction

With globalization and advanced communications networks, foreign language students' abilities to effectively interact and collaborate with people from diverse cultural and linguistic backgrounds (Kramsch, 2014) have become increasingly important. Language teachers are expected to develop intercultural communicative competence (Byram, 1997) and effective pedagogies to integrate technologies in language classrooms (Warschauer, 2002; Zinger, Tate, & Warschauer, 2017). In order to cultivate teachers' new teaching competences, scholars in the field of foreign language teacher education have increasingly applied telecollaboration (also known as virtual exchanges) because of its cross-culturally situated and technology-enhanced nature (Guth & Helm, 2010; Lewis & O'Dowd, 2016; O'Dowd, 2011). Telecollaboration connects teachers across socio-cultural and institutional contexts to interact and learn together via the use of communication technologies (e.g., Guth & Helm, 2010).

In order to achieve their professional goals, a common practice among telecollaborative scholars is to engage intercultural teachers in *designing learning tasks* or *(co)creating lesson plans* to support the intercultural learning, technology-enhanced language learning, and/or telecollaborative learning of their own students (e.g., Fuchs, 2016; O'Dowd, Sauro, & Spector-Cohen, 2019). However, because they typically do not have opportunities for *enacting* their lesson plans with students, their post-task reflections can only center on their *imagined* or *hypothesized* enactment practices and teaching outcomes. Without opportunities to enact and

observe actual teaching practices, the tasks remain largely theoretical for intercultural engagement and provides only a partial picture of the complexities of foreign language teaching (O'Dowd, 2016) for intercultural teachers to successfully put theory into practice.

To address this gap, we provided teachers with an extended opportunity, not only for co-developing lessons, as is a common activity in teacher education, but also for *enacting* their lesson plans as part of their telecollaborative task sequences (Grossman, Hammerness, & McDonald, 2009). To do so, we integrated a new technology, Virtual Reality Simulations (VRS), to allow teacher participants to enact their lessons with a small group of human-augmented avatar language learners in real time. To maximize teacher learning for putting theory into practice (Johnson, 2006) within and beyond the context of telecollaborative learning, we designed *sociocultural activities* that accounted for the social, practical, and contextual aspects of teacher cognition (Cross, 2010) for teachers to participate as both *teacher-learners* (Freeman & Johnson, 1998) and *social agents* (Cross, 2010) whose learning is socio-culturally situated and fundamentally affected by micro-, meso-, and macro- context (Lamy & Goodfellow, 2010; Ware, 2018). The following research question guided this inquiry: What do teachers notice about their own and their intercultural partner's teaching practices, and how do they understand those teaching practices to be situated within different layers of institutional and cultural contexts? In answering these questions, we also illustrate how the telecollaborative task design itself contributed to fostering teacher noticing and reflection.

Literature Review

Common Pedagogical Practices of Teacher Telecollaborative Learning

Telecollaborative projects typically are built around three task types proposed in O'Dowd and Ware's (2009) Progressive Exchange Model, including information exchange tasks, comparison and contrast tasks, and collaborative tasks. This sequence of tasks follows a three-phase sequencing, formed by an introduction phase (learners exchange information about themselves and their cultures), a comparative phase (learners compare differences between both cultures and/or languages), and a collaboration on a final product. In a teacher telecollaborative project, intercultural teachers collaborate on designing technology-enhanced, intercultural learning tasks for their own students (e.g., Fuchs, 2011; Turula & Raith, 2015). Such hands-on activities that offer shared goals challenge them to simultaneously utilize their intercultural communicative competence, pedagogical skills, and technological skills. According to Wu's (forthcoming) recent synthesis of 37 teacher telecollaborative studies conducted between 2009 and 2019, over half of the studies engaged teachers in both information exchanges and collaboration on products. The popularity of these two task types is desired because it indicates that teacher participants gained opportunities for personal interactions and partnership establishment and opportunities for collaboration, the most complex tasks for deep intercultural learning (O'Dowd & Ware, 2009; O'Dowd, 2015).

Besides the Progressive Exchange Model, an increasing number of telecollaborative scholars have added pedagogical intervention that reflects the concept of *teacher educator mediation* which emphasizes an instructor's active role in capturing teachers' actual needs emerged from their real-time interactions/learning process and offering "emergent, contingent, and responsive" support (Johnson, 2015, p. 518). Such mediation is particularly needed for telecollaborative learning because of its highly complex cultural-situatedness and technology-mediated nature (Guth & Helm, 2010). The types of mediated support recently offered in teacher

telecollaborative projects include but are not limited to: 1) the increased presence and expanded roles of instructors (e.g., coach, task design mediator, discussion facilitator, and pedagogical mentor) to support teacher learning across all learning stages (Fuchs, Snyder, Tung, & Han, 2017; Helm, 2013; O'Dowd, Sauro, & Spector-Cohen, 2019); 2) the use of experiential, task-based learning for teachers to design intercultural, technology-enhanced, and/or telecollaborative tasks for their own students (e.g., Bueno-Alastuey & Esteban, 2016; Dooly & Sadler, 2013, 2019); 3) the preparation of teachers for addressing challenges that are unique to telecollaborative learning, such as engagement of teachers in explicit discussions of miscommunication incidents (Sauro, 2016) and teachers' increased awareness of technological difficulties (Fuchs, 2011); 3); and 4) the opportunities for reflective practices and peer assessment/feedback (e.g., Fuchs, 2011; Kurek & Muller-Hartmann, 2017, 2019).

Emphasis of Enhancing Teachers' Abilities to Connect Theory and Practice

Among 37 teacher telecollaborative studies reviewed by Wu (forthcoming), a majority of telecollaborative scholars emphasized the significance of enhancing teacher participants' abilities to connect theory and practice so that they could transfer the types of beneficial attitudes, knowledge, and skills acquired through telecollaborative learning to their own language classrooms (e.g., Dooly & Sadler, 2013, 2019; Fuchs, 2011; Kurek & Müller-Hartmann, 2017). To achieve such goals, Dooly and Sadler (2013) engaged preservice TESOL teachers in experiencing technology-enhanced learning *as learners* and in designing technology-enhanced learning tasks *as teachers* for their language students. The teachers discussed issues related to technology-enhanced instruction, co-constructed a project that leverages technology resources for students' learning, and gained peer feedback/scaffolding to enhance theory-practice

connection in their task designs. In another project, Dooly and Sadler (2019) explored how “FIT”, an integrated model of Flipped materials, telecollaborative projects, and in-classroom instruction, could contribute to the learning of 51 student teachers in Europe and in the U.S. to develop competences relevant to technology-enhanced instruction. They reported positive learning outcomes, including teachers’ taking ownerships for their learning, deepened understanding of technology-enhanced instruction, and increased abilities to connect theory and practice.

Differing from Dooly and Sadler’s (2013, 2019) studies, another group of telecollaborative scholars have increasingly examined the implementation of classroom-based telecollaboration with actual students (Dooly & O’Dowd, 2018; Grau & Turula, 2019; Lee, 2018; Ware & Kessler, 2016). For instance, Ware and Kessler (2016) explored two telecollaborative practitioners’ pedagogical integration of telecollaborative learning in a U.S. secondary literacy classroom. While reporting on pedagogical challenges (e.g., time constraints and technology issues), the teacher participants reported their positive perceptions of integrating telecollaboration in their practices and their observations of positive student gains (e.g., increased cross-cultural knowledge and improved motivation and self-confidence for writing). Also implementing a classroom-based telecollaborative project yet engaging teachers of foreign language students in the context of South Korea and Iran, Lee reported different challenges, such as educational inequality issues due to different socio-economic backgrounds of students and high demands for local teachers to acquire high levels of cultural and social capital. Such challenges in a particular context led to Lee’s conclusion that “a more pedagogically, socially, and culturally sensitive approach” is needed for teachers to better customize their telecollaborative instruction to address the local needs (p. 683).

While O'Dowd and Ware's (2009) three-phased task types with increasing addition of pedagogical intervention are prevalently used in teacher telecollaborative studies and serve to promote the connection between theory and practice, a gap exists in the extant literature: No studies have explored what characterizes teacher noticing when conducting video-based analyses of their own and other's enacted teaching practices in the context of telecollaborative learning. This study addresses this gap. Teacher noticing is in particular examined because it shows what teachers typically attend to and how they respond to in-the-moment interactions (e.g., Van Es & Sherin, 2002, 2008; Van Es, Cashen, & Auger, 2017), which may shed lights to how we can provide support for their noticing for deeper intercultural understanding. Further discussion about teacher noticing is offered in the next section of theoretical framework.

Theoretical Framework

Multilayered Complexity of Language Learning and Teaching

The *Multilayered Complexity of Language Learning and Teaching* (Douglas Fir Group, 2016) is a transdisciplinary framework that guided my design of teacher learning in integrated ways that accounts for the multilayered complexity of foreign language learning and teaching. As shown in Figure 1, the complexity can be categorized into three interrelated layers, including the micro-, meso-, and macro- level (Douglas Fir Group, 2016; Lamy & Goodfellow, 2010; Ware, 2018). The micro-level involves social action and interaction in the classroom and online learning contexts, the meso-level involves sociocultural institutions and communities, and the macro level involves ideological structures. The micro-level social interaction shape and are fundamentally shaped by the meso- and macro- level of larger social institutional and cultural norms. Because educational expectations at the broader socio-institutional level significantly

affect “learners’ access to specific types of social experiences and their ability and willingness to participate in them and engage with them in affiliative and transformative ways” (Douglas Fir Group, 2016, p. 37), it is important for educators to avoid a limiting view of a teacher learning approach as purely pedagogical practice and to cast it as an educational culture instead (Lamy & Goodfellow, 2010).

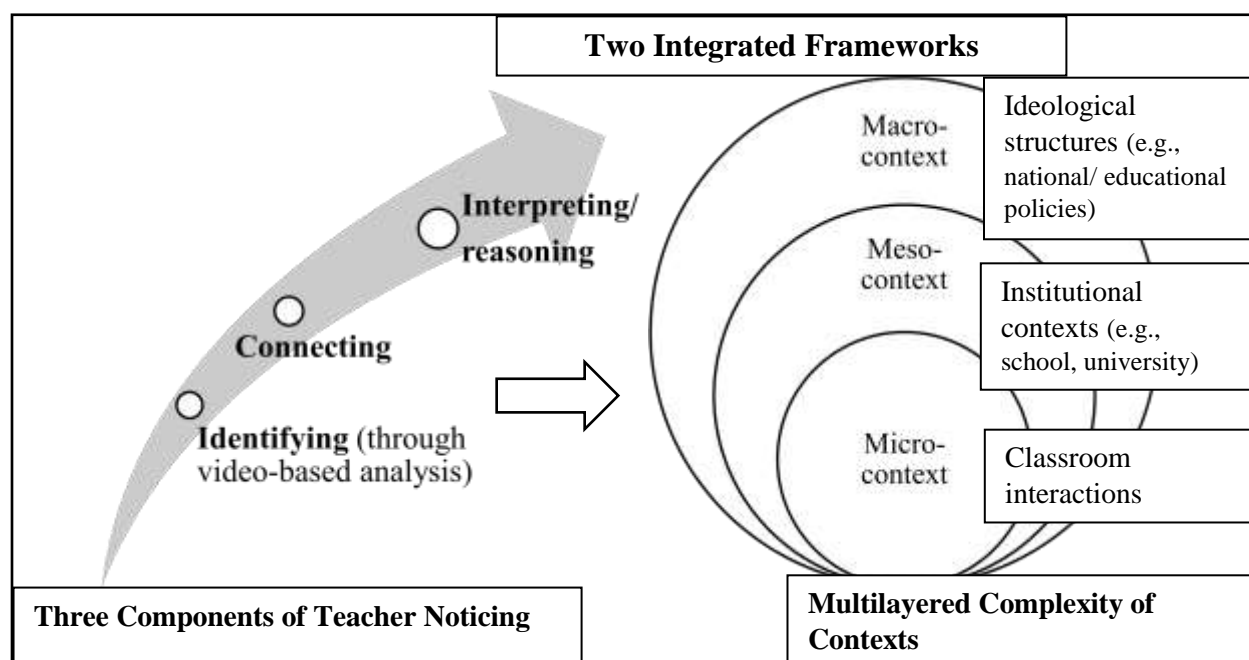


Figure 1. Integrated Framework of Teacher Noticing and Multilayered Complexity of Contexts

Teacher Noticing

The framework of *teacher noticing* (Van Es & Sherin, 2002) is introduced to this project as a transdisciplinary approach. According to scholars in math education, teacher noticing refers to teachers’ abilities to attend to complex instructional situations and make responsive instructional decisions during practices (e.g., Van Es & Sherin, 2002, 2008; Van Es, Cashen, & Auger, 2017). As shown in Figure 1, teacher noticing involves three aspects (Van Es & Sherin, 2002): 1) attending to and identifying a *critical incident*, a classroom event that they think is

importance in a teaching situation; 2) making connections between the noticed critical incident and broader principles of teaching and learning; and 3) applying what they know about the context to reason about the noticed situation. It typically engages teachers in video-based analyses of teaching practices and prompts teachers to *actively notice* particular features of teaching and learning with an interpretive inquiry stance to their noticed events (Kang & van Es, 2019; van Es & Sherin, 2002, 2008; Wu, Ware, & Liaw, 2020). Further, our adoption of this framework echoes Colpaert's (2018) call for a transdisciplinary approach with the hope for gaining better understanding of the complexities of intercultural telecollaborative learning (Guth & Helm, 2010). He reported that telecollaborative scholars' adoption of new transdisciplinary approaches has led to new possibilities for telecollaborative learning.

In the context of telecollaborative learning, a few scholars have used a similar notion of *critical incidents* (Tripp, 2013) for their participants to identify incidents that they perceived of strong influence on the technology use across different cultures (Fuchs, 2019) and on their perceptions of intercultural communication with their international partners (Turula & Raith, 2015). Yet, no telecollaborative scholars have incorporated the above three components of teacher noticing framework to create opportunities for intercultural teachers to collectively analyze video of their teaching practices and participate in a pedagogy-focused dialogue for collective reflection (Helm, 2013). The collectivity of analytic and reflective practices as such can arguably enable them to notice concrete, critical incidents of teaching and uncover their tacit ideological beliefs that inform their instructional decisions through explicit discussions about their pedagogical decision-making. In essence, such activities enable the teachers to leverage their *co-constructed noticing* and develop the "contextual and plural understanding of our (their) practices and discourses" (Canagarajah, 2016, p.24) across the micro-, meso-, and macro-

context (e.g., Douglas Fir Group, 2016). With an integrated lens of the two frameworks (see Figure 1), we hypothesize that when teachers are prompted to conduct video-based analysis of their enacted practices and follow noticing acts of identifying, connecting, and reasoning, their intercultural engagement moves beyond the micro level interactions to the meso- and macro-context, which in turn will deepen their intercultural understanding.

Methods

This qualitative case study explored the following framing question: What do teachers notice about their own and their intercultural partner's teaching practices, and how do they understand those teaching practices to be situated within different layers of institutional and cultural contexts? We designed an intercultural telecollaborative project involving three experienced language teachers (elementary school teachers enrolled in a M.A. program) in Taiwan and two experienced language teachers (doctoral students in education) in the U.S. in pedagogically rich online interactions and collaboration via online platforms. We integrated the VRS program for them to teach three human-augmented avatar language learners in real time. We intentionally featured the avatar students with three different cultures and for them to respond with multiple perspectives, at times, to provide the opportunities for them to enact culturally responsive pedagogies. They then met via videoconference and jointly analyzed their pedagogical choices which were informed by their cultural and linguistic situatedness.

Task Designs of Teacher Telecollaborative Learning

As shown in Figure 2, the task designs of this project followed the three-phase approach (O'Dowd & Ware, 2009) as embedded with a teacher noticing model (Van Es & Sherin, 2002). First, participants made individual ten-minute recordings; they then met in real time over Zoom

after watching one another's recordings to discuss their own teaching; finally, they co-planned and taught a 30-minute lesson using the VRS program. To ensure the authenticity of avatar student characteristics and interactions on the VRS program, we worked with a simulation specialist for three months to develop profiles of three 13-year-old avatar language learners from three diverse cultures (India, Mexico, and Taiwan) and create scenarios of rich cultural moments for teachers to respond. The teachers' interactions and collaboration took place using multiple online tools, primarily using Zoom, a synchronous videoconferencing tool.

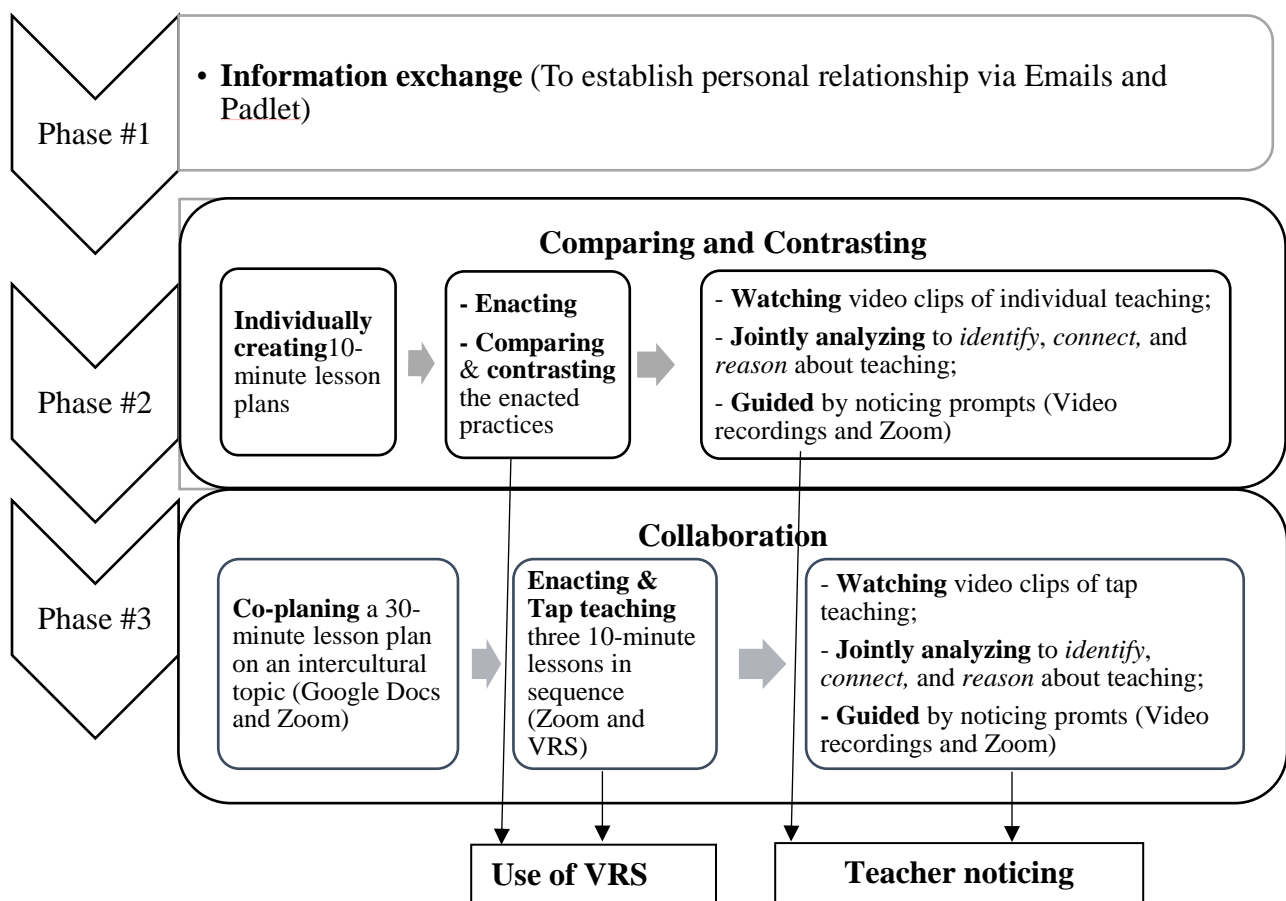


Figure 2. Task Design Grounded in Lens of Progressive Exchange Model and Teacher Noticing

In addition to these three conventional telecollaborative task types with three phases, we also integrated the framework of *teacher noticing* (Van Es & Sherin, 2002, 2008) for post-task interactions to reflect on teaching (Farrell, 2015) after each of their individual teaching and

collaborative teaching. This framework introduced our participants to collective analysis of their own teaching video for critical reflection in the following three ways (Van Es & Sherin, 2002, 2008): 1) challenge them to identify critical incidents of classroom events that they perceived of importance about foreign language students' learning, 2) prompt them to relate the noticed events to their pedagogical principles and share with their local and international partners, and 3) share their interpretations and reasoning of the noticed events. In particular, we clearly defined the concept of critical incidents with examples to the participants in noticing reflection protocols to ensure they understood the concept. The integration of this framework in task designs provided opportunities for the participants to collectively analyze video of their teaching and interact with each other to unpack the ideological basis of their instructional choices or the educational and cultural situatedness that inform their local pedagogical visions (Kramsch, 1998, 2009).

Data Collection

We collected data from four sources: 1) video recordings of teachers' VRS teaching practices; 2) teachers' written reflections; 3) video recordings of teachers' interactions on Zoom video conferences; and 4) artifacts (lesson plans, teaching protocols, and online discussion protocols).

Researcher Positionality

In this research project, we played multiple roles as suggested by telecollaborative scholars (e.g., Fuchs, Snyder, Tung, & Han, 2017; O'Dowd, Sauro, & Spector-Cohen, 2019): 1) project coordinators to communicate with each other and with teacher participants; 2) designers of telecollaborative tasks; 3) designers of teacher reflection protocols; 4) project implementers and mediators; and 5) data collectors and data analysts. We are multilingual and multicultural

speakers of languages (English, Chinese/Spanish) that our participants in the US and in Taiwan speak. While we perceive our multilingual and multicultural background as assets to mediate teacher intercultural learning in this project, we bear in mind that we may exhibit unintentional bias when analysing data and interpreting findings. To mitigate against these potential biases, we have designed a robust, triangulated analytical approach as outlined below.

Data Analysis

In looking at each of the pedagogical episodes in which a “critical incident” related to noticing intercultural aspects, we used Miles, Huberman, and Saldana’s (2020) thematic coding approach because it enabled systemic coding to capture teacher noticing of particular incidents or key features of teaching within analysable *episodes*. In the context of this study, *pedagogical episodes* included the *episodes* of teacher-teacher interactions on their teaching practices (Sherin & Russ, 2014), the *critical incidents of teaching* identified by participants in their written reflections, and *real-classroom teaching stories or scenarios* imbedded by the teachers in their interactions (Van Es & Sherin, 2002). We followed three coding stages as below.

Stage #1: Identifying stories/episodes of teacher pedagogy-based interactions.

Drawing on four transcripts of 5-hour-long video recordings of teachers’ post-lesson reflective interactions, we identified episodes of teacher pedagogy-focused interactions based on their discussion topics (Sherin & Russ, 2014). We also drew on the video teachers’ written reflections in which they identified critical incidents of teaching after observing self and other’s video of teaching practices. This stage generated a total of 50 episodes including 38 interaction episodes and 32 imbedded critical incidents of teaching.

Stage #2: Conducting thematic coding

Using the thematic coding approach (Miles, Huberman, & Saldana, 2020), we followed two-cycle coding phases first identifying the most meaningful data chunks, and then further condensing the data by clustering similar codes into larger categories. This systemic coding with two phases helped capture teacher noticing of *particular critical incidents*. Because teacher noticing is not a static construct and instead includes actions of identifying, connecting, and reasoning, we systematically coded for patterns based on these noticing acts. Further, in order to explore what aspects of the teacher noticing about their enacted practice reflected the micro-, meso-, and macro-context (e.g., Douglas Fir Group, 2016), we coded the pedagogical episodes at each of the categories at a time following a codebook. The codebook in Table 1 shows the codes of teacher noticing acts, multilayered contexts, definitions of the codes across contexts, and examples. In the first cycle, we specifically tracked within each episode what and how the teachers noticed about one another, the avatars, and their own imagined students based on their noticing acts and noticed content. At the meso-level, we systematically analysed the meso-level interactions that spread outward to include wider-scale interactions with institutions and communities beyond the participant's immediate spatiotemporal, socialization context. At the macro-level interactions, we tracked the types of broader ideological structures/beliefs noticed and discussed by the teachers that significantly affect their practices and student learning. Salient ideologies may be relevant to globalization, international education, educational policies, and cultural beliefs. In the second cycle, we generated themes further condensing the data by clustering similar codes into larger categories.

Because intercultural communication among teachers may not always go beyond their in-the-moment interactions to explore the broader contextual influence, we also created jottings and researcher analytic memos to provide information on broader contextual factors and support

Table 1

Codebook of Teacher Noticing Acts across Micro-, Meso-, and Macro- Context

Code across multilayered contexts		Definition of noticing acts within each context	Examples
Noticing acts	Context		
1) Identifying 2) Connecting 3) Interpreting/ reasoning	Micro-context	At this micro-context, teachers observe video of their avatar teaching and identify critical incidents of teaching that they considered of significance to student learning. This level of interactions embodies the actions, thoughts, emotions and social interactions of teachers/students in their immediate local worlds.	Observing and identifying a critical incident of avatar teaching: “ <u>Firstly</u> you mentioned about what seems form the outside... <u>then</u> you give them a real example of your personal experience.”
	Meso-context	This meso- context spreads outward to include wider-scale interactions with institutions and communities beyond the teachers’ immediate spatiotemporal, social context. They may connect what they noticed about their avatar teaching to their real students and real-world teaching. They may make references to the common practices of local teachers with whom they have frequent/ infrequent contact.	Connecting to real students/ making references to common practices in institutional contexts: <u>Sometimes</u> in the (Taiwanese) classroom, students are not allowed to talk; so when they get older, they tend to not answer questions or even raise questions.” “Because I <u>usually</u> taught in <u>45-minute</u> period too. And I would say our <u>building background</u> , or <u>activating prior knowledge</u> is <u>often</u> what we call it.”
	Macro-context	This level refers to the broader ideological structures in which foreign language teachers and students teach/study. Teachers may connect the observed critical teaching incidents to their teaching principles and interpret/reason about them with the support of their knowledge of a local context/culture.	Connecting to/interpreting with the support of instructional principles: “- Do you use a lot like <u>praise</u> , or good words in your teaching? - Yes. I think <u>positive reinforcement</u> is something that I have found to be really effective. And I think it’s <u>pretty common practice</u> to go ahead and recognize the students that are on tasks and doing what they’re supposed to.”

the interpretations of the findings. We produced jottings as analytic sticky note with reflective remarks when coding data on a word document (Miles, Huberman, & Saldana, 2020). It helps record our feelings, reactions, insights, and interpretations which could “strengthen coding by

pointing to deeper or underlying issues” (p. 87). We also created analytic memos as a useful sense-making tool to bring together different pieces of the data into a recognizable cluster (Miles, Huberman, & Saldana). By producing jottings and analytic memoing as bilingual and bicultural researchers, we hope to utilize our knowledge of multiple languages and cultures for further insights.

Stage #3: Triangulating data sources and conducting member checking

In order to increase the credibility of the findings of this study, we used data triangulation and member checking. We triangulated the analyses of multiple data sources (e.g., transcripts of teacher-teacher interactions, teaching videos, and written reflections) to check for disconfirming evidence (Creswell & Poth, 2019). We also conducted member checks for our participants to review and confirm the accuracy (or inaccuracy) of our analyses and interpretations of the data (Brantlinger et al., 2005).

Findings

What do teachers notice about their own and their intercultural partner’s teaching practices, and how do they understand those teaching practices to be situated within different layers of institutional and cultural contexts?

The thematic analyses of critical teaching incidents noticed by two groups of teachers in this project and their noticing acts yielded four themes regarding the patterns of their noticing about their own and other’s enacted teaching practices. As guided by the noticing framework, they tended to: 1) identify and interpret critical incidents imbedded with cultural differences; 2) engaging in video-based analysis of teaching and encouraging alternative interpretations of teaching practices; 3) connect to and reason about real-world scenarios from their own teaching;

and 4) notice and connect across cultures through explorations of frames of reference. They are discussed as below, respectively.

Theme #1: Identifying and interpreting critical incidents imbedded with cultural differences

After observing video of teacher-student interactions at the micro-level, teacher participants identified critical incidents of their interactions with avatar language learners when they noticed that something was potentially motivated by a cultural difference. Then, based on what they noticed, they connected the noticed incidents to their broader knowledge base and exchanged their interpretations, which essentially moved their conversations beyond the micro-level context to the meso- and/or macro- context to support one another's deeper intercultural understanding. For instance, after observing together a critical incident of culture teaching in Caiqin's video clip where two avatar students offered responses about "red candles" and "red envelopes", Jenny expressed her curiosity about the connection between these two cultural artifacts and initiated a discussion about the symbolisms of the color red across cultures (see the episode below).

Jenny: I didn't think about this before but I just now want to ask to make the connection with the red candle versus the red envelopes, the symbolism of the color red...I am just curious about the different meaning of the color red in different cultures?

Caiqin: Red is happiness in Chinese culture. Red envelope is for wife and husbands, when they're getting married, we give them red envelopes to means we share our

love and happiness with them, and in Chinese New Year, with this a red money envelope means we want them – we share lucky and we share love for these children.

Jenny: I knew about Chinese New Year but I didn't know about for weddings. That's cool.

Caiqin: So red is important color in Chinese culture and the opposite color is white. When someone has died and there's funeral, we need to get the family white envelope means we express our sadness, our sorrow toward the situation.

Jenny: Oh, interesting. For us, it would be black. Black is our color for mourning. That's cool.

Caiqin spoke with great willingness to share her own cultural knowledge and offered explanations in details to Jenny: “Red is happiness in Chinese culture. Red envelope is for wife and husbands, when they're getting married, we give them red envelopes to means we share our love and happiness with them...” and “red is important color in Chinese culture and the opposite color is white.” Jenny appreciated the additional cultural knowledge that extended her noticing and intercultural understanding of the color red beyond “Chinese New Year” that she had already been familiar with, “I knew about Chinese New Year but I didn't know about for weddings” They later also learned that certain different colors are used to represent the same significance and connotation across both cultures, “Black is our color for mourning (in the U.S.)” and white is for Chinese culture. While gaining increased knowledge about different cultures is important, an intercultural stance (Ware & Kramsch, 2005) exhibited here by the two teachers played a critical

role for them to negotiate differences and therefore enrich their cultural and linguistic situatedness over time.

A second example of a critical incident in teaching that involved cultural differences in pedagogical perspectives. As illustrated in the pedagogy-focused conversation among Binming, Caiqin, and Jenny, they just finished watching a video clip of Binming's teaching in which he had begun his lesson by summarizing a portion of a story for avatar language learners, as compared to his American partner, who immediately had begun the same lesson with an interactive conversation with the students:

Binming: Hmm, I guess I was trying to get them ready to discuss about a concept. So, I needed to recall, by having them refer to what happened to the story. So, I tried to provide them with details and tried to evoke their imagination about that. And I believe I needed that scaffolding for them, because I was trying to get them ready, warm them up, but get them prepared before I get to ask them a question. So, that time actually allowed them to think and to be ready for the question next.

Jenny: I will tell you in that part, I were to visualized the moment. Like, when you said, "Remember in the movie when she put makeup and blah, blah, blah", it was the first time even when I was teaching then the lesson, for some reason the only image I had in my head, was I guess whatever the little picture was at the top of the lyrics. And when you said that, I remembered exactly - and I haven't watched a movie in many years. But I remember seeing you were talking about it the movie. So, you did a good job describing it.

Using a U.S. pedagogical perspective, his local partner Caiqin mis-interpreted Binming's instructional move as "dominant teacher talk". This was not surprising because although Caiqin is also an English teacher in Taiwan, her pedagogical vision was probably affected by a western lens of "communicative language teaching" that has been widely adopted in the educational system in Taiwan. This reflects the broader influence of a macro- level, ideological context on the teachers' perceptions of teaching. Although they failed to bring this ideological belief to an explicit discussion in this episode, the reflection protocol in this project prompted them to further explain their reasoning about teaching that Binming was able to make his instructional decision making visible for his partners. He shared that he was actually "trying to get students ready by giving a recall of what happened in a story through vivid descriptions of details and trying to evoke students' imagination". He also pointed out that because the avatar teaching environment limited his use of visuals and video clips that he felt like he should scaffold by describing a particular scene before imposing a question. Here he essentially extended his own and his two partners' noticing from the micro- interactions to the meso-context, namely the telecollaborative task set up for them to teach via the VRS program. What also made a difference to extend their noticing is when his American partner Jenny reframed his teaching move as a rich learning moment for her because he "evoked" a scene. Such an intercultural lens created an alternative meaning of Binming's instructional move, which in turn acknowledged its effectiveness in this particular avatar teaching context.

Theme #2: Engaging in video-based analysis of teaching and encouraging alternative interpretations of teaching practices

When having the opportunity for analyses of teaching video, teachers were able to draw on rich multimodal semiotic resources to support their interpretations of the observed teaching events because it is a medium that enables the display of texts, audio recording, and visual recording of teacher-student interactions. When offer with the opportunities for observing video of each other's teaching practices, the teachers in this project tended to notice their partner's use of positive words, manipulatives, body language, avatar students' facial expressions, and/or linguistic and cultural resources. What leads to a deeper level of intercultural engagement was when they were prompted to take turns to share individual interpretations of a multimodal semiotic resource as such, especially when their interpretations showed differences. For example, Shali noticed her American partner Mary's use of "praise or good words" to praise students when they did well". Interestingly, Caiqin in another group also noticed her American partner Jenny's "good at giving students positive responses". However, the intercultural engagement of both groups unfolded differently in these two interaction incidents that they either deepen one another's intercultural understanding, reify stereotypes, or lead to over-generalizations (Dooly, 2008). The following two episodes illustrate two contrasting examples, each with different levels of extending the discussion.

"Is that common in Taiwan or different?: Episodes generating extended discussion.

As shown in the first episode, as a response to Jenny's question on the similarities and differences between their enacted practices, Caiqin shared her noticing of Jenny's positive responses to students and compared that teachers in Taiwan were not good at giving positive responses. Giving meso-level contextual information, Jenny explained that teachers in the U.S. are taught to validate student responses that indicates a cultural norm for teachers to follow at American schools. While agreeing with Caiqin's noticed difference, Binming spoke in a more

differentiated, careful way that avoided stereotyping or over-generalizing the common practices of English teachers in Taiwan. He explained that it is not because teachers in Taiwan don't listen to students, but because it seems to be more difficult for them to respond in-depth to students because English is not their native language. The information as such related to Second Language Acquisition and expectations on local teachers in Taiwan to adopt western teaching approaches without modifications to their local needs arguably offered an alternative, more accurate interpretation of local teachers' practices. It essentially contextualized a non-native speaker's practices within the broader influences of macro contexts for deeper intercultural understanding.

“It’s pretty common”: Episodes generating less extended discussion. In the second episode, grappling with the in-the-moment need to share and affirm each other and seek similarities, Shali and Mary failed to extend their discussion on aspects that might be considered richer intercultural inflection points. For example, Mary did not invite her partner to share potential differences in their practices and Shali showed a desire to ‘look/act the same’ as Mary. They also did not comment on the way in which the positive words could be “overgeneralized,” as can be a common stereotype about “how American teachers talk in the class”.

Episode #1: More extended discussion	Episode #2: Less extended discussion
<p><i>Jenny:</i> Well did you all notice anything really similar between all three of us, or <u>anything really different?</u></p> <p><i>Caiqin:</i> I thought the <u>teacher in Taiwan are not response to students at the same way</u>. Because in your answers <u>you are good at giving students positive responses</u>. But in Taiwan we teacher I'm not good at that... And <u>they want to be praised, but I'm not good at doing that</u>...</p>	<p><i>Shali:</i> I appreciate that you made sure that they are on their work with praise. <u>Is that a praise, like good words? Like, “Oh, you are doing good, you are doing well.”</u> So, do you use a lot like praise, or good words in your teaching?</p> <p><i>Mary:</i> Yes. I think <u>positive reinforcement</u> is something that</p>

Jenny: Is that something that is common in (Taiwan)? Like, here we very much as teachers are taught to validate student responses...

Binming: I agree what Caiqin just said. I feel most teachers they were - I wouldn't say the teachers don't listen to students. But it seems more difficult for teachers to respond in-depth to the students... I found in the videos of myself and C when avatar students threw out questions - I mean well, actually when they have something to say. My own strategy I was like, okay I was nodding - I would try to give them feedback but not really in-depth. Because I would need more time to process, to digest before I can give constructive feedback... I wanted to say more. But I found that whether or not it's easier as I thought it would be.

Jenny: I see.

I have found to be really effective. And I think it's - yeah, pretty common practice to go ahead and recognize the students that are on tasks and doing what they're supposed to...

Shali: I see.

Mary: Yeah, I think it's pretty common practice to do that. Is that common in your culture or no?

Shali: Yeah, it is. We are trained to use this strategy.

Through attending to and interpreting multimodal semiotic resources (e.g., words, gestures, actions) shown in the video with an *intercultural stance* (Ware & Kramsch, 2005), teachers distanced themselves from biases and assumptions about the noticed features and instead actively inquired about alternative interpretations or possible differences that they were able to notice that these semiotic resources are not necessarily “neutral” from a cultural perspective. For example, in a video clip selected by Binming, he identified a critical teaching moment in which his American partner Jenny was using body language (mimicking) to explain the action of crocheting to avatar students. When Jenny shared that she felt her explanation was falling apart, Binming highlighted that “you were mimicking the movements of crochet. So, that should be clear for them to imagine.” Because Jenny “realized if I (she) were actually teaching this in Taiwan, maybe that (crocheting) wouldn't be a good example”, she inquired about it with an intercultural stance, “in Taiwan is it common for young people to sew and crochet?” Binming's response based on his knowledge of local young people helped Jenny realize “So, that could be irrelevant to people in Taiwan too.” By going beyond their immediate interactions

context, the teachers not only noticed specific, observable aspects of teacher-student interactions but also produced broadened meaning to these noticed features.

Theme #3: Connecting to and reasoning about real-world teaching

Teachers frequently made connections between critical incidents with avatar language learners that they noticed in the video clips and critical incidents that they recalled in their real-world teaching. They typically made references to real-world scenarios about their own classroom experiences that might be similar to or different from a particular avatar teaching incident and then described their particular instructional moves or habitual practices. Showing curiosity about their international partners' real-world teaching experiences, they then asked questions about the common beliefs and practices of their partners' local institutional members, which further extended their noticing to broader foreign contexts. For instance, in an episode where Mary had just played a video clip of Shali's teaching with avatar students, she described what she noticed about Shali's engaging the students in "sharing out how they interpret Mulan (a character in a Chinese literacy text/a Disney movie)". She then showed her curiosity about the common practice of teachers in Taiwan by asking "would you say that's pretty common in Taiwan?" In the beginning, Shali responded with a simple "Yeah" because she misunderstood that Mary was asking about whether it was common for students in Taiwan to have different thoughts. Mary then imbedded a scenario that depicted two distinct groups of teachers in the U.S. who either "really welcome different opinions" or "unfortunately (have) the mentality like I'm right, you're wrong". An imbedded scenario as such created a more informative, cross-cultural context for the teachers' deeper understanding of different possibilities in the practices of

subgroups of teachers in the U.S., as compared to a fixed image of a common practice or a single approach adopted by all teachers.

When conversing about challenging teaching moments with avatar students, teachers also shared their common challenges from real-world teaching. Two of the most common real-world experiences that teachers referenced included the lack of time to cover materials and the pressures to prepare for tests. The following episode of a conversation between Mary and Shali demonstrates how they resonated with one another's similar challenges:

Shali: And they are asking any kinds of questions. But it's a reality that the students will ask question too.

Mary: And I guess how do you handle that in your classroom? When you have a test coming up, or like a quiz that you know they have to take and you have to get through - do you have to get through a lot of material? Or, do you feel like you have adequate time in Taiwan to get through all the material that you need to?

Shali: Some - actually we have a lot of materials to go through. So, if like there is a disagreement like Jasmine and Ava, if one third of students in the class they thought about - they have misunderstanding, then I will stop and quickly go over it. But if there is just one or two, or less five students have this misconception, then I will ask them to discuss after class. And I will go through my materials quickly.

Mary: I feel like that is a common, you know, concern of teachers. I was just talking to teachers that I've worked with too is you're expected to cover a lot of material.

Shali: Mm-hmm, yeah... in reality we don't have too much time to explain the different song and different conditions... I think we just go through the service. We didn't get deeper in the discussion... I need to cover in ten minutes. So, I keep, keep going.

Mary: I think that just the reality of teaching, right? I think you are making those decisions constantly every day. Whether how deep do I need to get? On, how quickly can I just get through this... I know when I think about a lesson, because when I taught it was usually 45 minutes like you said. And there is a lot of content that you have to get through. And so, making those decisions on when to stop, and explain something. As opposed to just, moving on, right. I feel like I'm constantly always weighing like, "Okay, do I have time to talk about this? Or, do we have a test at the end of the week, and I need to get through the materials, so that they're ready to take it."

In this conversation, Shali related her experience with the avatar student, who were asking lots of questions, to a similar challenge that she typically encountered with her own students because "it's a reality that the students will ask question too", "we have a lot of materials to go through", and "in reality we don't have too much time to explain". Although she was able to cover a lot of content in her instruction with avatar students, she felt that her interaction with students was not in-depth because she prioritized content over the quality of interactions due to the limited 10-minute instructional time in a teaching environment of virtual reality simulations. Mary echoed Shali's view to show her understanding and then shared her own struggle to try to cover lots of content in a 45-minute lesson in the U.S. setting. They then concluded the struggle

to be “a common concern of teachers” and “just the reality of teaching”. The challenges reported by the two teachers indicate the undesired influence of their sociocultural and institutional factors. Macro contextual factors as such were typically beyond their immediate control that they felt like they “could just go through the service”, and “could not get deeper in discussions”. These challenges, in essence, reflect the tensions between theory and practice commonly shared by teachers across cultures and educational contexts.

Theme #4: Noticing and connecting across cultures: Exploring frames of reference

In rare occasions, teachers made tacit their ideological beliefs that informed their instructional decision making. Explicit discussions about these underlying beliefs, arguably, would enable them to notice “significant frames of references” within and across cultures (Byram, 1997). When they brought these beliefs to explicit discussions, they essentially made them visible for each other to explore the similarities and differences and to determine how they could lead to different meanings. The primary frames of references that were explicitly discussed by the teachers included: 1) instructional principles and beliefs (e.g., formative assessments, positive reinforcement); 2) teacher performance standards/expectations (e.g., instructional efficiency); 3) educational policies (e.g., English language exams, Content and Language Integrated Learning); and 4) cultural norms and beliefs (e.g., concept of filial piety that expects Chinese children to be kind to and take care of their parents). The following two examples were to illustrate two of the frames of reference, teacher performance standards/expectations and educational policies.

Teacher performance standards/expectations. To illustrate, the following example shows teachers’ noticing of *teaching standards* across their sociocultural and national contexts. After a

partner identified a critical incident of teaching in which she was using manipulatives and a song, Jenny indicated that she was using such strategies because “If there is not a song, a video, or some fun activity, then the students (in the U.S.) think you are not a good teacher.” Her explanation made the evaluative standards of a good teacher in the U.S. setting explicit to help situate and explain her “entertainer” style of teaching within an American educational context. Her partner Binming shared a similar observation that students in Taiwan also “always expect activities or teachers doing more dynamic and fun and maybe kind of an entertainer kind of thing”. In sum, the macro-level of noticing as such increased the teachers’ awareness and understanding of the types of ideological beliefs that inform their own and their partners’ teaching practices.

Educational policies. As an example of the influence of *educational policies* in the following episode, Caiqin brought what she noticed in the educational context of Taiwan to an explicit discussion with her partners about the impact of Content and Language Integrated Learning (CLIL), a new policy, on her and her fellow teachers. This policy typically expects teachers in Taiwan to teach subject matters in English as their foreign language.

Caiqin: Last week, I saw a teacher designed a new curriculum using CLIL. She's an English teacher and the curriculum is for 7th graders' math class, and it worries her because her expertise is all in language area. It's not mathematic area...

And I also heard that an elementary school, they need one area in Taiwan needs 13 PE teachers but they need these teachers to be able to teach PE class in English, so even though there's 13 vacancy, only 2 teachers applied the job.

Because most of PE teacher in Taiwan, they don't teach PE in English, but our policy now in Taiwan is to – we try to, we plan to use CLIL from next semester. This morning, I was in Taipei to going a seminar that teach teacher how to use CLIL and most of the speakers, they invited to share their experience as native speakers. English native speakers teach PE class, or design class, or culture class in Taiwanese public school. It makes me worried about my future because I'm not an English native speaker but the trend nowadays looks like native speaker is better than Taiwanese teacher.

As shown in the episode, Caiqin shared three real-world stories about the types of challenges and reactions teachers in Taiwan had on the introduction of a CLIL policy to their classrooms. Her first story showed a new dilemma faced by an English teacher in Taiwan who had limited skills in math education yet was recently expected to teach a Math curriculum in English. The second story described the failure of an elementary school's recruitment of local PE teachers who could be qualified for both teaching PE and teaching in English, which indicated the under-preparedness of local teachers to meet the new expectations of local educational policy makers. The third story vividly portrayed the kinds of anxiety and concerns Caiqin had as a non-native English speaker. She felt “worried about my (her) future because I'm (she is) not an English native speaker but the trend nowadays looks like native speaker is better than Taiwanese teacher”. The instructional belief—misguided but still very real for many non-native speaker of a foreign language—that native speaker status is a key.

Noticing and sensing the challenges Caiqin had to experience due to the new policy—and to the apologetic way in which Caiqin alluded to her non-native speaking status, Jenny tried to

comfort her partner by sharing her positive beliefs and values about her international partner's unique knowledge and skills as bilingual and bicultural teachers. Jenny tried to comfort her partner by highlighting Caiqin's unique bilingual and bicultural assets. She valued her "really unique insights that can help Students Bridge from one language to the other that she as a native speaker could never do. She also reframed that "whether it's a native speaker or not is not as important as whether they're a strong teacher or not, or maybe it's not as important as whether they're culturally sensitive or not". In essence, Jenny recognized the ideological underpinnings of why her international partner would feel inadequate, and then directly confronted the stereotype to re-interpret it differently. This shows the beauty of telecollaborative projects as such where teachers as *collaborative, supportive partners* communicating with each other to explore what it means to teach, not teachers who are "labeled" as native/non-native "giving advice".

Concluding remarks made by Caiqin at the end of this project showed that telecollaboration "rewrote" the narrative that her non-native status needed to be something to apologize for. Her following accounts vividly described an "aha" moment that a Western teacher would see her teaching as "precious" and she came to full realization that "our culture is also a precious culture":

In Taiwan, sometimes we think Western culture is better than us and what we want to do in language class is to catch up Western culture, to know more about Western culture... This is the first time I know, oh, my thinking that Western people will never care about Asia culture or Taiwanese culture is wrong because I met someone who teach in what we say Western area, and ask me about my culture, and discuss

with us about our culture means you want to know it, and that makes me feel so happy, and I was now think that our culture is also a precious culture. It's also a treasure but not a stereotype.

Discussion

In response to the question of what and how teachers noticed in the intercultural telecollaborative context, teachers of this project not only exhibited patterns of identifying, connecting, and reasoning about their enacted teaching practices, but also their integrated use of intercultural stance and intercultural communicative competence for intercultural engagement. The thematic analyses of multiple data sources (e.g., online interactions, teaching videos, and written reflections) enabled four themes to emerge, which will be discussed in this section. Overall, the teachers' deep intercultural understanding mostly occurred when they connected their noticing of the micro-, immediate interactions to the meso- and macro- context, as prompted by noticing tasks of identifying, connecting, and reasoning.

Co-constructing a joint intercultural stance: Noticing and exploring differences

The opportunities for teachers to enact their lessons via the VRS program and conduct video-based analyses of their enacted practices together generated teaching events that became the *intercultural context* (Ware, 2005) for culturally situated, pedagogy-focused conversations. When teachers of this project were prompted to identify critical incidents that they perceived of significance in a teaching situation, they tended to notice teaching moments of cultural elements or cultural differences for joint analyses; then in either a comparative or contrasting lens, they shared their interpretations of these culturally-situated teaching moments to make their implicit

values about teaching and learning visible to their partners. In essence, by identifying and exploring critical incidents of high cultural inflection points (Belz & Muller-Hartman, 2003) that were of interest and significance to them (Van Es & Sherin, 2002, 2008), they took ownership for their intercultural learning and co-constructed an intercultural context for culturally situated, pedagogy-focused discussions grounded in concrete incidents of pedagogical decision making. An intercultural context as such functioned as a pedagogical “third space” (Kramsch, 1993; Skerrett, 2010) for *collaborative discovery* of similarities and differences in their teaching beliefs and practices, one of essential intercultural communicative competences (Byram, 1997).

In order to co-construct this intercultural learning space, the teachers engaged not only in active noticing of and conversing about culturally rich teaching events, they also together adopted an *intercultural stance* (Ware & Kramsch, 2005) that was essential for them to *decenter* themselves in the moments of their joint analyses and interpretations of the noticed teaching events that were socioculturally and institutionally situated. By decentering themselves, they encouraged each other to engage in negotiable, double-voiced discourse (Kramsh, 2002) and cultivated a third perspective “to take both an insider’s and an outsider’s view” on their own culture and other’s culture (Kramsch, 2009, p. 210). In the example of Caiqin’s misinterpretation of Binming’s teaching move of making a recall of a story scene as “teacher dominant talk” from a US pedagogical perspective, Binming’s two partners both offered their “insider’s view” and inquired about his pedagogical reasoning as an “outsider”. After he explained that he was trying to “evoke their (students’) imagination” by recalling key details of a story at first, his partners were able to “reinterpret, reorganize, and reconstruct prior knowledge in light of the new, to recognize the traces of prior texts and events as they appear in new contexts, endowed with a new value” (Kramsch, 1993, p. 200).

Noticing rich multimodal semiotic resources: Opportunity for developing symbolic competence

The findings of this study showed that teachers often attended to rich multimodal semiotic resources (e.g., a teacher's use of positive words, manipulatives, body language, and avatar students' facial expressions, linguistic and cultural resources) when jointly analyzing video of their enacted practices. This is not typically in the telecollaborative learning context because past projects have rarely engaged teachers in the analyses of teaching video that carries multimodal features of texts, audio, and video (Hauck & Young, 2008) for teachers to (re)play to notice rich multimodal semiotic resources and use them as observed evidence to support their interpretations. The multimodal semiotic resources noticed by the teachers arguably created the opportunity for them to develop symbolic competence – “the ability to manipulate the conventional categories and societal norms of truthfulness, legitimacy, seriousness, originality—and to *reframe* human thought and action” (Kramsch & Whiteside, 2008, p. 667). During Binming and his partners' discussion about a noticed feature of Jenny's tendency to give positive responses to students, he and his local partner both highlighted that teachers in Taiwan typically do not respond in the same way and are not good at being responsive in their interactions with students. The information on local English teachers' common practices in Taiwan as such would probably have been mis-interpreted by Jenny as “incompetent” or “undesired” based on quality-teaching standards established in the US. However, she was able to reframe her judgmental thought after Bingming further explained that he also personally valued the significance of providing responsive feedback and engaging students in in-depth discussions, yet because of the constraints of his English proficiency as a non-native speaker, he found it challenging to be responsive to student ideas. In other words, Bingming's noticing acts of identifying and

interpreting a noticed semiotic resource (e.g., positive responses) supported Jenny's development of symbolic competence by helping her reframe her interpretation of the same semiotic resource through his unique lens as a non-native speaker.

In order to unpack the possible multiple meaning of observed semiotic resources, teachers should not only attend to them as "significant reference sources" (Byram, 1997) but also extend their conversations about the noticed semiotic resources beyond the micro-level, immediate interactions context. The two contrasting episodes of two different extended degrees of conversations showed that a less-extended conversation that only seeks for similarities could result in overgeneralization, stereotyping, or missed-opportunities for intercultural understanding (Dooly, 2011; O'Dowd & Ritter, 2006; Ware & Kramsch, 2005), and a more-extended conversation that actively inquired about differences and engaged in negotiable, double-voiced discourse (Kramsch, 2002) could cultivate rich cultural imaginations of these symbolic resources for alternative meaning.

When prompted to identify, connect, and reason about their noticed critical incidents with an intercultural lens, teachers in this project at times were able to demonstrate understanding that semiotic resources are not necessarily "neutral". This contributed to the research on teacher noticing that was primarily conducted within one sociocultural, institutional context (e.g., Van Es & Sherin, 2002, 2008; Van Es, Cashen, & Auger, 2017) by making the intercultural features more salient for teachers to notice. As illustrated in a discussion on Jenny's use of mimicking to explain the concept of crocheting, her partners appreciated her use of body language to explain an abstract concept, but they soon also noticed and reached a new understanding that this example of crocheting might not be applicable to students in Taiwan if Jenny were to teach them

in Taiwan because crocheting is not a common practice among students in Taiwan. In essence, they were able to reinterpret the noticed critical incident and supported each other's development of symbolic competence through their collective analyses of and critical reflection on the symbolic affordances/systems that are heavily situated in their unique sociocultural contexts (Kramsch, 2011). Together, to engage teachers in video-based analysis and noticing of the rich semiotic resources shown in the teaching video offered the opportunity for them to "identify significant references within and across cultures and elicit their significance and connotation" and "negotiate an appropriate use of them in specific circumstances" (Byram, 1997, p. 53).

Connecting to and reasoning about real-world teaching: Bridging theory and practice

The findings suggest that teachers' intercultural engagement about their noticed critical incidents of avatar teaching frequently triggered their discussions about their real-world teaching experiences or particular teaching scenarios, in particular common challenges related to theory-practice tensions. By connecting the relatively less authentic teaching incidents with avatar students to real-teaching scenarios with their own students in the US/Taiwan, they essentially extended their noticing to each other's local conditions, students, and common teacher practices and beliefs, which arguably benefits their deep conceptual understanding of the broader contextual influences on foreign language education (Douglas Fir Group, 2016; Lamy & Goodfellow, 2010). By imbedding real-world teaching scenarios within their intercultural communication about teaching, they contextualized their intercultural learning in culturally- and linguistically-rich scenarios that they perceived of significance in their local teaching contexts. Their references portrayed their real-world teaching environments and helped extend their attention to and discussions of teaching events that had occurred or might still occur in a larger

timescale and in a larger, different space. The local common practices noticed and shared by the teachers functioned as “the enactment, re-enactment, or even stylized enactment of past language (teaching) practices, the replay of cultural memory, and the rehearsal of potential identities” (Kramsch & Whiteside, 2008, p. 660).

The most common teaching challenges jointly shared by the teachers were the lack of instructional time to cover materials and the pressure with accountability tests. Sharing honest struggles in their own teaching, they demonstrated to each other that they were “not just communicators and problem solvers, but whole persons with hearts, bodies, and minds, with memories, fantasies, loyalties, identities” (Kramsch, 2006, p. 251). Through the opportunities for connecting their noticed critical incidents to teaching principles and applying the knowledge of local contexts to interpret the common teaching issues, they not only painted a realistic picture of how it looks like to teach in the US/Taiwan, in particular of the common challenges in their personal teaching within each context, but also allowed each other to “entering another person’s frame of reference and developing cultural and social awareness” (Kramsch, 1993, p. 243) of the local teaching conditions. Further, they at times helped reinterpret and reframe the meaning of the challenging events with references to historical influence and principles, and reevaluate how they could better tackle the tensions between theory and practice in their future teaching. Together, intercultural communication with guided noticing as such can be beneficial for preparing teachers for bridging theory and practice.

Exploring frames of reference: Extending noticing and deepening intercultural understanding

Deep intercultural learning mostly occurred when teachers in this study extended their pedagogy-focused conversations to the meso- and macro- context. In particular, the noticing tasks of identifying, connecting, and interpreting directed their conversations to make connections among the micro-, meso-, and macro- interaction context. As shown in the findings, Jenny not only drew her partners' attention to a meso-level, critical teaching incident related to the popular use of "a song, a video, or some fun activity" in an English lesson in the US, but also connected this noticed practice to quality-teaching standards established in the US context and applied her knowledge of American students and local context to support her reasoning about her instructional choices as such. In other words, to structure teacher noticing tasks as such can bridge the three layers of contexts and support the depth of their intercultural conversations.

In order to help each other unpack the hidden and often taken-for-granted ideological assumptions of their instructional choices, teachers conducted explicit discussions about their underlying beliefs and sociocultural and intuitional norms. These ideological beliefs can be referred as "frames of reference" (Bryam, 1997) that the teachers noticed and discussed. The frames of reference noticed by the teachers in this study were related to instructional principles and beliefs, teacher performance standards/expectations, educational policies, and cultural norms and beliefs. They drew on these frames of reference when connecting and reasoning about critical incidents of teaching that they had identified. Through collectively analyzing and exploring these frames of reference through explicit discussions, they broadened each other's limited view of foreign language teaching as simply pedagogical practice and deepened their conceptual understanding of the broader influence of meso- and macro- contextual factors (Douglas Fir Group, 2016). The teachers, either native speakers or non-native speakers, were

able to extend their noticing to the broader contextual factors across cultures and equally contribute to their group members' intercultural understanding.

Limitations

A few limitations warrant consideration when interpreting the findings of this study. First, the use of Virtual Reality Simulations program for teachers to enact their lessons might not best represent the actual interactions between a foreign language teacher and actual language learners because the avatar language learners were profiled and enacted by an adult simulation specialist. Second, the analyses of data sources were only conducted by the first author of this article without establishing interrelated reliability with a second coder. In order to mitigate these limitations, we closely worked with the simulation specialist to develop student profiles through careful research on multiple resources to enhance the representativeness of students and to provide the essential training for consistency and implementation fidelity. We conducted member checking with two participants that agreed to help check for disconfirming evidence and ensure the accuracy of our interpretations of their online interactions and behaviors.

Conclusion and Implications

With the advanced development of globalization and social networks, foreign language teachers across the globe are expected to develop new teaching competences related to intercultural learning so that they can better support the intercultural communicative competence of their language learners. This article contributed to the field of foreign language teacher education, especially the research on teacher intercultural telecollaborative learning, by exploring teachers noticing in the telecollaborative context when they were jointly analyzing and

conversing about their enacted practices that shape and are constantly shaped by the micro-, meso-, and macro- contextual influence. The findings showed that the opportunity for enacting their lessons and conducting video-based analyses of teaching via the lens of teacher noticing supported their noticing and intercultural learning.

These findings lead to the following conclusions: 1) the critical incidents of teaching with cultural differences noticed by the teachers functioned as the intercultural context for their culturally situated, pedagogy-focused conversations in which they were encouraged to explore differences with an intercultural stance; 2) teacher noticing of rich semiotic resources offered the opportunity for developing their symbolic competence; 3) teachers' references to real-world teaching, especially teaching challenges related to theory-practice tensions, extended their noticing of the current teaching events with avatar students to their real teaching experiences with their own students and therefore created the potentials for bridging theory and practice; and 4) teachers' explorations of frames of reference essentially extended their noticing to the macro-level context and deepened their intercultural understanding of these boarder contextual factors. Because this study only explored what and how teachers noticed about the critical incidents of their enacted practices in the telecollaborative context, future research is needed to explore why they noticed these critical incidents and what might be missed in their intercultural communication on these noticed incidents.

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With the advanced development of globalization and social networks, foreign language teachers across the globe are expected to develop new teaching competences related to intercultural learning so that they can better support the intercultural communicative competence of their language learners. This article contributed to the field of foreign language teacher education, especially the research on teacher intercultural telecollaborative learning, by exploring teachers noticing in the telecollaborative context when they were jointly analyzing and conversing about their enacted practices that shape and are constantly shaped by the micro-, meso-, and macro- contextual influence. The findings showed that the opportunity for enacting their lessons and conducting video-based analyses of teaching via the lens of teacher noticing supported their noticing and intercultural learning.

These findings lead to the following conclusions: 1) the critical incidents of teaching with cultural differences noticed by the teachers functioned as the intercultural context for their culturally situated, pedagogy-focused conversations in which they were encouraged to explore

differences with an intercultural stance; 2) teacher noticing of rich semiotic resources offered the opportunity for developing their symbolic competence; 3) teachers' references to real-world teaching, especially teaching challenges related to theory-practice tensions, extended their noticing of the current teaching events with avatar students to their real teaching experiences with their own students and therefore created the potentials for bridging theory and practice; and 4) teachers' explorations of frames of reference essentially extended their noticing to the macro-level context and deepened their intercultural understanding of these broader contextual factors. Because this study only explored what and how teachers noticed about the critical incidents of their enacted practices in the telecollaborative context, future research is needed to explore why they noticed these critical incidents and what might be missed in their intercultural communication on these noticed incidents.

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Chapter IV: Conclusion and Implications

The research presented previously in the three papers share a common goal, which is to prepare culturally and linguistically responsive teachers to work with language learners from diverse cultural and linguistic backgrounds (Lucas & Grinberg, 2008; Villegas & Lucas, 2011). Two complementary approaches, the community-based learning and intercultural telecollaboration, were proposed in this dissertation to explore how these two conceptual models might play out across contexts (the local U.S. context and the global context) and how teacher educators could orchestrate each context to achieve the goal of promoting teacher cultural and linguistic responsiveness. The first paper focuses on the learning model of community-based learning that is more commonly used in the U.S. while the second and the third paper focus on intercultural telecollaboration, a model more commonly used in the global context. These three papers were grounded in the common conceptual framework of the three-layered complexity of contexts which offers guidance in designing teacher learning in ways that not only promote their understanding of the micro-level classroom interactions but also the fundamental influence of the meso- and macro-level contexts (Douglas Fir Group, 2016; Lamy & Goodfellow, 2010; Ware, 2018).

The findings of the three papers highlighted the unique contributions of the two learning models in complementary ways. The findings reported in the first paper show that community-based learning approaches positively affected the development of teacher efficacy beliefs toward their teaching adaptability and teaching preparedness with diverse learners. Findings as such confirm previous research that such approaches should be integrated into teacher professional learning programs to help bridge the gaps between theory and practice (e.g., Coady, Harper, & de Jong, 2011; Faez & Vale, 2012). While the community-based learning model supports teacher

learning, it could lead to a relatively limiting view of teaching as purely pedagogical practice and limit teachers' conceptualization of teaching based on a single educational culture. By shifting language teachers' attention to the broader global context via a cross-cultural lens, the 2nd and the 3rd paper highlighted the significant role of intercultural telecollaboration in developing new teaching competences relevant to globalization and advanced social networks for language teachers, including but not limited to their intercultural awareness and intercultural communicative competence (Byram, 1997; Kramsch, 2009, 2014). In particular, the 2nd paper contributed to the field of online education for foreign language teachers through its explorations on how tasks and facilitation protocols can be structured into small-group, synchronous online interactions through the lens of the Principled Use of Video (Kang & van Es, 2019) for guided reflective practices. The last paper reported findings that emphasized the significance of providing the opportunity for teachers to enact their co-created lessons and conduct video-based, collective analyses of teaching so that they could extend their noticing of the micro-, classroom interactions to the meso- and macro- contextual influence that constantly shapes foreign language teaching and learning (Douglas Fir Group, 2016). Together, the findings from the three papers depict how teacher educators can orchestrate both local and global contexts for maximizing the development of foreign language teachers' cultural and linguistic responsiveness.

In order to increase the preparedness of teachers to work with language learners with diverse cultural and linguistic backgrounds, teacher educators can draw on the following implications for the designs and implementation of the two complementary approaches of community-based teacher learning and intercultural telecollaboration: First, when designing tasks for teachers within a community-based learning model, it is important for teacher educators

to leverage resources of community-based learning (e.g., direct teaching opportunities with language learners) as a critical source of teacher self-efficacy so that the teachers can develop a better sense of preparedness and confidence to work with language learners. Second, while engaging both pre- and in-service teachers in the same teacher preparation program, it is essential for teacher educators to recognize the potential different learning pathways for each of the teacher groups to gain increased efficacy beliefs with language learners and offer differentiated instructions for their different learning needs. Third, because intercultural telecollaboration connects teachers across cultures and geographic boundaries, it offers unique learning opportunities for new teaching competences (intercultural communicative competences and technology integration) that can be complementary for a conventional teacher preparation approach (e.g., community-based learning approach). Fourth, given the significant role of online interactions between teacher learners in their professional learning in a synchronous online interaction context, teacher educators can consider designing online discussion protocols when engaging teachers in video-based analyses of their teaching practices and in collective reflections. Last but not the least, while focusing on the quality/depth of learner online interactions, it is also critical for teacher educators to intentionally extend their attention of the micro-level, in-the-moment interactions with their local/international partners to the meso- and macro-level contextual factors that have significant influence on their teaching and their students' learning.

As indicated by the findings of the three-paper dissertation, further research is needed to explore how teacher educators can orchestrate the two conceptual models of community-based learning and intercultural telecollaboration to achieve the goal of enhancing the cultural and linguistic responsiveness of teachers with diverse learners. Concerning the community-based

learning, scholars may examine how to design community-based learning in ways that can enable teachers to develop their noticing skills, especially regarding their culturally responsive teaching. They may also explore how a learning cycle of rehearsing, enacting and reflecting (McDonald, Kazemi, & Kavanagh, 2013) in the community-based learning model can support teachers' cultural and linguistic responsiveness. As complementary to the community-based learning model, two overarching questions will guide the inquiry of implementation of intercultural telecollaboration in teacher professional development: 1) How do teachers engage across cultures to enact pedagogical practices that are authentically tied to deepening their students' intercultural communicative competence? and 2) What factors contribute to teachers' development in making conceptual connections across the attitudes, knowledge, and skills necessary to sustain such intercultural approaches?

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